936-5519004201

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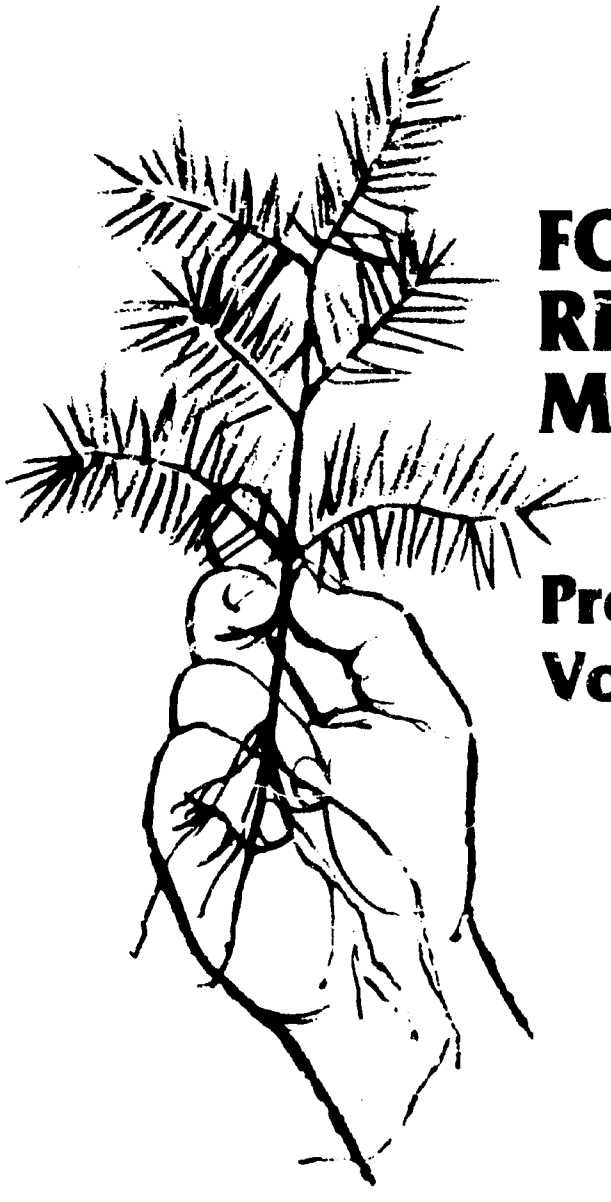

FOREST RESOURCES MANAGEMENT

Project Paper
Volume I

Office of Science and Technology
Development Support Bureau
Agency for International Development
Washington, D.C. 20523

July 1980

FOREST RESOURCES MANAGEMENT

Project Paper
Volume I

Dan Deely, Project Manager
Project Number 936-5519

Office of Science and Technology
Development Support Bureau
Agency for International Development
Washington, D.C. 20523

July 1980

SMOKEY SAYS, "LET'S LEND A HAND IN OTHER LANDS."

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT PAPER FACESHEET

1. TRANSACTION CODE: A (A = ADD, C = CHANGE, D = DELETE)

PP

2. DOCUMENT CODE: 3

3. COUNTRY/ENTITY: OS/ST Worldwide

4. DOCUMENT REVISION NUMBER: 1

5. PROJECT NUMBER (7 digits): 936-5519

6. BUREAU/OFFICE: A. SYMBOL: DSB; B. CODE: 10

7. PROJECT TITLE (Maximum 40 characters): Forest Resources Management

8. ESTIMATED FY OF PROJECT COMPLETION: FY 85

9. ESTIMATED DATE OF OBLIGATION: A. INITIAL FY 80; B. QUARTER 4 (Enter 1, 2, 3, or 4); C. FINAL FY 83

10. ESTIMATED COSTS ($000 OR EQUIVALENT $1 =)

A. FUNDING SOURCE	FIRST FY 80 B. FX	C. L/C	D. TOTAL	LIFE OF PROJECT E. FX	F. L/C	G. TOTAL
AID APPROPRIATED TOTAL						
(GRANT)	(1,400)	( )	(1,400)	(3,700)	( )	(3,700)
(LOAN)	( )	( )	( )	( )	( )	( )
OTHER U.S. 1. ForestService		100	100		2,000	2,000
OTHER U.S. 2. PeaceCorps		100	100		6,000	6,000
HOST COUNTRY						
OTHER DONOR(S)						
TOTALS	1,400	200	1,600	3,700	8,000	11,700

11. PROPOSED BUDGET APPROPRIATED FUNDS ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE C. GRANT	D. LOAN	E. 1ST FY 80 F. GRANT	G. LOAN	H. 2ND FY 81 I. GRANT	J. LOAN	K. 3RD FY 82 L. GRANT	M. LOAN
(1) FN	750	877		1,000		500		1,000	
(2) SD	750	877		400					
(3)									
(4)									
			TOTALS	1,400		500		1,000	

A. APPROPRIATION	N. 4TH FY 83 O. GRANT	P. LOAN	Q. 5TH FY ___ R. GRANT	S. LOAN	LIFE OF PROJECT T. GRANT	U. LOAN
(1) FN	800				3,700	
(2)						
(3)						
(4)						
TOTALS	800				3,700	

12. IN-DEPTH EVALUATION SCHEDULED: MM 10 YY 82

13. DATA CHANGE INDICATOR. WERE CHANGES MADE IN THE PID FACESHEET DATA, BLOCKS 12, 13, 14, OR 15 OR IN PRP FACESHEET DATA, BLOCK 12? IF YES, ATTACH CHANGED PID FACESHEET.

1 (1 = NO, 2 = YES)

14. ORIGINATING OFFICE CLEARANCE

SIGNATURE: /S/

TITLE: Acting Director, Office of Science and Technology

DATE SIGNED: MM 6 DD 24 YY 80

15. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION: MM 6 DD 25 YY 80

AID 1330-4 (3-76)

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT IDENTIFICATION DOCUMENT FACESHEET

TO BE COMPLETED BY ORIGINATING OFFICE

1. TRANSACTION CODE: A (A = ADD, C = CHANGE, D = DELETE)

PID

2. DOCUMENT CODE: 1

3. COUNTRY/ENTITY: DS/ST Worldwide

4. DOCUMENT REVISION NUMBER: 1

5. PROJECT NUMBER (7 DIGITS): 936-5519

6. BUREAU/OFFICE: a. SYMBOL: DSB; b. CODE: 10

7. PROJECT TITLE (MAXIMUM 40 CHARACTERS): FOREST RESOURCES MANAGEMENT

8. PROPOSED NEXT DOCUMENT: A. 3 (2 = PRP, 3 = PP); B. DATE: MM 05, YY 80

9. ESTIMATED FY OF AUTHORIZATION/OBLIGATION: a. INITIAL FY 80; b. FINAL FY 83

10. ESTIMATED COSTS ($000 OR EQUIVALENT, $1 = 7,100)

FUNDING SOURCE	LIFE OF PROJECT
a. AID APPROPRIATED	3,300
b. OTHER U.S. 1. Peace Corps	4,000
2. U.S. Forest Service	2,000
c. HOST COUNTRY	
d. OTHER DONOR(S)	
TOTAL	9,300

11. PROPOSED BUDGET AID APPROPRIATED FUNDS ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE C. GRANT	D. LOAN	E. FIRST FY 80 F. GRANT	G. LOAN	LIFE OF PROJECT H. GRANT	I. LOAN
(1) FN	750	877		1,000		3,300	
(2)							
(3)							
(4)							
			TOTAL	1,000		3,300	

12. SECONDARY TECHNICAL CODES (maximum six codes of three positions each)

13. SPECIAL CONCERNS CODES (MAXIMUM SIX CODES OF FOUR POSITIONS EACH)

14. SECONDARY PURPOSE CODE

15. PROJECT GOAL (MAXIMUM 240 CHARACTERS)

To reduce forest and related natural resource deterioration in LDC's which threatens basic human needs of the rural poor and increase sustainable use of forest resources to meet those needs.

16. PROJECT PURPOSE (MAXIMUM 480 CHARACTERS)

To improve delivery of effective forestry assistance to LDC s for the benefit of the rural poor by providing A.I.D. Missions and LDCs with ready access to sound technical advice and quality professional field support in forest resources, and by mobilizing Peace Corps capabilities in support of collaborative grassroots-level village forestry projects.

17. PLANNING RESOURCE REQUIREMENTS (staff/funds)

DS/ST direct hire travel to LAC/ROCAP and AFR/REDSO Regional Offices

18. ORIGINATING OFFICE CLEARANCE

Signature: William M. Feldman

Title: Acting Director, Office of Science and Technology

Date Signed: MM 11, DD 8, YY 80

19. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION: MM 5, DD 19, YY 80

AID 1330-2 (3-76)

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I. PROJECT SUMMARY AND RECOMMENDATIONS

A. Project Summary

The Development Support Bureau's Forest Resources Management project is a four-year, $3.7 million effort intended to provide and improve A.I.D. field Mission access to socially and technically relevant professional expertise in forest resources, and to strengthen and complement A.I.D. Mission programs through a Joint Collaborative Forestry Initiative with the Peace Corps.

1. International Forest Resources Support Network

Mission access to relevant forestry and natural resources expertise and information will be provided through an International Support Network operated by U.S.D.A. Forest Service under a Resources Support Service Agreement (RSSA). A central Experts Network unit will develop and manage an international experts system, and deliver limited short-term consulting and experts referral services through A.I.D. administrative channels to LDC field Missions, Regional Field Offices and Regional Bureaus.

Three long-term resident forestry advisors will be placed in the field for up to two years and other Network "Cooperators" will be identified to provide direct assistance and expert advisory service to A.I.D. Missions, to on-site Mission project personnel and to LDC counterparts.

The Forest Service will work closely with A.I.D.'s Regional Bureaus on two Regional Workshops, an International Forestry Assistance Conference and several analytical studies directed at examinations of ongoing and planned forestry assistance efforts, and at promotion of the most promising and effective approaches.

2. Joint A.I.D./P.C. Forestry Initiative

A Joint A.I.D./Peace Corps Forestry Initiative will build upon the differing but complementary strengths of the two agencies in an effort to deliver grassroots village level forestry assistance through collaborative Peace Corps linkages with LDC Mission assistance programs. An augmented Peace Corps Headquarters Forestry Initiative Programming Unit will promote an expansion of forestry assistance activity and identify and develop opportunities for A.I.D./P.C. collaboration.

A.I.D. will supply professional technical programming and backstopping expertise on a consulting basis to develop collaborative forestry projects in two-to-five A.I.D.-P.C. countries. Peace Corps will recruit, train and place Peace Corps forestry volunteers in A.I.D. collaborative project settings, while A.I.D. supplies funds for technical backup and support, counterpart training, materiel support (transportation, tools, tree nursery supplies, etc.) and pre- and in-service training development.

3. Other Agency Contributions and Participation

Another important feature of the Forest Resources Management project is the scale of contributions and participation that are anticipated from both of the implementing agencies. Although project success is not contingent upon in-kind contributions, the U.S.D.A. Forest Service may contribute as much as $2.0 million in the form of in-kind services to A.I.D. Missions, Offices and Bureaus during the four year life of the project. The Peace Corps' $6.0 million investment in the collaborative LDC forestry assistance projects will exceed A.I.D.'s investment by at least a factor of five (5). The combined contributions of the three agencies to these mutually inter-related forest resources support activities is expected to reach $11.7 million.

B. Recommendations

1. That appropriate steps be immediately taken to carry out required Congressional Notification action that will permit signing of Project Authorization, PAF, PART II, Annex C.

2. That action be taken by AA/DS to formally notify R. M. Peterson, Chief, U.S.D.A. Forest Service, of Agency desire to enter into a Resource Support Service Agreement (RSSA) with the Forest Service

for carrying out Forest Resources Support Network activities.

3. That A.I.D. begin negotiations with U.S.D.A. Forest Service representatives immediately following Congressional Notification action to develop the specific terms of an A.I.D./Forest Service RSSA.

4. That action be taken by AA/DS to formally notify Richard Celeste, Director, Peace Corps of A.I.D.'s desire to enter into a Participating Agency Service Agreement (PASA) with Peace Corps for launching a Joing A.I.D./Peace Corps Forestry Initiative.

5. That A.I.D. begin negotiations with Peace Corps representatives immediately following Congressional Notification action to develop the specific terms of an A.I.D./Peace Corps PASA.

II. PROJECT BACKGROUND AND COMPONENT DESCRIPTIONS

A. Background

1. Critical Need in LDCs for Forest Resources Assistance

A growing worldwide recognition of a critical need for assistance in dealing with forestry, forest resources and allied natural resources problems in less developed countries (LDCs) has emerged within the countries themselves and within the bilateral and international donor assistance communities over the past several years.

This growing awareness of critical forest resources problems and needs is well illustrated by such publicized situations as the critical fuelwood shortage in the Sahel region of Africa, water shortages linked to deforestation in Panama which threaten operation of the canal, and recent discovery by the Thai government of an unexpectedly large 38% decline in that country's forest-covered area over the past 20 years.

A veritable tide of domestic and international actions and events has drawn attention to, and kept increasing attention focussed on, forest resources issues:

a. The United Nations sponsored a World Conference on Desertification in August 1977, and a Meeting of Experts on Tropical Forests in February 1980 in Nairobi, Kenya to develop worldwide plans of action to combat desertification and to promote conservation and wise utilization of tropical forests, respectively.

b. The World Bank issued a Forestry Sector Policy Paper in February 1978 containing new guidelines for the Bank's lending program.

c. A.I.D. and the Department of State co-sponsored a U.S. Strategy Conference on Tropical Deforestation in June 1978.

d. The Asian Development Bank issued a Sector Paper on Forestry and Forest Industries in August 1978.

e. The Worldwatch Institute published a paper by Eric Eckholm, in February 1979, on deforestation and related problems which has been widely distributed under the title, "Planting for the Future: Forestry for Human Needs".

f. The A.I.D. Administrator endorsed the recommendations of a report prepared by a U.S. Government Interagency Task Force on Tropical Forests (formed as an outgrowth of the 1978 A.I.D./State sponsored Strategy Conference on Tropical Deforestation) for a U.S. Policy, Strategy and Program on Tropical Forests. This report was submitted to the President by the Secretary of State on June 18, 1980.

g. The "Global 2000" Report to the President (July 1980), undertaken jointly by the President's Council on Environmental Quality (CEQ) and Department of State, dealing with the probable

global environment, population and natural resources situation in the year 2000, has concluded that "of all the environmental impacts of the study projections, deforestation probably poses the most serious problem for the world, particularly the developing world". Against this background of increased national and international attention, and increasingly urgent and more specific mandates from the U.S. Congress through foreign assistance legislation, A.I.D. has been striving to respond appropriately to the varied forest resources problems in developing countries through assistance projects. This DS/ST Forest Resources Management project has been designed as an important dimension of that overall Agency response.

2. Congressional Mandate and Presidential Concern

The U.S. Congress has responded to the increasingly critical nature of forest resources problems in LDCs by giving A.I.D. stronger mandates in each of the past several years for greater involvement in LDC environmental and natural resources problems in its bilateral development assistance program. These mandates relating to forest resources include conservation and restoration of land, vegetation, water, wildlife, renewable energy sources, including fuelwood, and other resources upon which depend economic growth and well being, especially that of the poor.

The 1979 Amendments to the FAA contained under Section 103(b), the most explicit authorizing language in the history of U.S. foreign assistance legislation for providing bilateral assistance to deal with forest resource depletion and associated soil and water resource deterioration:

> "The Congress recognizes that the accelerating loss of forests and tree cover in developing countries undermines and offsets efforts to improve agricultural production and nutrition and otherwise to meet the basic human needs of the poor. Deforestation results in increased flooding, reduction in water supply for agricultural capacity, loss of firewood and needed wood products, and loss of valuable plants and animals. In order to maintain and increase forest resources, the President is authorized to provide assistance under this section for forestry projects which are essential to fulfill the fundamental purposes of this section. Emphasis shall be given to community woodlots, agroforestry, reforestation, protection of watershed forests, and more effective forest management."

A summary of recent amendments to the Foreign Assistance Act of 1961 (FAA) dealing with forestry and related natural resources is presented in APPENDIX A of Volume II of the Project Paper.

The President made specific reference to the LDC deforestation problem in his 1979 Environmental Message and directed in a follow-up Memorandum that A.I.D. give high priority to programs which would advance objectives including: 1) preservation of natural forest ecosystems and their rich complex of plant and animal life; 2) multiple uses of highly diverse tropical forests, including management of natural stands, development of ecologically sound forest plantations, and combined agriculture and forestry and 3) developing integrated projects for reforestation, more efficient fuelwood use, and alternative energy sources.

3. Response to A.I.D. Forest Resources Program Needs

This project is intended to meet both the most pressing current needs and to anticipate future requirements of A.I.D.'s emerging forest resources program. Each component of the project is designed to deliver technical, material, financial and/or information support to LDCs and A.I.D. field Missions which is essential for a sound and effective program.

a. A.I.D. Program Needs to be Met by Development of a Forestry Support Network

i. A.I.D.'s Need for Forest Resources Experts Networking and Experience Examination

A key finding of a recent review of A.I.D. projects involving forests and related natural re-

resources is that many A.I.D. country Missions have already begun to respond to the increasingly critical need for an expansion of development assistance efforts in forest resources, and that both the number and value of A.I.D. forestry-related projects have risen dramatically: A roughly estimated 400% to 500% overall increase in forestry assistance by A.I.D. Missions occurred between 1975 and 1979.

A recent study by the U.S. Forest Service under DS/ST project "Deforestation and Development" lists more than sixty recently completed, on-going or planned A.I.D.-funded forestry or forestry-related projects in LDCs, more than one half of which are in Africa and one third in Latin America.

A.I.D. Mission forestry projects are being designed, implemented and evaluated by a wide array of consultants who have been identified largely on an ad-hoc basis without benefit of any systematically organized support network in forestry and related natural resources areas. Knowledge, skills, and information which is being developed through ongoing programs or recent project planning work in LDCs is not being adequately analysed and appropriately transferred to other areas where it might be productively applied. Collective experience is not being examined, and practical directions and approaches for more effective future forestry-related assistance efforts are not being identified and pursued.

ii. A.I.D.'s Need for Technical Expertise in Forest Resources

The House Appropriations Committee, in its 1980 Appropriations Bill Report of June 14, 1979, urged A.I.D. to increase its staff capabilities in forestry; to plan for and include reforestation activities in all future rural development programs; to address forest management considerations within the framework of its environmental assessment policies, procedures and reviews; and to examine all of its current rural development projects to insure that, whenever appropriate, they incorporate a forestry/firewood component.

A Federal Interagency Task Force on Tropical Forests, which included A.I.D. participation, worked throughout 1979 to develop a U.S. Policy, Strategy and Program on Tropical Forests. The Task Force's recommendations were endorsed by the Administrator on January 2, 1980, and the Report was forwarded to the President on June 18, 1980. The draft Report stated that "...until recently A.I.D.'s in-house technical expertise in tropical forestry...has been almost nonexistent and that Federal agencies, including A.I.D., currently have insufficient personnel assigned to planning, analysis and program implementation in the area of tropical forest management.... Most (Agencies) will have to go beyond reassigning staff and add new technical competence."

The Circular Airgram dealing with forestry which was sent to all A.I.D. field posts in September 1979 by AA/PPC pledged that DSB would define "available expertise to provide field support services" to LDCs and A.I.D.'s field Missions. Missions were encouraged to examine "personnel implications" of greatly expanded activity in forest resources and to consider "future personnel needs" implicit in increased assistance efforts.

This project is designed to be directly responsive to Federal Interagency Task Force recommendations endorsed by the A.I.D. Administrator, and to the recent DSB and PPC policy and guidance formulation efforts.

b. A.I.D. Program Needs Met by Peace Corps Component

Over the past two years, there has been a widespread recognition that A.I.D. and Peace Corps share common goals and objectives in assisting the poor of developing countries, and that improved collaboration and cooperation between the two agencies will contribute to making their respective programs and the overall U.S. government's assistance program more effective. In June of 1979 the Congressional House Appropriations Committee urged A.I.D. to increase its assistance efforts in relation to forest resources and deforestation, and urged explicitly that the Peace Corps "could also form a very important com-

ponent of any U.S. initiative." Peace Corps in November of 1979 issued a "Forestry Initiative" paper calling for a much expanded Peace Corps effort in forestry and natural resource conservation, drawing attention to Peace Corps resource needs, with a special focus for immediate action on a joint A.I.D./P.C. forestry initiative programming effort. In response to furthering collabration and cooperation the Peace Corps Director and the A.I.D. Administrator signed a Joint Memorandum on December 31, 1979, directed at A.I.D. and Peace Corps staff, exhorting personnel of both agencies to increase their joint efforts in support of collaboration and cooperation in development activities.

The A.I.D./P.C. component of this project is designed to encourage and promote increased A.I.D./P.C. collaboration as outlined by the A.I.D. Administrator and the Peace Corps Director. This project responds directly to those specific "resource needs" expressed by the Peace Corps in its recent "Forestry Initiative" paper, and simultaneously provides A.I.D. with a significant opportunity to extend its own efforts at the grassroots level.

Both agencies will gain from joint forestry programming and strengthening of cooperative relationships under this project. Together they will:

i. Demonstrate concrete action in response to Administration mandates for increased interagency collaboration and action on the tropical forestry problem;

ii. Gain new insights from planned assessments of existing projects about the kinds of planning and implementation approaches, resource mixes, and community interactions which promote or impede the accomplishment of desired project goals;

iii. Build the capability of their respective field organizations to better plan, both jointly and separately, community-level forestry and conservation projects, and the ability of headquarters offices to derive technical findings and materials, project models, training techniques, and other aspects of experience with new projects, which can in turn enrich overall guidance and assistance available to the field.

Peace Corps programming will benefit from the technical expertise available through AID's networks, as well as from the hoped-for development of responsive and appropriate mechanisms for funding materials and equipment which are often essential to project and PCV effectiveness. AID stands to gain from the out-reach to, and feedback from, community settings in which Peace Corps can function effectively. Results of research can be tested, adapted, and extended by PCVs.

Skills and knowledge can be transferred by PCVs to host country development workers in the settings where they are to be applied.

B. International Resources Support Network

The Support Network component of DS/ST's Forest Resources Management project is designed to serve the following purposes:

(1) Develop Agency capability to meet and service LDC Mission-level demands for socially and technically relevant professional expertise in forest resources;

(2) Provide LDC Missions with immediate and direct field support and backstopping;

(3) Provide the Agency and Regional Bureaus with additional means through which ongoing and planned forestry assistance efforts can be examined, and more widespread use of the most promising and effective approaches promoted.

The A.I.D.-funded life-of-project cost over a four-year time frame is $2.5 million for this component of the overall $3.7 million project. In-kind life-of-project contributions (provided without charge to A.I.D.) by the U.S.D.A. Forest Service over four years are currently estimated at $2.0 million. Forest Resource Support Network activities will include:

(1) Network development services and management (accounting for 25% of the total four-year Network budget);

(2) Direct LDC Mission backstopping (more than 10-person years of long and short-term assistance accounting for 50% of the budget);

(3) Assistance experience examination through Workshops/Conferences and analyses (accounting for 20% of the budget with the balance devoted to overall project evaluation).

Each of the three major categories of Support Network activities is described in the following Sections so as to highlight how each activity will contribute to achievement of project objectives, what project personnel and budget resources each activity will require, and how each facet of the project will be carried out in relation to the interests of the Regional Bureaus and Missions.

1. Network Development, Services and Management

a. Activity Purpose

This activity will serve to develop the Agency's capacity for identifying and accessing relevant forest resources expertise to meet LDC Mission assistance requirements.

b. Project Resources

Network development, services and management over a four-year period will require roughly 25% of the budgeted funds for the Support Network component of the project. This amounts to $600,000 for this activity over the life of the project out of a total budget of $2.2 million for this component.

This level of effort will provide sufficient funding to employ one senior professional, two-three junior professionals, one clerical support person and limited funds for other direct costs over four years with the assumption of a modest 25% overhead rate (dependent upon negotiation of a RSSA with U.S.D.A. Forest Service).

c. Support Network Development, Services and Management Activities

i. Network Philosophy and Orientation

Relevant Expertise

(1) The process of Network Development and Management will serve to identify both U.S. and foreign expertise which is highly relevant to LDC Mission problem and assistance project needs relating to forest resources.

Multidisciplinary Orientation

(2) The Network will take in not only professional technical expertise in forestry, per se, but will also identify relevant social science expertise which is applicable to forest and related natural resources problems. It shall be the intent of the project to develop network information and mechanisms to promote multidisciplinary approaches to forest resources assistance which are sensitive to social, economic, and institutional, as well as

to scientific and technical, aspects.

U.S.D.A. Forest Service

(3) The U.S.D.A. Forest Service has been selected as the most capable and appropriate organization to assume responsibility for performing all Support Network activities through a RSSA with A.I.D. In-kind and other contributions to the project by the Forest Service are expected to amount to as much as $2.0 million over the four-year life of the project, although such contributions are not essential to project integrity.

Spectrum of Forest Resources Concerns

(4) The Forest Resources Support Network will deal with a wide spectrum of subjects bearing on forests and related natural resources. Perhaps the best way to show the range of subject areas which may be relevant to forest resources in the A.I.D. context is to list some of those specialties and sub-disciplines which are likely to be involved.

Forest resources concerns will include:

- Reforestation
- Seed orchard establishment and management

Spectrum of Forest Resources Concerns (Cont.)

- Nursery management
- Nursery pest management
- Fire ecology and management
- Forest pathology
- Forest entomology
- Plantation management
- Forestry extension
- Forest hydrology
- Forest mensuration
- Forest mycology
- Forest genetics
- Forest policy and administration
- Forest sciences research
- Forestry education and training: professional and technical
- Forest wildlife
- Aquatic biology and fisheries
- Institution building
- Logging and logging engineering
- Forest and related natural resource law
- Forest products marketing
- Forest economics and financial management
- Forest-related concession and business administration
- Soil conservation
- Forest inventory
- Fuelwood production
- Remote sensing applications

- Forest biomass production and conversion
- Forest land capability analysis
- Forest products export
- Forest soils and soils management
- International trade
- Range management
- Park administration and management
- Rare and endangered species protection and management
- Public information and participation
- Forest industrial and wood utilization specialties
  - Sawmilling - Hardboard manufacture
  - Wood preservation
  - Pulp and paper - Lumber seasoning
  - Wood properties and wood chemistry
  - Veneer and plywood - Naval stores

Spectrum of Forest Resources Concerns (Cont.)

Ties will have to be made with closely related and associated fields in order to deal with forest resources in a multidisciplinary manner, and in a way which is sensitive to the social, economic and institutional context of LDC forest resources problems affecting A.I.D.'s target populations. Important broadly related areas include:

- Agriculture
- Agroforestry
- Tropical Soils
- Rural Development

- Development Administration
- Energy

Related specialty areas include:

- Agricultural soil conservation
- Arid lands management
- Dune stabilization, shelterbelts, live fencing
- Watershed management
- Rural sociology
- Anthropology
- Land tenure
- Agricultural economics
- Agricultural extension, cooperatives
- Small-scale rural industry
- Rural credit
- Epidemiology
- Income/employment generation

Information as well as Experts

(5) Although primary emphasis will be given to identification and accessing of individual experts and organizations, scientific information and documentation will also be given attention. Arrangements will be made to combine efforts under DS/DIU's RSSA with U.S.D.A. with in-kind contributions from the U.S.D.A. Forest Service to meet limited information and documentation service requests from Missions and Regional Bureaus. Ties will be established between the Support Network and DS/DIU for supplying information services in response to requests processed through

the Network System.

(6) The U.S.D.A. Forest Service RSSA arrangement will provide the Support Network with linkages to, and possible capabilities for using the Forest Service's domestic and foreign information networks. Sources of technical information will be identified; some will be broad ones not focussed on any one single subject like the reference collection of the U.S.D.A. National Agricultural Library in Beltsville, while others will be more narrowly technical, such as those shown in the 1980 Forest Service "Directory of Forestry Related Data Bases."

Domestic Information Sources

Access to other existing information networks will be an essential part of the Experts Network, useful for identifying the most knowledgeable scientific experts in narrow specialty areas as well as for gathering scientific information on problems in those same areas; i.e., there is obviously an important link between information and the individual experts and organizations that produced it.

(7) Sources of information on international information networks will be identified and means of access will be effectively determined.

International Information Sources

As a starting point, documents such as FAO's "World Catalog of Information and Documentation Services - Agris Forestry," and the United Nations Environment Programme (UNEP) "Directory of Information Sources on Conservation and Wise Utilization of Tropical Forests" will be consulted. Sources of information available through the International Union of Forestry Research Organizations (IUFRO) will be explored. Information sources will frequently be used as a guide toward locating expert individuals and organizations, as well as to locate information per se.

Professional Judgement as well as Lists

(8) Network Development and Management efforts will not only produce lists of relevant domestic and foreign experts and expert organizations targeted at A.I.D. assistance support requirements in forest and related natural resources areas, but will also serve to build professional acumen among A.I.D. staff in DSB, Regional Bureaus and Missions, and to provide a body of professional talent in the form of a Network staff, that will be capable of offering sound professional judgments, advice and interpretations concerning sterile listed information.

Joint Project Management Advisory Group

(9) Regional Bureau specialists in forestry and natural resources (from AFP/DR, LAC/DR, etc.) will serve on a Joint Project Management Advisory Group chaired by the DS/ST Forest Resources Management Project Manager. Such an Advisory Group will periodically review Support Network operations and work plans, and recommend changes and adjustments in an ongoing manner which are responsive to user needs in the field Missions and Regional Bureaus.

ii. Support Network Development

Staff Qualifications and Selection

(10) Network staff personnel will include persons with professional training and/or experience in forestry and related natural resources areas. Staff will be selected to fill positions by the prime contractor only with concurrence of DS/ST and Regional Bureau representatives.

Network Staff Activities

(11) Network staff personnel will concentrate their activities on network development during the early stages of the project, and shift increasingly toward network updating, services and management in later project stages.

Project Analysis

(12) Network development will begin with analysis of A.I.D. forestry project activities and identification of those professionals who are already involved in offering forest resources-related services (including individuals, PVOs, universities, institutes, consortia, consulting firms, and government agencies).

Other Networks

(13) Forestry and related natural resources problems are so multi-disciplinary that much of the relevant expertise that must be tapped to deal with them is contained as limited subsets of that within other experts networks. Information on, and access to, other existing experts networks in A.I.D., and both within and outside the U.S. in other government agencies and organizations, will be gathered throughout the life of the project.

(14) Within A.I.D., such networks as those developed and supported by the Development Support Bureau's Office of Rural Development, Office of Energy and Office of Agriculture will be particularly relevant to some aspects of forestry-related assistance work, The DS/EY

"Bioresources" project, DS/RAD's Rural Development Data Requirements Package, Access to Land, Water and Other Productive Resources (University of Wisconsin Land Tenure Center), Managing Decentralization (University of California), and Off-Farm Employment (Michigan State University) will be among the existing A.I.D. resources that can be called on to meet forestry-related assistance demands in a socially conscious, multidisciplinary manner.

Existing A.I.D. Networks

(15) The Support Network will identify and gather relevant descriptive and access information on other forestry-related experts networks in the U.S.A. These will include the 61 or more professional and technical schools of forestry in U.S. Universities across the country, as well as University Consortia and other organizations such as the Organization for Tropical Studies (OTS) now headquartered at Duke University. Sources will include the U.S. Forest Service itself, which employs almost 21,000 professional employees, a substantial number of whom are foresters or have training and experience in closely allied fields. The Forest Service

Existing Domestic Networks

has almost 1,000 research scientists and eight major experiment stations, including numerous smaller field stations that take in the Institute of Tropical Forestry in Puerto Rico and the Institute of Pacific Islands Forestry in Hawaii. Other government agencies having something to offer will include, among U.S.D.A. agencies, the Science and Education Administration, which publishes a "Directory of Extension Forest Resource Specialists" with more than 200 citations, and other parts of U.S.D.A., including the Office of International Cooperation and Development (OICD), Soil Conservation Service, and the Animal and Plant Health Inspection Service (APHIS). The U.S. Department of Interior includes the Bureau of Land Management, the National Park Service, and the Fish and Wildlife Service, all of which have expertise relating to forestry and natural resources. The Professional Society of American Foresters (SAF) with over 20,000 members publishes a "Membership Directory" and a "Directory of Consulting Foresters." Since half of all third world professional expatriot nationals reside in the United States, expatriots might represent a valuable pool of expertise for technical assistance. Other professional societies can offer similar experts information, such as the Society of Range Management, Soil Science Society of America, and Soil Con-

Existing Domestic Networks (Contd.)

servation Society of America. Numerous other domestic organizations, including ones like the New York and the Missouri Botanical Gardens, and the Smithsonian Institution in Washington, D.C. can offer both information and expertise. The National Forest Products Association and U.S. forest products industrial firms also have expertise to offer toward development assistance, especially the more than 30 U.S. forest products companies with overseas industrial operations.

Existing Domestic Networks (Contd.)

(16) International Networks will be identified and access arrangements will be investigated. Such Networks include a wide range of sources extending from the World Bank's Listing of International Consultants, and the Food and Agriculture Organization's (FAO's) data on experts and consultants, to information compiled by nongovernmental organizations such as the International Union of Forestry Research Organizations (IUFRO), and the International Union for the Conservation of Nature (IUCN). International sources will take in not only the expert assistance possibilities in less developed countries (LDCs) and in developed countries (DCs), but also those in Regional and International research and

Existing International Networks

educational institutions (CATIE in Central America, the International Council for Research in Agroforestry (ICRAF) in Nairobi, etc.). Another important dimension to the support network's international aspects will be the substantial contributions for LDC assistance which reside in the most highly developed of the developing countries, such as Brazil, Nigeria and Taiwan.

Existing International Networks (contd.)

Establishing Network Criteria

(17) Regional Bureaus will play a key role in definition of criteria for including experts and organizations within the Support Network system, and in defining specific relevant information which is to be kept on those that are included (i.e., countries of past experience, language capabilities, etc.).

Mission Satisfaction Most Important

Mission and Regional Bureau user satisfaction will be absolutely essential to Network performance; Regional Bureau and Mission needs and requirements will determine system characteristics.

Contractors for both Design and Implementation

(18) Network information will be developed so as to identify not only those individuals and organizations with relevant short-term consulting capabilities, but also those with a longer term on-site LDC resident project implementation and management capability.

iii. Support Network Services and Management

Network Service

(19) The Support Network unit will provide services to A.I.D. Missions, Regional Field Offices, Regional Bureaus and DSB Offices through normal administrative and management channels; specific procedures for service delivery, and request and response handling and communication will be worked out so as to best accommodate Mission and Regional Bureau client/user requirements.

Service Operation

(20) Network Service will focus on relevant expert referrals to meet Mission, Regional Bureau and other Office requirements bearing on forest and related natural resources. On-call short-term consulting services funds included in this project will enable the Network staff to perform a limited amount of contracting for services to Missions and Regional Bureaus. But these project funds are so limited that they will cover only a small fraction of total demand for such forestry-related consultancies from all A.I.D. field Missions, Bureaus and Offices. A funding allocation formula is described on page 47.

(21) A manual system is contemplated at present, but an automated processing operation using either a word processing unit or computer terminal could be added later if warranted by demand and system performance. This question will be one of those

addressed during the first project evaluation, eighteen months into the project. In the typical case, several alternative sources for the requested services or expertise will be provided by the Network staff to the client or requester (most frequently, the A.I.D. Mission will be the requesting client). The Network staff will be involved as much as possible considering other work load in contacting potential contractors/consultants to determine availability, costs, etc.

Potential for Automation

(22) The Network staff will normally not be involved in making final selections of consultants, or in contracting for their services; A.I.D. Missions, Regional Field Offices, Regional Bureaus and Central Bureaus will routinely handle these functions in accordance with established procedures. The Network staff will become involved in selecting consultants and in contracting for services when the On-call Service Support funds from this project are being utilized. The A.I.D. Mission, Office or Bureau which is to receive the consultant service will be given an opportunity to concur in the selection (more discussion on project-funded on-call services is given in Section B.2., under Direct LDC Mission Backstopping).

Network Contracting Services

(23) On-call Consulting funds provided under the project will be included in each FY's fund commitment to the Forest Service under the RSSA agreement with the anticipation that U.S.D.A.

U.S.D.A. Procurement

mechanisms will then be used to contract for services with these funds.

Forestry Experts Demand/Use Analysis

(24) Network staff will analyze A.I.D. demand for, and experience with use of, forestry-related expertise on both a short-term consultancy and on a long-term residency (project assignment) basis.

Network Examination of A.I.D. Mission CDSSs

(25) Network staff will examine A.I.D. Mission CDSSs to get clues about future levels of demand, and future kinds of consultant services requirements that A.I.D. will be likely to have in coming years based on forestry-related project assistance projections. This information will be used together with other A.I.D. project planning information to try to anticipate future Mission needs and requirements for both long and short-term services.

Regionalization of Network Operations

(26) The Network staff will strive to work toward Regional specialization, with one member concentrating on Africa and Near East, another on Asia, and a third on Latin America, respectively. Each of these individuals would then be expected to establish a particularly close working relationship with the respective Regional Bureau technical office, and especially with any Regional forestry and natural resources specialist in that Office.

(27) The Support Network will begin, albeit on a relatively small scale in this project, to interact

Network Interaction with the Forestry Community

with the domestic and the international forest resources communities.

Recognition of Subareas in Demand

(28) Network staff will determine the major requirements for services by A.I.D. Missions in numerous subareas of forestry and related natural resources disciplines and concentrate networking activities in subareas of greatest need.

Multidisciplinary Teams

(29) The Network staff will recognize repetitive demand in A.I.D. project activities for multidisciplinary team skills of a particular make-up and find sources capable of providing such teams of relevant experts. The staff will contact organizations capable of fielding such teams, communicate A.I.D. needs, and encourage team development.

Information Distribution to Experts

(30) The Network staff will distribute information to appropriate parts of the international network that will help them to better understand A.I.D. and LDC needs, and to better supply relevant, appropriate kinds of support to A.I.D.'s forestry-related assistance efforts.

Network Contacts with Experts

(31) Network staff will encourage visits from individual experts and expert-organizations so that the staff can become more familiar with their experiences and with what they have to offer, and the experts can become more familiar with what A.I.D. is doing and what A.I.D. and LDC requirements are. Network staff will be expected to develop an objective, professional understanding of the capabilities of experts and expert organizations through such direct contacts and review of individual performance and institutional experience information.

Network Interviews with A.I.D. Mission Directors

(32) The Network staff will arrange to hold informal discussions and information exchanges through Regional Bureau technical office contacts with A.I.D. Mission Directors when they are in A.I.D./W on business. This will permit an opportunity to exchange information on needs, performance, viewpoints, outlooks, etc. Such

meetings will help to inform Missions about Network capabilities, and will help inform the Network staff about Mission situations, attitudes, and LDC conditions.

Returning P. C. Forestry Volunteer Interviews

(33) The Network staff will cooperate with the Peace Corps Forestry Initiative staff to interview returning P. C. forestry volunteers and to keep track of them for possible future use in A.I.D. Mission forestry projects where their skills and experience might be highly valuable.

Network Tracking of Use and Experience

(34) The Network will keep records of requests and referrals, as well as service procurements the Network itself handles. Complete records of expert use by all A.I.D. Missions will not be kept because of the administrative burden involved in such record-keeping, both for the Network and for A.I.D., but information on use or reports on effectiveness or satisfaction of A.I.D. Missions with services received will be filed whenever they are available. Negative information will not be formally stored, but may influence Network staff judgments when making future referrals.

Expertise in Short Supply

(35) The Network staff will identify types of expertise which are in particularly high demand but short supply, and try to take appropriate action in the international forestry community to locate and/or to encourage development of such needed expertise.

Orientation Briefing and Information Packages

(36) The Network staff will prepare short lists of references which provide a good orientation toward forestry and natural resources situations, as well as toward the general social, cultural, economic and assistance situation in individual LDCs. In-kind contributions from the Forest Service together with links to DS/DIU's RSSA with U.S.D.A. will help to prepare such country lists, as well as to supply information packets to consultants and organizations and institutions. A.I.D. CDSSs, Area Handbooks, World Bank Forestry Sector and broader World Bank Country Profiles, A.I.D. Environmental Profiles, and Country Demographic Profiles are among the kinds of orientation information which might be both listed and made available. Network staff will sometimes arrange for orientation sessions for consultant teams or chiefs of party in Washington prior to their being dispatched to LDC forestry project sites to perform requested services.

2. Direct LDC Mission Backstopping

a. Activity Purpose

The purpose of Network backstopping activities is to support Mission efforts and improve the effectiveness of forestry and related natural resources projects by making relevant professional expertise more readily and more easily identified and accessed by A.I.D. field Missions and Regional Bureaus.

b. Project Resources

Direct LDC Mission backstopping will require 50% of the total project funds for the Support Network Component over the 4-year life of the project. Field backstopping is budgeted to receive $1.3 million of the $2.5 million project total, with $750,000 allocated for long-term resident forestry advisors (6-person years) and $550,000 for short-term on-call consultancies at approximately $150,000 per year.

This amount of funding will support three full-time resident professional forest resources advisors each of whom will most likely be stationed at an A.I.D. Regional Field Office for up to two years. On-call consulting service funds would be used to support a part of Mission requirements for short-term consultancies in forest resources. Approximately one-third of the on-call service funds

will be allocated to Missions in Africa ($205,000), one-third to Latin America, and the balance to Missions in the Asia and Near East Regions.

c. Support Network LDC Mission Backstopping Activities

i. Resident Forestry Advisors

Location of Resident Forestry Advisors

(1) A preliminary determination has been made to place one forestry/natural resources professional under contract in ROCAP (Guatemala City) another in REDSO/EA (Nairobi), and a third person in the Asia Region. In the event that any of the Regional Bureaus are able to provide early funding for their own staff forestry advisors, project funds for full-time resident advisors could either be shifted to another subregional area (i.e., Caribbean, South America, etc.) or allocated to another of the support Network functions. Final arrangements for placement of advisory personnel will be negotiated with the client Regional Bureaus, Regional Field Offices and Missions so as to make the best possible use of the six-person years of full-time resident advisor support that have been programmed into the budget.

Duration of DS Funding for Resident Forestry Advisors

(2) The project design is intended to encourage the Regional Bureaus and the Regional Field Offices to fund their own resident forestry and related natural resources advisors on a contract, a PASA/RSSA, IPA or a direct-hire basis. This four-year project provides for only three such advisors

for a two-year period with the intent of motivating Regional Bureaus to pick up the funding of advisors within 24 months or less as the need for and utility of their advisory services becomes better recognized. Regional Bureaus will be expected to make a decision on whether to continue or to expand funding for resident forestry advisors by August 1982, but project integrity and Central Experts Network operations/services will be maintained, whether or not Regional Bureaus choose to continue Regional forestry advisory services. The identification of A.I.D. forestry "cooperators" in those subregional areas around the world which are not served by project-funded resident advisors is also intended to stimulate action by Regional Bureaus, Offices and Missions to create full-time forestry and natural resources advisor posts where none currently exists. This project will encourage more use of and reliance upon, existing A.I.D. employees who have a background in forestry and/or related natural resources subjects, and who are currently stationed at posts where they can perform a useful advisory function as a part of the Forest Resources Support Network. The intention for finding and using such A.I.D. employee "cooperators" is to stimulate Regional Bureaus, Regional Field Offices and Missions to formally establish natural resources advisory positions, or to begin to make more use of the existing qualified and motivated personnel in this capacity.

Duration of DS Funding for Resident Forestry Advisors (Cont.)

Support of Resident Forestry Advisors

(3) These resident professional advisors would be supported by travel funds, by limited short-term, on-call consulting service funds, and by the AID/W Experts Network Staff through lines of communication routed through Regional Bureau technical offices.

Mission Control over the Advisor

(4) All activities of full-time resident forestry advisors will be performed only with concurrence and consultation of A.I.D. Missions and the Regional Field Office in which each is located. Regional Bureaus, Regional Field Offices, A.I.D. Missions and DS/ST will work together to define the advisor's duties and scope of work to meet field needs for resident advisory services in forestry and related natural resources. Missions and Regional Field Offices will set up the specific operating arrangements for the forestry advisor to suit their own client requirements as the intended recipients of advisory services.

Resident Forestry Advisor Qualifications

(5) Regional Bureaus and Regional Field Offices where full-time resident forestry advisors are to be placed will concur with DS/ST's approval of personnel slated to fill these posts prior to the prime contractor's making final selections. Each forestry advisor will have an appropriate background in forestry and related natural resources, local language ability, prior experience in working within countries in his area, knowledge of country conditions and both regional (such as CATIE, etc.) and host country institutions, and a knowledge of priority forestry-related problems bearing on LDC, A.I.D. Regional and A.I.D. Mission program interests.

(6) Full-time forestry advisors placed in Regional Field Offices will offer direct professional technical and project management advice and information to A.I.D. Missions and LDC counterparts. They will be supported, as stated earlier, by travel funds, limited on-call consulting service funds, and the Experts Network staff in the U.S.

Forestry Advisor's Duties

The Regional resident forestry advisors will be expected to establish liaison with Regional and host country institutions. They will offer project management assistance to Missions, forestry project staff personnel and host country counterparts. They will offer advice and assistance with identification of training needs and requirements, with orientation of Mission staff to forestry, and with identification of forest resources project opportunities, including collaborative, joint or complementary efforts with other donors. They will assist Missions in project design, forest resources problem diagnosis and recommendation of assistance action alternatives, project monitoring, project evaluation, and with environmental assessments for planned projects involving forest resources implications. They will act as a link with the AID/W Experts Network, and will function as needed and agreed by the Missions to help orient and brief TDY consultants called in by Missions to work on forestry projects and/or to join with such consulting teams and contribute directly

to their efforts. They will advise Mission Environmental Officers on forestry and natural resources aspects of CDSS preparation.

Use of Foreign Expertise

(7) The resident forestry advisors will be fully apprised of all A.I.D. restrictions and legal requirements dealing with employment and use of foreign nationals as consultants. Armed with this information, each advisor will be expected to establish working relationships with host country and Regional institutions having professional expertise and programs in forest and related natural resources areas. Foreign sources of expertise will include persons connected with LDC institutions, with non-A.I.D. developing countries of higher economic status (such as Nigeria, Brazil, Taiwan, etc.), with Regional International institutions (such as CATIE in Costa Rica). The International Experts Network will include appropriate foreign experts and institutions, and the resident forestry advisors will be expected to understand their capabilities and to offer advice to A.I.D. Missions and Regional Field Offices drawing upon these institutions and their experts, as well as U.S. domestic sources, to meet A.I.D. Mission and LDC support needs.

Possible Broader Objectives

(8) Regional forestry advisors, in addition to normal duties described earlier, could be directed

Possible Broader Objectives (Cont.)

to pursue broader objectives in the conduct of their affairs, as agreed to by DS/ST, Regional Bureaus, Regional Field Offices and client Missions. For example, they might be directed to work to improve A.I.D.'s relations with host country natural and forest resources organizations and ministries, to promote improvement in the status of women through forestry projects, to encourage creation of a Natural Resources Donor Assistance Coordination Committee in each country, to promote increased host country use of Regional institutions, or to promote development of "Deforestation Response Strategies" or forest policy as part of the overall Development Plan or as an A.I.D. assistance planning tool within selected countries.

Possible Local Hire Foresters at the Mission Level

(9) Missions with several ongoing and planned projects related to forestry, under the jurisdictions of ROCAP, REDSO/EA or other subregional areas where full-time resident forestry advisors are ultimately placed under this project, might take action to hire a local host country national with a forestry background to serve as a liaison between the LDC Mission and the host country officials associated with planning and implementing forestry projects on the one hand, and between the Mission and the project-funded forestry advisor on the other.

ii. Selection of A.I.D. Employees as Support Network "Cooperators"

Selection of Network "Cooperators"

(10) DS/ST and the Network staff will work through Regional Bureaus, Regional Field Offices and Missions to locate direct-hire staff personnel or existing contract personnel, who are not supported by this project per se but who possess knowledge/experience in forestry and/or related natural resources fields, and to make arrangements for their participation in the project as Support Network "Cooperators." These persons will be asked to handle, in addition to their regular duties (obviously on only a limited scale), some of the requests for forestry assistance, advice and information that originate from A.I.D. Missions and Peace Corps field personnel within an agreed upon subregional or Regional area, and they can function to make recommendations to the Support Network for allocation of modest amounts of project-supplied on-call consulting service funds to those same Missions for forestry-related assistance.

Location of A.I.D. Employee "Cooperators"

(11) Ideally, such "cooperators" might be located in Bridgetown, Barbados to serve the Caribbean area; in Lima, Peru to serve South American Missions, in REDSO/WA (Abidjan, Ivory Coast) to serve countries in West Africa and North Africa (NE); in Bamako, Mali to serve Sahel countries; and Jakarta, Indonesia, New Delhi, India, and/or Bangkok, Thailand to serve Asian Missions. Specific arrangements for

Location of Employee "Cooperators" (Contd.)

cooperation in the project, for channelling Experts Network referrals, requested technical information and on-call consulting service funds will be worked out and adjusted from time to time through the Joint Project Management Advisory Group as the project evolves.

iii. Short-term Consultancy Funds and U.S.D.A. Forest Service Contributions

Support for Advisors and "Cooperators"

(12) The resident forestry advisors, whose positions are funded by the project, and the A.I.D. employee "cooperators," who are tied into the project-funded Support Network, will be able to draw upon two forms of specialized support from the Network in addition to routine forestry expert referrals and forestry information; these special forms of support include short-term consultancy funds and possible U.S.D.A. Forest Service in-kind contributions. LDCs, A.I.D. Missions, Peace Corps field personnel, and A.I.D. Regional Field Offices are intended to be the primary recipients of these support services, and Mission Directors and Regional Field Office Directors will concur in consultant service funding decisions and participate in formulating requests for in-kind assistance contributions from the U.S.D.A. Forest Service to meet their needs.

Short-term Consultant Services Funds and Fund Allocation Formula

(13) The Forest Resources Management Project will provide limited funds for forestry and related natural resources short-term consultant assistance for A.I.D. Missions and Regional Field Offices. The estimated annual amount of funds and the proposed annual funding allocations by Region are given in Table 3 on page 106.

The primary purpose of these funds is to provide a means for strengthening the professionalism and the effectiveness of both ongoing and planned AID Mission forestry assistance efforts to LDCs. Since these limited funds are expected to provide only 5-10% of the anticipated demand for all short-term forestry and related natural resources consulting service that will be needed by A.I.D. Missions over the next four years, they represent only a very modest augmentation of, rather than a substitute for, continuing Regional Bureau and Mission funding of the vast majority of their own requirements.

Short-term Consultant Services Funds and Fund Allocation Formula (Contd.)

A cost sharing funding allocation formula will be applied by the Support Network Manager in dispersing short-term consulting services funds in response to requests from regional forestry advisors, "cooperators," A.I.D. Missions and Regional Bureaus. Each Regional Bureau will be required to allocate a minimum of three times more Regional/Mission funds to forestry consulting services each fiscal year than the amount of its DS project fund allocation. Each October, the Regional Bureaus will provide the Support Network Manager with estimates of their anticipated levels of expenditure for forestry-related consulting services during the coming fiscal year, and with summaries of the expenditures which have been made during the previous fiscal year.

The cost sharing funding formula may be adjusted through deliberations by the Joint Project Management Advisory Group under the leadership of the DS/ST project manager, who will also have a continuing oversight responsibility for consulting fund expenditures.

In-Kind Contributions from the U.S.D.A. Forest Service

(14) In-kind contributions from the U.S.D.A. Forest Service will include: 1) limited assistance in developing meetings and workshops in the U.S. and overseas on forestry assistance topics; 2) limited assistance in developing and conducting training programs in forestry subjects in the U.S. and overseas (Regional or individual country); 3) provision of limited information and documentation services; 4) and occasionally making Forest Service professionals available to Missions for temporary duty assignments of up to two weeks duration without charge for their salary time (usually with A.I.D. paying travel and per diem costs). In-kind contributions from the U.S.D.A. Forest Service are anticipated over the four year duration of the project, but such in-kind contributions are not essential to the integrity of the project nor to the accomplishment of the primary project objectives. The Forest Service will allocate at least three personnel ceilings to the eight-person Support

Network effort; these ceilings will be used either to cover AID/W Network staff positions or resident forestry advisors in the field. The Forest Service will be asked to provide additional full-time professional support to the Support Network staff without charge. Other Forest Service professionals will provide advice and back-up services to the central Network staff unit on procedural, informational, technical and professional matters without charge to A.I.D. The Central Network staff unit is likely to be administratively managed by the International Forestry Staff Unit in the Forest Service's Washington Headquarters. In-kind contributions by U.S.D.A. Forest Service similar to those described above for the Support Network will also be delivered to the Peace Corps component of the project. Interrelationships between the Network, the Peace Corps and the Forest Service are described at greater length in Section III.C.

In-Kind Contributions from the U.S.D.A. Forest Service (Contd.)

The total value of possible contributions in-kind by the Forest Service to the project over its four-year life is roughly estimated at $2.0 million.

iv. Operation of the Forest Resources Support Network

Support Network Elements

(15) The key elements of the Support Network include (project-supplied and project-funded elements are underlined):

Support Network Elements (Cont.)

a. A.I.D. Missions

b. Regional Resident Forestry Advisors

or

A.I.D. Employee "Cooperators"

c. Regional Field Office or Mission (ROCAP, REDSO, etc.) and On-Call Consulting Service Funds

d. Regional Bureau Technical Offices

e. Forest Service Experts Network Unit in AID/W

Mission is Service Recipient

(16) A.I.D. Missions and Regional Field Offices are the primary intended recipients of all Network services, expert referrals and information, all on-call consulting funds, and services provided by them, and all professional time of the full-time resident forestry advisors.

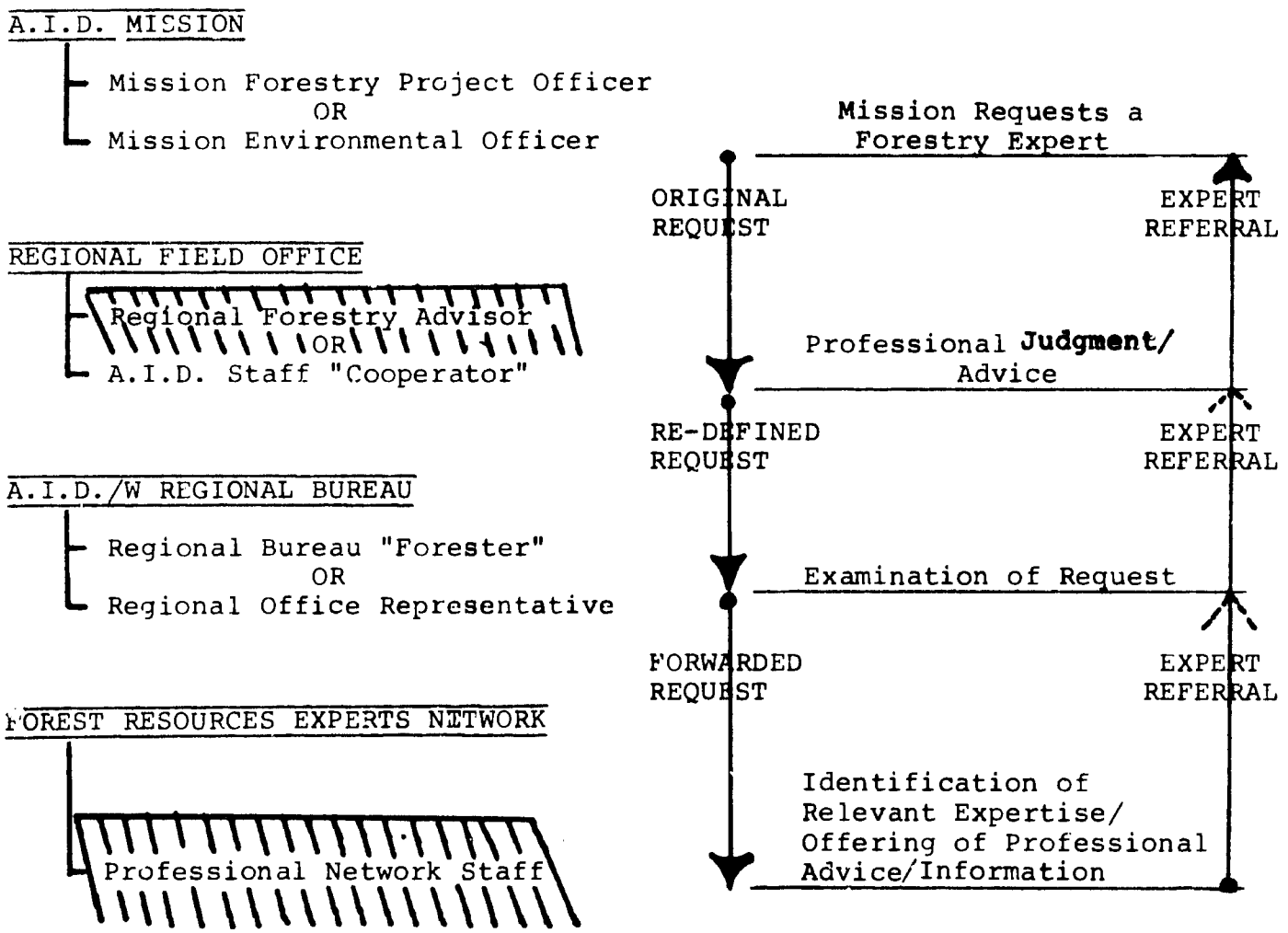
LDC Poor are Ultimate Beneficiaries

(17) The ultimate beneficiary from all Support Network activities is intended to be the LDC poor, whose basic needs will be better met through more effective and more professionally designed and implemented A.I.D. Mission projects in forestry and related natural resources.

Support Network Operation

(18) A.I.D. Missions are, and will continue to be, the ultimate decision makers with regard to forestry projects. A.I.D. Missions now provide and will continue to provide the vast majority of all funding for forestry-related projects and consulting support services. Support Network operation is illustrated in Figure 1.

FIGURE 1.: Routine Forest Resources Support Network Operation



Support Network Operation (Cont.)

a. When a Mission desires to seek forestry-related expertise and/or information, Mission personnel will be advised to contact the appropriate Regional forestry advisor or "cooperator" for advice and/or, in some cases, a direct referral to a domestic, a host country or a foreign regional source.

b. The full-time forestry advisor should in this way become established as the first "professional filter" in the Support Network. In a similar fashion, A.I.D. employees identified as "cooperators" could function to offer advice to Missions seeking services or information in forestry.

c. A request for expert services or information could then be sent to the appropriate Regional Bureau technical office in AID/W either by the Regional forestry advisor, by the "cooperator" or directly by the requesting Mission. If sent from the Regional advisor or the "cooperator," the request would, in effect, be sent out from the A.I.D. Regional Field Office (REDSO, ROCAP, etc.) to the AID/W Regional Bureau technical office.

d. The Regional Bureau would examine the request, ask for any needed clarification, and send it on to the Central Support Network staff unit.

e. The Network staff would work closely with the Regional Bureau technical office in identifying the

Support Network Operation (Contd.)

best available domestic or foreign sources for the required services or information. In the majority of cases, the Network staff would provide the Regional Bureau, or the Mission or Regional Field Office through the Regional Bureau, with several potential referral sources and with professional advice in making a final selection (as well as information on availability, costs, etc. as requested or as time permits).

f. The tasks of selecting consultants or sources for services, and of negotiating contract-procurement arrangements for same, would largely be made in just the same way these arrangements are carried out now; i.e., with the Office which is providing the funds for the services (usually the Mission) performing these functions, or the funding office designating another unit to perform these tasks on their behalf. A.I.D. Missions, A.I.D. Regional Field Offices, and Regional Bureau Technical Offices would therefore perform procurement functions for the majority of services just as they do now.

g. The DSB Network staff would only handle service procurement (i.e., under U.S.D.A. rather than under A.I.D. procedures) when using limited project on-call service funds, and then only with the involvement/concurrence of the recipient Mission or Office. PIO/T preparation would remain an A.I.D. Mission, Office or Bureau function for A.I.D. procurements; but Network staff could respond to specific requests for advice and

help with defining scopes of work for professional services in PIO/Ts as their time permits.

Support Network Operation (Contd.)

On call consulting services provided under this project will be arranged by the Support Network and dispensed to A.I.D. Missions in the field with involvement/concurrence from the appropriate recipient Mission or Regional Field Office making the original request; on-call consulting service funds will be allocated on the basis of the funding formula given on page 47.

(19) The Forest Resources Support Network will engender several improvements and offer a number of advantages to A.I.D. Missions, Regional Field Offices and Regional Bureau Technical Offices over current procedures and Agency performance.

Advantages and Improvements Offered by the Support Network

The Most important differences under the Support Network will be that: 1) greater professional judgement will be applied in the field in the original recognition of need and definition of requirements for forestry and related natural resources services; 2) greater professional knowledge and understanding of Regional institutions and host country capabilities will be available both in the field through the advisors, and in AID/W through the Experts Network; 3) the present efforts of Regional technical offices in performing these functions with personnel who have many other duties will be augmented

Advantages and Improvements Offered by the Support Network (Contd.)

by full-time Experts Network staff personnel; Experts Network information on sources, individual experts and their capabilities will be made available to Missions, Regional Offices and Regional Bureaus; and a greater level of professional judgement and understanding of forest resources will begin to pervade all of the Agency's forestry and related natural resources LDC assistance efforts.

3. Forest Resources Experience Examination and Analysis

a. Activity Purpose

This activity will provide the Regional Bureaus, in particular, and the Agency, in general, with additional means through which the overall effectiveness of forest resources assistance efforts can be examined, and the best and most promising approaches further developed and promoted for wider application.

b. Project Resources

This activity will require approximately 20% of the Support Network budget over the four year life of the project. Of the total budgeted amount of $500,000, $200,000 is slated for support of from two-to-four Regional Workshops; $135,000 is earmarked for an International Conference on Forest Resources Assistance; and some $165,000 is budgeted for examination of promising, but inadequately known or understood, assistance mechanisms that show potential for more effectively addressing LDC forest resources needs and problems.

c. Experience Examination and Analysis

i. Regional Forestry Assistance Workshops

The Support Network contractor (assumed to be the U.S.D.A. Forest Service) and DS/ST will work closely with Regional Bureaus to organize two-to-four Regional Workshops over the four year life of the Project.

Regional Bureau Consultations

(1) The purpose(s) of these Workshops will vary by Region, and will be determined in detail only at a later date through consultation with the Regional Bureaus, Regional Field Offices and Missions.

Size and Funding of Workshops

(2) Depending upon the scale of the various Workshops which are ultimately designed through Bureau consultations, all funding might be provided for smaller-scale efforts through project funds, or project funds from the Forest Resources Management project might only be used as a contribution to larger-scale efforts supported predominantly by the Regional Bureaus and/or Missions attending. U.S.D.A. Forest Service will offer limited in-kind support service contributions for setting up the Workshops and will even explore possibilities for arranging smaller-scale working meetings in the U.S., perhaps in conjunction with other scheduled meetings or conferences.

(3) The anticipated focus of Regional Workshops funded under this project activity will be on forestry and forestry-related experience examination

and analysis. Such Workshops will provide an opportunity for host government officials and local host country participants in forestry projects to articulate their views on needs, approaches and effectiveness; grant recipients and contractors involved in ongoing A.I.D.-funded and other donor projects will be given the chance to report on their progress, successes and failures, problems and needs; and A.I.D. staff, contract service and design team personnel and others will be afforded the opportunity for exposure to thoughtful dialogue on problems, needs, approaches, and potential solutions. Dependent upon funding details, proceedings and/or invited or commissioned papers stemming from such Workshops might be published and widely distributed in other Regions and among the "International Experts Community" whose membership would be evolving through continuing project Experts Network development efforts.

Potential Workshop Focus

ii. International Forestry Assistance Conference

At least one International Conference would be supported under this project activity.

(4) The program, timing, detailed purpose, location and attendance would be determined by the Support Network contractor and DS/ST working in close consultation with the Regional Bureaus, Regional Field Offices and Missions.

Regional Bureau Consultation

(5) While the specific focus for any Conference Program would not emerge until much later after thorough Regional Bureau consultations have taken place, the general thrust would be toward bringing LDC host country representatives together with the "International Experts Community" in the presence of involved A.I.D. staff to examine and compare needs and problems (LDCs), with capabilities to understand and effectively meet them (Experts), and with approaches and mechanisms for applying effective actions and resources (A.I.D.).

Conference Program Focus

iii. Examinations of Promising Assistance Mechanisms

(6) Both Regional Workshops, other less formal working sessions and the International Conference will provide useful fora for exploration of promising, perhaps innovative, but inadequately understood, forms of assistance for addressing forest resources needs and problems in LDCs. This activity will permit examinations to be conducted and reports to be written on the most promising of such new or innovative approaches and mechanisms for widespread distribution among LDCs, donor organizations, A.I.D. offices and Missions, and the "International Experts Community."

Promising Mechanism Examination

Regional Consultation

(7) All examinations of promising assistance approaches and mechanisms will be pursued in close consultation with Regional Bureau, Regional Field Office and Mission representatives to ensure relevance to real needs and to avoid any possibility of unnecessary duplication or overlap with efforts being conducted by others.

C. Joint A.I.D./Peace Corps Forestry Initiative

1. Goals and Objectives

The Peace Corps goal within the project is to evolve a set of replicable community-based forestry projects enabling host-country villagers to manage, protect, increase, and meet their needs for forest-related goods and services. Through efforts at developing and supporting a set of pilot initiatives, the project will increase knowledge of new conservation practices, better propagation and silvicultural methods, and demonstrate them through project activities. Peace Corps will test, disseminate, monitor, and evaluate a limited set of new and old, conventional and nonconventional, low-cost forestry techniques which produce and utilize wood, and utilize trees to meet social needs. Project efforts will support linkages between Host Country Governments and Peace Corps and A.I.D. and among P.C. volunteers (PCVs), U.S. A.I.D. Mission personnel and personnel of other public and private institutions. The project will help make available the latest forestry practices and technologies through work with in-country counterparts, and by a series of in-service, and pre-service and staff and counterpart training programs and workshops. The rural poor will benefit directly where technologies and tropical reforestation practices are demonstrated at the village level by

villagers managing their renewable natural resources. Others may learn about these technologies from first hand observation of village woodlot demonstrations, through P.C. extension workers, through host-country networks or local dissemination services, or through replication of the project models developed under the initiative.

The objectives of the project are (a) to develop, demonstrate and make available for future transfer a range of tropical reforestation techniques, locally developed for local needs, which can be realistically incorporated into ongoing patterns of resource production and use, particularly fuelwood consumption; (b) provide personnel adequately prepared and committed to engage in community extension work and who are knowledgeable about appropriate propagation and silvicultural techniques; (c) provide seed money in amounts appropriate to the tasks at hand and available with reasonable rapidity and flexibility in light of diverse local conditions (the current 2-year minimum delay from project conception to funding is considered unreasonably slow, given the high rate of personnel turnover in all participating agencies); (d) demonstrate a community-based project design approach which takes into account the variability of local political, cultural and biological environments; (e) provide

training methods and curricula based on adult learning techniques to be tested, refined, and eventually transferred for host country use beyond the scope of this pilot effort (content will include forestry technical skills, project and community organization skills, and technical information preparation and dissemination skills). To accomplish these objectives requires a concerted effort to involve participation of all parties, from the village to the national levels, in planning and implementation stages. The project must provide for information sharing and integrated resource planning and development at the project level consistent with local autonomy. The objectives of the project will have been successfully attained when:

(a) a pilot set of tropical reforestation techniques, locally developed for local needs, are fully utilized at the village level, and trained counterparts are using these new techniques in their respective extension programs;

(b) an approach to providing personnel adequately trained and committed to engage in community village level forestry and extension work is tested and available on a continuing basis;

(c) a set of models for providing supportive resources in amounts appropriate to the task at hand and available with reasonable rapidity are developed.

2. Outputs

The A.I.D./P.C. component of the project will result in (a) increasing the level and effectiveness of collaborative efforts between the two agencies toward reducing the adverse effects of accelerating deforestation on meeting the basic human needs of rural populations in less developed countries, (b) development of information and replicable models essential to expanded forestry related efforts of both A.I.D. and P.C., (c) the implementation of up to three new collaborative projects and up to three significantly expanded and/or redesigned collaborative projects which integrate A.I.D. and Peace Corps resources, (d) increased capacities for Peace Corps and A.I.D. to carry out coherent, coordinated community-level forestry and conservation initiatives beyond the scope of this joint effort.

3. Basis and Rationale for the Initiative

Degradation of the world's forests is rapidly depriving the rural poor of natural resources and altering social and cultural patterns much needed to meet and maintain basic human needs. Deforestation, with implications for firewood availability, soil fertility and desertification has attracted worldwide attention and concern. Peace Corps and A.I.D. have independently made progress in reducing the effects of deforestation and now see

that fuller collaboration and cooperation between the two agencies will make their respective programs and the overall U.S. Government's assistance program more effective. However, such an effort must overcome some existing constraints which will require new and innovative approaches by P.C./A.I.D. and other donors, as well as host countries:

- Prior development efforts have often neglected the planting of trees or caring for natural vegetation. In the past, a major thrust of much agricultural development has been the expansion of arable land by clearing natural vegetation (trees, bushes, grasses). Comparatively few efforts have been directed toward planting and maintaining vegetation, either as a way to preserve the resource base, or to provide local products (e.g., food, forage, fuelwood, medicines, bark). Also, many cultures do not manage natural vegetation as a renewable resource.

- There seems to be a low relative priority of government commitment to this area in some developing countries. In most places, the majority of the national budget is allocated to infrastructural, agricultural, educational and industrial development, and forest departments are typically underfunded and understaffed.

- Significant materiel and technical support is required to implement forestry activities. For example, a

nursery is an absolute prerequisite; and in many areas, fencing or guards are necessary to protect newly planted vegetation from encroachment by humans and animals. Technical assistance is also often necessary to help villagers identify appropriate species, select sites, and learn cultivation and harvesting techniques. In many cases, national forest services are unable to provide these needed resources.

Community-based forestry activities are complicated by the long timeframe between planting and harvesting. For example, it may be five-to-ten years or longer before trees can be harvested for fuelwood. And in those instances where vegetation is established to halt erosion or prevent flooding, considerable labor is required over many years, with little immediate reward. The time and effort required for these activities may exceed the resources of those most in need, the people already living on the margins of subsistence.

Nevertheless given its basic philosophy of working at the community level to assist poor people effect change, Peace Corps can potentially make a significant contribution to addressing the critical development problems associated with deforestation. Peace Corps has been involved in forestry-related activities since 1961, and currently has about 200 volunteers working in forestry projects in about 20 countries.

This project supports Peace Corps efforts to develop a more focused program to address in a more concerted manner the problems caused by deforestation. Through it, Peace Corps and A.I.D. will contribute directly to the overall goal of increasing forestry's contribution to improving the life of poor people in developing countries by aiding in their efforts to meet basic human needs for food, fuel and shelter.

This Peace Corps/A.I.D. forestry program will utilize the strength and assets of A.I.D., Peace Corps and other cooperating organizations by pooling those resources and organizing them through a mutually productive division of labor to develop approaches aimed at overcoming the constraints outlined earlier. It is recognized that P.C. can provide significant numbers of volunteers prepared to work at the grass-roots level and acquire technical, linguistic and cross cultural skills which enable them to work closely with target village populations, counterparts and host agencies. U.S. A.I.D. is recognized as having the capabilities of providing a network of trained technical expertise, established field contacts, and resource and materiel support essential to effective, broad-guage reforestation activities. Further, it is recognized that other members of the development community, such as private voluntary organizations have a history of innovative approaches to development,

frequently associated with diverse philosophies, lighter administrative structures and greater flexibility in program implementation which could prove them valuable partners in this initiative.

4. Forestry Project Types Appropriate to the Peace Corps/A.I.D. Initiative

Problems created by deforestation are diverse and numerous. This is due in part to the great environmental differences in the various regions of the world, and in part to the different environmental impacts of varying cultural and sociological factors. We have identified six project types which seem appropriate for addressing some typical forestry problems. Pilot efforts under this project will reflect one or more of these types. Their activities are production-oriented, primarily involving planting and managing vegetation.

Table 1 graphically presents the most important aspects of the six project types: objectives, PCV forester tasks, and principal technical skills required of volunteers. As a careful reading of the table indicates, there are commonalities which run through all these project types.

First they all address the problem of environmental degradation through strategies reflective of P.C.'s

TABLE 1: A RANGE OF POSSIBLE PEACE CORPS FORESTRY PROJECTS

PROJECT TYPE	PROJECT OBJECTIVES	VOLUNTEER TASKS	PRINCIPAL SKILLS REQUIRED OF VOLUNTEERS
Village Woodlots (Community-based forestry to meet local needs for fuel and wood products)	Develop community woodlots to supply fuel and wood products Generate additional income Heighten local awareness Transfer appropriate project technology Develop replicable projects	Establish/manage nurseries Organize and train local people to establish/manage small woodlots Train counterpart personnel	Nursery skills Knowledge of reforestation techniques Knowledge of local language/culture Community extension and development expertise
Reforestation of Cutover Land (Planting trees on cutover forest land to protect fragile environments, such as watersheds, and to provide supply of wood products)	Make forests more productive Protect watershed areas Increase fuel supply Halt soil erosion Heighten local awareness Transfer appropriate project technology Develop replicable projects	Establish/manage nurseries Organize and train local work groups to reforest and manage cutover lands Train counterpart personnel	Nursery skills Knowledge of reforestation and soil conservation techniques Knowledge of local language/culture Community extension and development expertise
Land Rehabilitation (Conservation of soil and water resources, or reclamation of degraded land, by extension work using vegetative and mechanical methods)	Control soil erosion Improve water quality Increase crop and fodder production Heighten local awareness Transfer appropriate project technology Develop replicable projects	Establish/manage nurseries Organize and train local work groups for vegetative and mechanical work to combat soil erosion Train counterpart personnel	Nursery skills Knowledge of soil conservation techniques Tree/plant identification and propagation skills Knowledge of local language/culture Community extension and development expertise
Agroforestry (Land-use system that combines or alternates livestock or crop production with growing trees)	Increase fodder and fuel supply Halt soil degradation Achieve sustainable agricultural system Generate additional income Heighten local awareness Transfer appropriate project technology Develop replicable projects	Establish/manage nurseries Assist and instruct farmers to cultivate trees for food/fodder/fuel and to protect or enhance crops/soils Train counterpart personnel	Nursery skills Knowledge of reforestation and soil conservation techniques Familiarity with managing fruit, nut and fodder trees Knowledge of local language/culture Community extension and development expertise
Arid Zone Vegetation Resource Management (Management and exploitation of vegetation to halt and reverse resource degradation, protect farm fields, and supply wood products for local population.)	Protect farm fields and buildings from blowing sands Protect against wind erosion and stabilize dunes Increase fuel supply Manage well points Heighten local awareness Transfer appropriate project technology Develop replicable projects	Establish/manage nurseries Assist and instruct rural people to plant "living fences" or windbreaks, or stabilize dunes by vegetative/mechanical means Train counterpart personnel	Nursery skills Knowledge of arid land ecology Tree/plant identification, propagation skills Knowledge of local language/culture Community extension and development expertise
Forest Resource Management (Manage existing forests to improve current yields and initiate a sustained yield program.)	Plan forest management for sustained yield Improve forest management and technical training Maintain soil fertility Heighten local awareness Transfer appropriate project technology Develop replicable projects	Carry out forest and sociological/economic surveys Plan and implement appropriate forest management schemes Install minor roads and trails Train counterpart personnel	Natural resource planning/management skills Forest inventory skills Knowledge of reforestation techniques Knowledge of local language/culture Community extension and development expertise

basic human needs philosophy.

Second, though their specific technical objectives differ somewhat, all projects share the following goals:

- Heighten local awareness of the importance of resource conservation;
- Transfer appropriate knowledge and technical skills to villagers;
- Develop approaches replicable by host countries and other development agencies.

Third, the basic skills required of all PCVs include:

- Knowledge of specific technical skills;
- Ability to work effectively with host country counterparts;
- Familiarity with local culture and traditions;
- Fluency in local languages;
- Competency in basic community development techniques.

Finally, all may also face design and implementation difficulties, such as:

- Lack of available land: Productive nurseries require good soil, fairly level sites, and abundant water supplies. This often means that farm fields must be converted to nurseries, raising potential land tenure or ownership problems that can be difficult. Locating marginal fields or other sites with potential

for other forestry activities can similarly be difficult.

- Soil conditions: Trees, like other crops require soil to grow. Totally devastated lands -- eroded moonscapes -- cannot be used for village type forestry projects. Though planted trees might survive, their production would be minimal.

- Shortage of water: A nursery requires a dependable water supply. Lack of adequate well or stream water can be a key constraint, obviously more so in the more arid zones. Where water shortages are severe, projects will have to contain water provision components.

- Shortage of labor: The tree-planting season often coincides with traditional planting seasons. Farmers may be reluctant to involve themselves in forestry activities if this conflicts with other farm work.

- Negative attitudes: Attitudes about forestry, and relationships between rural people and foresters are negative in some locales. In some settings, foresters have traditionally played an enforcement role, controlling and protecting government land against grazers,

shifting cultivators, tree and animal poachers, or others encroaching on government land. In the worst cases, foresters have participated in the poaching of government trees. Although in recent years forestry agencies in a number of countries have emphasized the concept of "forestry for people" and increased extension efforts, the old attitudes between foresters and rural people sometimes change quite slowly.

- Relative priority to host country governments. Some degree of personnel and/or materiel support is essential to forestry projects. Often, forestry departments are small divisions within other government agencies, and have very limited budgets. As a result, it is critical to identify accurately the source of any staff and/or materiel support required for the specific project.

Each of the six project types is described in some detail, including Peace Corps' specific experience where applicable, in Appendix I of Volume II of this Project Paper.

5. Project Activities Associated with the Forestry Initiative

During the initial year of the project, the A.I.D./P.C.

component will apply A.I.D. resources in (a) rapid assessment of existing forestry projects to identify the strengths and weaknesses of current programming; (b) staff training workshops for overseas programmers to disseminate the lessons of the assessments, build forestry programming skills, identify new programming potentials, and develop action plans for new or revised programming with A.I.D.; (c) on-site programming assistance by headquarters staff, consultants, and A.I.D. personnel to identify enough solid programming opportunities to lead to the development of one to three new and one to three expanded or redesigned joint projects which integrate A.I.D. and Peace Corps resources; and (d) the design and preparation for piloting of pre-service and in-service technical training modules for Peace Corps Volunteers and their host country counterparts. The above activities are to be carried out in the sequence outlined above, building from the rapid assessments as the initial base of knowledge for the succeeding steps.

During the second and third years, these activities will be refined and replicated as appropriate; training efforts will be expanded, and project implementation under way. A continuous evaluation strategy will be implemented, and final project results will include a set of project types and related pre- and in-service training models ready for replication in settings not reached during the life of the project itself. Administrative and financial plans are presented in Section III C.

D. Project Inputs, Outputs and Beneficiaries

The Logical Framework for the Forest Resources Management project is presented in Table 2 on the next page.

1. Support Network Inputs

The primary inputs connected with the Support Network component of the project are six man years of resident forestry advisory time for A.I.D. field Missions, $550,000 in short-term consulting services, and four years of support for a 4-5 person Experts Network staff unit to service A.I.D. Mission, Regional Field Office and Regional Bureau needs in forestry and related natural resources.

2. Support Network Outputs

The primary Support Network outputs are the Development of an International Forest Resources Experts Network to service A.I.D. Mission needs, improve Mission access to quality professional expertise and socially and technically relevant advisory services in forestry and improvement in the field effectiveness of A.I.D. Mission project assistance efforts in forestry for the ultimate benefit of the rural poor.

3. Peace Corps Inputs

The Peace Corps component of the project will involve a Peace Corps input of approximately 120 new forestry volunteers spanning the life of the project. Peace Corps experience indicates that a new country project request averages 10 volunteers the initial year while expanded ongoing forestry project requests usually average 12-15 volunteers per year. A.I.D. inputs of $280,000 to Peace Corps Headquarters programming in support of a Joint Forestry Initiative, Contract

AID 1020-28 (1-72)

DS/ST
Dan Deely

TABLE 2: **PROJECT DESIGN SUMMARY**
LOGICAL FRAMEWORK

Life of Project:
From FY FY 80 to FY FY 85
Total U.S. Funding $[illegible],700
Date Prepared: 6/1[illegible]80

Project Title & Number: Forest Resources Management 936-5519

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Program or Sector Goal: The broader objective to which this project contributes Reduce forest & related natural resource deterioration which threatens basic human needs of the rural poor in LDCs, & increase sustainable use of Forest resources to meet those needs.	Measures of Goal Achievement: Evidence from periodic surveys and assessments by international organizations (UNEP, FAO, IUCN, etc.) that resource deterioration trends are slowing or reversing & basic needs are not threatened.	●UNEP reports. ●FAO surveys & reports. ●IUCN assessments. ●Individual country & A.I.D. Mission reports indicating progress & improvement	Assumptions for achieving goal targets: ●Population control & host government willingness to act on such related measures as land reform must be sufficiently successful so as not to erase or to overwhelm gains made through forestry assistance.
Project Purpose: To improve delivery of effective forestry assistance to LDCs for the benefit of the rural poor by providing A.I.D. Missions and LDCs with ready access to sound technical advice and quality professional field support in forest resources and by mobilizing Peace Corps capabilities in support of collaborative local village projects.	Conditions that will indicate purpose has been achieved: End of project status. Improved ability of LDCs stemming from A.I.D. Mission assistance to deal effectively with forest resource & natural resource base deterioration which threatens meeting basic needs of the rural poor.	●Expressions of satisfaction & evidence of on-the-ground results in slowing forest resource deterioration by host governments by independent observers ●A.I.D. Forest Service and Peace Corps project evaluation reports	Assumptions for achieving purpose: ●U.S. expert capabilities in forest resources are adequate for effective assistance project design and implementation. ●LDC commitment & performance adequate to translate soundly designed assistance into effective accomplishments. ●AID Missions are responsive and willing to make constructive use of forestry support and expertise to increase and improve assistance efforts.
Outputs: ●Design & implementation of collaborative PC projects ●Guidelines for AID/PC collaboration & local implementation ●Village level progress toward solving forest-related problems. ●Trained counterpart field technicians and training models ●Development of an Experts Network ●More effective Mission forestry projects ●Improved Mission access to quality professional support	Magnitude of Outputs: ●Up to 6 projects designed ●150 counterpart technicians trained and two models developed ●40-50 village forestry projects carried out ●Forest Resources Experts Network developed ●A.I.D./PC Collaboration Guidelines ●Village Forestry Project Guidelines ●Experience examination ●Innovative assistance mechanisms ●4 P.C. programming and in-service training workshops ●2-4 A.I.D. Assistance Experience Workshops ●One International Conference	●Peace Corps project documents ●Host country reports on training received ●Network documents and Operations Reports ●Guidelines publication ●Services experience reports ●Assistance concept/idea papers ●Workshop/Conference procedings	
Inputs: ●Direct Assistance delivered to A.I.D. Missions by 3 resident forestry advisors. ●P.C.Hq.programming launching of 4-6 projects & recruiting/placement of 120 Peace Corps forestry volunteers ●Contract services for P.C. experience analysis & guidelines development ●Support Network work on experts network development, services & A.I.D. experience analysis ●On-call consulting services	Implementation Target (Type&Quantity) ($000) ●$750 in long-term field support ●$180 in P.C.-Hq. Programming staff support ●$120 for P.C. consulting services ●$600 for experts network development services and management ●$550 for short-term on-call consulting services	●P.C. progress reports & invoices ●U.S.D.A. progress reports and invoices	Assumptions for providing inputs: ●Well qualified forestry & natural resources professionals willbe found to fill field posts in P.C. country offices (2) & A.I.D. Regional field offices (3).

Services for Peace Corps experience examination and guidelines development, $200,000 in material support for village forestry projects carried out by Peace Corps volunteers (PCVs), $280,000 for PCV and host country counterpart training, and four person years of resident field support in forestry project programming and backstopping.

4. Peace Corps Outputs

The primary outputs expected from the Peace Corps component of the project are 4-6 new or expanded A.I.D./P.C. collaborative forestry projects, training of 150 host country counterpart technicians, development of two PCV training models, placement of 120 PCVs, and publication of A.I.D./P.C. forestry project guidelines and training models.

5. Beneficiaries

The LDC rural poor will be the ultimate indirect beneficiaries of Support Network efforts to provide more effective forest resources assistance project identification, design and management at the country A.I.D. Mission level and the direct beneficiaries of P.C. efforts at the local village level.

A.I.D. Missions will benefit directly from improved access to relevant expertise and professional support services provided by the Support Network, and A.I.D. assistance efforts will be strengthened by the expanded field outreach provided by Peace Corps volunteers (PCVs).

III. ADMINISTRATIVE AND FINANCIAL PLANS

A. Forest Service Organization and Project Contributions

1. Forest Service Organization

The United States Forest Service is one of the major agencies of the Department of Agriculture (U.S.D.A.). The Forest Service is the largest and most diverse agency in U.S.D.A., with 21,000 permanent full-time employees and many more summer hire and social employment program laborers. Forest Service activities include:

(1) Management, protection and use of the 188 million acre National Forest System for a sustained flow of economic and social benefits.

(2) Cooperation with State foresters, private forest and woodland owners, wood processors and other private and public agencies. This cooperation is designed to focus scientific management and utilization on forest resources to improve the quality and increase the quantity of goods and services produced from forest lands.

(3) Research in forestry and forest products that supports National Forest management and cooperative forestry programs, plus management of the Nations forests and

rangelands in general. Forest Service authority for involvement in international activities has been strengthened by recent legislation.

The U.S.D.A Forest Service is organized into three major divisions with basic agency mission programs and responsibilities, and these units are then supported by other administrative and management offices. The three major divisions are Research, the National Forest System and State and Private Forestry. The organizational makeup of Forest Service Headquarters in Washington, and the structure of its field offices across the nation are given in Figures 2 and 3, respectively.

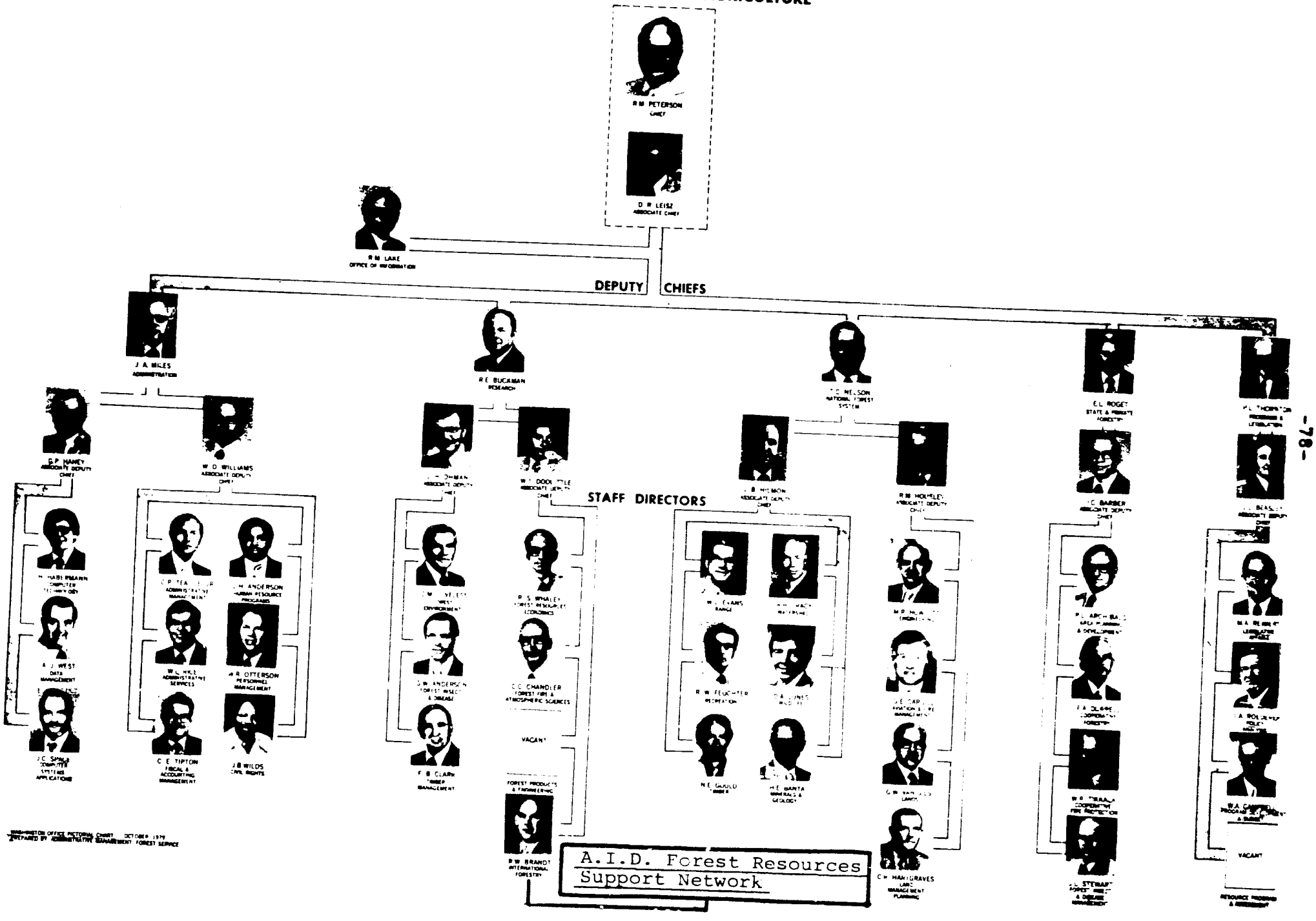
RESEARCH

Forest Service Research employs approximately 1000 professionals representing some 50 scientific specialties and disciplines with an annual research budget of roughly $135 million. The Forest Service has seven specialized Research Staff Offices in its Washington headquarters, and eight Field Experiment Stations, an Institute of Tropical Forestry, an Institute of Pacific Islands Forestry and a Forest Products Laboratory.

NATIONAL FOREST SYSTEM

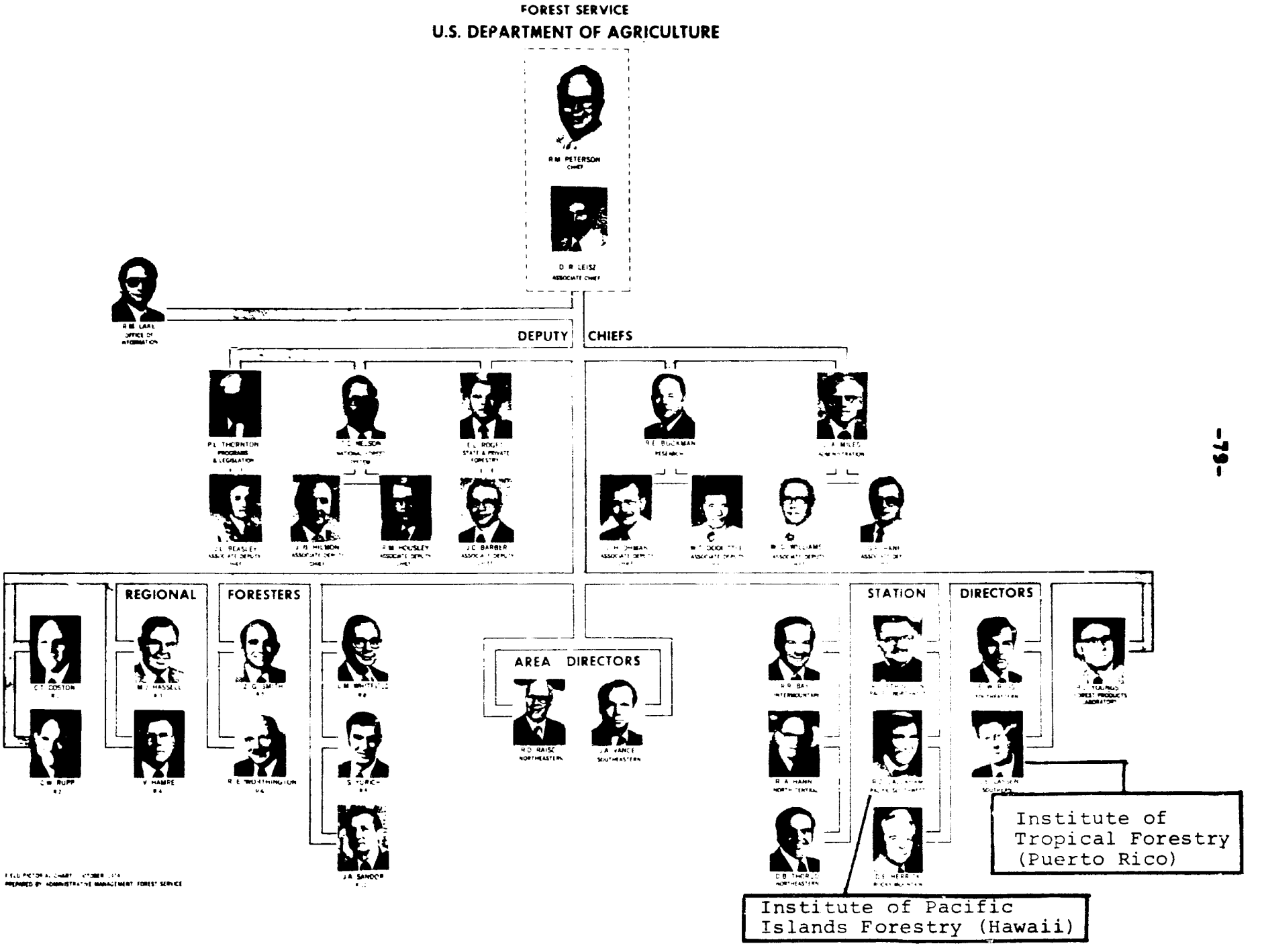
The second major division of the Forest Service is the National Forest System which is responsible for on-the-ground forest and related natural resources management on the Federally owned National Forests (18% of the

FOREST SERVICE
U.S. DEPARTMENT OF AGRICULTURE



WASHINGTON OFFICE PICTORIAL CHART OCTOBER 1979
PREPARED BY ADMINISTRATIVE MANAGEMENT FOREST SERVICE

FIGURE 3: NATIONWIDE ORGANIZATION CHART OF THE U.S.D.A. FOREST SERVICE



Nation's commercial timberland). Principles of sustained yield management are applied to the entire spectrum of natural resources extending from water and watershed management, to wildlife and fish and wildlife management, timber and timber management, forage and range management, recreation and minerals. Approximately 13,000 professionals are employed by the Forest Service in its National Forest System operations. Although the Forest Service is best known for its timber management operations, which constitute 30% of the softwood and hardwood timber harvested in the U. S. each year, the Forest Service manages its 154 National Forests and 19 National Grasslands for grazing as well as for timber. The Forest Service nursery system produces more than 100 million tree seedlings every year, and more than 1/3 million acres are planted or seeded annually. In 1977, National Forest System grazing lands provided 11.4 million animal unit months of grazing for 1.5 million head of cattle and 1.7 million head of sheep through grazing permit arrangements with private ranchers and farmers involving more than 18,000 rural families.

STATE AND PRIVATE FORESTRY

The third major division of the Forest Service is State and Private Forestry (S&PF). S&PF employs some 300 professionals in cooperative programs with State and local governments, forest industries and other private landowners. The range of cooperative programs includes assistance to improve fire control

and protection of forests from insects and diseases, to plan forestry programs so as to obtain the maximum use potential from forest resources, to improve practices in harvesting, processing, and marketing of forest products, and to encourage cooperating State forestry agencies to increase managerial efficiency and effectiveness.

S&PF is organized into seven Regions and two broad areas. S&PF was involved in providing financial and technical assistance to States, Trust Territories and private owners for production of 660 million trees and planting of almost 2.5 million acres in FY 1977 under the Forest Tree Production Program and the Forestry Incentives Program (FIP).

2. Administrative Handling of this Project within the Forest Service

One of the seven Washington staff Offices under Forest Service Research is that of the International Forestry Staff. The International Forestry Staff is charged with handling a wide spectrum of international affairs and activities. These activities range from responding to requests for information and experts in forestry and related natural resources, and arranging for training and orientation tours of U.S. facilities relating to forestry by visiting foreign representatives, to representing the United States at International Conferences and on International bodies dealing with forestry.

The International Forestry Staff is likely to assume the primary management responsibility on behalf of the Forest Service for the Forest Resources Support Network component of this project through later negotation of a Resource Support Service Agreement (RSSA) between A.I.D. and U.S.D.A. Forest Service.

The Forest Service Research organization to which the International Forestry Staff is tied, includes at least two field units which have a particular orientation toward the tropics. One of these is the Institute of Tropical Forestry in Puerto Rico, and the other is the Institute of Pacific Islands Forestry in Hawaii. The professional staff and the technical and reference facilities of these units have an especially strong applicability to use in A.I.D.'s Latin American and Asian forestry assistance programs, respectively.

3. <u>In-kind Contributions to the Project by the Forest Service</u>

The United States Forest Service is the single largest professional Forest Resources Management organization in the world with 21,000 permanent full-time employees, roughly 5000 of whom are trained professional foresters and many others have skills and training in closely allied disciplines; and it is the largest such organization within that country which possesses the largest body of trained forestry and related natural resources

manpower in the world (i.e., the United States). Perhaps as many as 43,000 trained professional foresters work in the United States for federal, state, and local government agencies, private organizations and institutes, more than 61 professional and technical schools of forestry, private forest products industrial firms, and for themselves as forestry consultants. The Forest Service is expected to provide a wide range of in-kind contributions to both the Forest Resources Support Network and the Peace Corps components of the project. In-kind contributions are expected to approach the $2.0 million level over the four-year life of the project, although such contributions are not essential to project integrity. The International Forestry Staff Office is likely to assume responsibility for overseeing Support Network effort.

The Forest Service will provide at least three permanent full-time professional personnel ceilings for Support Network activities, and will provide continued support for Peace Corps' Washington Headquarters Office of Programming and Training Coordination (OPTC) under a separate cooperative agreement.

The Forest Service will assume most of the responsibility for organization and development of the Forest Service aspects of the International Experts Network. Forest

Service will also be encouraged to provide additional professional manpower to the core support Network staff for the four-year duration of the project.

The core Network staff will be backed up by Forest Service information systems and limited technical and professional advisory services from all other Forest Service units throughout the country, without charge to the project.

Forest Service personnel will provide limited blocks of their domestic time for developing training packages, for participating in or setting up meetings, and for responding to requests for information without charge for salary time.

Forest Service will provide limited short-term direct consulting support to A.I.D. Regional forestry advisors, A.I.D. field Missions and LDC counterparts, either without any charge or without charge for salary time conditioned upon A.I.D. reimbursement for travel and per-diem expenses.

The Forest Service may sometimes provide limited copies of technical publications without charge in response to A.I.D. requests (Forest Service Research publishes more than 1,500 technical reports each year) and additional documentation services can be provided through ties with DS/DIU's Agricultural Information Service RSSA with U.S.D.A.

The Forest Service will provide the same kinds of limited information, documentation, and short-term consultant and advisory services to the Peace Corps Forestry Initiative unit, and to LDCs where joint forestry projects are underway that it delivers to the Support Network unit and to A.I.D. field Missions throughout the life of the project.

B. Peace Corps' Organization, Project Management and Peace Corps Funding Commitments

1. Organization and Project Management

a. Project Management

Peace Corps' ability to mount this initiative effectively will require strengthening of its capacity to provide overall guidance and technical support for the initiative at the headquarters level. This will be accomplished by funding one additional professional and one administrative support position in the Peace Corps Washington Office of Programming and Training Coordination (OPTC).

Presently the Washington staff in the forestry and natural resources unit of OPTC consists of two professionals detailed from other agencies. (See Figures 4 and 5 for organization charts of Peace Corps and OPTC showing overall organization and the relationships OPTC and Regions have to overall agency organization). One is a senior forestry and watershed research specialist from the United States Forest Service, the other a parks management specialist and conservationist from the National Park Service. This staff is fully engaged in technical support for forestry and natural resources projects in close to 40 countries in which approximately 400 PCVs are participating. Their duties involve participation in technical workshops, providing assistance

FIGURE 4: GENERAL ORGANIZATION CHART FOR PEACE CORPS HEADQUARTERS

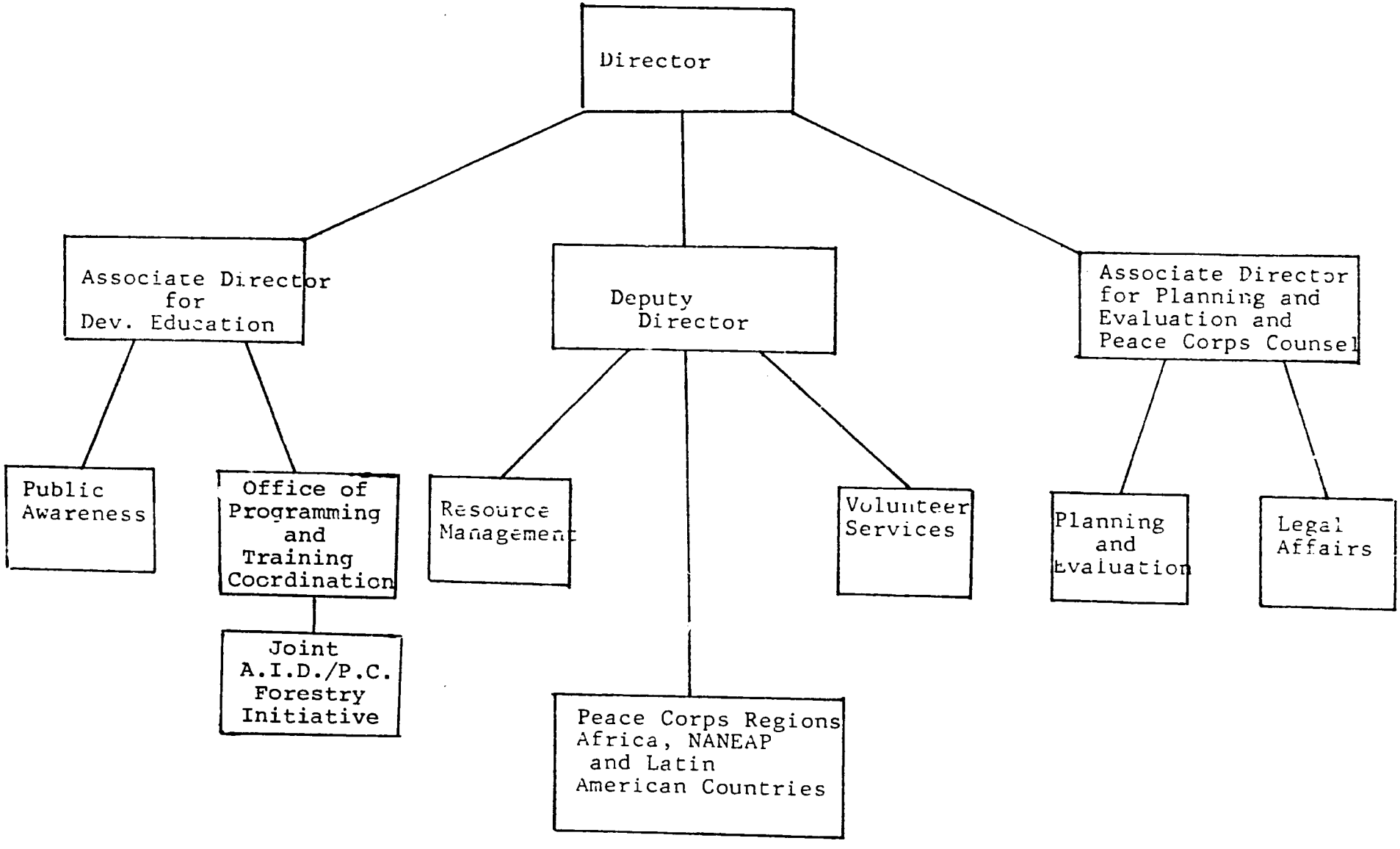
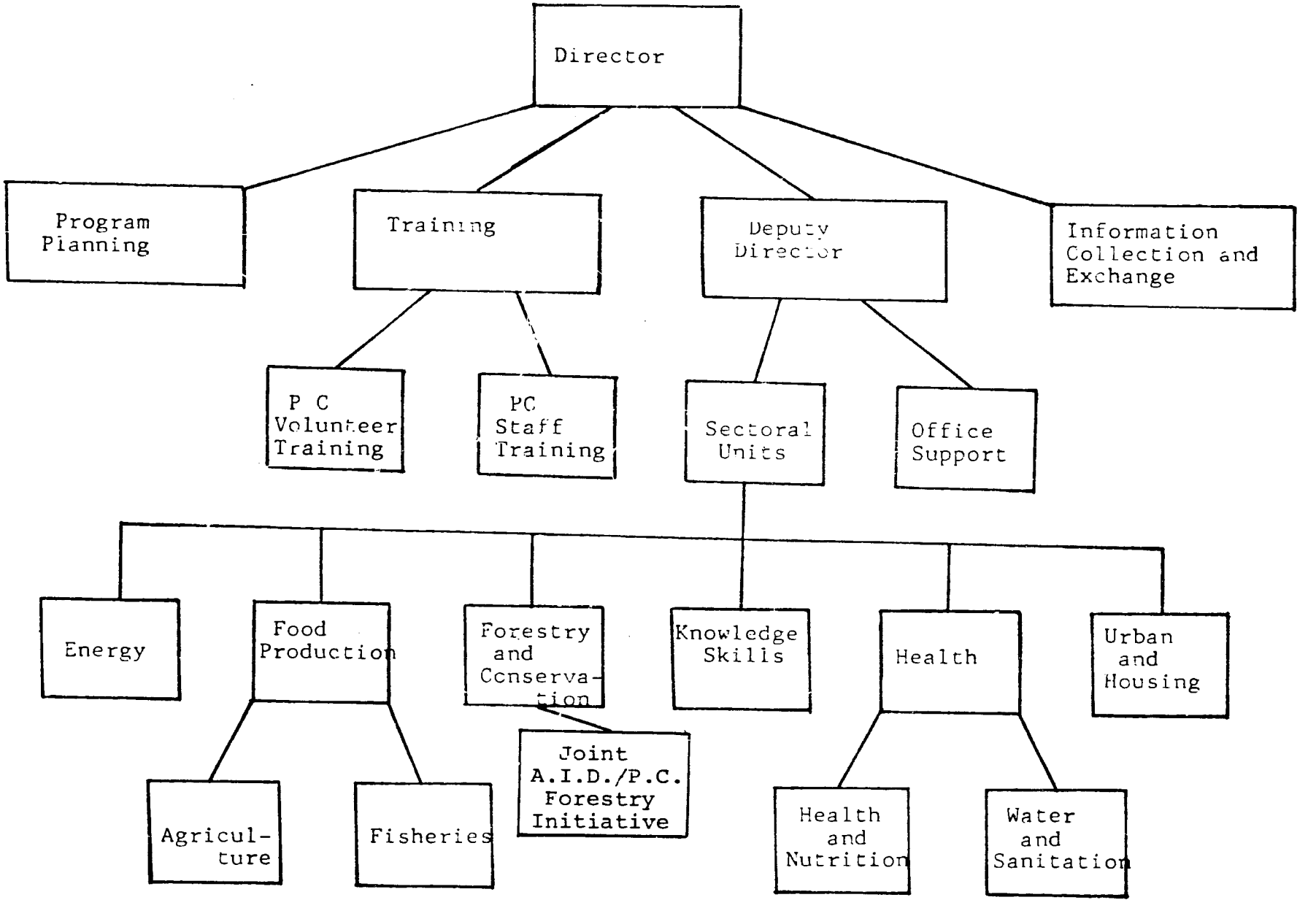


FIGURE 5: ORGANIZATION CHART FOR PEACE CORPS OFFICE OF PROGRAMMING AND TRAINING COORDINATION (OPTC)



by mail and through management of a consultant pool, extensive liaison with public, private, and multinational organizations involved in forestry and natural resources, review and feedback on new project proposals submitted by the field, participation in special targetted recruitment efforts, and development of a technical information bank and a series of basic technical manuals for use by PCVs and staff. The team is also engaged in identifying training resources and monitoring technical training activity.

This unit receives administrative and clerical assistance from OPTC's support pool of five persons which is shared with 20 other professionals. As a result of the small size of the forestry unit, most of its activity is reactive rather than initiating.

Peace Corps would use project resources initially to add one professional and one support staff person for the life of the project to the forestry unit of the Office of Programming and Training Coordination (OPTC). This would provide the minimum sized unit to give the necessary full attention to the early assessment, workshops and the first programming steps. The headquarters unit would be participating directly in, as well as coordinating, all activities under the project. They would tie in with the experts network efforts in the other component of the project to identify a pool of consul-

tants, design and help conduct assessments and workshops, provide programming assistance, help design, set up, monitor and evaluate technical training pilots, expand the technical materials bank, and maintain technical liaison with other agencies concerned with the forestry initiative as well as A.I.D. The recruitment for the two additional positions would be done by Peace Corps through regular personnel processes. Standard Peace Corps administrative procedures would apply for the hiring, payment, and any other administrative details that may occur involving these individuals. This category also contains travel and support funds for the individuals, and a modest 10% overhead charge payable on any PASA from Peace Corps to Action to cover the direct costs of administrative support services purchased by Peace Corps from ACTION.

b. Project Field Staff

Peace Corps will place the primary responsibility for project design, implementation, and monitoring on its regular field staff. These Associate P.C. Directors (APCDs) will in most cases have responsibility for projects in a range of rural development areas, and a limited technical knowledge of the forestry area. However, they do have the necessary daily contacts with host country agencies, the trust and confidence of the PCVs, and the needed team relationship with the rest of the P.C. staff

without which projects just will not work. Through intensive regional staff workshops jointly conducted with and for P.C. and A.I.D., a good number of existing staff members can be given needed basic skills in programming and supporting community forestry projects. In addition, 4 field staff person years will be funded from A.I.D. resources to function and strengthen field capability. These funds will be used to deploy both short and long-term forestry field staff. Two options which may be utilized in these efforts are as follows:

i. Project funded forestry APCDs, each with previous P.C. or equivalent experience and appropriate language and area cultural capabilities, would be placed in countries where pilot efforts are undertaken and where opportunities for rapid growth look strong, and where full time effort beyond current field staff capability is needed to develop it. Following these placements, as actual project activity developed in a particular country, once 30-40 PCVs were engaged in forestry projects and requiring full time support, P.C. would shift its own resources in the form of a forestry APCD to support the position. A.I.D. thus provides the essential front-end support.

ii. Where appropriate, field personnel might be placed on a subregional basis to serve 2 to 4 countries having P.C. and A.I.D. operations. In addition to providing technical support to in-country programmers

these specialists might be looking into subregional projects (e.g. where a major watershed crosses national boundaries but needs consistent project intervention) or developing subregional training models. The day-to-day programming activity would remain the responsibility of country staffs, so that the technical backstopper would not become bogged down in lengthy negotiations, details of volunteer support, mobilization of host country resources, etc., but could remain flexible to service technical needs as they arose. Decisions about the actual deployment of field staff will depend on country and project selection.

c. Project Material

Consistently, one of the biggest frustrations experienced by many volunteers is the difficulty in obtaining support funds for projects within a time frame which recognizes the fragility of local consensus and the need to act while everyone's interest is high. A.I.D. funds will be used to make available a minimal amount of support for new and expanded projects piloted under the initiative. In general, these funds will be used for nurseries, transportation and agricultural equipment:

i. Nurseries. Often, the first step of any activity which involves planting trees will be to

establish a nursery if one doesn't already exist in the area. Nurseries vary in size, ranging from as small as 2,000 seedlings for a school garden nursery to as large as 200,000 seedlings to serve a region. The cost is largely determined by whether the environmental conditions demand that the trees be planted in plastic pots (in arid/semi-arid regions where precipitation is slight and soil conditions are poor), or whether they can be planted bareroot or as cuttings (in more humid or temperate regions where soils are productive and moist, and rain is plentiful). The initial costs for nursery establishment include such items as fencing material, rakes, watering cans, dirt and, in some areas, well-digging and pumping devices. The cost of a 50,000 tree nursery can range from as little as $2,000 to as high as $12,000 in 1979 prices. Other expenses include labor for out-planting (cost not included in this project), maintenance of reforested areas, and possible fencing of reforested areas. The initial cost of nursery material is incurred the first year of operation: there is a substantial decrease in the cost per tree during successive years. However, as the project evolves, recurring costs such as labor (for local participants and government agencies), transportation, and material replacement will increase with inflation and effort expansion.

ii. Transportation. Lack of transportation can be a major limiting factor to the successful implementation of forestry related projects. Filled plastic pots can weigh 2 kg each and a large, reliable, flatbed truck is needed to carry several thousand pots to a reforestation site. Depending on the distance traveled and the price of gasoline, transportation from the nursery to the planting site can run from 3¢ to 20¢ per tree in 1979 prices (Weber, Earhart), not including the cost of the vehicle. For projects with centrally located offices, each office should be equipped with one small truck to transport supplies such as organic fertilizer, sand or dirt. In some situations, the local development workers, whether host country counterparts or volunteers, can be a great deal more effective if they have access to some form of daily transportation. If distances between sites, or between villages and sites, are long or terrain difficult, both volunteers and counterparts may need motorcycles for transportation and communication relating to extension and post-planting work.

iii. Agricultural and Other Equipment. Additional tools and equipment may be required for project components other than the nursery. Such items as planting bars, fumigators, chain saws,

forest inventory equipment, compasses, soil test kits or levels may be needed by counterparts and volunteers alike. In addition, agricultural equipment such as hoes, machetes, and surveying equipment may be required. P.C. does not receive appropriated funds for project materiel support. Yet, often, as in the case of this initiative, PCVs work with projects which do require such resources. The A.I.D. funds provided will be utilized throughout the life of the project in amounts required for each specific pilot effort to be undertaken. Where possible, actual disbursement of funds from P.C. will be handled through P.C./PVO collaboration with the A.I.D. country Mission and host country officials.

d. PCV and Counterpart Training

i. Training. This A.I.D./P.C. initiative will require a considerable investment in training for PCVs before and during their service, for selected P.C. and A.I.D. staff, and for host country nationals. In this section, we discuss the use of funds requested for pre- and in-service training for PCVs and their counterparts.

All training conducted or sponsored by P.C. will rely principally on current concepts of adult

learning and nonformal education. In brief, this approach is characterized by encouraging participation of those being trained in the teaching/learning process. Training participants are expected to take major responsibility for their own learning. In this model, most learning is the result of experience and interaction with others, rather than passive listening or reading. Learning is gained by problem-solving exercises, working with case studies, immersion in new situations, examination of the group process, a skill-building focus, and learning how to learn (and, in some cases, how to train others using these techniques). Reading materials and equipment are used but sparingly and only as appropriate to the actual learning needs of each group. During the training cycle, the participants are asked to evaluate its usefulness, to make suggestions for changes in content or method, and to share the knowledge and experiences they bring with them.

Technical content is determined by the specific projects or activities the participants will be involved in, whether that be setting up nurseries, establishing windbreaks, or setting up village woodlots. Trainers will also receive training in working in teams, assessing and organizing

communities, planning and managing tasks and projects, mobilizing resources, uses of appropriate technology, documentation of project activity, and the transfer of skills to co-workers.

ii. Volunteer Training. P.C. views training as the initiation and ongoing support of a learning process which occurs throughout a PCV's term of service. While there is differentiation in subject matter and training length between pre-service and in-service training, both are regarded as parts of a continuing function wh[illegible] focuses on enabling PCVs to function as effectively as possible as development workers and builders of positive relationships with third world people.

Though P.C. is slowly evolving a core training curriculum, at the present time there is no uniform approach to P.C. basic training of forestry volunteers. Programs range too widely in content, approach, successfulness and quality. To support this initiative, both the number and range of forestry training programs will have to be not only expanded but also standardized to accommodate the envisioned increase in locales, volunteers and counterparts. Both pre-service and in-service training must be designed so that the volunteers and counterparts are not only prepared for their

initial assignments, but also provided with periodic skill review and upgrading once they are in the field. Generic as well as country-specific training is needed, as well as provision for continuous technical back-up support (supplied by A.I.D.).

Pre-service training modules will be developed for generic and project/country-specific skills. These will typically involve initial design and testing of training in the U.S. which can, once tested and refined, then be disseminated for use in overseas settings. This is the approach used in recent skills-training development conducted by P.C. A.I.D. resources will be used for the initial design and development work for generic training modules in support of at least two of the proposed forestry project types. P.C. resources will be used for the ongoing training of forestry volunteers.

In-service training has to be more tailored to each situation and to each group of participants. Such training usually picks up and reinforces the main themes of pre-service training and responds to individual skill needs (technical, organizational or language) discovered by the volunteers during their early months of service, or which evolve as the project continues. Often it is useful to bring together PCVs from neighboring countries who are doing similar work to share experiences, exchange knowledge, and contribute to future project

development. This training is usually conducted by P.C. in-country staff, often augmented by training or technical specialists who are brought in to assist. P.C. would seek A.I.D. participation in such in-service workshops.

iii. Counterpart Training. P.C. expects to enhance its usual commitment to the transfer of skills to host country people whether they be community leaders, local youth, or employees of national forestry agencies. While P.C. is statutorily prohibited from using its appropriated funds for the training of non-PCVs, A.I.D. resources will facilitate the general inclusion of counterparts along with PCVs in the training to be done under this initiative. In addition to including counterparts in formal training events, we will also try to provide PCVs with some skills in counterpart training and community participation so that this can be an ongoing feature of their roles.

e. Program Development and Assessment

Funds in this category will be used for three activities: baseline assessments, programming workshops for Peace Corps and A.I.D. field staff, and the provision of consultant sources for specific project exploration and design.

i. Baseline Assessment. The purpose of the assessments is to identify as many factors as possible which may contribute to potential project identification. This information will be collected and assembled as quickly as possible following start-up of the project by a two-person team sent to the respective countries identified in the preliminary list. The assessors will work with host country officials and P.C./A.I.D. Country Directors while in-country. The findings and conclusions will provide some guidelines for project identification and design, as well as for identifying some of the resources needed for project implementation.

ii. Programming Workshops. During the project's early phases, P.C. experts will conduct staff development workshops for their own and A.I.D. overseas program staff. Currently, those with responsibility for forestry/natural resources programming are generalist rural development programmers. Workshops for these staff (with additional participation by appropriate PCVs, A.I.D. and host country personnel) will involve an explanation of the importance of the deforestation issue, ways of ascertaining forestry project opportunities, criteria for successful projects, joint project planning and management skills in forestry development;

linkages between forestry and other sectoral efforts; reviews of resource needs and mobilization techniques for supporting PCVs; and identification of follow-up activities required to specify project opportunities.

iii. Programming Consultants. Immediately following the programming workshops, programming consultants will be available to assist those country directors and staff who have indicated that there is potential for viable forestry projects. The programmers will assist country personnel in developing these project possibilities and preparing their project documents. The consultants will be hired by OPTC on a personal services contract and oriented thoroughly by OPTC prior to any country involvement. The consultants will be thoroughly knowledgeable in forestry-related matters as well as the paper and political processes associated with putting together a project request.

2. Peace Corps Funding Commitments to the Forestry Initiative

Peace Corps will be effecting over 300 volunteer-years of service directly through the initiative. Some 75 volunteer-years will be expended on totally new efforts and approximately 225 volunteer-years in expanded ongoing forestry efforts. Peace Corps estimates the cost of an FY 80 volunteer-year at approximately $17,000. Peace Corps will be providing over 1500 weeks of pre-service training to PCVs participating directly in the initiative. The cost for an FY 80 training week is about $500. Over 1,000 training weeks for forestry volunteers not directly involved in the initiative will be effected by the training models developed as part of the whole initiative.

Two full-time Peace Corps professional staff in OPTC will be working on the initiative. Their combined salaries plus benefits are estimated at over $75,000/year.

Field staff in at least four or more countries will be directly involved in the initiative. We estimate five person-years of effort, at an average FY 80 cost to Peace Corps of approximately $50,000/person-year, will be involved at the field staff level.

Peace Corps total investment in the forestry initiative is estimated at about $6 million covering the life of the project.

C. Inter-Cooperation Among A.I.D., Forest Service and Peace Corps

Current implementation plans for the Forest Resources Management project call for negotiation of separate agreements with U.S.D.A. Forest Service for the International Forest Resources Support Network component, and with Peace Corps for the Joint A.I.D./Peace Corps Forestry Initiative component, respectively.

The numerous opportunities for meaningful inter-cooperation among A.I.D., Forest Service and Peace Corps in this project form an important part of the rationale and basis for the project design.

The U.S.D.A. Forest Service has strong ties with Peace Corps of long standing and has played an important key role in launching of the Peace Corps Forestry Initiative. The Forest Service detailed a full-time professional forester to Peace Corps headquarters without charge in 1977 and his efforts were central to initiating a separately defined forestry thrust in Peace Corps programs.

1. Forest Service/Peace Corps Cooperation at the Headquarters Level

The Forest Service is expected to continue its full-time professional support for the Peace Corps initiative through separate arrangements between Forest Service and Peace Corps. Forest Service will provide limited short-

term consulting services, information and documentation to Peace Corps headquarters staff (a staff funded by this project) without charge to either A.I.D. or Peace Corps.

The Forest-Service-run and A.I.D.-funded International Experts Network will accept requests for consultant and personnel assistance from the Peace Corps, just as it will from A.I.D. Missions and Regional Bureaus,and will provide relevant expert referrals to meet Peace Corps, and joint A.I.D./P.C. forestry activity needs. Channels of communication for expert help, information and documentation from those working in LDCs on A.I.D./P.C. forestry projects will normally go through the P.C. headquarters unit to the Support Network unit, but P.C. may sometimes also elect to send such requests through the A.I.D. Mission with which a joint project is being undertaken, and to use the A.I.D. line of communication from the Missions to the AID/W Network unit.

2. <u>Forest Service/Peace Corps Cooperation at the Field Level</u>

Network staff will help Peace Corps headquarters staff with debriefing of returning Peace Corps forestry volunteers, and Forest Service and Peace Corps will cooperate in an effort to enter former volunteers into

the expert information system. The Forest Service will provide all the same kinds of in-kind support services to those engaged in A.I.D./P.C. forestry projects in the field which are provided to A.I.D. Missions in the field. These will include such things as limited short-term consulting services, limited information and documentation without charge (or with payment of travel and per diem only), provision of limited plant materials (seeds/seedlings/cuttings) at less than full cost or without charge for test plantings at the LDC village level, and limited assistance with developing training packages, and with conduct of training for PCVs and counterparts.

Resident forestry advisors placed in the field by the Forest Service with A.I.D.-funding under the Support Network component of the project will cooperate with, and provide mutual support for, Peace Corps programming and backstopping personnel placed in the field by the Peace Corps under the Joint Forestry Initiative Component of the project. Peace Corps programming and in-service training workshops may be linked with Regional workshops arranged through A.I.D. Regional Bureaus by the Forest Service wherever Missions, Regional Bureaus, DS/ST, Forest Service and Peace Corps find such an arrangement to be mutually advantageous.

D. Project Financial Plan and Budget

The Forest Resources Management Project will carry a A.I.D.-funded life-of-project cost of $3.7 million over a four year period. The Forest Resources Support Network component of the project will be funded at a level of $2.5 million, and the Peace Corps component at $1.2 million.

The U.S.D.A. Forest Service is expected to contribute up to $2.0 million in the form of in-kind services to the project over four years, and the Peace Corps will make a substantial budget commitment of approximately $6.0 million to carry out its share of the effort in the Joint A.I.D./Peace Corps Forestry Initiative.

The total estimated cost of the project including Forest Service and Peace Corps contributions is estimated at **$11.7 million.**

1. Support Network Component

The annual budget for the Support Network component of the project is presented in Table 3. The budget provides: (I) $600 thousand for Experts Network Development, Services and Management Activities; (II) $1.3 million for Direct LDC Mission Backstopping; (III) $500 thousand for Assistance Experience Examination and Analyses and $100 thousand for formal evaluations by both F.S. and P.C. at 18-20 months into the project and again at project termination. Budget figures allow for a modest 7-10% rate of inflation.

DS/ST FOREST RESOURCES MANAGEMENT PROJECT

TABLE 3: FOREST RESOURCES SUPPORT NETWORK BUDGET ($000's)

	1st Yr. (FY 80)	2nd Yr. (FY 81)	3rd Yr. (FY 82)	4th Yr. (FY 83)	TOTALS
NETWORK DEVELOPMENT, SERVICES & MANAGEMENT					
EXPERTS NETWORK DEVEL.	160	140	75	75	450
• SALARIES	(116)	(98)	(48)	(48)	
• OTHER DIRECT COSTS (Consultants, Printing, Document Purchases, etc.	(20)	(20)	(12)	(12)	
• OVERHEAD	(24)	(22)	(15)	(15)	
NETWORK SERVICES AND MANAGEMENT	-	16	67	67	150
• SALARIES	-	(12)	(53)	(53)	
• OVERHEAD	-	(4)	(14)	(14)	
II. DIRECT LDC MISSION BACKSTOPPING					
RESIDENT FORESTRY ADVISORS	315	390	45	-	750
(6 PERSON YEARS) ·AFR	(105)	(130)	(15)	-	(250)
·LAC	(105)	(130)	(15)	-	(250)
·ASIA	(105)	(130)	(15)	-	(250)
SHORT-TERM CONSULTANT SERVICES	110	143	148	149	550
·AFR	(42)	(54)	(54)	(55)	(205)
·LAC	(38)	(49)	(49)	(49)	(185)
·ASIA	(30)	(35)	(40)	(40)	(145)
·NE	(-)	(5)	(5)	(5)	(15)
III. ASSISTANCE EXPERIENCE EXAMINATION & ANALYSIS					
TOTALS	-	148	193	159	500
• REGIONAL WORKSHOP SUPPORT	-	(100)	-	(100)	(200)
• INTERNATIONAL CONFERENCE	-	-	(135)	-	(135)
• EXAMINATIONS OF PROMISING ASSISTANCE MECHANISMS	-	(48)	(58)	(59)	(165)
EVALUATIONS2/		50		50	100
TOTAL	585	887	528	500	2,500

1/Budget figures in the above Table allow for a modest 7-10% rate of inflation.

2/Evaluation funds apply to both Network and Peace Corps components.

2. A.I.D. Project Funds in the Joint A.I.D./Peace Corps Component

Project support requirements needed by the Peace Corps to effectively implement this program have been grouped into the five following categories:

(1) Project Management

(2) Project Field Staff

(3) Project Material

(4) PCV and Counterpart Training, and

(5) Program Development and Evaluation.

A general life of project budget of $1.2 million for the A.I.D.-funded portion of the Joint A.I.D./Peace Corps Forestry Initiative is presented in Table 4; and a projection of expenditures by fiscal year (FY 80-83) is given in Table 5. The figures are given based on average costs of Peace Corps program experience throughout the world, and will likely require some redistribution as specific project activities are implemented. Totals cover all project activities from start-up through FY'83. This component of the project includes funding for Peace Corps Headquarters project management activities at $280,000; project field staff at $200,000; project material support at $200,000; PCV and counterpart training at $280,000; and program development and evaluation at $240,000 over the four year life of the project.

TABLE 4: Life-of-Project Projections of Expenditures by Activity for the Peace Corps Component ($ in 000)

Activities	Sub-Total	Total
Project Management		$280.0
Staff:(6-8 person-years) conservation specialist (1) clerical support (1)	$128.0	
Benefits	12.0	
Travel	30.0	
Miscellaneous Admin. Costs	10.0	
Shared Admin. Services Costs (ACTION, @ 10% Project total)	100.0	
Project Field Staff		200.0
4 person years for life of project (average salary of $50.0 P/yr)	200.0	
Project Material		
1-3 New Projects		200.0
1-3 Expanded Projects		
PCV and Counterpart Training		280.0
2 Pre-service Training Models	100.0	
Inservice PCV's and Counterparts Training (each cycle (1-2) weeks in length)	180.0	
Program Development and Assessment		240.0
Base Line Assessments (FY 80-81)	45.0	
Program Workshops @ $50. K	150.0	
Program Consultants	45.0	
		$1,200.0

TABLE 5: Projections of Expenditures by Fiscal Year for the Peace Corps Component ($ in 000s)

Activities	FY 80	FY 81	FY 82	FY 83	TOTAL
Project Management					
Staff: (6-8 person years) conservation specialist (1) clerical support (1)	$ 4.0	$ 39.0	$ 42.0	$ 43.0	$128.0
Benefits	0.4	3.6	4.0	4.0	12.0
Travel	0.0	10.0	14.0	6.0	30.0
Miscellaneous Admin. Costs	2.0	3.0	3.0	2.0	10.0
Shared Admin. Services Costs (ACTION, @ 10% Project total)	2.0	40.0	38.0	20.0	100.0
Project Field Staff					
4 person years for life of project (average salary of $50.0 P/yr)	$ 0.0	$ 50.0	$100.0	$ 50.0	$200.0
Project Material					
1-3 New Projects	$ 0.0	$ 50.0	$100.0	$ 50.0	$200.0
1-3 Expanded Projects					
PCV and Counterpart Training					
2 Pre-service TRN Models	$ 0.0	$100.0	$ 0.0	$ 0.0	$100.0
Inservice PCV's and Counterparts Training (each cycle (2) weeks in length)	0.0	30.0	60.0	90.0	180.0
Program Development and Assessment					
Base Line Assessments (2 person team)	$ 15.0	$ 30.0	$ 0.0	$ 0.0	$ 45.0
Program Workshops @ $50. K	0.0	100.0	50.0	0.0	150.0
Program Consultants	5.0	20.0	20.0	0.0	45.0
	$ 28.4	$475.6	$ 430.0	$265.0	$1.200.0

The level of funding will be sufficient for supporting 4-6 new or expanded A.I.D./Peace Corps collaborative projects in LDCs. These collaborative projects are intended to be models that will help to stimulate more interagency collaboration and joint projects in forestry at the country Mission level. Continued Mission support for grassroots forestry activities launched under this project is expected, and additional projects involving A.I.D./Peace Corps interaction in village foresty in other countries is anticipated as an outgrowth of this effort.

IV. IMPLEMENTATION PLAN

DS/ST intends to implement the Forest Resources Management project through separately negotiated agreements with U.S.D.A. Forest Service for the Support Network Component, and with Peace Corps for the Joint A.I.D./Peace Corps Forestry Initiative Component.

A. Forest Resources Support Network Implementation

The U.S.D.A. Forest Service has expressed a willingness to work to negotiate a RSSA agreement with A.I.D. for performance of all Forest Resources Support Network operations included under this project.

Since the primary purpose of the Support Network component is to provide A.I.D. Missions with the resources they need to carry out effective forestry assistance efforts for the benefit of the LDC poor, A.I.D. and Forest Service have a strongly shared responsibility for project success. Forest Service will bear the responsibility for improving A.I.D. access to socially and technically relevant expertise in forestry and related natural resources areas; A.I.D., and especially A.I.D. Missions, must, however, effectively utilize and take advantage of that appropriate expertise for delivery of effective assistance to the LDC poor through A.I.D. Mission forestry projects.

The guiding philosophy of the Forest Service in carrying out all Support Network functions and operations shall be that the A.I.D. field Missions, as the primary client recipients of all services, must play the primary role in defining the Network's characteristics and its operational features. User satisfaction will be paramount if the project is to succeed.

Forest Service will be responsible for management and fiscal administration of Support Network operations. Forest Service will be responsible for detailed work planning and accomplishment, and for working closely with A.I.D. Regional Bureaus through DS/ST and the Joint Project Management Advisory Group. A.I.D. will be responsible for providing diligent oversight and direction for Forest Service efforts through the Advisory Group throughout the life of the project to maintain a constant feedback and adjustment mechanism.

The Forest Service will be responsible for implementing and carrying out three major functions as a part of the Support Network operation:

1. Network Development, Services and Management
2. Direct LDC Mission Backstopping
3. Forestry Assistance Experience Examination and Analysis.

The key implementation actions, dates and responsible parties for carrying out Support Network functions are listed in Table 6, starting with those administrative tasks which must immediately follow Project Paper (PP) approval.

"Network staff will be in place by March 1981 and delivery of expert referral and information services to AID Missions and Regional Bureaus will begin immediately upon staff arrival. The Experts Network will not be fully operational, however, until all appropriate ties to other existing domestic and international networks, information sources and institutions, have been made, and until detailed information on thousands of individual experts and hundreds of institutions have been gathered through questionnaires and contacts, including their technical and language capabilities, access, availability and experience by subject and geographic area. A fully operational domestic experts network system will be in place by October 1982, and a fully operational international network system will be in place by October 1983."

TABLE 6: INTERNATIONAL FOREST RESOURCES SUPPORT NETWORK IMPLEMENTATION PLAN

Action or Event	Date (month, year)	Responsible Party
• PP Approval	July 1980	DSB, Regional Bureaus
• Congressional Notification	July 1980	DS/ST, DS/PO
• RSSA Negotiation	August 1980	A.I.D./Forest Service
• RSSA Agreement Signing	September 1980	A.I.D./Forest Service
• Administrative Start-up	October 1980	Forest Service
• Begin Network Staff Recruiting	October 1980	Forest Service
• Define Forestry Advisor Scopes of Work and Operating Arrangements	November 1980	DS/ST, Forest Service (Mission & Bureau inputs)
• Hold 1st Joint Project Management Advisory Group Meeting	December 1980	DS/ST, Regional Bureaus
• Complete Network Staff Selection	January 1981	Forest Service
• A.I.D. Concurrence with Network Staff Selection	January 1981	DS/ST, Regional Bureaus
• All Network Staff in Place and Network Operations/Services Functioning (both Domestic and International)	March 1981	Forest Service
• Hold Management Advisory Group Meeting	March 1981	DS/ST, Regional Bureaus
• Hire Forestry Advisors	March/April 1981	Forest Service
• A.I.D. Concurrence with Advisor Selection	April 1981	DS/ST, Regional Bureaus, Field Offices, Missions
• Support Network Development Plan	May 1981	Forest Service
• All Forestry Advisors in Place	June 1981	Forest Service

TABLE 6 (Cont.)

Action or Event	Date (month, year)	Responsible Party
• Hold Management Advisory Group Meeting	September 1981	DS/ST, Regional Bureaus
• Hold First Regional Forestry Assistance Workshop	November 1981	Forest Service
• Complete 1st Contract Evaluation of Progress	February 1982	DS/ST
• Launch 1st Examination of Promising Assistance Mechanism	April 1982	Forest Service
• Decide whether to Continue Funding and Support for Regional Forestry Advisors	August 1982	Regional Bureaus (decision on Regional funding may be made earlier)
• Hold Management Advisory Group Meeting	September 1982	DS/ST, Regional Bureaus
• Domestic Experts Network System Fully Operational	October 1982	Forest Service
• Submit 1st Network Operations Report	October 1982	Forest Service
• Complete 1st Forestry Assistance Examination	November 1982	Forest Service
• Launch 2nd Examination of Promising Forestry Assistance Mechanism	January 1983	Forest Service
• Hold Management Advisory Group Meeting	March 1983	DS/ST, Regional Bureaus
• Decide on Arrangements for Continuance of Support Network Operations in FY 85 and beyond	April 1983	A.I.D. (DS, Regional Bureaus)
• Project Funding of Regional Forestry Advisors Terminates	May 1983	Forest Service
• Hold International Forestry Assistance Conference	June 1983	Forest Service
• Hold Management Advisory Group Meeting	September 1983	DS/ST, Regional Bureaus

TABLE 6 (Cont.)

Action or Event	Date (month, year)	Responsible Party
• Complete 2nd Forestry Assistance Examination	September 1983	Forest Service
• International Experts Network System Fully Operational	October 1983	Forest Service
• Submit 2nd Network Operations Report	October 1983	Forest Service
• Hold 2nd Regional Forestry Assistance Workshop	November 1983	Forest Service
• Launch 3rd Examination of Promising Forestry Assistance Mechanism	January 1984	Forest Service
• Hold Management Advisory Group Meeting	March 1984	DS/ST, Regional Bureaus
• Complete 3rd Forestry Assistance Mechanism Examination	July 1984	Forest Service
• Submit 3rd Network Operations Report	October 1984	Forest Service
• Complete Final Project Evaluation	February 1985	DS/ST

B. A.I.D./Peace Corps Forestry Initiative Implementation

1. Country Selection

The identification of countries for the project-specific collaboration will begin with an extensive list of possibilities, and be narrowed down as the assessments and staff training workshops proceed. The identification process will be a joint effort with A.I.D. Consulting will be done between P.C. Washington staff and A.I.D. Regional Bureaus; in the field between P.C. and A.I.D. Mission Directors and their staffs. The initial list, to be prepared in the first 60 days of project implementation, will incorporate the following criteria:

a. Severity of the forestry problem or of the human needs problems linked to forestry or solvable through forestry.

b. Effects deforestation is having on the local population, including women and children. One potential problem in many village reforestation programs is their tendency to focus on a subgroup within the village community to the exclusion of other groups. This tendency is commonly explained as a donor/forester effort to economize on local management costs by piggybacking forestry efforts onto locally organized and operational groups. There is nothing wrong with this strategy, as long as reforestation efforts are not allowed to enrich

one particular subunit within the community at the expense of others. Particularly important is the case of women. In certain village cultural situations, women typically responsible for collecting household firewood supplies have a vested interest in reforestation. However, in many cases this interest is clearly not directly convertible into tree-planting activities.

c. Immediacy of the problem. Deforestation in some LDCs has become so acute that it is not a question of having enough wood, or even of dwindling supply, but whether or not any firewood is economically available for consumption. In some areas, people are traveling long distances to obtain firewood for cooking.

d. Host country commitment to resolving deforestation-related problems. Need to review on-going projects to see if they are supported at the national as well as at local and village governmental levels, as perceived by P.C. in-country staff and volunteers. Also, the need to be assured that support for new projects at the host country, P.C. and A.I.D. national levels will be sufficient to carry out a new initiative.

e. A.I.D. and P.C. country involvement. Both parties must be present and illustrate a strong actual interest or potential interest for a forestry program. Reasonable in-country political stability is, of course, presumed.

The first country listing will then be reduced to a list of countries with specific potential for P.C. and A.I.D. collaboration in forestry. Further evaluation and programming will yield specific countries for pilot efforts in each sub-region. The sub-regions are Latin America, Africa (including North Africa) and Asia. By the end of the first year, all of the participating countries, new and expanded, will be identified.

2. Implementation Action

A listing of some of the key implementation actions for the Peace Corps component of the project and the approximate dates (month and year) when each is expected to take place are presented in Table 7.

TABLE 7: Joint A.I.D./Peace Corps Forestry Initiative Implementation Plan

ACTION OR EVENT	DATE (month/year)	RESPONSIBLE PARTY
• Sign P.C./A.I.D. PASA	August 1980	A.I.D., Peace Corps
• Headquarters staff identified (DS/ST Concurrence)	" "	Peace Corps
• Initial listing of potential project countries identified	September 1980	Peace Corps (A.I.D. collaboration)
• Initial effort assessors identified, hired, and oriented	" "	Peace Corps
• Headquarters staff hired	" "	Peace Corps
• Programming consultant pool built up	" "	Peace Corps (Forest Service Network Assistance)
• Decisions on workshop sites and sequence	" "	Peace Corps
• Baseline assessments completed in first of three subregions	October 1980	Peace Corps
• First programming workshop underway	November 1980	Peace Corps
• First group of programmers to field	" "	Peace Corps
• Remaining baseline assessments completed	" "	Peace Corps
• Final country decisions of pilot project efforts in first of three sub-regions	December 1980	Peace Corps, A.I.D. Mission
• Expanded PCV recruitment underway	" "	Peace Corps
• PVO cooperating agencies for first pilot efforts identified	January 1981	Peace Corps
• Second program workshop underway	" "	Peace Corps
• First pilot project efforts fully designed	February 1981	Peace Corps, A.I.D. Mission
• First P.C./PVO agreements signed	" "	Peace Corps
• Pilot in-service workshop(s) in first of three sub-regions	March 1981	Peace Corps, A.I.D.

TABLE 7 (continued)

ACTION OR EVENT	DATE (month/year)		RESPONSIBLE PARTY
• Final Country decision of pilot project efforts in second of three sub-regions	March	1981	Peace Corps, A.I.D. Missions
• Semi-annual status report to A.I.D.	"	"	Peace Corps
• Third programming workshop underway	"	"	Peace Corps
• Exploration with A.I.D. of project expansion	"	"	Peace Corps, A.I.D. Missions
• Final country decision of pilot project efforts in third of three sub-regions	May	1981	Peace Corps, A.I.D. Missions
• Final design agreement with A.I.D. on P.C./A.I.D. project evaluation Model	September	1981	Peace Corps, A.I.D.
• Semi-annual status report to A.I.D.	"	"	Peace Corps
• First pre-service training model designed	"	"	Peace Corps
• First project funded field staff in place	"	"	Peace Corps
• First pre-service training cycle underway	"	"	Peace Corps
• First volunteers to field in new/ expanded pilot projects	January	1982	Peace Corps
• End of initial project development efforts	September	1982	Peace Corps
• Final forestry project initiative development report to A.I.D.	December	1983	Peace Corps
• Continuing Pre-and In-service training efforts	March September	1981 - 1983	Peace Corps
• Continuing placement of field staff	"	"	Peace Corps
• Continuing provision of P.C./W and on-site technical backup	"	"	Peace Corps
• Continuing project monitoring and revision	"	"	Peace Corps, DS/ST

C. Evaluation Plan

The Forest Resources Management project represents a three-way partnership among three independent Federal agencies; agencies that share a common dedication to achievement of both the project's specific purposes and its broader goals. A.I.D. is making a $3.7 million investment in this effort, but U.S.D.A. Forest Service anticipates making a possible contribution of up to $2.0 million, and the Peace Corps intends to devote more than $6.0 million to its part of the effort.

Each of the three agencies involved in the project will conduct formal evaluations, each in the manner of its own agency's established procedures, while in each case involving and working closely with representatives of the others.

1. Formal Evaluations

A.I.D. will conduct formal evaluations of both components of the 48 month project 18-20 months after start-up, and a final evaluation just after project completion early in 1985. A sum of $100,000 has been budgeted for conduct of two formal contract evaluations.

A.I.D.'s formal evaluations will be performed by a contract team with the participation of

at least one representative from each of the three participating agencies. An effort will be made to select an A.I.D. Mission Director to represent the Agency on the evaluation team since the A.I.D. Mission is the client and the intended direct recipient of most of the project's services.

The U.S.D.A. Forest Service will perform a Staff Study of the Forest Resources Management Project during its third year (1983) to examine progress, achievements and possible implications for future levels and forms of Forest Service involvement in international forestry assistance programs. A.I.D. and Peace Corps representatives and project participants will be asked to contribute to the study.

Peace Corps will conduct evaluations of field projects generally two years after the start of service of the first Volunteer group. The original project design is the basis for formulating evaluation issues. The method utilizes a workshop in which project participants learn and apply basic evaluation techniques to their own project. Outside persons are involved as facilitator/trainers, and technical specialists as resource people. This approach is used in order to (a) promote the concept of self-evaluation, (b) assure commitment to the results and follow-up of the evaluation by those who need to act on it, and (c) transfer evaluation skills to host country people.

The Peace Corps' investment in each of 2-6 country collaborative projects that will be launched under the Joint Forestry Initiative will be much greater than A.I.D.'s investment (at least five times greater) and since such individual projects will be programmed and launched by the Peace Corps in the same manner as all other PCV efforts except that A.I.D. will be collaborating, Peace Corps will handle these efforts through normal established administrative procedures.

2. Routine Monitoring and Charting of Progress

Less formalized forms of evaluation and management direction will be carried out throughout the life of the project in addition to A.I.D. special contract service evaluations and other similar formal Forest Service and Peace Corps efforts.

DS/ST will exert a continuous management presence in the project through its assigned project manager. The Joint Project Management Advisory Group will include representatives from all four Regional Bureaus, from DS/RAD, DS/AGR, DS/EY and DS/DIU, as well

as from Forest Service and Peace Corps. DS/ST will hold Advisory Group meetings throughout the project's four-year span, usually at not more than six-month intervals; meetings will be held more frequently during early stages of project implementation, and will be called at any time when warranted by ongoing events and project activities.

The Forest Service Regional Workshops and the International Conference on Forestry Assistance called for in the project will provide an opportunity to gather information about project successes and failures, strengths and limitations. The workshops planned by the Peace Corps will provide a similar opportunity for critical assessment of ongoing activities and appropriate adjustment for maximum effectiveness.

The Forest Service will submit periodic Support Network Operations reports as spelled out in the Implementation Plan. Peace Corps Headquarters, Office of Programming and Training Coordination (OPTC), will also submit annual summaries of progress and achievements to DS/ST in A.I.D.

D. Social, Economic, Technical and Environmental Analyses

1. Social Soundness and Economic Aspects of the Project

The Forest Resources Management project involves a combination of U.S.D.A. Forest Service Support Network activities, with a Joint A.I.D./Peace Corps Forestry Initiative.

a. Support Network Component

The Forest Resources Support Network operations conducted through the Forest Service RSSA will not involve direct implementation of major A.I.D. country Mission assistance projects in forestry; rather the Support Network will provide essential advisory services, information and backstopping for a wide range of forestry-related projects and activities, each of which is independently conceived and launched by individual A.I.D. Missions, Regional Field Offices and Regional Bureaus. This project represents therefore, a "backup support," rather than a "direct on-the-ground action" effort.

Even though Support Network activities will not directly impact social and economic conditions through major direct interventions in the field, the Network's orientation and philosophy will nonetheless have important indirect implications.

The Network philosophy will be strongly oriented toward a multidisciplinary approach which is highly sensitive to social, economic and institutional aspects of forestry and related natural resources problems. The intended orientation of the Support Network toward socially and technically relevant expertise and advisory services is well stated in the opening passage of that Section of the Foreign Assistance Act (FAA), which contains the clearest legislated instructions for A.I.D.'s forestry assistance mandate.

> "The Congress recognizes that the accelerating loss of forests and tree cover in developing countries <u>undermines and offsets efforts</u> to improve agricultural production and nutrition and otherwise <u>to meet the basic human needs</u> of the poor."

As summarized in the LOGICAL FRAMEWORK in Section II.D., the overall Sector Goal for both components of the Forest Resources Management project is to "Reduce forest and related natural resource deterioration which threatens basic human needs of the rural poor in LDCs and to increase sustainable use of forest resources to meet those needs."

b. Peace Corps Component

The social and the economic orientations of A.I.D. and Peace Corps are fully consistent and complimentary within the context of joint collaborative forestry activities under this project. The Joint Forestry Initiative will pool the strongest resources of both agencies to deliver socially and technically relevant forestry assistance at the local village or grassroots level.

The Peace Corps Act clearly illustrates in its opening passage the compatibility of the Peace Corps' purpose with that of A.I.D.:

> "The Congress of the United States declares that it is the policy of the United States... to promote world peace and friendship through a Peace Corps, which shall make available to interested countries...men and women of the United States...willing to serve, under conditions of hardship if necessary, to help the peoples of such countries...in meeting their needs for trained manpower, particularly in meeting the basic needs of those living in the poorest areas of such countries..."

The orientation toward recognition and action on opportunities in forestry for improvement in the status of women which will be pursued by the Forest Service in its Support Network operations will be matched by the Peace Corps through the compatibility of its Authorizing Charter from the Peace Corps Act:

> "In recognition of the fact that women in developing countries play a significant role in economic production, family support, and the overall development process, the Peace Corps shall be administered so to give particular attention to those programs, projects, and activities which tend to integrate women into the national economics of developing countries, thus improving their status and assisting the total development effort."

2. Technical and Environmental Analyses

a. Technical Aspects

Detailed technical specifications on forestry related assistance will emerge during the course of implementation and operation of both components of the project.

Expert information and professional advisory services provided through the Forest Service under the Support Network component of the project will stress use of appropriate technology applied with social and cultural sensitivity. Since all indirect backstopping support and advisory services under this project will be delivered through A.I.D. field Missions for application to Mission forestry assistance projects, all of the normal safeguards in the A.I.D. project development system will function in the normal manner to ensure that technical approaches are well conceived in terms of employment effects, host country ability to utilize and maintain the technology used in a given project, and the potential spread effects which may derive from a particular technology choice.

Appropriate technology is a hallmark of all Peace Corps grassroots level village efforts carried out by Peace Corps volunteers (PCVs). Peace Corps programming personnel will further confer and work closely with A.I.D. country Mission representatives in joint collaborative forestry project design to further ensure wise technological choices in village forestry-related activities. These will include not only such biological aspects as tree nurseries, and choice of species, but other more engineering oriented questions like introduction of more efficient stoves in local households and charcoal kilns in small rural industries.

b. Environmental Aspects

The Initial Environmental Examination is reproduced from the Project Identification Document (PID) in Annex B, and the Environmental Threshold Decision indicating a "Negative Determination" is presented in Annex C.

3. Compliance with Statutory Requirements

The project has been checked for compliance with statutory requirements, including the Project Checklist and the Standard Item Checklist contained in Appendix 5C (2) and 5C (3), respectively, of A.I.D. Handbook 3 (dated June 7, 1979).

ANNEXES

FOREST RESOURCES MANAGEMENT

PROJECT PAPER

ANNEX A

June 2, 1980

ACTION MEMORANDUM FOR THE ASSISTANT ADMINISTRATOR, BUREAU FOR DEVELOPMENT SUPPORT

FROM: DS/PO, Bernard Chapnick

SUBJECT: PID Approval for Project 936-5519, Forest Resources Management

At the meeting you chaired on May 22, 1980 for final review of the subject PID, no further issues were raised concerning the PID. Representatives of the Regional Bureaus and PPC indicated that there was no objection to proceeding to develop the project paper for this activity.

Recommendation: That you approve proceeding with the development of the project and preparation of a project paper.

APPROVED: _____

DISAPPROVED: _____

DATE: 6/6/80

Attachment:
PID for Project 936-5519

Clearance:
DS/ST, W. Feldman _____ Date _____

DS/PO:BRoche:msk:6/2/80:59040

INITIAL ENVIRONMENTAL EXAMINATION

DS/ST's Forest Resources Management project has two major components. The first involves forest resources experts networking, delivery of field services and experience analysis. The second deals with collaborative A.I.D./Peace Corps forestry programming and development, field support and grassroots-level forestry experience analysis.

U.S.D.A. Forest Service Experts Network activities and delivery of forestry-related field support services will involve support for a wide array of country Mission level activities. These will include environmental examinations, project design, project implementation and management assistance, project evaluation and broader scale examinations of experience and future opportunities and approaches in forestry-related assistance work. These advisory and supporting activities will be directed at environmental improvement for the benefit of the rural poor. Direct physical actions on-the-ground will not be taken through this project; but rather these kinds of actions will be taken through Mission projects receiving advice and assistance from the Support Network. All such country Mission projects in forestry will, of course, themselves be subject to environmental examination in accordance with established A.I.D. procedures.

Collaborative Peace Corps project activities will be primarily directed at village-level forestry assistance to the poor resulting in environmental improvement. Activities will include

such things as erosion control, reforestation, community involvement and participation in enlightened, sustainable forest and related natural resources management, fire control, fuel-wood plantations, and improved agroforestry systems to replace unsustainable and more ecologically destructive shifting cultivation systems. Each of the two-to-five country level forestry programs which is to be developed and directly supported under this project will also be subjected to a more specific environmental review in accordance with established Peace Corps procedures prior to being initiated. (see following discussion of Peace Corps Environmental Procedures.)

A negative determination is, therefore, recommended.

ENVIRONMENTAL THRESHOLD DECISION

TO: AA/DS, Mr. Sander M. Levin

THRU: DS/PO, Bernard Chapnick

FROM: DS/ST, William M. Feldman

SUBJECT: Environmental Threshold Decision

Project Title: Forest Resources Management
Project #: 936-5519
Project Manager: DS/ST, Dan Deely
REFERENCE: Initial Environmental Examination (IEE) contained in PID (attached), p. 23 dated _____

On the basis of the Initial Environmental/Examination (IEE) referenced above and attached to this memorandum I recommend that you make the following decision.

__X__ 1. The proposed agency action is not a major Federal action which will have a significant effect on the human environment.

_____ 2. The proposed agency action is a major Federal action which will have a significant effect on the human environment, and:

_____ a. An Environmental Assessment is required; or

_____ b. An Environmental Impact Statement is required.

The cost of and schedule for this requirement is fully described in the referenced document.

_____ 3. Our environmental examination is not complete. We will submit the analysis no later than _____ with our recommendation for an environmental threshold decision.

Approved: S. Joseph, Acting

Disapproved: _____

Date: 6/6/80

AGENCY FOR INTERNATIONAL DEVELOPMENT
PROJECT AUTHORIZATION AND REQUEST FOR ALLOTMENT OF FUNDS PART I

1. TRANSACTION CODE: A (A ADD, C CHANGE, D DELETE)

2. DOCUMENT CODE: PAF 5

3. COUNTRY ENTITY: OS/ST

4. DOCUMENT REVISION NUMBER:

5. PROJECT NUMBER (7 digits): 936-5519

6. BUREAU OFFICE: A. SYMBOL: DSB; B. CODE: 10

7. PROJECT TITLE (Maximum 40 characters): FOREST RESOURCES MANAGEMENT

8. PROJECT APPROVAL DECISION — ACTION TAKEN: A (A APPROVED, D DISAPPROVED, DE DEAUTHORIZED)

9. EST. PERIOD OF IMPLEMENTATION: YRS 0 4 QTRS

10. APPROVED BUDGET AID APPROPRIATED FUNDS ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE C. GRANT	PRIMARY TECH. CODE D. LOAN	E. 1ST FY 80 F. GRANT	E. 1ST FY 80 G. LOAN	H. 2ND FY 81 I. GRANT	H. 2ND FY 81 J. LOAN	K. 3RD FY 82 L. GRANT	K. 3RD FY 82 M. LOAN
(1) FN	750	877		1,000		500		1,000	
(2) SD	750	877		400					
(3)									
(4)									
TOTALS				1,400		500		1,000	

A. APPROPRIATION	N. 4TH FY 83 O. GRANT	N. 4TH FY 83 P. LOAN	Q. 5TH FY R. GRANT	Q. 5TH FY S. LOAN	LIFE OF PROJECT T. GRANT	LIFE OF PROJECT U. LOAN
(1) FN	800				3,700	
(2)						
(3)						
(4)						
TOTALS	800				3,700	

11. PROJECT FUNDING AUTHORIZED (ENTER APPROPRIATE CODE(S): 1 LIFE OF PROJECT, 2 INCREMENTAL LIFE OF PROJECT): A. GRANT 2; B. LOAN

C. PROJECT FUNDING AUTHORIZED THRU FY 8 3

12. INITIAL PROJECT FUNDING ALLOTMENT REQUESTED ($000)

B. ALLOTMENT REQUEST NO.

A. APPROPRIATION	C. GRANT	D. LOAN
(1) FN	1,000	
(2) SD	400	
(3)		
(4)		
TOTALS	1,400	

13. FUNDS RESERVED FOR ALLOTMENT

TYPED NAME (Chief, SER/FM/FND)

SIGNATURE

DATE

14. SOURCE/ORIGIN OF GOODS AND SERVICES: 000 ☐ 941 ☐ LOCAL ☐ OTHER ____

15. FOR AMENDMENTS, NATURE OF CHANGE PROPOSED

FOR PPC/PIAS USE ONLY	16. AUTHORIZING OFFICE SYMBOL	17. ACTION DATE (MM DD YY)	18. ACTION REFERENCE (Optional)	ACTION REFERENCE DATE (MM DD YY)

AID 1330-6 (7-78)

ANNEX D

PROJECT AUTHORIZATION AND REQUEST FOR ALLOTMENT OF FUNDS

PART II

ENTITY: Development Support Bureau

PROJECT: Forest Resources Management

PROJECT NUMBER: 936-5519

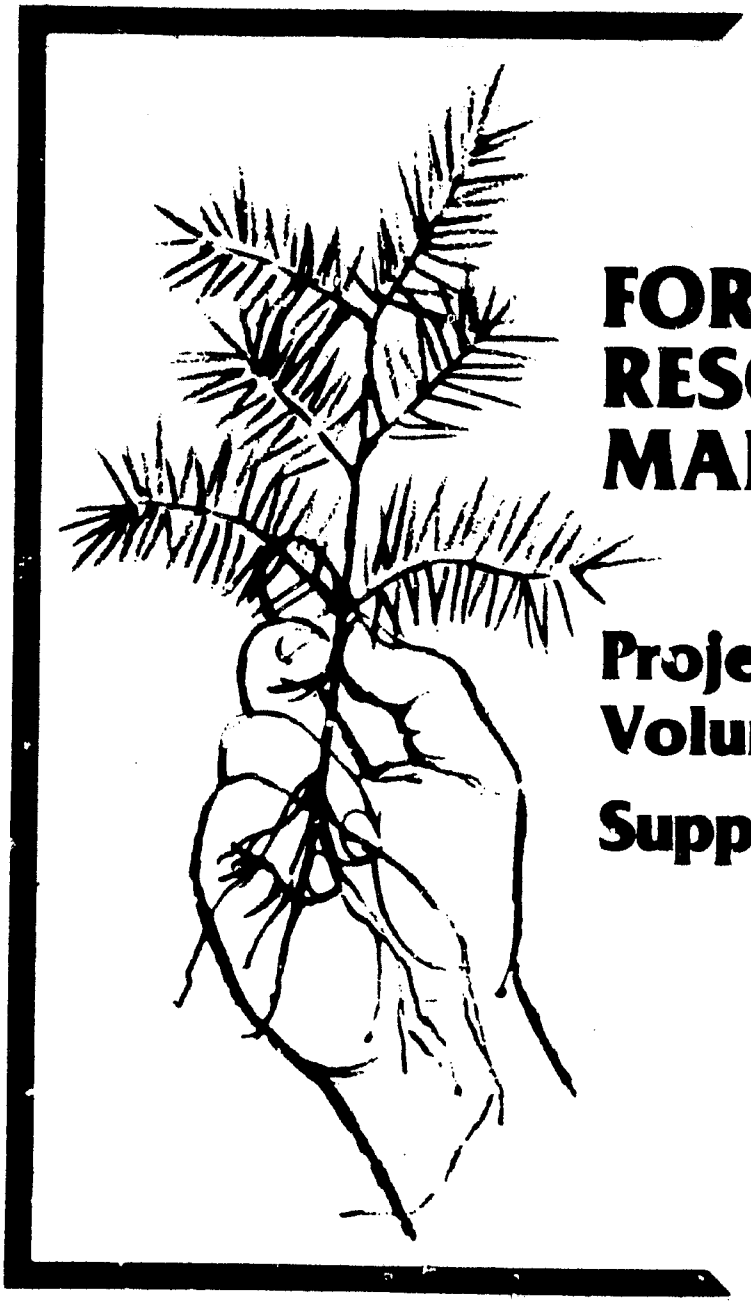
A.I.D. grant financing up to $1,400,000 in FY 80 is authorized to begin this project to develop and operate a Forest Resources Support Network and to support a Joint A.I.D./Peace Corps Forestry Initiative.

A total life of project cost of $3,700,000 is approved for incremental funding over a four year period (FY 80-83).

Signature: _____
AA/DS, Sander Levin

Date: _____

Clearance:
DS/PO:BChapnick



FOREST RESOURCES MANAGEMENT

Project Paper
Volume II
Supporting Appendices

Office of Science and Technology
Development Support Bureau
Agency for International Development
Washington, D.C. 20523

July 1980

FOREST RESOURCES MANAGEMENT

Project Paper
Volume II
Supporting Appendices

Dan Deely, Project Manager
Project Number 936-5519

Office of Science and Technology
Development Support Bureau
Agency for International Development
Washington, D.C. 20523

July 1980

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E. AA/PPC - AA/DS Joint Memorandum "Guidance on Forestry and Related Issues" dated December 13, 1979 . . . . . E-1,10

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G. A.I.D./P.C. Letter to all Field Offices Encouraging A.I.D./P.C. Collaboration dated April 1978 . . . . . G-1,4

H. A.I.D./P.C. Joint Cable to Field Offices on A.I.D./P.C. Collaboration dated May 4, 1980 . . . . . H-1

I. Peace Corps "FORESTRY INITIATIVE" Paper dated November 1979 . . . . . I-1,46

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APPENDIX A

RECENT AMENDMENTS TO THE FOREIGN ASSISTANCE ACT OF 1961(FAA) MANDATING EXPANDED FORESTRY AND RELATED NATURAL RESOURCES ASSISTANCE

1977 Amendments

The 1977 Amendments to the Foreign Assistance Act of 1961 (FAA) contained a new section, Section 118, which called upon A.I.D. to:

> "Furnish assistance ...for developing and strengthening the capability of less developed countries to protect and manage their environment and natural resources. Special efforts shall be made to maintain and where possible restore the land, vegetation, water, wildlife, and other resources upon which depend economic growth and well-being, especially that of the poor."

1978 Amendments

The 1978 Amendments to the FAA changed the general development assistance policy statement in Section 102 to include reference to environment and natural resources as a "critical problem" area:

> "United States development assistance should focus on critical problems in those functional sectors which affect the lives of the majority of the people in the developing countries; food production and nutrition; rural development and generation of gainful employment; population planning and health; environment and natural resources; and education, development administration, and human resources development."

Section 103 of the FAA was amended in 1978 to include specific reference to forestry and soil conservation:

> "Assistance...shall be used primarily for activities which are specifically designed to increase the productivity and income of the rural poor, through such means as ...stimulation of small, labor intensive enterprises in rural towns; improvement of marketing facilities and systems; expansion of rural infrastructure and utilities such as farm-to-market roads, water management systems, land improvement, energy, and storage facilities; establishment of more equitable and more secure land tenure arrangements; and creation and strengthening of systems to provide other services and supplies needed by farmers, such as extension, research, training,

Note: Underlining emphasis added.

fertilizer, water, forestry, soil conservation, and improved seed, in ways which assure access to them by small farmers."

Section 118 was expanded by the 1978 Amendments to include a call for environmental assessments of development assistance efforts and evaluations of developing country environmental and natural resource problems and capabilities for solving them:

> "In carrying out programs under this chapter, the President shall take into consideration the environmental consequences of development actions.
>
> "In furtherance of the purposes of this section, the President shall carry out studies to identify the major environment and natural resource problems, and the institutional capabilities to solve those problems, which exist in developing countries. The results of these studies shall be reported to the Congress by March 1, 1979."

The 1978 Amendments to the FAA also called upon A.I.D. under Section 119 to become involved with fuelwood and other renewable energy sources:

> "Furnish assistance... for cooperative programs with developing countries in energy production and conservation with particular emphasis on programs in research and development, and use of small-scale, decentralized, renewable energy sources for rural areas carried out as integrated parts of rural development efforts in accordance with Section 103...".

1979 Amendments

Cooperative programs with developing countries in energy production and conservation were further authorized under the 1979 amendments to Section 119 to:

> "...include research on, and the development, demonstration, and application of suitable energy technologies (including use of wood); analysis of energy use, needs, and resources; training and institutional development; and scientific interchange."

Section 119 dealing with Renewable and Nonconventional Energy Technologies was further expanded by the 1979 Amendments to the FAA by adding the following subsection:

Note: Underlining emphasis added.

"Inadequate access by the poor to energy sources as well as the prospect of depleted fossil fuel reserves and higher energy prices require an enhanced effort to expand the energy resources of developing countries, primarily through greater emphasis on renewable sources. Renewable and decentralized energy technologies have particular applicability for the poor, especially in rural areas."

The 1979 Amendments to FAA also contained under Section 103(b), the most explicit authorization language in the history of U. S. foreign assistance legislation for providing bilateral assistance to deal with forest resource depletion and associated soil and water resource deterioration:

"The Congress recognizes that the accelerating loss of forests and tree cover in developing countries undermines and offsets efforts to improve agricultural production and nutrition and otherwise to meet the basic human needs of the poor. Deforestation results in increased flooding, reduction in water supply for agricultural capacity, loss of firewood and needed wood products, and loss of valuable plants and animals. In order to maintain and increase forest resources, the President is authorized to provide assistance under this section for forestry projects which are essential to fulfill the fundamental purposes of this section. Emphasis shall be given to community woodlots, agroforestry, reforestation, protection of watershed forests, and more effective forest management."

Note: Underlining emphasis added.

APPENDIX B

DEFORESTATION

The Committee finds that in recent years the growing dependence on wood for heating and cooking by the world's poor has led to overcutting, deforestation, erosion and loss of available agricultural land in many parts of the developing world. Man has deforested one third of South America's native forests, one half of Africa's and two thirds of Southeast Asia's. Without adequate energy available at affordable prices, the basic needs of the world's poor for food, water, shelter, clothing and jobs will remain unsatisfied and political stability will be jeopardized. The Committee has found that large central generation and long distance transmission and distribution systems are too costly to meet rural energy needs by means of a national grid. Only one out of eight rural inhabitants would be able to afford electricity by the end of this century. In fact non-commercial fuels still supply about half the total energy in developing countries and all but a seventh in rural sectors.

Although a large potential exists for the contribution of renewable energy resources toward economic development and meeting basic needs of the world's poor, the Committee believes that recent initiatives by the Agency for International Development and the international financial institutions seem in no way commensurate with the scale of the problem for a comprehensive program is needed to obtain long-run independence of fossil fuel.

As part of an overall program to promote the widespread introduction of renewable energy technologies in rural areas, the Committee urges a comprehensive strategy on tropical forestry, jointly developed by the Department of State, AID, the Department of Agriculture, the Department of Interior, Peace Corps, the National Science Foundation, and the Council on Environmental Quality. It should identify priority programs and activities for U.S. bilateral and multilateral support, outline fields in which the United States has special competence, define the types of potential destructive actions which should be avoided or modified in tropical forests ecoysystems, address the matter of responsibilities of U.S. firms, agencies, and institutions operating abroad, enunciate research, development and demonstration and training needs.

The Committee is particularly concerned that AID has not set priorities in its forestry projects. It is not clear what either AID or the State Department plan to do in countries which might lose their remaining forests within the next 5 or 10 years as compared with those countries which might still have considerable areas of forest by the

end of the century. The rain forests of the Philippines and Peninsula Malaysia may well be logged over and grossly disrupted as early as 1985. In Haiti over three quarters of the country's forests have been leveled over the past 15 years, primarily to make charcoal for cooking and heating. A rapid rate of deforestation is occurring in Ghana, Nigeria and the Ivory Coast. Such countries should be assisted in developing far reaching rural energy-reforestation programs including village woodlots, improved stoves, the continued development of fossil fuel resources and renewable energy resources and even renewable energy plantations.

The Committee also urges AID to increase its staff capabilities in forestry, to plan for and include reforestation activities in all future rural development programs, to address forest management considerations within the framework of their environmental assessment policies, procedures and reviews and examine all of its current rural development projects to insure that, whenever appropriate they incorporate a forestry/firewood component.

The Committee cautions AID that a wide range of well-intentioned development programs including beef export promotion, population resettlement and the extension and upgrading of rural roads has accelerated deforestration in many parts of the developing world.

Since many of the solutions to deforestation involve small scale but widespread efforts, the Committee is of the opinion that the Peace Corps could also form a very important component of any U.S. initiative.

As far as the multilateral aid organizations are concerned the Department of Treasury and the Department of State should use their influence in the Development Banks, in regional development banks and with other bilateral donors to call attention to the firewood problem and urge its solution by these organizations.

APPENDIX C

DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D.C. 20523

September 19, 1979

MEMORANDUM FOR THE PRESIDENT

Subject: Response to Directive of August 2, 1979

We welcome your memorandum of August 2, 1979 directing that we evaluate our developmental programs against the specific objectives that promote an improved natural resource base in the developing countries.

We agree that there is much that the United States can do about the problem of deforestation, which is no longer perceived as an abstract environmental concern, but instead one of considerable direct importance to poor people in developing countries and to mankind in general. Both A.I.D. and Peace Corps have made significant progress in helping reduce the effects of deforestation and improving already degraded areas. We expect our support to increase as leaders of other countries recognize the importance of maintaining a sound natural resource base.

The following examples of A.I.D and Peace Corps activities and our expectations for the future exemplify our concern and involvement:

- In Latin America, several projects are underway including a $10.8 million watershed management project in Panama, and a $2 million reforestation project in Peru. Forthcoming activities include a $500,000 conservation and environmental protection project in Bolivia, a $225,000 program of environmental improvement in El Salvador, and a $9.8 million natural resource project in Costa Rica. Agro-forestry, village woodlots, alternative fuels and land reclamation activities are also being carried out in some countries in Africa, Asia, and the Near East.

- Significant steps have been taken in Africa to encourage cooperative efforts between our two agencies for new initiatives on village woodlots and other firewood production efforts.

An A.I.D. workshop this fall will focus attention on energy, forestry and environmental priorities in Asian countries.

- Peace Corps Volunteers have been working to achieve grassroots solutions to the problems of deforestation and environmental degradation for nearly nineteen years. Presently, approximately 500 volunteers are working in over forty countries addressing natural resource and conservation issues. A substantial portion of this group is made up of volunteers working directly in forestry and reforestation.

- As a result of the importance of the problem, Peace Corps is now defining an expanded major initiative to assist in identifying appropriate solutions to the world forestry problem. This should lead to a major Peace Corps/A.I.D. collaborative effort, building on our experience in the Sahel, a Natural Resource Conservation project in El Salvador, and the CARE/Peace Corps/A.I.D. agroforestry project in Chad.

- In addition, the relationship between deforestation and the need for the development of alternative energy sources is clear to both our agencies. In response to this need, Peace Corps has begun implementation of a comprehensive energy use evaluation and alternative energy development project funded by A.I.D. These village level programs will train volunteers to identify and respond to specific energy needs of third world people in an effort to find alternative sources of energy and enhance current conservation techniques.

In the Fiscal Year 1981 Budget, A.I.D.and Peace Corps will be seeking your support for these and similar initiatives in renewable energy, forestry, and natural resource conservation.

We appreciate your recognition of the importance of these subjects to development assistance and will keep you informed of our progress in carrying out your directive.

Richard F. Celeste
Director
Peace Corps

Douglas J. Bennet, Jr.
Administrator
Agency for International Development

APPENDIX D

AIRGRAM

DEPARTMENT OF STATE

UNCLASSIFIED

CLASSIFICATION

210

APPENDIX D
Page 1 of 8

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TO- AIDTO CIRCULAR A 210 X

DATE SENT
9/22/79

FROM - AID/WASHINGTON
E.O. 11652: N/A
SUBJECT - Preservation of Forests

REFERENCE -
—

SUMMARY: Natural resource problems and needs in developing countries must be considered in formulating Agency programs. A recent memorandum from the President directs that A.I.D. evaluate existing efforts and give high priority to programs which would advance the following objectives:

- Necessary preservation of natural forest ecosystems and their rich complex of plant and animal life;
- multiple uses of highly diverse tropical forests including management of natural stands, development of ecologically sound forest plantations, combined agriculture and forestry;
- increasing yields in family-scale tropical agriculture to relieve pressures on forest lands that are not suitable for cultivation;
- developing integrated projects for reforestation, more efficient fuelwood use, and alternative energy sources.

The purpose of this message is to:

- Acquaint you with the concerns of the President and the Congress;

PAGE 1 OF PAGES 6

DRAFTED BY	OFFICE	PHONE NO.	DATE	APPROVED BY
ALBERT C. PRINTZ, JR. ENVIR.AFFAIRS COORD.	PPC	21036	8/30/79	AA/PPC:ALEXANDER SHAKOW

AID AND OTHER CLEARANCES
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PPC/PDPR:BStdman(Phone) UNCLASSIFIED PM/TD:DCreedon(Phone) PPC/PBLRogers(Pho
LAC/DR:~~RHausHammer~~ROtto(~~Subst~~) SER/MP:FAllen

CLASSIFICATION

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MCGREGOR & WERNER, INC., WASHINGTON, D.C. 20012

- Stress the necessity of discussions with host country officials on the subject of natural resources as a part of the CDSS process;

- Advise as to what is underway in the area of policy formulation and to submit your views.

A. INTRODUCTION: Over the past year increased attention has been directed to the rapid disappearance of forests in both humid and semi-arid tropics.

Recognizing the complex causes and multiple effects of such loss of vegetative cover, State and A.I.D. sponsored a Conference on Tropical Deforestation in June, 1978 to explore this concern. Proceedings of the Conference were distributed to all posts by Circular Airgram AIDTO A-10, January 11, 1979. Follow-up has included the formation of both Interagency and Non-Governmental Organization(NGO) working groups. The NGO Working Group presented several strong recommendations to the A.I.D. Administrator in early June, suggesting increased efforts in research and development, in institutional support, and in the incorporation of forestry concerns into international meetings, training programs, and the projects development process. The Interagency Working Group's recommendations are due in the near future.

A.I.D. is participating in the Interagency Working Group and has begun to address the problems of deforestation and reforestation in a number of contexts. The Africa Bureau held conferences on the subject and provided program guidance (Airgram 157) on village firewood production and cooking fuels. The Asia Bureau will convene a Conference this fall on Energy, Environment and Forestry from which will come a better sense of problems, priorities, necessary resources, other donor activities, country experiences and constraints, etc. The LAC Bureau has numerous precedential projects underway which have resulted in part, from the concern of Country leaders of the need for natural resource conservation initiatives.

An Agency position paper is being drafted which will spell out our responsibilities for forests and associated natural resources, provide a basis for

analyzing the many causes of deforestation and identify potential areas for A.I.D. intervention. An inventory of Agency-wide activities will be included with sufficient detail to permit those unfamiliar with them to better understand the nature of the activities, their impacts and how they were developed. This should facilitate Mission's discussions about similar programs with host government officials.

B. Examination of Country Needs:

In most countries, baseline data are limited and in many cases, unreliable. Natural resource inventories have not been undertaken and important environmental trends, while postulated, remain undocumented. The information regarding institutions in a country is also incomplete. While superficial catalogues of agencies laws, and facilities may exist, valid assessments of their effectiveness have been undertaken only rarely.

Such information is essential to gain a perspective of the country's situation in advance of the preparation of the CDSS. The CDSS then would specifically address the environmental and natural resource issues within a country to the extent that they affect the country's equitable growth, eradication of poverty, and the fulfillment of the basic human needs of the poor. It would then facilitate judgment as to how A.I.D. can best encourage and support the establishment or strengthening of host government environmental and natural resource management capability and which projects of the type newly authorized under sections 103 & 118 of the F.A.A. are appropriate.

The process of gathering relevant natural resource and environmental information for the CDSS will produce, in effect, what is often called an "environmental profile" of the country. This profile, more of a process than a definitive document, will be useful to the Agency in a number of ways:

- It will identify useful information sources, including indigenous and foreign institutions and individuals with country specific experience in appropriate environmental specialities.

- It can provide the basis for a dialogue with country officials on the need for more effective environmental management policies and programs, environmental resource management legislation specifically tailored to the country's own circumstances, and possibly the establishment of new institutional arrangements.

- It can furnish more adequate information upon which to determine the potentially adverse effect of existing and proposed development policies and projects on long term resource productivity. It will help in the formulation of strategies for avoiding or minimizing such effects.

- It can serve as a basis for formulating projects specifically addressed to environmental and natural resource problems of the country, and the basic human and social forces causing a loss of the natural resources.

To facilitate the initiation of this "profiling process" DSB has implemented contracts with the Library of Congress and the University of Arizona to prepare draft environmental reports containing a review of existing literature on the legal, institutional, and technical aspects of environmental and natural resource problems of 25 selected countries. This material should be of help to missions in initiating discussions on natural resource/environmental problems, causes, and needs with country officials. Eight have been completed and are being distributed for use by the Missions. Volume II of the recent A.I.D. Report to Congress on Environmental and Natural Resource Management in Developing Countries contains two examples of these Reports. This initial data, jointly evaluated and supplemented by appropriate country and Mission personnel can be assimilated into the ongoing CDSS process, thus permitting environmental and natural resource activities to become a more important element of the Agency's assistance strategy for the country.

Continued congressional attention to preservation and responsible development of natural resources gives added impetus to ensuring that the subject is carefully explored with governments and fully incorporated in the CDSS submissions due in January, 1981. Improvements in "needs" identification should begin showing up in the January, 1980 CDSS Submissions.

Some Missions are already well along toward identifying problems and developing programs to meet these needs See attached Panama 05948. In other instances (Costa Rica and Indonesia) the government has already identified its priorities in the natural resources area and has communicated these to all donors.

C. Action Requested:

Many techniques and approaches may be used to define the problems for presentation in the CDSS and to develop identifiable projects consistent with these needs and country priorities. This message does not therefore call for the automatic initiation of any one specific type of reforestation, production, management or preservation program but instead, confirms the necessity of ensuring that the Missions pursue this as a subject for discussions with the host government. These discussions may lead in some instances to new initiatives in the FY 81 and subsequent budget years.

Where possible, Missions should work closely with Peace Corps staff in these endeavors. Peace Corps may have or can acquire the scarce skills to properly design and initiate a project that we fund. Discussions underway in AID/W with Peace Corps may result in further instructions on areas where a closer working relationship may be developed.

Missions realize that any new program emphasis has wide ranging implications. Since an evaluation of resource needs for any significant A.I.D. initiative in addressing deforestation is being undertaken with DSB leadership, Missions are encouraged to communicate any assessment of funding and personnel implications from their persepctive. DSB and the Regional Bureaus are defining available expertise to provide field support services which includes six new IQCs in the area of environment and natural

AIRGRAM CONTINUATION

DEPARTMENT OF STATE

AIRGRAM

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resources (list attached). Four IDI's with background in the natural resource/forestry field were included in the current class based on anticipated program emphasis. Missions are urged to consider future personnel needs and to communicate these to the Training and Development Division of Personnel Management.

ATTACHMENTS:

- Presidential Memorandum of August 2, 1979
- Panama 05948
- Congressional Report HR 96-273 (excerpted)
- List of New I.Q.Cs.

CABLEROOM SEND LIST G

SEND NAIROBI FOR USAID AND RESDO/EA
ACCRA FOR USAID AND RPO
DAR ES SALAAM FOR USAID AND
RDOEA/ARUSHA
GUATEMALA FOR USAID AND ROCAP
BANGKOK FOR USOM AND RED

VANCE

Indefinite Quantity Contractors (IQCs)
Environment and Natural Resources

(July, 1979)

1. Harza Engineering Company
   150 South Wacker Drive
   Chicago, Illinois 60606

   Project Manager: Dr. Brian J. Gallagher
   Tel: 312/855-7000

2. Mathtech, Inc. (University of Georgia)
   2220 Parkland Drive, N.E.
   Atlanta, Georgia 30345

   Project Manager: Stephen G. Schmeiser
   Tel: 404/491-0366

3. JRB Associates, Inc.
   8400 Westpark Drive
   McLean, Virginia 22101

   Project Manager: Dr. Paul Campanella
   Tel: 703/821-4600

4. Environmental Consultants Inc.
   14325 Proton Road
   Dallas, Texas 75234

   Project Manager: Jack Donaldson or Hugh Ward
   Tel: 214/233-8261

5. International Science and Technology Institute, Inc.
   1129 20th Street, N.W., Suite 404
   Washington, D.C. 20036

   Project Manager: Nihal W. Goonewardene
   Tel: 202/466-7290

6. Pro-Lysts, Inc.
   University Station
   Box 3761
   Eugene, Oregon 97403

   Project Manager: Charles Dalton
   Tel: 503/485-6877

THE WHITE HOUSE

WASHINGTON

August 2, 1979

MEMORANDUM FOR

THE ADMINISTRATOR OF THE AGENCY FOR INTERNATIONAL DEVELOPMENT
THE DIRECTOR OF ACTION

In my Environmental Message of August 2, 1979, I expressed concern about the rapid disappearance of the earth's forests, especially in the tropics and subtropics. I believe there is much that the United States can do in our development assistance to other nations to contribute to environmentally sound care and management of the earth's forests and to the well-being of people affected by them.

I am directing you to evaluate your development assistance programs in light of the following objectives and to give high priority to programs which would advance these objectives:

- necessary preservation of natural forest ecosystems and their rich complex of plant and animal life;
- multiple uses of highly diverse tropical forests, including management of natural stands, development of ecologically sound forest plantations, and combined agriculture and forestry;
- increasing yields in family-scale tropical agriculture to relieve pressures on forest lands that are not suitable for cultivation;
- developing integrated projects for reforestation, more efficient fuelwood use, and alternative energy sources.

Please give this assignment your immediate attention.

Jimmy Carter

APPENDIX E

UNITED STATES INTERNATIONAL DEVELOPMENT COOPERATION AGENCY
[redacted]
AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D.C. 20523

December 13, 1979

MEMORANDUM

TO: ALL A.I.D. POSTS

FROM: AA/PPC, Alexander Shakow
AA/DS, Sander M. Levin

SUBJECT: Guidance on Forestry and Related Issues

Over the past year Missions have received numerous documents and reports of meetings focused on the problems related to deforestation along with instructions to begin looking at individual country situations as a part of the CDSS process. All of these are a necessary part of a process leading to Agency policy dealing with the problems of deforestation and natural resource depletion.

The attached A.I.D. Guidance on Forestry and Related Issues constitutes one more step toward the formation of a clear strategy. It outlines opportunities for Missions to examine the extent to which deforestation and the loss of vegetative cover constitute an impediment to development, as well as the commitment of the country to alleviating the causes and effects. This is a request to Missions to start a dialogue with host governments and other donors where this has not been done and to build on and expand activities which have already been initiated.

Also attached is a new paper on Peace Corps Forestry Initiatives. It is being sent along with A.I.D. Guidance for two reasons: (1) to acquaint you with the type of initiatives which PC feels are appropriate to their goals and experience, and (2) to provide some further insight to the difficulties encountered in implementing certain types of projects.

The A.I.D. Guidance presents a wide range of objectives and appropriate initiatives. The Peace Corps paper focuses only on those which are appropriate for Peace Corps involvement. A.I.D. Missions in countries where the Peace Corps is located should discuss both papers with the Peace Corps staff, examining possible

new activities as well as collaboration on any existing Peace Corps projects. For Missions where there is no Peace Corps the details of this paper should prove helpful, especially if A.I.D. or PVOs should propose similar initiatives in the future. The Peace Corps welcomes comments and suggestions on their paper.

Missions are requested to report to A.I.D./W on those countries where deforestation and loss of vegetative cover constitutes a serious threat to other development activities and where there is an awareness and a commitment on the part of a country to bring about improvements in the situation. This will give us better information on the extent of the problems, the locations most severely affected and enable A.I.D./W to sort out the necessary financial and technical resources that may have to be committed.

We will soon provide you with an annotated bibliography of reference materials on this subject through the Office of Development Information and Utilization (DS/DIU). Included will be details on activities already completed, underway or planned by A.I.D. that might prove helpful to those preparing similar initiatives. As this inventory of activities becomes better defined it will provide useful information to others, both inside and outside A.I.D., particularly as the U.S. begins to define its contributions to a global effort to deal with problems related to deforestation.

Attachments:

1. Guidance on Forestry and Related Issues
2. Peace Corps Forestry Initiative

UNITED STATES INTERNATIONAL DEVELOPMENT COOPERATION AGENCY
AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON D.C. 20523

GUIDANCE ON FORESTRY AND RELATED ISSUES
December, 1979

I. INTRODUCTION: The President will soon receive a report outlining a policy, strategy, and program framework which the USG should pursue to cope with problems related to tropical deforestation. One of the major conclusions of the report, that A.I.D. along with other Federal agencies is helping to prepare, is that accelerated deforestation is rapidly depriving the rural poor of resources needed to meet basic human needs -- food, fuel and shelter. A.I.D. intends to help developing countries meet the challenge posed by deforestation and related problems. This guidance outlines a range of objectives and program options which Missions might take, either bilaterally or in concert with other donors, which will be responsive in a meaningful way to expected instructions from the President. A copy of the Report to the President will be provided as soon as available. This message provides background information and supplements AIDTO Circular A-210 on Preservation of Forests and elements of the Agricultural Development Policy Paper of June 3, 1978. It also outlines available A.I.D./W technical resources should Missions seek assistance and summarizes current activities in this field.

II. BACKGROUND: "Deforestation" is a development problem that extends beyond the loss of tropical rain forests. Forests, woodlands and grasslands provide people with essential food, forage, fuel, shelter, a wide range of commercially valuable products, employment opportunities and environmental benefits. These resources are a vast reserve for current and future generations--a resource that is being jeopardized in many parts of the world by the proliferation of unsustainable patterns of use and an inappropriate allocation of scarce human and capital resources often resulting in an inequitable distribution of income adversely affecting the economic livelihood of the poor.

Planned and unplanned use of forests, woodlands, scrub and savanna always involves difficult trade-offs. The gain of some immediate benefits--timber, fuelwood, space for planting food crops--must be balanced against the loss of values needed over the long term--soil fertility, water quality and quantity, genetic resources, ecological diversity, wildlife and aboriginal habitats, future commercial development, tourism and recreation.

Missions should be aware that in addition to the technical-horticultural aspects of tree planting (soil fertility and pH, water availability climatic conditions, altitude, appropriate species, diversity), there are other important

logistic and managerial activities that must be considered. Solutions to overcome deforestation must also incorporate social-cultural-economic-political-environmental considerations if natural forest conservation and reforestation activities are to succeed.

Our programs must be designed to meet the immediate food and fuel needs of the population by dealing with the causes of resource deterioration (fuel; agricultural land for food, pasture and fodder; and forest products), as well as with symptoms of the problem (tree loss, erosion, declining soil fertility). Careful assessment of individual cases will assure that no potential cause--and therefore no potential remedy--is unwittingly excluded from consideration. It should be realized that since energy/forestry/environmental components of projects cannot be separated clearly, the pursuit of some of the activities identified in this message will also be consistent with the high priority the Agency is placing upon energy programs.

Authority to address these problems is contained in the Foreign Assistance Act of 1961 as amended by the Congress in 1977, 1978 and 1979; specifically sections 102, 103, 103b, 118 and 119. The law authorizes A.I.D. to provide assistance with problems of environment and natural resources, forestry, soil conservation and water management, land use improvement, wildlife and renewable energy, in order to maintain resources essential to meeting basic human needs.

III. POSSIBLE PROGRAM ACTIVITIES: Missions should consult with host countries and help establish the major causes of deforestation and related problems, and determine their magnitude, areal extent, urgency and possible corrective actions. Since most restoration efforts are costly, both in terms of financial and technical resources, each Mission should ensure effective coordination of its forestry activities. One approach is to promote the formation of a "natural resource coordinating committee, with representation from other donor organizations and relevant host country agencies which will optimize the use of limited resources and enable Missions and developing countries to address problems beyond the capability of any single agency.

Varying degrees of awareness exist in LDC governments. Some such as Haiti, Costa Rica, Nepal, Panama, and Upper Volta have developed programs and obtained U.S. assistance. Others are trying to define the problems before designing specific activities. While the causes of deforestation and devegetation are different enough to require country-specific approaches, no

country is immune from the problem of expanding populations placing increasing stress on natural systems. Because of the diversity of problems and commitments, Missions should consider these broad areas of program acitivity:

- Analysis, planning and policy formulation (including natural resource inventories, and land-use assessments, capability classification, tenure security and legislation);

- Institution-building for natural resource management and conservation;

- Incorporation of forestry activities into agricultural and rural development programs;

- Afforestation or reforestation, and protecting natural/ induced vegetation;

- Appropriate and alternative energy;

There are a number of means by which assistance may be provided:

- Collaboration with other bilateral or multilateral donors or direct assistance to host countries;

- Provision of technical assistance with an emphasis on multidisciplinary teams;

- Cooperation with the Peace Corps and Private Voluntary Organizations;

- Participation in consortia capable of sponsoring regional approaches to natural resource management and development;

- Provision of PL 480, Title II and Title III support.

The nature of deforestation and related resource problems suggests that a wide range of objectives and initiatives may need to be examined by Missions. This may be appropriate as a part of the ongoing CDSS process or as a separate element of an "environmental profile" as noted in AIDTO Circular A-210. Several possible initiatives have been associated with five basic objectives in order to demonstrate how some activities may provide direct as well as indirect support. Some initiatives could support several of the listed objectives. Missions may also be able to suggest others based on an assessment of country circumstance and needs. The objectives include raising the level of host country awareness, direct forestry improvements, reduction of pressures causing deforestation and natural resource degradation, and improvement in institutional capabilities to manage natural resources.

Each Mission will have to consult with the country on their needs and priorities and then select appropriate objectives and initiatives. It may be that only one of the initiatives can be given the level of attention needed or that several must be addressed simultaneously if results are to be achieved, but in any event, the approach by A.I.D. and the host country in planning initiatives must begin with a conscious effort to expand planning horizons to suit the long-term and ultimately large-scale process of natural resource development and management.

1. OBJECTIVE: To raise host government awareness of the problem of deforestation and natural resource degradation in order to increase their commitment of resources, both human and financial, to provide sustainable natural resource systems in order to meet basic human needs.

- Help assess actual loss rates and analyze causes of deforestation to determine the magnitude and types of efforts needed.

- Develop a comprehensive capability to survey forest resources and to monitor forest cover changes through both ground and remote-sensing technologies.

- Assess with the host government, the economic consequences of existing forestry related practices and land-use patterns, including the associated indirect costs of deforestation, e.g. flooding,soil loss, siltation, disruption of agricultural cycles, rising costs of fuelwood and other forest forest products,loss of medicinal trees, bushes and wildlife.

- Help develop a country strategy to systematically deal with deforestation and associated forest land and resource use problems.

2. OBJECTIVE: To provide support for protection, regeneration, production and restoration efforts.

- Help identify, protect and manage critical catchments and watersheds, areas which contain representative genetic materials, and unique or fragile environments.

- Develop planting materials and technologies and train people for a variety of forestry activities which can be locally initiated and controlled: tree plantations, agroforestry, woodlots, and private holding tree planting.

- Assist in developing income generating programs for the rural poor based upon managing and marketing forest products (plant and animal) on a sustainable basis so that there is a local stake in maintaining natural and planted forests.

- Support efforts to learn and record local knowledge of plants and animals and the scientific basis for indigenous resource practices.

- Initiate, support and expand existing programs of applied research in agroforestry to identify, screen and evaluate trees and plants having characteristics useful to and aimed at solving problems of the rural poor: fast-growing, regeneration by coppicing, multi-purpose (wood, forage, fertilizer and soil fertility improvements) which complement food crops, or which provide other economic and environmental benefits.

- Consider Food for Work (Title II) and Food for Development (Title III) to provide the commodity support and local currencies needed to finance the substantial amounts of labor that might be needed in any large-scale efforts to restore degraded lands and critical watersheds.

- Encourage governments to implement necessary socio-economic and administrative changes, such as land tenure security, so that greater local participation will be forthcoming.

3. OBJECTIVE: To ease pressures on current use of forests and other vegetation by developing renewable and alternative sources of energy and appropriate and alternative, sustainable cropping systems for the rural poor.

- Support village woodlots or urban tree plantations where there is an active pattern of communal landholding or communal oversight of activities. The necessity for involving the women of the community (who usually gather and utilize the fuelwood) in the identification, design, and implementation of such projects cannot be over-stressed.

- Increase productivity of currently cultivated land to reduce the pressure of expanding populations to use forest, savannas and marginal lands for agricultural expansion. This approach needs to be initiated with caution, looking at both the intrinsic capability of the land to support intensified agricultural production and the energy requirements (including fertilizers and pesticides) to sustain it.

- Develop alternatives and renewable energy sources including substitutes for wood fuel and charcoal. Also consider the field testing of solar devices with potential for drying grain, fish and tobacco as well as more efficient low-cost stoves and improved kilns for charcoal production.

- Utilize the concept of agroforestry for the simultaneous and stabilized production of food, forage, and fuelwood especially in areas where shifting cultivation is practiced.

- Evaluate possibilities for short-term subsidy programs for alternative fuels, especially for poor consumers. Such programs are, however, expensive and difficult to terminate.

- Consider, if agro-forestry not appropriate, short-term supplementary financing of commodity support to compensate owners for the loss of productive assets. The timescale of forestry efforts means that land which is replanted to trees is withdrawn from other forms of cultivation for long periods of time.

4. OBJECTIVE: To increase utilization efficiency of forest and other natural resources through: (1) technological improvements--in production, extraction, processing and end use,-- and (2) more effective means of controlling the use rates of existing resources.

- Develop local capability to formulate solutions which are specific to particular environments through long-term training at professional levels.

- Provide short-term training programs in tree planting, propagation and harvesting. A.I.D.'s policies focus on community level training and support of community level efforts through extension services for forestry and soil/water conservation.

- Support public education on resource conservation to provide stimuli for effective community or individual participation in natural resource use through Forestry for Local Community Development (FLCD) and school or backyard tree nurseries.

- Consider small-scale or cottage industry development to utilize "noncommercial" species of trees remaining after selective harvesting for commercial purposes. This approach is limited and must be coupled with appropriate reforestation and environmental controls to ensure that such intensive use of the forest does not create environmental problems of its own.

5. OBJECTIVE: To assist governments to strengthen their institutional capability to manage natural resources through improved planning and regulation of lands for agriculture, energy and other uses at the farm, community and regional levels.

- Upgrade the effectiveness of host country forestry personnel to manage existing reserves by providing appropriate training and equipment.

- Provide technical assistance to host country agencies in analysis, planning, legislation and policy formulation, and environmental assessment activities.

- Encourage host governments to initiate regenerative programs for lands which have deteroriated due to misuse.

- Encourage and assist host governments to develop paraprofessional personnel able to advise small and marginal farmers on maintenance of existing tree crops and integration of tree and other crops in economically viable cropping patterns.

- Encourage and assist host governments to develop and utilize local institutions to build community involvement and capacity for improved resource planning and management.

- Encourage and assist host governments to develop and utilize regional institutions to strengthen system-based oriented (e.g., river basins or catchment areas) planning and management of natural resources.

While this message has focused on activities that might be undertaken in recognition of an identified need, the Missions must realize that many traditional development activities can lead to deforestation, including, land clearing for agriculture and cattle grazing, road construction (especially into unexploited areas), and population resettlement schemes. In these and similar activities, the Missions must ensure that A.I.D. activities do not cause unnecessary deforestation and that the environmental examination carefully evaluates and concludes that the cleared lands will sustain the intended uses and that the activity will go forward only if resource regeneration, or other sustainable use components are incorporated into the project. Missions should also be examining all ongoing and proposed major projects (e.g. integrated rural/agricultural development, irrigation, rural water supply, fish pond development, range management in arid areas) to ensure that appropriate elements such as erosion controls (windbreaks and vegetative plantings), woodlots, watershed protection, training, and nurseries are fully incorporated.

There are several technical problems related to projects in this area that must be overcome, but no project will be successful if technical criteria alone are examined. The host government and local communities must see the need for such activities and be willing to take the steps necessary to reduce natural resource depletion and destructive land-use patterns. Until that level of awareness and commitment is reached, our attention should be directed toward assessment type activities and those designed to upgrade the host country planning capabilities. Wherever the commitment exists, it should be supported and expanded.

Finally, it should be recognized that the economic and social benefits of projects in natural resource conservation, preservation and development may not be apparent in the short term. This should not deter Missions from proposing such activities, which will normally have a three to five year project life span. The measurable benefits when a project terminates may be in terms of institutional development, changed practice, reduced levels of environmental degradation; and these will be sufficient to posit as objectives when proposing activities in this area. It may well be that follow-on project support will be justified in individual cases; the long range nature of the problem, and the need to sustain and support an equivalent long term commitment by the host country, may argue for second stage projects.

IV. AID/W Resources: An interdisciplinary mode of intervention is necessary because of the complexity of the deforestation problem. In addition to the resources normally available from their regional offices, Missions can tap skills and expertise of Development Support Bureau personnel, programs and projects. These include: (1) IQC's in Environment and Natural Resources, (2) Several ongoing and planned DSB projects, (3) Consulting services from direct-hire and IPA personnel.

Six newly arranged IQC contractors in Environment and Natural Resources can provide some expertise in forestry. The list of IQC firms was attached to AIRGRAM A-210. IQC's and ongoing projects in other related subject areas such as Agriculture, Energy, or Rural Development can also provide needed expertise.

A number of DSB personnel and IDIs with formal training in forestry can be made available for support of Mission needs. An AID/W Forest Resource Group has been proposed to serve as a key point of contact on forestry matters. Other personnel having knowledge of related fields such as remote sensing, environment, hydrology, agronomy, soils management, energy, land use planning, land tenure, local organization, and community participation can also be made available in response to specific Mission requests. For some of the identified initiatives, personnel from the Peace Corps and other agencies, as well as Private and Voluntary Organizations, might be available.

APPENDIX F

UNITED STATES INTERNATIONAL DEVELOPMENT COOPERATION AGENCY
AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D.C. 20523

JAN 2 1980

THE ADMINISTRATOR

MEMORANDUM FOR THE HONORABLE LUCY WILSON BENSON
Under Secretary for Security Assistance,
Science and Technology
Department of State

SUBJECT: Final Draft Report of the U.S. Interagency Task Force on Tropical Forests

I am herein providing official clearance on behalf of the Agency for International Development (A.I.D.) for the Final Draft Report (dated November 28, 1979) of the Interagency Task Force on Tropical Forests.

Section 103(b) of the Foreign Assistance Act, as recently amended by the International Development Cooperation Act of 1979, gives the Agency a clear mandate for greater involvement in forestry projects.

A.I.D. joins with other federal government agencies and U.S. interests in lending strong support to the recommendations of the Task Force.

Douglas J. Bennet, Jr.

APPENDIX G

APPENDIX G

Agency for International Development & Peace Corps

April 3, 1978

Dear Director:

Since the Peace Corps was started there has been a strong sense that it should not be too close to the official U. S. establishment overseas, including AID. There is a good deal to be said for this concern on the Peace Corps' part, and we both believe that the very special character of the Peace Corps must not be lost. But we also believe there is a great deal more that Peace Corps and AID can do together to foster our mutual goals--goals which are much closer together now that AID's "new directions" legislation has really taken hold. We now share a common interest and concern in responding to basic human needs in such areas as rural development, health, and education. In close collaboration with the host government, AID (directly or through a PVO or other source) can furnish the necessary financial resources and senior technical capability, while the Peace Corps can provide needed skills at the local or regional level to help ensure lasting project success.

This letter is intended to spur AID and Peace Corps field directors to accelerate and expand the effort to find constructive ways of enhancing the effectiveness of our programs--just as we have already started to do in Washington. And the process should be eased now by the fact that there are at present, hundreds of ex-PCVs serving as AID officers, many ex-PC staff in key AID jobs in Washington and abroad, and ex-AID staff returning to Peace Corps staff as well.

In fact, despite pressure to avoid close association, a recent survey of Peace Corps programs suggests that PCVs participate in AID-supported programs in about 30 of the 36 countries where we both have field missions. Here are a few examples:

Sahel - Drought Relief: Major assistance was furnished by AID to the Sahelian countries during and after the severe drought of 1972-75. Peace Corps Volunteers played a major role in organizing and carrying out this assistance at the local level. At present, Volunteers and AID Missions are coordinating their efforts in a variety of projects to prevent a recurrence of the devastating effects of prolonged drought.

Ecuador - Small Business Project: AID is seeking to increase agricultural production and productivity through a broad variety of activities, including basic and applied research, seed production, new varietal testing, farmer test plots, production kits, and other supporting activities. Through local agreement between AID and the Peace Corps, Volunteers with an agricultural background have been recruited and placed at research centers, farms, and field test sites There they work with specialists, extension agents, and local farmers to extend the range of testing beyond the research centers. Their contribution enhances the outreach capability of the project and provides a valuable feed-back channel to alert AID project managers to difficulties or new ideas for modifications to increase effectiveness.

Nepal - Biogas Research: AID and the Peace Corps are jointly engaged in a research project to test the feasibility of using local materials to make less costly and more efficient generators for use at the village level. Volunteers living in the villages test both the utility and acceptability of the technology, i.e., its appropriateness, before wide-scale introduction is undertaken.

Tunisia - Well Restoration: Using funds provided by AID, CARE, which is administering this project, is using Volunteers to assist in the implementation of the project by supervising and assisting local craftsmen in the restoring, cleaning, and repairing of wells. After restoration, Volunteers provide nutrition and sanitation training to villagers in the vicinity of the wells.

Philippines - Nutrition Education: Technical specialists are provided by AID to the National Nutrition Center along with funds for training provincial nutrition program administrators. Volunteers are assigned to these administrators to assist them in organizing and conducting nutrition-related activities at the local level and also assist in the collection of data to be used for management and project planning.

Philippines - Fisheries Project: AID is supporting an extension project by providing grants through the Philippines Bureau of Fisheries. Peace Corps Volunteers have been assisting both AID and the Bureau of Fisheries by working as team leaders.

El Salvador - Health Sector Assessment: Two Volunteers conducted comprehensive studies on the effect of insecticides and breastfeeding practices as part of the Health and Nutrition Sector Assessments currently in preparation by the AID Mission.

These constitute a small sampling of the kinds of projects jointly carried out by AID and the Peace Corps. They reflect the wide diversity of areas in which cooperation is both feasible and desirable.

We would like to bring AID and the Peace Corps into closer contact from the very beginning of the project planning cycle to ensure that Peace Corps and AID resources are considered when program plans are designed, developed, and implemented. Although the preparation and review process for regular AID projects tends to be lengthier than the usual Peace Corps schedule, participation in some circumstances by the Peace Corps might well serve to increase project effectiveness and provide particularly satisfying PCV job assignments. (Attached, for those who may not be familiar with it, is a brief summary of the AID project preparation and review cycle.)

In those countries where joint program efforts currently exist, we urge AID officers and Volunteers to seek additional opportunities for cooperation and coordination. In those countries where this type of programming does not exist, we encourage you to place high priority on exploring ways in which joint programming can become a reality.

APPENDIX H

Department of State

OUTGOING TELEGRAM

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GUATEMALA FOR USAID & ROCAP, KARACHI FOR AAG AND IIS,
NAIROBI FOR USAID & REDSO/EA
SUBJECT: PEACE CORPS/AID COLLABORATION

FOR PEACE CORPS AND AID DIRECTORS FROM PEACE CORPS DIRECTOR CELESTE AND AID ADMINISTRATOR BENNET

1. OVER THE PAST FEW MONTHS WE HAVE BEEN QUITE PLEASED TO REVIEW THE WAYS IN WHICH AID AND PEACE CORPS COLLABORATIVE EFFORTS IN THE FIELD HAVE GROWN, AND ARE EVOLVING TOWARDS MUCH MORE COMPREHENSIVE COORDINATION OF THE WAY THAT OUR TWO AGENCIES CARRY OUT THEIR MISSIONS OVERSEAS. RECENTLY, IN THE WAKE OF THE PRESIDENT'S CALL FOR FISCAL RESTRAINT, AS WELL AS THE ACTIVITIES ON THE HILL WHICH HAVE LIMITED OUR AVAILABLE FUNDS FOR THIS YEAR, THE TWO OF US MET TO DISCUSS HOW WE CAN BE SUPPORTIVE OF THESE MOST SERIOUS EFFORTS BY THE PRESIDENT, BY IDENTIFYING NEW WAYS IN WHICH AMERICAN DEVELOPMENT ASSISTANCE MIGHT ACHIEVE GREATER IMPACT.

2. AS PART OF THIS EFFORT, WE BELIEVE IT IS TIMELY TO TAKE ANOTHER CAREFUL LOOK AT WHAT WE ARE DOING IN THE COUNTRIES WHERE WE ARE BOTH PROVIDING ASSISTANCE. WE URGE YOU TO REVIEW OUR PROGRAMS IN TERMS OF CURRENT AND PENDING PROJECTS,

AVAILABLE BUDGETARY RESOURCES AND AVAILABLE PERSONNEL, WITH AN EYE TOWARD IDENTIFYING AREAS WHERE OUR INDIVIDUAL AND MUTUAL ACTIVITIES CAN BE ENHANCED BY APPROPRIATE COLLABORATION AND BY MAKING GREATER COMMON USE OF OUR INDIVIDUAL RESOURCES IN THE FIELD. THE EARHART REPORT ON PC/AID COLLABORATION SENT TO THE FIELD A FEW MONTHS AGO CONTAINS SPECIFIC RECOMMENDATIONS WHICH MIGHT WELL BE IMPLEMENTED RAPIDLY IN SUPPORT OF THIS EFFORT ON A COUNTRY BY COUNTRY BASIS.

WE HOPE YOU WILL TAKE THIS OPPORTUNITY TO ASSIST US [illegible] EFFECTIVE OF MAXIMIZING OUR IMPACT, OF BETTER MEETING OUR MANDATE AND OUR RESPONSIBILITIES, AND OF DEMONSTRATING TO OUR HOST COUNTRIES THAT OUR NEED FOR FISCAL CONSTRAINTS IN NO WAY REFLECTS A DIMINISHED DETERMINATION TO HELPING MEET THEIR NEEDS. NEWSOM

BEST AVAILABLE DOCUMENT

APPENDIX I

Peace Corps

APPENDIX I

Washington, D.C. 20525

To: PC Directors
PC Senior Staff
Regional Staff
Forestry Project Review Team

From: David B. Levine, Director,
Office of Programming and
Training Coordination

As you know, for the past several months we've been working on pulling together some guidance on expanding PC's involvement in forestry and natural resources programs. We wanted to define a set of project types, and the attendant volunteer and material resources required. To a large degree we based the attempt on field efforts already underway.

We've now completed that work, and the forestry initiatives paper is complete, and attached for your information and follow-up.

Copies are being distributed to field offices, PC/W staff and to various donor agencies who may wish to participate with us in the described efforts. From all of you, we would like feedback on the ideas in the paper, suggestions for improvement, ideas as to how best to proceed, and specifics as to applicability to the various countries and regions in the PC world.

From the field posts, we'd be particularly interested in a close review of the document to determine:

a) which specific project types would be most applicable to your country program;

b) how do your current efforts tie into the typology presented;

c) are you interested in participating in initial program development efforts relating to this initiative; and

d) are there particular in-country collaboration opportunities related to this initiative which you'd want to pursue?

THE AGENCY FOR ACTION VOLUNTEER SERVICE

We would appreciate your feedback on these issues by cable, as soon as possible. We'd hope you'll also share the paper with your AID field mission.

We're quite excited by this effort and will keep you closely informed as we explore collaborative and funding opportunities. Please get us your feedback as soon as possible. Thanks and peace.

APPENDIX I

PEACE CORPS FORESTRY INITIATIVE

Office of Programming and
Training Coordination
M-701
Peace Corps
Washington, D.C. 20525
October 25, 1979

ACKNOWLEDGEMENTS

During the last year and a half, Peace Corps has been carrying out a serious reexamination and refocus of its efforts in forestry and natural resource conservation. These efforts are intended to strengthen our programming in this sector, and to bring it into general accord with our congressional and administrative mandates to address the most basic needs of the poor majority in the third world.

Significant leadership for this effort has been provided by Sam Kunkle, Peace Corps' Forestry and Natural Resources Sector Specialist. Sam, an employee of the United States Forest Service (USFS), U.S. Department of Agriculture, was detailed to Peace Corps' Office of Programming and Training Coordination (OPTC) almost two years ago as part of a revitalized collaborative effort between the two agencies. Special appreciation is owed Dr. Robert Brandt of USFS for his support in arranging this detail.

This initiatives paper culminates our efforts, spearheaded by Sam, to build the necessary foundation for extensive, significant work in the forestry area as part of the overall U.S. tropical forestry strategy. It, of course, represents only a beginning; and we are indebted to Sam for his guidance throughout this period.

Major contributions to this paper itself were provided in the conceptual stage by Pirie Gall and Flavia Rutkosky of OPTC. The actual molding and development of the paper were carried out by Carol Ulinski, in consultation to OPTC, and by J. J. Earhart, a Peace Corps Fellow Valuable review input was provided by Peace Corps Director Richard F. Celeste, members of the Interagency Tropical Forest Working Group, and various individuals both in (Peace Corps, AID, National Park Service, U.S. Forest Service) and outside of the government structure.

It is with special gratitude to all of these people that we embark on what we trust will be a significant developmental program contributing vitally to world peace and understanding.

David B. Levine
Director
OPTC
October 1979

INTRODUCTION

Through this paper, the Peace Corps is attempting to provide a possible framework for a global, community based forestry program.

Deforestation, with implications for firewood availability, soil fertility and desertification, has attracted worldwide attention and concern. There is now general agreement that a concerted international effort is required to address this problem. However, such an effort must overcome some unique constraints which will require new and innovative approaches by Peace Corps and other donors, as well as by host countries.

- First, development has neglected the planting of trees or caring for natural vegetation. In the past, a major thrust of agricultural development has been the expansion of arable land by clearing natural vegetation (trees, bushes, grasses). Few efforts have been directed toward planting and maintaining vegetation, either as a way to preserve the resource base, or to provide local products (e.g., food, forage, fuelwood, medicines, bark). Also, many cultures do not manage natural vegetation as a renewable resource.

- Second, forestry activities are inhibited by the long timeframe between planting and harvesting. For example, it may be 7-10 years or longer before trees can be harvested for fuelwood. And in those instances where vegetation is established to halt erosion or prevent flooding, considerable labor will be required over many years, with little immediate reward. The time and effort required for these activities may exceed the resources of those most in need, the people already living on the margins of subsistence.

- Third is the seeming lack of government commitment in many developing countries. Almost

without exception, the majority of the national budget is allocated to agricultural, health and industrial development, and the forest departments are normally underfunded and understaffed.

And fourth, considerable material and technical support is required to implement foresty activities. For example, a nursery is an absolute prerequisite; and in many areas, fencing or guards will be necessary to protect the newly planted vegetation from encroachment by humans or animals. Some technical assistance will also be necessary to help villagers identify appropriate species, select sites, and learn cultivation and harvesting techniques. In many cases, however, the national forest service is too weak to provide these needed resources.

In the U.S., forestry-related activities are becoming a priority in foreign assistance programs, and substantial resources are being made available for efforts in this area. In fact, in a recent message (August, 1979), President Carter personally instructed the heads of AID and P.C. to place major emphasis on developing programs in the areas of forestry and energy.

Given its basic philosophy of working at the community level to help poor people effect change, Peace Corps can potentially make a significant contribution to addressing the critical development problems associated with deforestation. We have been involved in forestry related activities since 1961, and currently have about 400 volunteers working on conservation and natural resource projects in 40 countries. About half, 200 volunteers, are working directly in forestry.

This paper represents an early step in our attempt to develop a more focused P.C. program to address in a more concerted manner the problems caused by deforestation. Our overall goal is to increase forestry's contribution to improving the life of poor people in developing countries by aiding in their efforts to meet basic human needs for food fuel and shelter. Given the different physical, social, and cultural situations within countries and regions,

it is clear that there is no universal solution to these problems.

For this reason, we offer a spectrum of ideas and suggestions for forging a Peace Corps forestry program that builds upon and strengthens current P.C. forestry related efforts. Recognizing that P.C. can only provide some of the resource requirements for a forestry program, we have also identified some potential opportunities for strengthening collaboration with other development organizations. We begin with a brief introduction to the problem, and a summary of recent U.S. efforts to develop a strategy for addressing it. Section II outlines a number of potential interventions, each illustrated with relevant past or current P.C. experience. The kinds of resource requirements implied by a P.C. forestry program are described in Section III. Possibilities for collaborative projects with other developmental organizations (e.g., AID, private voluntary organizations, World Bank, FAO) are identified in Section IV. In Section V a timeframe is presented for implementing the activities implied by this initiative, and the appropriate next steps are discussed.

Rather than attempting to pin down the details of this effort, we have tried to provide a departure point for defining the program in detail. We mean the paper to be a basis for several kinds of discussions: in the field, within each P.C. post and between the P.C. post and appropriate host country agencies; between the P.C. post and other development agencies; between each post and P.C./W; and between P.C./W and the headquarters offices of other development agencies. Based on these interactions, specific opportunities on a country and/or regional basis will be identified and project implementation commenced--as early as within this fiscal year.

Trees and other woody vegetation have substantial ecologic and economic value, and make an important contribution toward meeting basic human needs for food, fuel and shelter. Uncontrolled exploitation of this renewable resource is occurring on a large scale, as land is cleared for cultivation, vegetation is consumed by grazing animals, or trees are cut for timber and fuel. According to a recent study, deforestation is now occuring at an annual rate of 18-20 million hectares, mostly in the lesser developed countries (LDCs).[1]

As supplies are rapidly being destroyed, demand is on the rise. In 1976, annual consumption of wood for all purposes came to 2.5 billion cubic metres, and is expected to increase to 4 billion cubic metres by 1994.[2] Although World Bank estimates are that 20 to 25 million hectares must be reforested before the end of the century in order to meet projected demand,[3] at current rates of planting only 2 million hectares will actually be reforested by then.[4]

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[1] Council on Environmental Quality, The Global 2000 Report to the President: Entering the Twenty-First Century (Washington, D.C.: Government Printing Office, forthcoming).

[2] Erik Eckholm, Planting for the Future: Forestry for Human Needs, Worldwatch Paper 26 (Washington, D.C.: Worldwatch Institute, February 1979).

[3] Ibid.

[4] The multiple aspects of deforestation have been described in detail in numerous sources, and will not be repeated here. See among others: U.S. Interagency Task Force on Tropical Deforestation, The World's Tropical Forests: A U.S. Policy, Strategy and Program, draft working papers; World Bank, Forestry Sector Paper, 1978; Eckholm, Planting for the Future: Forestry for Human Needs, 1979; and Council on Environmental Quality, The Global 2000 Report to the President: Entering the Twenty-First Century, forthcoming.

Over the past several years there has been growing recognition of, and support for programs which address the problem of deforestation. Section 118 of the Foreign Assistance Act instructs the Agency for International Development (AID) to assist developing countries in managing and protecting their natural resources. Acknowledging the implications of deforestation for achieving development goals, the Congress more recently added a provision to the Act directly authorizing support for forestry-related activities:

> The Congress recognizes that the accelerating loss of forests and tree cover in developing countries undermines and offsets efforts to improve agricultural production and nutrition and otherwise to meet the basic human needs of the poor. Deforestation results in increased flooding, reduction in water supply for agricultural capacity, loss of firewood and needed wood products, and loss of valuable plants and animals. In order to maintain and increase forest resources, the President is authorized to provide assistance for forestry projects. . . . Emphasis shall be given to community woodlots, agroforestry, reforestation, protection of watershed forests, and more effective forest management.[5]

In June 1978, the Department of State and AID co-sponsored a Conference on Tropical Deforestation, which recommended the establishment of a U.S. interagency task force to draft a U.S. policy and strategy statement on this problem. The Peace Corps has played an active role in this process. And in August of this year, President Carter directed a memorandum to the Administrator of AID and the Director of Peace Corps instructing them to review current efforts to preserve and manage the world's forest resources, and develop programs

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[5]U.S. Congress, International Development Cooperation Act of 1979 (Section 103b), P.L. 96-53 dated August 14, 1979.

and projects in the areas of reforestation, fuelwood, conservation and alternate sources of energy.

In short, there is now a general consensus in the U.S. that deforestation is a global problem which demands our immediate attention. Long-term planning, developing comprehensive strategies, designing and implementing projects, supporting research, systematically evaluating a wide range of past and current efforts, must all be addressed as the U.S. develops a strong program. The planning process for this effort requires both time and resources. We are proposing that while long-term planning is proceeding, Peace Corps support small-scale, experimental activities to establish and manage vegetation (trees, plants, grasses) required to meet local needs for wood products, and to reverse the trend of environmental degradation. Through these experiences, we hope to identify a range of interventions which address local needs, are harmonious with local cultures and environments, and can be replicated on a larger scale.

According to the U.S. Strategy Statement on Tropical Forestry, the major constraints to improved management of woodlands are: (1) lack of material support; (2) insufficient numbers of skilled people working at the community level; and (3) limited host country capabilities to address social and institutional constraints. By providing skilled volunteers and project support, Peace Corps, in cooperation with other members of the development community, can contribute to overcoming these obstacles.

APPENDIX I

Since 1961, in direct response to requests from over 70 host countries around the world, Peace Corps volunteers (PCVs) have worked at the grassroots level in program areas such as agriculture, public health, education, and forestry. Before beginning their two-year assignments, volunteers are given training appropriate to their role as development workers. They master cross-cultural, technical, and language skills through training which helps them to live and work closely with the people in their host countries. They learn to approach development problems with new ideas that make use of locally available resources and that are appropriate to the local cultures. But Peace Corps' contribution is essentially limited to providing volunteers, which is only one of several key elements of the pilot projects we're proposing.

For this initiative to succeed, we must ensure that <u>both</u> skilled personnel <u>and</u> attendant project support will be forthcoming. The effectiveness of skilled personnel, such as trained PCVs is sharply reduced if they do not have access to the back-up resources necessary to carry out their jobs. For example, a quick review of past forestry efforts in the Sahel reveals that repeatedly a major constraint to project implementation has been a lack of support, including transport (vehicles), project funds, and basic materials. It is also important to recognize that in light of their own grossly inadequate operational funds and staff, host country forestry departments may in fact not be in a position to demonstrate their support of these efforts

through direct material back-up. Also, in third world countries there is often a serious shortage of trained foresters. Many of them are already overworked and may be unable to assume additional responsibilities. Ironically, many countries are limiting new forestry efforts because they realize that project success is unlikely if trained personnel don't receive the necessary infrastructural support, and they simultaneously acknowledge their inability to provide that support. According to Fred Weber, a specialist on African forestry, many Sahel countries would welcome more volunteers and program expansion if they had the material and capital to support the expanded staff.[6]

In recognition of the importance of forestry efforts to overall development and to assisting people in meeting their basic human needs, P.C. is willing to commit itself to programming, recruiting and training greater numbers of forestry volunteers over the coming years. However, to assure the full range of needed ingredients--people, capital, and focus--we would like to supplement our own resources and experience by seeking opportunities to collaborate with other developmental organizations similarly committed.

In the next section of the paper, we present some possible approaches for addressing a range of forestry problems, illustrating each with examples of past or current P.C. efforts.

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[6]Fred Weber, Sahel Peace Corps Directors Workshop Report: Conservation and Forestry Programming, Peace Corps Order No. 79-487-3005-A, November 5, 1978.

Section II: A Range of Possible P.C. Forestry Projects

Problems created by deforestation are diverse and numerous. This is due in part to the great environmental differences in the various regions of the world, and in part to the different environmental impacts of varying cultural and sociological factors. In response to these differences, we have identified 7 types of interventions which seem appropriate for addressing some typical forestry problems. Six of these activities are production-oriented, and primarily involve planting and managing vegetation. The seventh approach is conservation-oriented and focuses on the more efficient use of forestry products (e.g. improved charcoal making techniques and more efficient cookstoves).

Table I graphically presents the most important aspects of the six production-oriented project types. For each type, we have identified the principal project objectives, probable PCV tasks, and principal technical skills required of volunteers. As a careful reading of the table indicates, there are commonalities which run through all these projects. First, they all address the problem of environmental degradation through strategies reflective of P.C.'s basic human needs philosophy. Second, though their specific technical objectives differ somewhat, all projects share the following goals:

- heighten local awareness of the importance of resource conservation;
- transfer appropriate knowledge and technical skills to villagers;
- develop approaches replicable by host countries and other development agencies.

TABLE 1: A RANGE OF POSSIBLE PEACE CORPS FORESTRY PROJECTS

PROJECT TYPE	PROJECT OBJECTIVES	VOLUNTEER TASKS	PRINCIPAL SKILLS REQUIRED OF VOLUNTEERS
Village Woodlots (Community-based forestry to meet local needs for fuel and wood products)	Develop community woodlots to supply fuel and wood products Generate additional income Heighten local awareness Transfer appropriate project technology Develop replicable projects	Establish/manage nurseries Organize and train local people to establish/manage small woodlots Train counterpart personnel	Nursery skills Knowledge of reforestation techniques Knowledge of local language/culture Community extension and development expertise
Reforestation of Cutover Land (Planting trees on cutover forest land to protect fragile environments, such as watersheds, and to provide supply of wood products)	Make forests more productive Protect watershed areas Increase fuel supply Halt soil erosion Heighten local awareness Transfer appropriate project technology Develop replicable projects	Establish/manage nurseries Organize and train local work groups to reforest and manage cutover lands Train counterpart personnel	Nursery skills Knowledge of reforestation and soil conservation techniques Knowledge of local language/culture Community extension and development expertise
Land Rehabilitation (Conservation of soil and water resources, or reclamation of degraded land, by extension work using vegetative and mechanical methods)	Control soil erosion Improve water quality Increase crop and forage production Heighten local awareness Transfer appropriate project technology Develop replicable projects	Establish/manage nurseries Organize and train local work groups for vegetative and mechanical work to combat soil erosion Train counterpart personnel	Nursery skills Knowledge of soil conservation techniques Tree/plant identification and propagation skills Knowledge of local language/culture Community extension and development expertise
Agroforestry (Land-use system that combines or alternates livestock or crop production with growing trees)	Increase fodder and fuel supply Halt soil degradation Achieve sustainable agricultural system Generate additional income Heighten local awareness Transfer appropriate project technology Develop replicable projects	Establish/manage nurseries Assist and instruct farmers to cultivate trees for food/fodder/fuel and to protect or enhance crops/soils Train counterpart personnel	Nursery skills Knowledge of reforestation and soil conservation techniques Familiarity with managing fruit, nut and fodder trees Knowledge of local language/culture Community extension and development expertise
Arid Zone Vegetation Resource Management (Management and exploitation of vegetation to halt and reverse resource degradation, protect farm fields, and supply wood products for local population.)	Protect farm fields and buildings from blowing sands Protect against wind erosion and stabilize dunes Increase fuel supply Manage well points Heighten local awareness Transfer appropriate project technology Develop replicable projects	Establish/manage nurseries Assist and instruct rural people to plant "living fences" or windbreaks, or stabilize dunes by vegetative/mechanical means Train counterpart personnel	Nursery skills Knowledge of arid land ecology Tree/plant identification, propagation skills Knowledge of local language/culture Community extension and development expertise
Forest Resource Management (Manage existing forests to improve current yields and initiate a sustained yield program.)	Plan forest management for sustained yield Improve forest management and technical training Maintain soil fertility Heighten local awareness Transfer appropriate project technology Develop replicable projects	Carry out forest and sociological/economic surveys Plan and implement appropriate forest management schemes Install minor roads and trails Train counterpart personnel	Natural resource planning/management skills Forest inventory skills Knowledge of reforestation techniques Knowledge of local language/culture Community extension and development expertise

Third, the basic skills required of all PCVs include:

- knowledge of specific technical skills;
- ability to work effectively with host country counterparts;
- ability to function as effective rural extension agents;
- familiarity with local culture and traditions;
- fluency in local languages;
- competency in basic community development techniques.

Finally, all may also face design and implementation difficulties, such as:

- lack of available land: Productive nurseries require good soil, fairly level sites, and abundant water supplies. This often means that farm fields must be converted to nurseries, raising potential land tenure or ownership problems that can be difficult. Locating marginal fields or other sites with potential for other forestry activities can similarly be difficult.
- soil conditions: Trees, like other crops, require soil to grow. Totally devasted lands -- eroded moonscapes -- cannot be used for village type forestry projects. Though planted trees might survive, their production would be minimal.
- shortage of water: A nursery requires a dependable water supply. Lack of adequate well or stream water can be a key constraint, obviously more so in the more arid zones. Where water shortages are severe, projects will have to contain water provision components.

- shortage of labor: The tree-planting season often coincides with traditional planting seasons. Farmers may be reluctant to involve themselves in forestry activities if this conflicts with other farm work.
- negative attitudes: Attitudes about forestry, and relationships between rural people and foresters are negative in some locales. In some settings, foresters have traditionally played an enforcement role, controlling and protecting government land against graziers, shifting cultivators, tree and animal poachers, or others enroaching on government land. In the worst cases, foresters have even participated in the poaching of government trees. Although in recent years forestry agencies in a number of countries have emphasized the concept of "forestry for people" and increased extension efforts, the old attitudes between foresters and rural people sometimes change more slowly than we'd like.
- relative priority to host country governments: Some degree of personnel and/or material support is essential to forestry projects. Often, forestry departments are small divisions within other government agencies, and have very limited budgets. As a result, it is critical to identify accurately the source of any staff and/or material support required for the specific project.

In the remainder of this section we describe each of the seven proposed project types in some detail, including Peace Corps' specific experience where applicable. We don't intend this list of programming possibilities to be exhaustive, but rather to illustrate a variety of activities which can be implemented by volunteers.

1. Village Woodlots

The objective of village woodlot projects is to provide a local source of fuelwood by planting and caring for indigenous and exotic species (e.g. eucalyptus, Cassia, Gmelina). The wood can also be used for poles, posts and construction material. By planting village woodlots, some of the pressure on natural forests can be relieved.

Peace Corps is implementing woodlot projects in both Niger and Upper Volta. In both projects, the volunteers (approximately 15) are working in collaboration with the International Development Research Center (IDRC), FAO and UNESCO. The main thrust of volunteer work is establishing nurseries, encouraging village participation, working with villages to care for and maintain the trees, and promoting greater awareness of the importance of trees in meeting a variety of local needs.

Some major constraints have included shortages of water (this is a problem particular to arid regions where seedlings must be watered both in the nursery and during the first two dry seasons), lack of transport for transferring the seedlings from the nursery to planting sites, and the low priority sometimes accorded these project activities by host country governments.

2. Reforestation

Reforestation is the planting of trees on cut-over or degraded forest land, usually on catchments or other areas suited only to forest use. This activity can help control erosion and improve water quality, as well as provide a source of wood for future consumption. A reforestation project might include

nursery establishment, planting trees, counterpart training and extension, and soil conservation (e.g. terracing, contour water ditches, revegetation and stream bank control).

In Guatemala, 35 Peace Corps volunteers are working with the host country agency, Instituto Nacional Forestal (INAFOR) and CARE to implement a reforestation project. Local village counterparts work with the volunteers on a fulltime basis and are paid by INAFOR. Material support and transportation are provided by CARE and INAFOR. CARE also provides the volunteers with foodstuffs, which are given to farmers in return for their labor. Volunteers and counterparts work with local small farmers to plant trees on private, communal and municipal land holdings.

Problems encountered during project implementation include the lack of vehicles during the planting season, administrative difficulties within INAFOR, and inadequate training of counterparts. The likelihood that reforestation sites may be distant from villages may require special efforts to establish trees and protect them from animals, weather and people.

3. Agroforestry

Agroforestry is a system for managing land that combines livestock or crop production (including tree crops) with growing trees, either simultaneously or sequentially. Objectives are to increase food productivity and ensure a supply of wood products for fuel or construction materials, while conserving and

rehabilitating soil resources. This approach is appropriate in areas where land-use pressures are great and farmers cannot dedicate entire plots of land strictly to forest species.

One example of an agroforestry project is the planting of Acacia albida (gao). This unique arid land tree has the unusual feature of losing its leaves at the beginning of the rainy season, which permits the cultivation of crops beneath it. Field observations indicate that the Acacia (a leguminous species) is highly valued by the local people as a source of shade and fodder, as well as for its contribution to enhancing soil fertility (and agricultural output). The Acacia can also be intermixed with other species to form windbreaks and control erosion. It is found all over Africa, from the Nile Valley to South Africa, and from Senegal to Ethiopia.[8] According to Weber, the average cost of planting one hectare of Acacia albida in the Sahel was approximately $500.00 in 1978.[9]

In Chad, Peace Corps volunteers collaborated with CARE to carry out a agroforestry project funded by AID. The purpose of this project was to plant Acacia trees in farmers' fields for the purpose of enhancing soil fertility. A mid-point evaluation conducted in 1978 indicates

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[7]K.F.S. King and M.T. Chandler, The Wasted Lands, The Programme of Work of the International Council for Research in Agroforestry (Nairobi, Kenya: International Council for Research on Agroforestry, September 1978).

[8]Fred Weber and Maryanne Dulansey, Chad Reforestation Project, Midpoint Evaluation (Washington, D.C.: Consultants in Development, April 1978).

[9]Ibid.

that the project has been successful: eight nurseries were established, and 350,500 trees planted, of which 178,000 (or 60 percent of the final goal) have survived.[10] Also, farmer participation has been high, as has been the acceptance of the Acacia. (In Niger, a similar project was going well while funds were available, but came to a halt when external funding ceased.) In general, projects of this type are most likely to succeed if farmers' interest and participation are high.

Another example of an agroforestry project is planting the fast-growing Ipil-ipil, or Leuceana leucocephala. According to Michael Benge, an agroforestry expert at AID, this humid tropical species can grow to a height of 60 feet in 6 years. Being leguminous, it also enhances soil fertility. Its leaves and fruit pods can be utilized as animal fodder. The Ipil-ipil can also be used for the production of fuelwood, charcoal, pit-pots, and pulp and paper manufacture. In the Philippines, a team of 18 PCVs, which includes both foresters and agronomists, is intercropping Ipil-ipil with citrus and coconut trees. All project support has come from local villagers who actively participate in establishing nurseries, planting trees on private lands, and establishing demonstration areas for extension.

4. Land Rehabilitation

The destruction of forest and vegetative cover is a major cause of soil erosion with implications for agricultural production and depreciation of water quality. These are issues that

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[10] Ibid.

cannot be ignored when dealing with the deforestation issue, due to the close interrelationship between trees and all other environmental factors.

Peace Corps has volunteers working on soil conservation projects in Nepal, Honduras, Paraguay, El Salvador and Guatemala. The objectives of these projects are to stop erosion before it occurs and improve the situation on lands already badly damaged. Techniques employed include reforestation, revegetation, improved agricultural planting methods, terracing, composting and land-use planning.

The project requires host country counterparts to take an active role in implementation; therefore, the lack of such personnel and/or funds to pay them will create difficulties. Additionally, village participation may be difficult to obtain because this type of effort requires considerable work, and results (e.g. increased soil fertility) may not be visible for many years.

5. Arid Zone Vegetation Resource Management

Desertification is perhaps most exemplified by dune encroachment and shifting sands. Blowing sands in arid regions (300-600 mm precipitation) can cover houses, roads, farm fields and trees, causing damage and taking fields out of production. Strong winds cause erosion, thereby reducing crop yields. One solution is to reduce the wind's damage by establishing windbreaks or shelterbelts on and around the dunes.

In Niger, PCVs are implementing a dune afforestation project, begun in 1977, with funding provided by CARE. The volunteers

establish nurseries of some 30,000 seedlings of eucalyptus, Prosopis, Acacia, Parkinsonia and Tamarix. The different tree species are interplanted at various spacing patterns along the front of the dune area and around crop fields. The volunteers have also used palm leaves, branches and millet stalks to form palisades to halt the blowing sand.

A prerequisite to the success of this type of activity is the protection of planted areas from human and animal encroachment. In the Niger project, CARE has provided funds for guards to patrol planted areas. Such outside funding seems mandatory for project success.

6. Forest Resource Management

Despite the growing pressures on tropical forests, many countries continue to maintain large tracts of publicly owned forest land. Although forestry officials often protect these lands from encroachment, they are rarely managed to their full potential. The purpose of forest resource management projects is to improve current and future forest yields.

In Honduras, Peace Corps is working with host country officials, foresters, land-use planners, soil scientists and natural resource specialists to manage national forest reserves. Activities include reforestation, surveys, thinning, systematic cutting, watershed management, environmental education, soil surveys, land-use planning, training host country officials in forest management practices, and village extension work.

Strong support from the national forest service is a prerequisite for the success of this kind of project. Access to transportation, survey equipment, nurseries and technical backstop personnel are also needed.

7. Introduction of Wood Conserving Technologies

Peace Corps has had some experience with projects whose primary focus is to improve domestic technology. Introduction of improved charcoal making techniques and more efficient cookstoves which conserve fuelwood could significantly contribute to easing the pressure on the world's woodlands.

a. More efficient cookstoves. In many countries, the primary source of energy for cooking is firewood. In countries where firewood is in short supply, crop residues and dung are also burned. Most traditional methods of cooking over open fires are tremendously wasteful with usually only about 3-8 percent of the heat generated utilized for cooking, while over 90 percent escapes into the atmosphere and is lost. The introduction of more efficient stoves could have a significant impact on easing demand for, and actual consumption of firewood. Efforts are now underway in several countries to develop cookstoves which allow for a more efficient transfer of heat to the cooking utensil, as well as improving the rate of fuel combustion. Stoves developed in India (the smokeless "Chula") and Guatemala (the "Lorena" cookstove) have reduced firewood requirements by 40 percent and 50 percent respectively.

Cookstoves can be built using locally available materials (e.g., stone or a mixture of sand and clay) and are relatively easy to construct. However, considerable experimental work is required to build and adapt a cookstove to local conditions. The local style of cooking, the nature of the food cooked, and the fuel used are all important considerations. Stoves need to be designed in such a manner that they can be constructed with available tools from locally available materials, and so that local cooking pots fit on them easily.

Working with local communities to build, test and disseminate improved stoves could become part of the role of many volunteers. As part of our overall initiative, we are proposing that where appropriate, volunteers learn to adapt basic designs and construct a stove as part of their training requirements. Step-by-step construction manuals could also be developed and provided to each volunteer.[11]

b. Improved charcoal making techniques. In many urban areas of the third world, charcoal is a major source of domestic energy. Traditional conversion processes are, however, tremendously wasteful. By introducing simple charcoal kilns and retorts, losses can be reduced and yields increased by as much as 50 percent.

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[11] These efforts could build upon the construction manual for the Lorena cookstove which was published earlier this year, and a guide to designing woodburning stoves which is now being prepared. See Ianto Evans, Lorena Owner Built Stoves (Stanford, California: Volunteers in Asia, Inc., 1979), and Stephen Josephs, A Design Guide to Wood Conserving Stoves (Mt. Rainier: Volunteers in Technical Assistance and Intermediate Technology Development Group, forthcoming).

As part of an FAO-UNDP project in Ziguinchor, Senegal, a PCV has developed and tested an oil drum kiln which meets the criteria of minimum capital investment, construction with locally available materials and tools, ease of operation, durability, and increased efficiency of carbonization.[12] (Experiments with the Jamaica Retort have also been promising, with yields increased by 30-40 percent.) Under a proposed AID Renewable Energy Project, these techniques will be transferred to other regions in Senegal.

PCVs could play a role in further developing these techniques, introducing them in other charcoal producing areas, and adapting them to the local environment.

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[12] Construction details on 3 adaptations of a charcoal kiln developed in Senegal are provided in a paper by G. E. Karch, The Oil Drum Charcoal Kiln - An Appropriate Technology Approach, 1975.

Section III: Resource Needs

In Section II we described a range of illustrative projects which could be implemented by host countries in cooperation with Peace Corps and other donors. In this section, we discuss the range of resources needed to effectively implement these projects.

We have identified six general categories of project support requirements: material support, personnel, training, technical assistance, evaluation, and development education. Where possible we have attempted to provide some general estimates on needs, either in terms of cost or numbers. Both the level of effort and the cost of each project may vary, depending on the country, the region, and the final project design. For example, the cost of locally purchased nursery equipment in the Sahel might be much more expensive than the cost in Central America; or, a particular country situation might require different types and levels of infrastructural support; or, it may be that one project may provide a different scale of opportunity for focusing attention and resources than another. Estimates of resource needs cited here are based on our past experiences in different regions of the world. They are also based on a set of design assumptions which in certain instances may be overambitious. Needless to say, in most situations, effective

projects can be designed which require fewer resources or operate on a smaller scale.

1. Material Support

Nurseries, transportation and agricultural equipment are key resources for any forestry project.

a. Nurseries. Often, the first step of any activity which involves planting trees will be to establish a nursery if one doesn't already exist in the area. Nurseries vary in size, ranging from as small as 2,000 seedlings for a school garden nursery to as large as 200,000 seedlings to serve a region. The cost is largely determined by whether the environmental conditions demand that the trees be planted in plastic pots (in arid/semi-arid regions where precipitation is slight and soil conditions are poor), or whether they can be planted bareroot (in more humid or temperate regions where soils are productive and moist, and rain is plentiful).

The initial costs for nursery establishment include such items as fencing material, rakes, watering cans, dirt and in some areas, well-digging and pumping devices. The cost of a 50,000 tree nursery can range from as little as $2,000 to as high as $12,000 in 1979 prices. Other expenses include labor for out-planting, maintenance of reforested areas, and possible fencing of reforested areas.

The initial cost of nursery material is incurred the first year of operation; there is a substantial decrease in the cost per tree during successive years. However, as the

project evolves, recurring costs such as labor, transportation, and material replacement will increase with inflation and expansion. In some cases it may be possible to generate revenue by selling seedings to individuals on an appropriately graduated cost scale.

b. Transportation. Lack of transportation can be a major limiting factor to the successful implementation of forestry related projects. Filled plastic pots can weigh 2kg each and a large, reliable, flatbed truck is needed to carry several thousand pots to a reforestation site. Depending on the distance traveled and the price of gasoline, transportation from the nursery to the planting site can run from $.03 to $.20[13] per tree (Weber, Earhart) not including the cost of the vehicle. For projects with centrally located offices, each office should be equipped with one small truck to transport supplies such as organic fertilizer, sand or dirt. In some situations, the local development workers, whether host country counterparts or volunteers, can be a great deal more effective if they have access to some form of daily transportation. If distances between sites, or between villages and sites are long or terrain difficult, both volunteers and counterparts may need motorcycles for transportation and communication relating to extension and post planting work.

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[13]Based on 1979 prices.

c. Agricultural and other equipment. Finally, additional tools and equipment may be required for project components other than the nursery. Such items as planting bars, fumigators, chain saws, forest inventory equipment, compasses, soil test kits or levels may be needed by counterparts and volunteers alike. In addition, agricultural equipment such as hoes, rakes, and machetes, and perhaps surveying equipment would all come in handy.

2. Personnel

Many different skills are required to implement a forestry project. These skills can be provided by volunteers, counterparts, technical back-up personnel, and other host country nationals such as project managers, regional officers, guards, and village level participants.

a. Peace Corps Volunteers. Peace Corps is committed to meeting all requests for forestry volunteers to work in good, solid projects. To do this, we will have to determine the specific skills and competency levels required to implement each project. Generally, we know that sensitivity to the volunteer role, expertise in community development, and fluency in local language are prerequisites for all PCV jobs, and these will be uniformly provided by Peace Corps. However, each job position will require a different level of technical expertise, and in fact each project will most likely include a variety of volunteer jobs, each requiring different skill levels and combinations. Some of these will best be filled by volunteers with formal backgrounds in

forestry or related disciplines; others will best be filled by volunteers who receive intensive pre-service technical skill training, to supplement a more general academic and experiential background. Table 1 (page 10 above) identifies several of the needed skills for each of the various project types. During the design of each project, P.C. staff will work closely with host country and other sponsoring agencies to identify in greater detail the specific skills needed for each , and then to carefully match these requirements with the new recruits.

Frankly, our current recruitment efforts are inadequate to meet the personnel needs of a dramatically expanded forestry initiative, and we are now considering a variety of actions for expanding these efforts, including informing the U.S. forestry community of service opportunities within the Peace Corps. These actions include the following:

- Print and circulate a P.C. recruitment brochure focused explicitly on this initiative. The currently used brochure for "science majors" contains only four short paragraphs on forestry opportunities.

- Pull together some visual presentations, such as movies or slide shows, which depict the life of a PCV forester. Recruiters could show these on college campuses, at forestry conferences, and other appropriate forums. These presentations could also be used as part of a U.S. public awareness campaign on the problems of and potential solutions to tropical deforestation.

- Have recruiters encourage university forestry departments to contact them about upcoming forestry conferences where P.C. could make a presentation.

- Involve returned forestry volunteers in recruitment. Many may already be on university campuses, enrolled in graduate programs.

Make greater use of the media (television, radio, forestry journals) to publicize opportunities.

We believe that through these and similar efforts we can recruit sufficient numbers of appropriately qualified volunteers to meet the projected demand. We are also encouraged by the fact that although in the past there has been a shortage of U.S. trained foresters available for overseas assignments, this situation appears to be changing. In fact, reportedly there are many forestry graduates who cannot find jobs. For example, the U.S. Forest Service receives job applications far in excess of its available job openings. We would like to reach these applicants and inform them of opportunities within P.C. where they can apply their skills, often in places wehre such skills are in seriously short supply. Upon their return from overseas service, such individuals should also be more attractive as prospective employees to various forestry and natural resource agencies. This would help overcome the U.S.'s own shortage of individuals with experience and expertise in tropical forestry. Upon completion of their assignments, some of these returned volunteers will most likely be interested in continuing their work with other U.S. agencies, thus greatly strengthening U.S. planning and programming efforts in the tropical forestry area.

b. Host country personnel. Counterparts (1 or 2 per site) are vital to continuation and replicability of projects. If local personnel can be trained to carry out duties taught

to them by volunteers, and if material input is ensured, projects can continue, and in fact expand after the volunteers have departed.

In the past, donors have often been reluctant to cover salaries of host country nationals; this has been viewed as an important contribution of the host country government. Although desirable, this may not always be possible given the often tight budgets of forestry departments in the very countries with highest indicators of need. As a result, in some cases project costs will of necessity include support for counterparts and other host country porject management staff.

c. Non-professional personnel. Although counterpart roles and professional levels, as well as salaries, vary from region to region, many projects can utilize non-professional counterparts who often earn from $1.50 to $3.00/day. These would be full-time workers selected from the local community to carry out various project responsibilities. They might work alongside the volunteer in daily activities, learning both the skills and information required for their tasks. Additional personnel requirements might include several laborers to aid in the establishment of a nursery, or laborers to assist during the planting season. It may also be necessary to hire full-time guards to protect young trees from hungry animals. In some cases, some of these expenses might be covered by revenues generated from sales of trees to landowners.

3. Training

a. Current Peace Corps forestry training. Peace Corps provides all volunteers with the necessary skills to carry out their developmental roles. These skills usually relate to language, cross-cultural, technical and local development abilities.

At the present time there is no uniform approach to Peace Corps training of forestry volunteers. With the recent exception of a training program for volunteers going to Tanzania, little P.C. forestry training occurs in the United States. Rather, training has been generally conducted in the country of volunteer assignment, organized either by P.C. or by the requesting host country agency. In some cases, Guatemala for example, a contract for training is awarded to a local firm. Some volunteers have received in-service training courses at the USDA-run Institute of Tropical Forestry in Puerto Rico.

b. Counterpart training. To the greatest extent possible, counterparts at all levels should be encouraged to attend both pre-service and in-service technical training courses alongside the PCVs with whom they'll be working. Counterpart training goes a long way in emphasizing both to the counterpart and to the community the importance of their work as a vital contribution to the preservation of the local environment. This will also instill more self-confidence to the counterparts, thereby increasing their capability, credibility, and self-respect. Whenever necessary, project

support should include support for such training and related travel and per diem.

c. New training efforts. Both the number and range of forestry training programs will have to be expanded to accommodate the proposed increase in project types, volunteers and counterparts. Training efforts should be designed to prepare the volunteers and counterparts for their initial assignments, but also to provide them with periodic skill review and upgrading once they are in the field. In addition to expanding its contractual relationships with U.S. based forestry training institutes, P.C. could also explore the possibility of identifying forestry institutes in each geographic region or ecological zone to:

- Provide initial general training for volunteers and counterparts assigned to the region;
- Backstop country-specific training which could follow these;
- Assist in providing continuous technical back-up support to the projects;
- Serve as clearinghouses for project related information.

Efforts like these may require the addition of full-time P.C. technical personnel to be stationed at each institute to provide the overall focus, any requested on-site assistance, and assistance in developing future project opportunities.

Other options worth consideration as part of the effort to strengthen training includes:

- Exploring the possibility of conducting pre-service

training at U.S. governmental facilities such as USDA's Institute of Tropical Forestry in Puerto Rico;

- Designing standardized approaches to in-service workshops which provide opportunities both to share information and experiences, and to increase appropriate skills. Such settings could also be used to facilitate the exchange of information between researchers at regional institutes, and workers in the field;

- Providing in-service training to P.C. staff responsible for project back-up;

- Increasing the range of forestry-related, standardized training packets (books, materials) and technical support materials available to the development community through Peace Corps Information Collection and Exchange (ICE). P.C. has already published several manuals relevant for forestry project support. One of these, Reforestation in Arid Lands, includes information for designing and implementing projects in arid and semi-arid areas, as well as specific information on sub-Saharan West Africa (climate, soils, plants, and trees). Similar manuals for village and farm reforestation in the tropical areas of Central America and the Caribbean are planned for production in 1980;

- Identifying project by project possibilities for incorporating relevant forestry skills into other P.C. efforts, especially in the education and food production areas; and

Developing generalized training modules for PCVs not directly involved in the forestry program to assist them in understanding and explaining the problem of deforestation, and to teach them the basics of planting trees, and conserving firewood by such means as constructing improved cookstoves. These secondary activities carried out by many volunteers could dramatically increase the forestry initiative's overall impact.

In pursuing these and similar efforts, P.C. will pay particular attention to the experiences of volunteers and counterparts who are currently working in related projects.

4. Technical Assistance

During the project design phase there will be instances where field posts could benefit from the services of consultant assistance, such as a forester and/or a community development specialist. During project implementation, volunteers and counterparts will have the skills necessary for carrying out project interventions at the community level. However, there will be times when they will be faced with problems or opportunities beyond the scope of this training. It is, therefore, important that forestry experts as well as appropriate printed materials be available when assistance is needed.[14] The kind of assistance required will undoubtedly vary and could include sub-regional technical personnel back-up, information exchanges by letter, general background literature, specific

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[14]Also see Section III, 3, Training, above.

technical data, networking, and actual on-site visits. All projects will require some back-up which will largely be determined by project size and complexity. One way to address this need is to appoint a full-time P.C. staff forester to a region. For example, an Associate Peace Corps Director who is also a forester is now stationed in Ouagadougou, Upper Volta. Given some travel funds and back-up support, he could assist other Sahel field posts in their programming efforts, and could coordinate overall P.C. regional efforts with those of the CILSS, the Sahelian regional development organization also based in Ouagadougou. Short-term technical assistance requirements could be addressed by drawing upon the pool of returned forestry volunteers.

5. Evaluation

Although Peace Corps has been involved in forestry programs since 1961, there have been no in-depth analyses of these experiences--of what has worked and why, what hasn't worked and why, and how the project design used could have been strengthened and replicated. A preliminary review of the literature on village forestry reveals that only a minor attempt has been made by any of the involved agencies to evaluate past and present efforts in this area. We believe that this information should be assembled as quickly as possible so that the findings and conclusions can provide the basis for strengthening current efforts and developing future programs.

To this end, we are planning to undertake an intense evaluation of our own efforts in village forestry. As a first step, we are now evaluating ten completed village level forestry and natural resource projects sponsored by the donor community. The purpose of this assessment is to identify factors contributing to project success or failure. Sociological factors, such as the nature and degree of local participation and pertinent cultural characteristics, will be given particular emphasis. The conclusions will provide some guidelines for project identification and design, as well as for identifying the resources needed for project implementation. We are also interested in learning more about the past and present experiences of other developmental organizations, and encourage the sharing of any existing studies.

It is important that the evolving U.S. forestry program include a strong evaluation and feedback system. Peace Corps is now considering ways to strengthen our own in-house project monitoring and evaluation systems, as well as ways to gather information from our volunteers in the field.

6. Development Education

For this forestry initiative, as for most development efforts, the extent and nature of local participation will most likely be a major determinant of success. Community meetings, information about similar successful efforts, audiovisual media presentations utilizing slide shows, films, and flip charts can be quite effective in building local support for reforestation. This is particularly

critical where a major project goal is to encourage the community to donate time and resources to project implementation.

Extension should not be limited to the recipient countries though. Deforestation is a problem that affects us all. As part of Peace Corps legislative mandate to promote awareness among Americans about life in developing countries, we propose to organize extensive efforts to bring the problems of world forestry to the attention of people in this country. We will also attempt to demonstrate how our own energy policies and resource utilization practices affect the entire globe's capability to meet its fuel and wood product needs. These efforts would be focused on community groups, high school and post-secondary students, and those directly involved in development efforts. Returned volunteers can play an important role by sharing their experiences at schools, universities, churches and other community organizations. This message could be reinforced with visual presentations, such as movies, slide shows, booklets or public interest media spots. Such efforts are also likely to have strong positive impact on our volunteer recruitment capability.

Section IV: Collaboration

The scale of deforestation is enormous. Solutions will require a concerted effort which draws upon a multitude of resources. Peace Corps can provide skill-trained volunteers to work with communities in identifying needs and seeking solutions. However, as mentioned earlier, we cannot provide other resources which are vital elements of a forestry program. In the past, we have undertaken joint projects with many diverse organizations, as illustrated in Table 2. We are now seeking additional opportunities for joining our resources with those of other developmental organizations committed to combating deforestation.

In Section III we identified some of the resources needed to implement forestry projects. Here, we briefly describe some of the developmental organizations we know of with strong forestry programs or special skills which could be applied to these projects. In the near future we would like to meet with these--and other interested organizations--to discuss ways we can share our resources to multiply our individual impacts in these areas.

1. AID

AID is the primary government agency responsible for administering the U.S. foreign assistance program. It supports bilateral activities in 54 countries. In the past,

TABLE 2: ORGANIZATIONS COLLABORATING WITH PEACE CORPS IN FIELD PROJECTS AS OF APRIL, 1979

Bilateral Aid Donor Agencies

Australia
Belgium
Canada
Democratic Republic of Germany
Federal Republic of Germany
Great Britain
Ireland
Netherlands
Norway
Sweden
Switzerland
United States

Official Volunteer Sending Agencies

United Nations Volunteer Programme
VSO (Great Britain)
Federal Republic of Germany/Volunteers
Japanese Volunteers

Other U.S. Governmental Agencies

Health, Education, and Welfare:Center for Disease Control
U.S. Department of Agriculture
USDI-National Park Service
National Technical Information Service
International Communications Agency
Embassy Self-Help Funds
U.S. Forestry Service

U.S. Universities

University of Arizona
University of Southern Mississippi
University of Louisiana/Gallaudet College
Auburn University
University of Utah
University of Massachusetts

Multilateral Aid Donor Agencies

World Bank/IBRD
European Development Fund
Interamerican Bank
Asian Development Bank
Caribbean Development Bank
Central American Bank for Economic Integration
UNDP
WHO (includes Pan American Health Organization) (PAHO)
U.N. World Food Program
FAO
UNICEF
UNESCO
International Atomic Energy Organization
ILO
UNCDF
Organization of American States
Organismo Internacional Regional de Sanidad Agropeccaria (OIRSA)
U.N. Economic Commission for Asia/Pacific
EEC
Instituto Interamericano de Ciencies Agricolas (IICA)
Asian Vegetable Research and Development Center
International Institute for Tropical Agriculture (IITA)

Host Country Domestic Development Agencies

CARITAS
COHAAT-Costa Rica
YMCA of Ghana
CONGAT-Togo
CATIE-Centro Agronomico Tropical de Investgacion y Ensnanza
Mauritanian Red Crescent Society

Private and Voluntary Organizations and Foundations

International Planned Parenthood
Family Planning International
Pathfinder
CARE
Catholic Relief Services
Miserior-German Catholic Church
Volunteers in Technical Assistance (VITA)
Church World Service
Wings of Hope
Partners of the Americas
Presbyterian Church
Heifer Project International
Boy Scouts of America
World Wildlife Fund
American Leprosy Fund
Lutheran World Relief
National 4-H Foundation
World Council of Churches
Save the Children
Foster Parents Plan International
American Institute of Free Labor Development (AIFLD)
Salvation Army
Partnership for Productivity
OXFAM (United Kingdom)
Overseas Education Fund
Technoserve
Development Alternatives
Japanese Organization for International Cooperation in Family Planning (JOICFP)
YMCA
Foundation for Cooperative Housing
National Council of Negro Women
American Leprosy Mission
Girl Scouts of America
League for International Food Education (LIFE)
Institute for Nuclear Issues
Cooperative League of the United States
Brothers Brother Foundation
Foundation for Research and Independent Development in Africa
Lions Club of America
Kennedy Foundation
International Center for Tropical Agriculture
International Medical Research Center
AFRICARE
Interamerican Foundation
Rockefeller Brothers Fund
Asia Foundation

collaboration between AID and P.C. has been sporadic. There is now growing recognition that the two agencies share common goals, can provide complementary resources, and that closer cooperation and joint programming would increase the overall effectiveness of U.S. programs and projects in the third world. A letter signed by the P.C. Director and AID Administrator in April 1978 was sent to all P.C. and AID Mission Directors to encourage them to work more closely together. More recently, a joint AID/PC memorandum to President Carter emphasized our mutual commitment to programs in natural resource conservation, forestry and renewable energy. Specific mention was made of P.C.'s forestry initiative and the potential for collaborating with AID on this effort. An airgram circulated to all AID missions in Africa clearly states that the establishment of village woodlots or similar community forestry/conservation efforts is a priority, and strongly encourages all Mission Directors to work closely with P.C. Directors in project design and implementation.[15] In the energy sector AID and P.C. are already jointly supporting a modest initiative which includes village energy use surveys and alternative energy project development.

Over the next few months we would like to explore possibilities with AID for designing and implementing a coherent forestry program which might draw upon a number of the different programming options in use by AID. Some of

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[15] Department of State, Village Firewood Production and Other Cooking Fuels, AIDTO CIRC. A-157, dated July 3, 1979.

these which seem to have greatest potential are briefly described below:

- A Participating Agency Service Agreement (PASA): This is an agreement between two U.S. government agencies in which one agency provides the financial support for a project, which is implemented by a second agency. Peace Corps currently has a PASA with AID to undertake the energy initiative.

- Joint Project Design: P.C. and AID work together in the field on a country-by-country basis to design and implement a bilateral activity (e.g., Mali Livestock and Mali Renewable Energy).

- Accelerated Impact Project: This is a small AID project, with a funding limitation of $500,000, which can be implemented in 2 years. Project preparation takes less time, and project documentation requirements are less stringent than for larger Projects. The AIP is available only in Africa and Latin America.

- Operational Program Grants: A vehicle for transferring AID funds to private voluntary organizations, who manage and implement development projects. In some cases, such as the CARE Reforestation Project in Chad, P.C. volunteers have been involved in project implementation.

- Special Development Activities: This is a fund to support small community organized projects. In the past, P.C. has drawn upon this to finance the purchase of needed equipment and supplies.

- Improved Rural Technology: This regional project provides funding for small-scale activities in Africa. Total cost of any single activity is limited to $50,000.

2. Private and Voluntary Organizations

There are between 400 and 500 U.S. private and voluntary organizations (PVOs) providing assistance to developing countries. Although their major focus has been to provide disaster and refugee assistance, some PVOs have also begun to sponsor development projects in the areas of food and agriculture, health and population, education, and forestry.

According to a recent report evaluating the effectiveness of PVOs in administering foreign aid,[16] these organizations have been particularly successful in implementing a basic human needs strategy. They encourage and support self-help initiatives at the community level, often working with established local organizations. This support may be in the form of materials and equipment, and/or technical assistance. PVO's often display a high degree of sensitivity to the local culture, and often tend to be more innovative than other developmental assistance organizations due to their minimal reliance on government support.

The level of assistance provided by PVOs is significant. In FY 1977, for example, grants totalling $840 million were made to developing countries. This represents 7.1 percent of total U.S. dollar flows to developing countries during this year. During the same period of time, PVOs adminstered an additional $480 million of AID funds, for a total of $1.3 billion. This exceeded the U.S. bilateral assistance program for the same year, which amounted to $1.1 billion.[17]

In addition to the large amount of money administered by PVOs, it is noteworthy that a high percentage of these funds actually reach the beneficiaries. Also, PVO's generally are able to expend funds more quickly than larger organizations.

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[16] Elliot Schwartz, Private and Voluntary Organizations in Foreign Aid (Washington, D.C.: Special Studies Division, National Security and International Affairs, November 15, 1978).

[17] Ibid.

In the past, Peace Corps has cooperated with PVOs on implementing a wide range of projects, including forestry activities. Examples include a reforestation project in Chad with CARE, and a natural resource conservation project in Guatemala with the Catholic Relief Service. Also, Peace Corps is currently working with CODEL--a coalition of 41 PVOs based in New York--to design training and awareness workshops on environmental topics.

3. World Bank

In the past few years the Bank's forestry lending program has undergone a major shift in emphasis, from support for industrial plantations to activities which contribute to rural development and environmental protection. Between 1953 and 1976 only four of the Bank's portfolio of 17 forestry projects were concerned with rural forestry; in contrast, over 50 percent of the Bank's current program will benefit people living in rural areas. The Bank will continue to place emphasis on rural forestry and will support a variety of activities including research, training, and institution building.

4. Food and Agriculture Organization (FAO)

A UN agency with headquarters in Rome, Italy, FAO has probably the strongest technical assistance program in forestry in the world. With a staff of almost 400 professionals, most of whom are working in the field, FAO is

supporting activities in 56 countries. Its current annual operational budget is approximately $32 million.[18]

FAO is placing greater emphasis on the role of forestry in rural development and has recently published a guide on "Forestry for Local Community Development." Its extensive library and working files are a valuable source of information on tropical forestry.

5. United Nations Capital Development Fund (UNCDF)

Through the contributions of some 70 countries, 61 of which are developing nations, the UN Capital Development Fund provides financial assistance to small ventures in poor communities which do not qualify for loans or have otherwise been overlooked by more traditional sources. Based on consultation with the host country government and the community, seed money is channeled into community projects for the purchase of essential equipment and supplies. The amount of money per project is small, ranging from a low of $60,000 to a high of $1.9 million, with the majority going to projects in the least developed countries. The UNCDF currently has projects in 26 developing countries, many of which are countries where PCVs are serving.

6. International Development Research Centre (IDRC)

IDRC was established by the Canadian government to sponsor and conduct applied research and development on problems of developing countries. The Centre's

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[18] The U.S. is a major contributor to FAO, funding about one-fourth of this agency's total annual budget.

program has focused on the semi-arid tropics and includes 20 projects in 12 countries in Africa and the Near East. Research is being conducted on the use of shelterbelts and windbreaks for desert reclamation (Sudan, Tunisia), new planting techniques for large-scale reforestation (Sudan), and the best species for firewood (Malawi). The Centre is supporting the newly established International Council for Research in Agroforestry (ICRAF) which is described below. It has also given a grant to the Philippines to undertake research on the species of Leucaena most suitable for small farms.

7. International Council for Research in Agroforestry (ICRAF)

ICRAF was established in 1977 for the purpose of sponsoring, planning and coordinating research on agroforestry. Based in Nairobi, Kenya, it is an autonomous, non-profit international organization supported by voluntary contributions from governments, and public and private organizations. In addition to collecting and disseminating information on agroforestry, the Council will also support training of researchers and forestry/agricultural extension workers, and field activities.

Section V: Time Frame for Implementing P.C.'s Forestry Initiative

In this paper we have identified a number of possible project activities where we believe we can make a contribution, and where it is possible to program groups of volunteers. We have also generally identified the resources needed to implement these projects. These activities are illustrative, and we do not intend that the potential range of P.C. involvement be limited to them. During the next 12 months we plan to further refine this initiative, strengthen our cooperative and collaborative relationships with other development organizations, reinforce P.C.'s internal capacity to mount an expanded effort, and begin implementing a coherent forestry program. Our time frame for achieving these objectives is outlined below.

TIME FRAME

Activity	Date
Obtain internal concurrence on program framework	September 1979
P.C.in-service staff training workshops to include explanation of new initiative.	September 1979
Explanation of initiative to P.C. Country Directors at worldwide directors workshop	October 1979
Complete final draft of initiative paper for wide distribution within the Development Community	October 1979

Explore possibilities for PC/AID collaboration, convene small PC/AID work group to review/modify general plan in terms of overall AID efforts	November 1979
Complete draft proposal for initial AID/PC collaborative effort; and begin AID/PC collaboration effort	November 1979
Explore possibilities for strengthening forestry related recruitment and training programs	December 1979-February 1980
Explore other donor agency collaborative possibilities	December 1979-February 1980
Develop appropriate collaborative agreements	January-April 1980
Convene regional/zonal forestry workshops related to initiative	Early 1980
Initiate overall evaluation strategy	Spring 1980
First initiative-specific volunteer input	Summer 1980

Our first step will be to work with our field posts to evaluate past experiences and identify project opportunities. At the same time we will take measures to strengthen our internal programming efforts as they relate to project design, recruitment, training, public awareness, and evaluation.

Whenever and wherever possible, we would like to work with others who are seeking solutions to problems related to deforestation. Toward this end we will make a special effort to share information on our experiences and plans, and to explore possibilities for undertaking collaborative projects.

We encourage and welcome any comments or recommendations related to the ideas stated in this paper, and look forward to working with a broad community of people and organizations.

The forests are being depleted rapidly; the urgency for our well-conceived but immediate action is great.

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APPENDIX J

Development Assistance in

FORESTRY

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an A.I.D. Policy Discussion Paper

July 1980

Agency for International Development

PREFACE

This discussion paper attempts to look at the problems of deforestation from a variety of perspectives and to draw together some ideas on how A.I.D. might better address them.

For readers already well versed in the growing literature on forestry and related issues, the opening review of problems linked with deforestation and natural resource degradation will be familiar. For readers just beginning to think about these problems, the paper tries to:

- develop a definition of "forestry issues"
- underline the importance of forestry in the broader context of natural resource use
- sketch out the dimensions of the development task ahead.

After a brief discussion of A.I.D. mandates to address deforestation and a short overview of current A.I.D. and other donor efforts in forestry, the paper turns to the subject of A.I.D. program development. Examples of past A.I.D. activities are incorporated into a general discussion of five program areas to illustrate experience which may provide useful referents for program development in other countries.

These elements formed the basis of the "Guidance on Forestry and Related Issues" which was transmitted to the field in December, 1979. This Guidance message is attached here as Annex A. The elements were identified in initial meetings of an ad hoc forestry subgroup of the Committee on Environment and Development (COED) and included in an earlier draft of this paper. It is expected that as Missions and host governments consider possible approaches and the issues involved, further modifications will lead to a strategy--or perhaps a whole array of country strategies--which will be both workable and effective.

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I. Deforestation and Natural Resource Degradation

World-wide attention has been drawn to the critical fuelwood shortages and desertification in the Sahel region of Africa and to massive deterioration of the natural ecosystem in Haiti. Deforestation in Panama's watersheds threatens the operation of the Canal; excessive sedimention reduces the capacity of the lakes needed to store the 52 million gallons of fresh water released with each ship's passage through the Canal. Seasonal flood losses of water through the spillway and low flows in the dry season are also accentuated as forests are burned for cultivation or pastureland. Asia's forest-covered areas are declining with unexpected rapidity.

The "Global 2000" Report to the President concludes, "Of all the environmental impacts of the study projections, deforestation probably poses the most serious problems for the world, particularly for the developing world."[1] The International Development Research Centre concurs and adds an urgent time dimension, "It has been predicted that within the next 25 to 30 years most of the humid tropical forest as we know it, will be transformed into unproductive land, and the deterioration of the savanna into desert will continue at ever-increasing speed."[2] Accelerated deforestation is rapidly depriving the world of resources needed to meet basic human needs--food, fuel, and shelter.

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[1]As quoted in the November, 1979, draft of the U.S. Interagency Task Force Report to the President on the World's Tropical Forests: A U.S. Policy, Strategy, and Program, p. 2.

[2]J.G. Bene, et al., Trees, Food, and People: Land Management in the Tropics, IDRC-084c, p. 9.

Between 1950 and 1973, the earth's total forest area was reduced from nearly five billion hectares to just under three billion hectares. At the rate of deforestation implied by these figures, virtually all forest area would disappear in 27 years. Current estimates of present use rates diminish somewhat the spectre of a treeless future; forest area reduction is now considerably less, but still close to 20 million hectares annually -- mostly in the tropical regions of the world.[3]

Forested acreage is not evenly distributed or equally productive across continents, however, so such global estimates need to be applied with caution. In Latin America, 38 percent of the total land area is in closed forest;[4] in Africa, 8 percent; in Asia and the Pacific, 38 percent. In Latin America, closed forests are estimated to contain 136 cubic meters of growing stock per hectare; in Africa, 228 cubic meters; and in Asia-Pacific, only 89 cubic meters. Thus, Latin American closed forests contain about 55 percent of the volume of the world's tropical forest growing stock, with 0.2 percent of the volume of wood produced in these closed forests and woodlands[5] removed every year. African closed forests and woodlands account for approximately 30 percent of the growing stock, with 0.5 percent of the wood removed each year. For Asia, the comparable figure are 15 and 1.4

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[3]As presented by G. Barney at the U.S. Strategy Conference on Tropical Deforestation, AID/State, June 12-14, 1978, pp. 16, 17.

[4]That is, those forests formed by trees at least five meters tall with their crowns interlocking (UNESCO classification).

[5]"Woodlands" are defined as consisting of trees at least five meters tall, with crowns not usually touching, but with ground coverage of at least 40 percent.

percent per year. Similar variations among countries, of course, lie behind these continental aggregates.[6]

Most indicative statistics focus on tree loss which is visible and can be evaluated in economic, usually commercial, terms. But other values are also lost as forests and woodlands are cut over. Forest resources not only provide direct products--food, fuel, and forage--but also play critical roles in soil stabilization and the maintenance of soil fertility, watersheds, and wildlife habitats. A variety of natural resource problems are thus inextricably linked to the process of tree removal.

The cumulative impact of these problems is so widely dispersed over space and time that complete quantification of the costs and benefits of forest loss is impossible. The protection of the headwaters of five major rivers by the forests of Madhya Pradesh in India, for example, affects the well-being of water users hundreds of miles from the source. Similarly, the value of protected forests as a store of genetic diversity may only be realized by people over a period of centuries.

Dr. Norman Myers of the Natural Resources Defense Council in Nairobi summarized the importance of tropical forests for temperate zone nations:

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[6]Summarized from S.L. Pringle, "Quantity and Quality of the Tropical Forests," Conference on Improved Utilization of Tropical Forests, May 21-26, 1978, pp. 11-15.

"First of all, there is the climatic question...far more light and heat are reflected from deforested areas than from areas where there is a large mass of vegetation to absorb light coming from the sun. There is also the particulate matter in the atmosphere resulting from large-scale burning...as a result of massive deforestation in the tropics, there could be a decline in precipitation in the grain-growing belt of the United States... (and) the United States might find itself with too little rather than too much food in an increasingly hungry world...(with) far-reaching implications...in the areas of foreign policy and national security...

Secondly, (there is)...the problem of disappearing species...It has been noted that the United States is dependent on germ plasm from tropical moist forests to maintain the productivity of its food crops...The National Cancer Institute at Beltsville, Maryland, has stated that if tropical forests are widely eliminated within the foreseeable future, this would cause a major setback to the anti-cancer campaign because so many new drugs are being developed from plants of tropical moist forests...[7]"

It is clear that "deforestation" is a development problem which extends far beyond the loss of tropical rainforests. Forests, woodlands, and grasslands provide essential food, forage, fuel, and shelter, a wide range of commercially valuable products, employment opportunities, and environmental benefits. These resources are also a vast reserve for current and future generations--a reserve that is being jeopardized in many parts of the world by the proliferation of unsustainable patterns of use and an allocation of scarce development resources which is both inadequate and inappropriate to address the deep-rooted causes of deforestation.

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[7]Speech at the U.S. Strategy Conference on Tropical Deforestation, AID/State, June, 1978, pp. 20, 21 in Proceedings.

II. Causes of Deforestation and the Reduction of Forest Values

The vast majority of trees and woody shrubs are deliberately cut and removed by an increasing number of people for many reasons--heating and cooking, fiber for textiles, house construction materials, sawnwood or wood chips for export, pulp for paper, or, most importantly, to gain space for planting crops and growing food. The shrub[8] and savanna grasslands[9] which characterize the "forests" of the semi-arid tropics are, it is true, severely affected by drought--but evidence shows that people and their livestock often magnify drought damage and reduce the capacity of grasslands to regenerate when rains return. People--acting in their own interests but within the constraints set by natural systems and economic patterns--determine the rate and scope of deforestation and savanna deterioration through their use (and perhaps overuse and misuse) of trees, shrubs, and the lands on which these grow.

By bringing about various land use changes and establishing various land use patterns, people affect the way in which resource value trade-offs are made. Consideration of these three factors provides a framework for more in-depth discussion of the cause of tree loss and natural resource deterioration.

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[8]That is, with woody shrubs 0.5 to 5 meters tall, either open shrub land or closed thickets.

[9]Treed savannas are those grasslands with 10-40% cover of trees.

A. Land Use Changes

People's use of forest land ranges from the most extensive mode of utilization (hunting and gathering with little modification of the original tree and shrub cover) to very intensive uses (such as permanent agriculture and urban development). The most intensive uses of land so completely transform the original forest or vegetation cover that it bears no resemblance to the appearance of the original.

Neither the most intensive conversion of land from forest to non-forest uses nor the modification of surface vegetation to include non-forest as well as forest activities necessarily imply that such modification will lead to degradation and depletion of the natural resource base. The basic determinant is the type of ecosystem and the carrying capacity of that system. Some systems are more amenable to change than others; some can sustain intensive utilization, some cannot.

When people change the use of ecosystems in non-sustainable ways, i.e., by overstocking given areas of grassland, by applying modes of cultivation which accelerate soil erosion and water run-off, by harvesting fuelwood at rates greater than natural regeneration or replanting are taking place, and so forth, then the cycle of natural resource deterioration often associated with deforestation is set in motion.

B. Land Use Sustainability

Forests are often described as a "renewable resource." This appelation is given to forests in part because of their readily observable ability in temperate climates to regenerate themselves after being greatly modified by human use (as by timber harvesting) as well as because of their ability to "reappear" as if by magic through the natural process of plant succession even when they have been completely removed (as when old-field forest succession colonizes and takes over abandoned agricultural land).

Often, however, trees and woody shrubs are removed from marginal or fragile tropical lands which cannot be maintained in continuously productive--sustainable--use without substantial applications of social, institutional, administrative, and technological inputs. The combination of tropical soils, increasing populations, and the greater need for investments of all kinds acts together to make successful development of marginal and fragile lands for intensive human uses a difficult undertaking.

In many instances, basic knowledge for ecosystem regeneration is lacking and the substantial economic resources needed are not available. Thus, the tendency in natural resource and agricultural development efforts has been to direct the most available reources to the most fertile and more reproductive areas about which there is greater knowledge rather than to these marginal lands. Yet, paradoxically, people with little social, cultural, or economic standing, and thus least access to the needed

resources, are most often forced to subsist on marginal and fragile lands. They cannot afford to maintain them and so further compound and exacerbate the problem begun when the original forest and vegetation cover is removed.

Four forest resource uses are often cited as initiating unsustainable use patterns: fuelwood collection, shifting cultivation, pasture and forage production and commercial timber harvesting.

(1). Fuelwood Collection

The fuelwood aspect of the deforestation process provides particularly dramatic insight into the depletion associated with unsustainable resource use patterns:

> Fuelwood removals . . . make up more than 80 percent of all tropical wood utilization . . . Fuelwood, and even its common derivative, charcoal, is bulky relative to its value and thus expensive to transport. This, plus the fact that trees of almost any species are acceptable, has led to repeated removal of woody growth on lands near population centers. . [10]

When people continue to use woody vegetation for cooking fuel and population growth increases their demand for fuelwood beyond naturally regenerated supplies, fuelwood shortages are a likely, if not inevitable, consequence. The causes of the fuelwood situation can also be related to: (1) the manner in which harvesting is done; (2) the demand for fuel exceeding the productive capacity of the woodlands under a given form of management, with demand due perhaps to rapid population growth alone but

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[10]November, 1979, draft of the U.S. Interagency Task Force Report on the World's Tropical Forests, pp. 26, 27.

perhaps due to other factors as well--inefficient cooking technologies, for example; or (3) the lack of available alternatives for increasing supply or switching to the use of fuel substitutes.

In any case, if soil deterioration begins to occur with depletion of the woodland fuelwood supply, the deterioration may speed the further reduction of supply. This vicious cycle may lead ultimately to failure to meet cooking needs--even at a minimum subsistence level, to cutting back on heating--with adverse health consequences in low-temperature situations, and to switching from fuelwood and charcoal to crop residues and dried cow dung as alternative fuel sources--with consequences for further declines in soil fertility and reductions in output of food crops. In short, unsustainable harvesting of fuelwood can make it difficult for the poor to meet their basic needs.

(2). Shifting Cultivation

Sustainable resource use patterns can prevent such downward spirals from starting. Sustainability implies that a continuous stream of positive benefits is available to the users. Even shifting cultivation can be a sustainable agricultural system when land is abundant and periods of fallow are adequate. Under such conditions, farmers can allow a secondary forest community to be reestablished after cropping and thus to restore the nutrient status and structure of the soil.

Unsustainable shifting cultivation occurs when the fallow period is reduced or the length of the cropping cycle is over-extended. This may

come about because of population pressure and people's needs for food and forage or perhaps simply as a result of poor management. Under such conditions, leaching causes removal of soil nutrients from the surface layers, soil structure begins to break down, reducing water infiltration capacity and increasing runoff and erosion, and tenacious weeds and crop pests and diseases become more intense, further decreasing crop yields. If this process of deterioration goes sufficiently far, the land will eventually become uncultivable and completely unproductive.

(3). Pasture and Forage Production

A soil depletion syndrome similar to that associated with shifting cultivation can also occur when livestock owners transform forest areas to pasture or forage production in areas where rainfall is high. Some of the signs of deterioration may not be so apparent, but experience is showing that tropical soil nutrient status cannot be maintained under continuous grazing or forage production without application of fertilizer or periodic return to fallow.

(4). Commercial Timber Harvesting

Commercial timber harvesting, when carried out under sustained yield management conditions, results in only a temporary local depletion of standing timber volume. Planned regrowth and regeneration balance the loss overall. Commercial timber harvesting conducted in an unsustainable manner, however, can result not only in long-term depletion or reduction of standing timber volume but also in reduced timber quality and value.

Even when commercial harvesting is badly done, it rarely results in the complete removal of vegetative cover from the land, as is often the case with shifting cultivation or pasture establishment. Logged-over forest lands, therefore, may support a much modified or less valuable timber stand, or, in some cases, a highly unproductive vegetation cover. The erosion and leaching associated with timbering, however, may not be so excessive as those associated with agricultural uses.

Construction of access roads and other transport systems into undeveloped forest areas, as for timber or mineral extraction, on the other hand, often leads to additional planned or unplanned agricultural and pastoral development. This is especially the case where population pressure on existing cropland is severe and the demand for expansion land is strong.

Such new development is often carried out in an unsustainable manner; critical soil and water resource damange and deterioration has resulted from such land uses after tree harvesting. People who initiate unsustainable land use patterns are often constrained by social, economic, and political forces--particularly inequitable and insecure land tenure arrangements, exacerbated by a general scarcity of other needed inputs. Such causal factors are difficult to analyze, but they will determine whether the uses made of transformed or modified forest areas are sustainable in the long run or not.

C. Resource Value Trade-Offs

Planned and unplanned uses of forest, woodlands, scrub, and savannas always involve difficult trade-offs among the values which these natural resources have to offer. The gain of some immediate benefits--timber, fuelwood, space for planting food crops--must be balanced against the need to maintain a reserve for future needs--soil fertility, genetic resources, water quality and quantity, ecological diversity, wildlife habitats, future commercial development, tourism and recreation.

The causes of deforestation and natural resource degradation must be analyzed within this framework of land use changes, land use sustainability, and resource value trade-offs. Underlying causes (need for fuel, timber, land for food and fodder) rather than symptoms of the problem (tree loss, erosion, declining soil fertility) must be understood if appropriate and effective solutions are to be devised. A careful assessment of empirical situations on a case-by-case basis will be esential to insure that no potential causal factor--and therefore, no potential remedy--is *a priori* excluded from consideration.

III. The Development Task

A productive resource base will be maintained only by matching the demand with the supply. Through technical inputs, it is possible to increase supply to meet higher demand, but this creates disturbances within

the ecosystem. For example, an increased use of fertilizer may cause eutrophication in streams and lakes which, in turn, may cause a decrease in fish population due to diminished oxygen in the water.

A productive natural resource base will probably be best maintained by a combination of approaches, among them:

- protecting the forests and setting aside certain ecological areas for protection of plant and animal species
- ensuring that all harvest of fuel and timber is carried out on a sustained yield basis--either by planting, seeding, or natural regeneration in combination with soil fertility maintenance and water management
- limiting but not stopping the clearing of forest cover for conversion of forest lands to other uses
- seeking to reforest, afforest, or encourage natural regeneration of lands not currently supporting any forest cover--to help balance conversion and transformation losses that will occur as forest lands are inevitably converted to other uses.

Few countries have either the requisite knowledge or resources to carry out such a wide-ranging program. Moreover, in designing program interventions, the Agency and host country government colleagues are going to be brought face to face with a number of hard political and economic decisions involving precisely those value trade-offs which have been described above. Natural resource degradation proceeds because people, communities and nations follow the course of least resistance in meeting their needs; to change that course will require major, long-term efforts on the part of many donors and countries acting in concert.

IV. A.I.D.'s Role in Addressing the Problem

The Congress has given A.I.D. increasingly stronger mandates over the past several years for involvement in forestry as a legitimate aspect of its development assistance program. The 1979 amendments to the Foreign Assistance Act provide the most specific Agency mandate for forestry project assistance to date.

The 1979 amendments to Section 103(b) provide authorization for bilateral assistance to deal explicitly with forest resource depletion and associated soil and water resource deterioration:

> The Congress recognizes that the accelerating loss of forests and tree cover in developing countries undermines and offsets efforts to improve agricultural production and nutrition and otherwise to meet the basic human needs of the poor. Deforestation results in increased flooding, reduction in water supply for agricultural capacity, loss of firewood and needed wood products, and loss of valuable plant and animals. In order to maintain and increase assistance under this section for forestry projects which are essential to fulfill the fundamental purposes of this section, emphasis shall be given to community woodlots, agroforestry, protection of watershed forests, and more effective forest management.

Moreover, A.I.D. is authorized in Sec. 119 to:

> .... include research, and the development, demonstration, and application of suitable energy technologies (including use of wood); analysis of energy use, needs and resources; training and institutional development; and scientific interchange.

The President directed in his Environmental Message of August, 1979, that A.I.D. "....give high priority to programs which would advance these objectives:

- necessary preservation of natural forest ecosystems and their rich complexes of plant and animal life;
- multiple uses of highly diverse tropical forest, including management of natural stands, development of sociologically sound forest plantations, and combined agriculture and forestry;
- increasing yields in family-scale tropical agriculture to relieve pressures on forest lands that are not suitable for cultivation;
- developing integrated projects for reforestation, more efficient fuelwood use, and alternative energy sources."

A.I.D. has already begun to play a more positive role in dealing with forestry and related natural resource issues along the lines advocated by the President and Congress. The 1978 U.S. Strategy Conference on Tropical Deforestation, which A.I.D. co-sponsored with the State Department, was a first step. The Africa Bureau's 1978 conference on fuelwood generated additional dialogue and furthered thinking and planning on key issues. Other conferences carried the process further: the Africa Bureau's energy conference in Paris in November, 1979, the Asia Bureau's conference on energy, forestry, and the environment in Manila in November, 1979, an A.I.D.-supported meeting in Costa Rica on forest sciences in tropical areas, held in October, 1979, and Peace Corps/A.I.D. conference on community forestry held in Upper Volta in February 1980 are some of the recent activities.

Two communications within A.I.D. have begun the intra-agency dialogue necessary to formulate a reasoned policy and realistic program guidelines.

- In September, 1979, the Assistant Administrator for Program and Policy Coordination sent an airgram to all Missions on "The Preservation of Forests." The airgram included a copy of the Presidential directive noted above and an excerpt from the report of the House Appropriations Committee.

- The Committee report urged the Agency to increase funding, planning and staffing for assistance in addressing the environmental and natural resource problems they face. It asked all Missions to undertake "environmental profiling"--a process involving the gathering of information about resource problems and trends, the initiation of a dialogue with host government officials, and the formulation of strategies and projects to respond to specific environmental and natural resource problems.

- In late December, a memorandum outlining "Guidance on Forestry and Related Issues" was sent from AID/W to the Missions. The guidance memorandum "constitutes one more step towards the formulation of a clear strategy. It outlines opportunities for Missions to examine the extent to which deforestation and the loss of vegetative cover constitutes an impediment to development, as well as the commitment of the country to alleviating the causes and effects. (It is) a request to Missions to start a dialogue with host governments and other donors where this has not been done and to build on and expand activities which have already been initiated."

A.I.D. has, of course, not been alone in assuming a more positive stance in addressing the worldwide problems of deforestation and natural reource degradation. The FAO has traditionally played a leading role in the provision of technical assistance for forestry and continues to do so, with over 300 persons providing forest-related skills to developing countries. The World Bank has put forth a strong Sector Policy Paper on Forestry and followed up with increased lending to social forestry projects, including a recent IDA loan to India for nearly $30 million. Canada's CIDA and IDRC

have published policy and background papers which support an increased level of funding for "trees and people." The Swedish International Development Authority supports several projects at FAO and has numerous bilateral projects as well. The United Kingdom also provides forestry expertise; the Commonwealth Forestry Bureau at Oxford provides a principal source of tropical forestry information in Forestry Abstracts. Other European donors are also widely involved in forestry projects and tropical forestry research. Most importantly, developing countries themselves are expresing increased concern with deforestation and natural resource degradation and are actively seeking ideas and funding to address the problems head-on. The Djakarta Conference on Forestry was a recent forum for such issues.

Both governmental and private organizations in the U.S. have encouraged A.I.D. to assume this positive role in dealing with forestry and related problems and promised active collaboration and support of future A.I.D. activities in developing countries. For example, increased Peace Corps involvement with forestry efforts--community woodlots, testing of more fuel-efficient technologies--provides an opportunity for A.I.D. to collaborate in forestry at the "grass roots." Firm plans for collaboration in some country activities are already moving ahead.

In short, A.I.D. has a wide-ranging mandate to provide substantial support for forestry and natural resource-related initiatives in developing countries in order to assist those countries to meet the basic human needs of their populations. A.I.D. will have to overcome the constraints common to new initiatives (funds, personnel, experience, and relevant technology)

in order to play this expanded role in the forestry area effectively. The Agency will be able to draw upon its own experiences with prior forestry-related efforts as well as those of other donors and voluntary agencies, such as CARE and the Peace Corps, although much ground-breaking work still remains to be done. In the next section, some of the possible program activities and approaches which may be useful in taking the next steps are suggested. It should be recognized that since energy, forestry and environmental components of projects cannot be clearly separated, the pursuit of many activities identified will be consistent with the high priority that the Agency is also placing upon energy programs.

V. Program Development in Forestry and Natural Resources

Although A.I.D.'s experience has been scattered, there are a substantial number of relevant projects for reference in planning and programming forestry-related initiatives. Review of project impacts is still needed to prepare the Agency adequately for more effective multi-donor and multinational efforts as well as to meet needs for planning bilateral assistance efforts in the 1980's. It is clear, however, that local involvement and local investment wil be essential if serious efforts are contemplated. A.I.D. programs in forestry and natural resource management, to be cost-effective, will have to provide for substantial participation by the people who currently use the trees. The term coined by the FAO--"forestry for

local community development"[11] --and the concepts of "social forestry" are likely to be increasingly useful in shaping A.I.D.'s efforts to address the socio-economic and community aspects of the problems of deforestation.

Because of the diversity of problems, resources, awareness, and commitments among developing countries, any one of several areas of activity may be appropriate starting points for program development:

- Analysis, planning and policy formulation (including natural resource inventories and land-use assessments, land capability classification, evaluation of tenure law and its applications)
- Institution-building for natural resource management and conservation (including training, management systems, and establishment of service support institutions)
- Incorporation of forestry activities into agricultural and rural development programs
- Afforestation or reforestation, and protection of natural and induced vegetation
- Appropriate and alternative energy.

Some of the ideas and experiences which may be relevant to each of these program areas are discussed briefly below. It should be kept in mind that there are a number of means by which A.I.D. can provide such program assistance:

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[11]Marilyn Hoskins' paper for AID on "Women in Forestry for Local Community Development" provides practical guidance for using this approach. The concept of FLCD and social forestry are also discussed in more detail below, p. 33.

- Collaboration with other bilateral or multilateral donors
- Provision of technical assistance directly to host countries--with an emphasis on multidisciplinary teams
- Cooperation with the Peace Corps and private voluntary organizations or other intermediaries
- Participation in consortia capable of sponsoring regional approaches to natural resource management and development
- Provision of PL 480, Title II (Food for Work) and Title III support.

Some implementation modes may be better-suited to certain areas of activity; only further experience is likely to indicate which are most cost-effective.

A. Analysis, Planning, and Policy Formulation

The artificial bounds often set in the process of project development and design may already have contributed to the magnitude of the problems of deforestation and may well be too restrictive to permit A.I.D. and host governments to implement effectively the kind of wide-ranging and farsighted strategies needed to address them. By thinking of development as a series of discrete events--"projects"--rather than as a continous process, planners are often led to ignore the competition for scarce natural resources engendered by even the most developmentally-oriented projects. The expansion of Nepal's timber industry, for example, may have exacerbated that country's soil erosion problem. In Brazil, the ecological balance of the Amazon Basin has been undermined by the Trans-Amazon highway construction

and associated resettlement and range development projects--and no single project can now be designed to restore that balance. Broader analysis and improved planning are a prerequisite to overcoming project competition likely to result in natural resource depletion. By developing country programs" and "sectoral strategies," a broader analytical framework can be set up to consider resource value trade-offs explicitly.

A.I.D.'s approach to forestry problems can begin such conscious efforts to surmount project bounds with analytical horizons expanded to suit the long term and ultimately large-scale processes of natural resource development. The three-to-five year project planning frame must be widened to take into account likely conditions ten or even twenty years in the future. Knowing the rate of deforestation is essential[12] --but it is not enough. What is also needed is information on the productive capacity of national systems, population growth, land use, food needs, energy alternatives, economic and fiscal health of the country or area and a host of other variables. Sound scientific knowledge is basic to the process of effective policy and program formulation regarding natural resource development. Sound understanding of the political, cultural and socio-economic conditions regarding use of and access to natural resources is fundamental to acting on the basis of the scientific knowledge.[13]

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[12]And the opportunities to use remote sensing technologies to measure and monitor rates of deforestation are growing. FAO has already taken steps; AID has several projects in remote sensing for agriculture which are also relevant.

[13]See the recent Devres report for AID on "Socio-Economic Considerations in Fuelwood Use".

A recently initiated project in Costa Rica illustrates an approach to addressing natural resource problems by combining planning and analysis tasks with institutional strengthening activities. The purpose of the Natural Resources Conservation project (No. 515-0145) is to strengthen the institutional mechanisms through which Costa Rica manages renewable natural resources. The components of this $9.8 million loan project will be:

- policy analysis and research
- pilot micro-watershed management
- reforestation and cattle management improvement pilot projects
- forestry production pilot scheme
- resource management plans for five priority regions
- development of conservation education in a national park.

This project is an interesting mixture of planning and program development or analysis with field work (in the form of pilot projects). It is supported by strong public commitment of the Costa Rican government to the conservation of natural resources and the environment.

A.I.D.'s experience in Tunisia with a Watershed Planning and Marginal Lands Project (No. 644-11-120-018), carried out between 1959 and 1967, illustrates the limitations which are posed when the commitment of the host country government to implementing scientific plans developed is not secured. Twenty-nine person-years of technical assistance were provided between 1963 and 1967. Soils and range surveys were carried out and conservation plans for the 157,000 hectare Oued Marguellil watershed in central Tunisia drawn up. Yet the single achievement of the project appears to have been a series of soil maps and an unimplemented watershed management plan.

B. Institution Building

Building and strengthening national and community institutions will be as critical in addressing the problems of deforestation as it has been in A.I.D.'s more traditional sectors. National forestry institutions are generally charged with managing forest resources and both supporting and regulating commercial forestry activities. Foresters prepare maps and surveys of forested areas to locate commercial timber resources and draw up exploitation plans for removal of salable timber, construct roads, manage concessions, and improve extraction and processing methods. Their tasks include efforts to achieve more homogeneous regrowth of cut-over land with greater volume of valuable of species. The growing dimensions of tropical deforestation indicate that currently institutionalized efforts have been insufficient if not unsuccessful.

The capacity of most traditional forestry institutions to address the particular problems of fuelwood can, moreover, certainly be questioned. Only a few countries have radically reorganized their forestry efforts to deal specifically with such community-level use. Government foresters, charged with protecting state forest reserves and supervising the commercial concessions in most countries, continue, more often than not, to end up as enemies of the rural communities and populations. Rural households have thus continued to meet their needs for fuelwood while foresters have not succeeded in protecting trees from fuelwood seekers--with the consequent expansion of unsutainable wood use patterns. Reversing this trend will not only be a matter of increased police action, but of increasing supplies and alternative energy sources through participation of the fuelwood user

groups. It is likely that the current establishment of foresters will need a radical reorientation in approaches to their current tasks--encouraging community participation in regeneration efforts instead of simply policing government plantations, for example--as well as expansions in their numbers to permit them to take on the additional responsibilities implied. It may be, too, that the administrative divisions between forestry, agriculture, livestock and natural resources will need to be reconsidered if such reorientation is to be successful.

Assisting developing countries to strengthen institutions for planning, research, extension, and public education activities is also important. This may require inputs of economists, sociologists, educators, extension personnel and media-specialists--a whole range of traditionally "non-forestry" expertise. The involvement of the Peace Corps, private voluntary organizations, and scattered community development and agricultural extension personnel in community level forestry activities should continue to provide a useful fund of experience and insight for institution-building at this level.

In the longer term, staff development in A.I.D. itself will have to reflect the wide range and special characteristics of institution-building task regarding natural resource development--balancing the formation of scientific research and communication management entities with the development of increased extension and communication mechanisms to enhance local participation in addressing the problems of deforestation. Continuity of administrative and technical effort--in the form of project monitoring and

evaluation, as well as research and program development--will be essential to efficient and intelligent use of resources for forestry assistance.

The Integrated Rural Development project in Haiti (No. 521-0078) as well as the Costa Rica project already described, provides an example of an institution building approach to natural resource conservation. The purpose of the Haiti project is to develop and test an institutional system and capacity to deliver resources and services to small farmers inhabiting four critical watersheds. This $12 million project was initiated in 1977, but was redesigned after further review in late 1979. The original project assumed a greater existing institutional capacity to absorb the project than was in fact the case, and the revision will involve a scaling-down.

The Niger Forestry and Land Use Planning project (No. 683-0230) also illustrates a major institutional building emphasis. The project's outputs will include the creation of a central technical planning unit in the National Forest and Water Service, the conduct of a natural resources inventory and yearly vegetation monitoring program, and an education campaign on deforestation and forest conservation (for government and the public alike) as well as the preparation of a 20-year plan for rehabilitating the nation's natural resource base.

Educational support for the development of a national cadre of foresters is included in the Upper Volta Forestry Education and Development project (No. 686-0235). The $5.9 million grant project will seek to train 40 students per class in a two-year lower level forestry agent training

center by involving them in trials of forest management alternatives on 4,500 hectare of natural forests growing on shallow lateristic soils in the Dinderosso Forest. This work will also provide a training opportunity in the interaction with herders and farmers in the area.

C. Integrated Agroforestry and Rural Development

The simultaneous or sequential growing of trees with agricultural crops is called agroforestry (or agrisilviculture). The techniques of agroforestry were developed through the attempts of foresters in Asia to grow greater concentrations of commercial timber than occurred in the natural forest. Cut-over or depleted natural forests were cleared and seedlings of teak or other valuable species were planted. Local cultivators supplied the labor and were allowed to farm the land until the canopy closed--two or three years--in return for planting and caring for the seedlings. This was the taungya system, devised to reconcile the interests of foresters and shifting cultivators.[14]

The emphasis in agroforestry has recently shifted from the production of valuable hardwood species in combination with controlled crop cultivation to the intensification and stabilization of agricultural land use under cultivation by enriching the fallow with the use of leguminous species such

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[14]Shifting cultivators, under normal conditions, of course, practice a sort of agroforestry by pollarding--that is, cutting off side limbs to reduce shade--rather than felling certain trees and by stimulating the growth of other species through burning in preparation for cultivation.

as Leucaena.[15] This shift in emphasis to the development of sustainable land use management reflects a concern for the subsistence needs of small farmers under increasing population pressures. Many new types of trees, additional values of trees (nitrogen fixation, for example) and permanent combinations of trees and food crops are now considered so that increased yields of food, fuel, fodder for livestock, and materials for shelter essential to meet basic human needs are possible.

Given the cultural variety and wide range of ecological conditions of developing countries, however, diversity will continue to be the hallmark of agroforestry. The likelihood of a replicable panacea--such as a particular combination of trees and crops--is low. It is probably neither realistic nor useful to aspire to one or two "optimum" agroforestry combinations or to harbor expectations of the kinds of universal innovations achieved in the development of high yield varieties of corn, wheat, and rice. Agroforestry poses a major challenge to applied research in both the agricultural and silvicultural fields. Until recently research has emphasized the manipulation of genetic material or ecological factors in order to overcome the limitations of particular crops in achieving high-output and sustainable systems of production. But the improvement of unique traditional patterns of local crop and tree cultivation--possibly represnting the most efficient and ecologically sound use of resources--will require site-specific trials with exotic as well as local species.

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[15]Two publications funded by AID are particularly useful: Leucaena: Promising Forage and Tree Crop for the Tropics (NAS, 1977) and Tropical Legumes: Resources for the Future (NAS, 1979).

Since agroforestry merges the disciplines of ecology, agronomy, and forestry with sociology, anthropology, economics, and development administration, and because its advance will require investments in small-scale field experimentation, unique problems are posed for development assistance work. To date, A.I.D. has little experience in agroforestry per se. A wide range of rural development and agricultural project experience, however, is both relevant and useful. In particular, the farming systems perspective currently being developed in agricultural research systems around the world is likely to provide valuable insight for agroforestry applications.

Although the A.I.D.-sponsored and CARE-implemented *Acacia albida* tree planting project in Chad (677-0008) is often cited as a reforestation project, it is likely that its agroforestry characteristics have contributed to its success. In the drier areas of Africa in Sahel, the *Acacia albida* epitomizes a tree that provides multiple benefits to rural welfare and development: soil enrichment through nitrogen fixation, dry season browse and pods for cattle feed, dry season shade but leaflessness in the growing season--due to its deciduous nature during the rainy months. It is thus an ideal tree for millet and sorghum fields, and much esteemed by local farmers, who know its value.

D. Afforestation and Reforestation

Planting trees or shrubs in locations where tree cover has been removed (reforestation) or in areas which have never been forested (afforestation) can be done in large-scale plots with top-down planning and management and a

paid labor force, in small-scale efforts (fruit trees around a houseyard) by individuals working on their own time, or at any scale in-between. Tree-planting activities are probably those which spring to mind as a "forestry project." It should, however, be emphasized that reforestation and afforestation are only one possible approach to addressing the problem of deforestation.

Large-scale plantations are often established over extensive surfaces of government-owned lands and administered by forest service personnel. This is not invariably the pattern; in Brazil, over one million hectares of eucalyptus have been planted on private lands with the stimulus of government subsidies.

There is a considerable body of information and experience in plantation silviculture in developing countries, although it has been accumulated mostly for climates with monsoonal rainfall regimes or a marked dry season (India, Burma, sub-Saharan Africa). The economics of plantation tree farming are amenable to conventional project analysis, although environmental benefits or losses are still relatively difficult to evaluate. Still, there are fewer unknowns in large-scale forestation than any other type of activity considered in this paper.

Large plantations are viewed by some as the only way that developing countries will be able to meet future wood needs on a predictable and sustainable basis, even in regions that now have relatively high productivity of plantations in suitable agro-climatic situations. Fast-growing species

are planted and all the trees are utilized so that plantations are up to forty times more productive than natural forests.

- The Asian Development Bank, for example, estimates that reforestation in Asia must be expanded at a rate of 10 million hectares per year at an annual cost of $400-800 million in order to satisfy future needs and avoid a wood deficit in 1990 on the order of 170 million cubic meters.

- In the African Sahel, where there is already a critical wood deficit, plantations should be established at the rate of 300,000 hectares per year to meet future needs. Currently, however, costs far outrun available resources.

A.I.D.'s experience in Jamaica illustrates a large-scale forestry approach. Six thousand hectares of fast-growing Caribbean pine (P. caribea) were planted during 1974-77 period on government land as a major part of a $4.4 million Forestry Development Loan. The project was preceded by seven years of forestry assistance from Canada and the U.K. as well as a UNDP/FAO project on Forestry Development and Watershed Management in the Upland Regions. The FAO project yielded 38 studies that helped to justify the A.I.D. project and identify the critical areas for reforestation. This background, together with a high level of government commitment and the relative ease with which the Caribbean pine is grown, resulted in a successful project.

A recently designed $1.6 million grant project for Gambia will establish 1,300 hectares of Gmelina on government land. The selection of Gmelina was backed by 30 years of trials begun by British foresters with various species, including teak, eucalyptus, and Khaya spp. The plantation is projected to average 15 to 20 cubic meters per hectare of annual wood

production and will help to supply the urban fuelwood needs. Other project components are training scholarships, village woodlots, and feasibility study for mangrove exploitation.

Barring innovative solutions to the problems of collective management, experience indicates that the benefits of large-scale plantations in general are likely to be limited to: employment in the plantations, a general increase in the availability of wood for urban markets, decreased cutting pressures on natural forests, and some measure of planned security as far as future wood needs are concerned. Experience also indicates that problems of policing are enormous, especially where land pressure and demand for firewood are great, and that direct costs may, at least in the short run, outweigh the direct benefits.

Small-scale forestation includes trees planted by communities or individuals and grown as a crop in small plantations of a few hectares, in small groups or along the sides of roads, fences, houses, and irrigation boundaries. In general, there are no inherent or insurmountable technical obstacles to small-scale forestation. Species, planting techniques, nursery design and the like are well tested and tried.

The benefits of small-scale efforts are substantial: local self-sufficiency in fuelwood, the multiple benefits from planting, income-savings from not having to purchase fuel, and time-savings from not having to gather fuelwood at locations far removed from the community. The difficulties of small-scale forestation are equally numerous: land may be in short supply

or legally constrained, working out protection mechanisms may be complex, those doing the planting and protecting may not receive the benefits, and those with knowledge of improved tree varieties and techniques of planting may not be able to communicate effectively with individuals and communities. The need for involvement of people with skills other than those traditionally provided by foresters is very clear.

Small-scale village or community plantations have been most notably successful in the People's Republic of China, South Korea, and Gujarat State in India. The Chinese and Korean examples lose some demonstration value in nations without strong, not to say totalitarian, governments. The Gujarat State experience, however, holds several lessons for small-scale forestry interventions. Repeated failures to protect forests and to get large-scale plantations going led in 1969 to the idea of "extension forestry" and a group was started in the state forestry department. First, trees were planted on state lands along roads and irrigation canals. Villagers were allowed to cut grass betwen the trees in return for caring for the trees. Next, free seedlings and advice were given to individuals. Bigger farmers responded well, although small farmers did not. (Subsidies are now being considered to foster plantings on eroded marginal portions of small farms.) Third, village plantations were promoted, through dialogues between state forestry representatives and village councils. The elements were:

- four hectares of land set aside by the village for planting
- seedlings provided by the state with wages for laborers

- villagers' agreement to protect trees from pilfering and grazing in return for harvesting of grass and fruits
- on harvesting, equal division of trees between the state and village council, with price controls applied to the products, keeping them well below the market price and increasing accessibility to the poor.

The FAO's elaboration of a "forestry for local community development" approach generalizes on the Gujarat experience.[16] FAO notes[17] that several elements appear to be relevant to the success of small-scale forestry with community participation:

- sustained technical suport system
- full range of development services, especially if part of a watershed management effort
- obvious and tangible benefits for the participating community
- appropriate community organization for planning, work, benefit allocation, and conflict resolution
- strong commitment at higher government levels as well as at the community level
- perhaps profound changes in community attitudes and behavior regarding trees and forests
- perhaps profound changes in the attitudes of foresters regarding people, and a radical reorientation of forest institutions, from policy to technical functions.

A.I.D. has also undertaken small-scale forestry projects--so far only conjunction with larger plantation projects. In Jamaica, this effort was

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[16]The Hoskins paper for AID gives other examples of forestry for local community development approaches.

[17]In the 1978 publication, Forestry for Local Community Development, FAO Forestry Paper No. 7, Rome.

not succesful as the government was unable to recruit an "extension forester." The Gambian project is just getting started, but there will be a component which will seek to establish five ten-hectare village fuelwood plantations of Gmelina and Azadirachta. Cashews, managoes, and citrus trees will also be offered. Motivation of the villagers to establish the plantations is somewhat in doubt, as the expresed priority need was for agricultural improvement, but a process to elicit the interest and involvement of the villages has been built into the project.

E. Alternative Energy Sources

Fuelwood is the major source of domestic energy in most developing countries and accounts for the vast majority of wood harvested. Rural households tend to use wood itself while more urban households rely on mixtures of charcoal and wood. The expanding circle of deforestation around Ouagadougou in Upper Volta is perhaps the most dramatic and well-known indicator of the urban demand for fuel.

The "renewability" of trees has often been mentioned as a key advantage of forestry as a source of energy. The time needed for renewal is, however, a major consideration in undertaking any interventions involving the planting of trees for fuelwood. Only exceptional trees on exceptional sites, such as the Albizzia plantations in the Philippines, which are reported to grow seven meters in one year, will produce benefits of such immediacy that they can be adopted without major subsidies, guarantees, or coercion. Measure with longer time delays are almost certain to require either some

form of subsidy--especially to cover the opportunity cost of the land removed from cropping--or a companion development activity that compensates for the time delay.

Thus the need to conserve current woodstock while beginning reforestation and afforestation efforts along the lines described above suggests that attempts to improve the technology of alternative energy sources and to develop alternative technologies for using traditional energy sources more efficiently may be justified. The three-stone stove is an inefficient user of firewood; alternative stove designs (e.g., the "Lorena" of Central America) are felt to provide major firewood and charcoal savings potential. Few, however, have been spontaneously adopted or become commercial successes even where fuelwood is perceived to be in short supply.

Solar, hydroelectric, wind, and biogas generation are other potential sources of alternative energy. Wider use of these technologies will depend on the success of the further testing, adapting, and redesign necessary before they can be more broadly considered as low-cost energy-saving alternatives to fuelwood. A.I.D. has a number of programs just starting in this area, particularly in the Sahel. Most will be research/pilot efforts and lessons learned are expected to provide valuable guidance in the future.

VI. An A.I.D. Strategy for the 1980's

This discussion paper has focussed thus far on building the analytical underpinnings for an A.I.D. strategy on forestry and other natural resource issues. In sum:

- The problem of deforestation is a serious one, needing urgent attention.
- Both technical and financial assistance are needed for developing countries to undertake long-term and innovative steps to address this problem.
- A.I.D. has a broad mandate to provide such assistance, a base of experience in natural resource management and development, and a growing sense of approaches which could be useful.

The impact of deforestation and natural resource degradation will fall exceptionally hard upon the poor as fuelwood shortages threaten their abilities to cook food and heat their homes. Further, the future for increased agricultural productivity is jeopardized if continued impoverishment of the natural resource base is unchecked in the next decade.

A.I.D.'s vision for the 1980's must encompass program and policy options well beyond the narrow boundaries of tree planting. In this section, the process of delineating an A.I.D. strategy which can effectively deal with the broad range of problems associated with deforestation is begun. Identifying means for incorporating short-term projects into the long-term timeframe of forestry and marshalling the resources to accomplish them are the tasks immediately facing the Agency.

A. Objectives

The nature of deforestation and related resource problems suggests that a wide range of objectives and initiatives may be appropriate in different circumstances. The process of goal specification in any given country may be usefully considered by Missions as part of the ongoing CDSS process or as

a separate element of an "environmental profile." Based on discussions above, five likely program objectives are suggested here and associated with several possible program initiatives for purposes of illustration. Some initiatives could support several of the listed objectives, of course. The rough classification here reflects the usual goal-purpose distinction of the logical framework and is intended to demonstrate activities providing indirect as well as direct support.

Missions will also be able to define other objectives and initiatives based on assessment of country circumstance and needs. The objectives suggested here include: (1) raising the level of developing country awareness; (2) supporting direct forest development activities; (3) reducing pressures causing deforestation and natural resource degradation; (4) increasing the efficiency of forest resource utilization; and (5) improving institutional capabilities to manage natural resources.

1. Objective: To raise host government awareness of and commitment to the problem of deforestation and natural resource degradation.

- Help assess actual loss rates and analyze causes of deforestation to determine the magnitude and types of efforts needed.
- Develop a comprehensive capability to survey forest resources and to monitor forest cover changes through both ground and remote-sensing technologies.
- Assess with the host government, the economic consequence of existing forestry related practices and land-use patterns, including the associated indirect costs of deforestation,

e.g., flooding, soil loss, siltation, disruption of agricultural cycles, rising costs of fuelwood and other forest products, and loss of medicinal trees, bushes and wildlife.

- Help develop a country strategy to deal systematically with deforestation and associated forest land and resource use problems.

2. Objective: To provide support for protection, regeneration, production and restoration efforts.

- Help identify, protect and manage critical catchments and watersheds, areas which contain representative genetic materials, and unique or fragile environments.
- Develop planting materials and technologies and train people for a variety of forestry activities which can be locally initiated and controlled: tree plantations, agroforestry, woodlots, and private holding tree planting.
- Assist in developing income generating programs for the rural poor based upon managing and marketing forest products (plant and animal) on a sustainable basis so that there is a local stake in maintaining natural and planted forests.
- Support efforts to learn and record local knowledge of plants and animals and the scientific basis for indigenous resource practices.
- Initiate, support and expand existing programs of applied research in agroforestry to identify, screen and evaluate trees and plants

which may be useful in solving problems of the rural poor. This will include those species which are fast-growing, regenerate by coppicing, and have multiple purposes (wood, forage, fertilizer and soil fertility improvements) and complement food crops, as well as those which provide other economic and environmental benefits.

- Consider P.L. 480 Food for Work (Title II) and Food for Development (Title III) to provide some of the commodity support and local currencies needed to finance the substantial amounts of labor that might be needed in any large-scale efforts to restore degraded lands and watersheds.
- Encourage governments to implement necessary socio-economic and admnistrative changes, such as land tenure security, so that greater local participation will be forthcoming.

3. Objective: To ease pressure on current use of forests and other vegetation by developing renewable and alternative sources of energy and appropriate, sustainable cropping systems for the rural poor.

- Support village woodlots or urban tree plantations where there is an active pattern of communal landholding or communal oversight of activites. The necessity for involving the women of the community (who usually gather and utilize the fuelwood) in the identification, design, and implementation of such projects cannot be overstressed.

- Increase productivity of currently cultivated land to reduce the pressure for growing populations to use forest, savannas and marginal lands for agricultural expansion. This approach needs to be initiated with caution, looking at both the intrinsic capability of the land to support intensified agricultural production and the energy requirements (including fertilizers and pesticides) to sustain it.
- Develop possible alternatives, especially those based on renewable energy sources, as substitutes for fuelwood and charcoal. Also consider the field testing of solar devices with potential for drying grain, fish, and tobacco as well as more efficient low-cost and socially-acceptable stoves and improved kilns for charcoal production.
- Utilize the concept of agroforestry for the simultaneous and stabilized production of food, forage, and fuelwood especially in areas where shifting cultivation is practiced.
- Evaluate possibilities for short-term subsidy programs for alternative fuels, especially for poor consumers. Such programs are, however, expensive and difficult to terminate.
- Consider, if agro-forestry is not appropriate, short-term supplementary financing of commodity support to compensate owners for the loss of productive assets. The timescale of forestry efforts means that land which is replanted to trees is withdrawn from other forms of cultivation for long periods of time.

4. Objective: To increase utilization efficiency of forest and other natural resources through (1) technological improvements--in production, extraction, processing and end use--and (2) more effective means of controlling the use rates of existing resources.

- Develop local capability to formulate solutions which are specific to particular environments through long-term training at professional levels.
- Provide short-term training programs in tree planting, propagation and harvesting. A.I.D.'s policies focus on community level training and support of community level efforts through extension services for forestry and soil/water conservation.
- Support public education on resource conservation to provide stimuli for effective community or individual participation in natural resource use through Forestry for Local Community Development (FLCD) approaches and school or backyard tree nurseries.
- Consider small-scale or cottage industry development to utilize "noncommercial" species of trees remaining after selective harvesting for commerical purposes. This approach is limited and must be coupled with appropriate reforestation and environmental controls to ensure that such intensive use of the forest does not create environmental problems of its own.

5. Objective: To assist governments to strengthen their institutional capability to manage natural resources through improved planning and regulation of lands for agriculture, energy and other uses at the farm, community and regional levels.

- Upgrade the effectiveness of host country forestry personnel to manage existing reserves by providing appropriate training and equipment.
- Provide technical assistance to host country agencies in analysis, planning, legislation and policy formulation, and environmental assessment activities.
- Encourage host governments to initiate regenerative programs for lands which have deteriorated because of misuse.
- Encourage and assist host governments to develop paraprofessional personnel able to advise small and marginal farmers on maintenance of existing tree crops and integration of tree and other crops in economically viable cropping patterns.
- Encourage and assist host governments to develop and utilize local institutions to build community involvement and capacity for improved resource planning and management.
- Encourage and assist host governments to develop and utilize regional institutions to strengthen planning and management of natural resource systems (e.g., river basins or catchment areas).

While these objectives and initiatives focus on activities that might be undertaken in recognition of an identified need, many traditional development activities can lead to deforestation. Missions must, therefore,

ensure that A.I.D. activities do not cause unnecessary deforestation. The environmental examination should carefully evaluate whether cleared lands will sustain the intended uses. The activity should go forward only if resource regeneration, or other sustainable use components, are incorporated into the project.

B. Priorities

A.I.D. places its highest priority on assisting the poor in developing countries to achieve their basic needs in a self-sustaining way. Where the food and fuel needs of the poor are being threatened by deforestation and natural resource degradation, interventions are needed which will alleviate this threat. Where the poor in rural areas are clearly using resources in unsustainable ways, interventions are needed which will increase their capacity to implement sustainable modes of use (of land, trees, soil and water).

By examining all ongoing and proposed major projects (e.g., integrated rural/agricultural development, irrigation, rural water supply, fish pond development, range management in arid areas), A.I.D. Missions should be able to ensure that appropriate forestry elements, such as erosion controls (windbreaks and vegetative plantings), woodlots, watershed protection, nurseries and training of personnel, are fully incorporated. This will reduce the competition for funds--and the priority designation--which many Missions already heavily committed to a wide range of development efforts are likely to perceive. Such piggybacking also provides a mechanism for relatively rapid start-up in addressing forestry concerns.

The priority which should be assigned to forestry activities in many countries, however, may require that a range of specially-focused activities be undertaken. Action projects, such as community fuelwood projects, range improvement projects, and the like, will have to be complemented, or in some cases, preceded, by significant efforts in institution-building and research. Forestry service reorientation and expansion, as discussed above, is likely to be a high priority on the institutional side. Research is needed on social forestry, adaptive research on fast-growing species, agro-forestry, and tropical ecosystems management.

Central funding has not been and will not be allocated to cover all such research and institution-building efforts. Nor can central planning designate relative priorities with any expectation of worldwide applicability. Given the nature and diversity of the forestry and community situations which must be taken into consideration, regional and local research and institutional-building initiatives are essential.

While the causes and magnitudes of deforestation and devegetation are different enough to require country by country determination of priority in operational terms, the universal importance of forest-related concerns should not be overlooked. No country is immune to the problem of expanding populations placing increasing stress on natural systems. Few are immune to the concerns of rising energy costs and few can afford to ignore their continued dependence on fuelwood. By the time the deforestation problem is so evident that the urgency for action is apparent to all, it may be too late.

C. Appropriate Timeframes

It should be recognized that the economic and social benefits of projects in natural resource conservation, preservation, and development may not be realized over the short term. Although some objectives or initiatives can be accomplished relatively quickly (assessment of resources, use rates, causes of deforestation), the development of programs to meet other objectives (training of people, controlling use rates) may require a minimum of a decade before success can be expected, much less achieved. This should not deter Missions from proposing such activities.

While short-term accomplishments may be limited, the problems associated with forest depletion and natural resource degradation will not correct themselves. Populations and petroleum costs will continue to rise. Even under the most optimistic conditions of economic and income growth, with substantial substitutions of alternative fuels for wood, demand for firewood alone will continue to rise in absolute terms. These long term trends will persist. Add to them the likelihood of decreasing soil fertility due to increased erosion and decreasing use of organic fertilizers (as dung is used to substitute for fuelwood) and the rationale for immediate initiation of long term programs is clear.

A.I.D. normally funds projects over a three-to-five year project span. But where the long-range nature of the problem and the need to sustain and support an equivalent long-term commitment by the host country indicate that second stage projects will be needed, follow-on support for action projects

should be planned at the outset. Some countries and some regions within countries have already moved further toward meeting various forestry objectives than have other countries. The array of short-term objectives and the need for long-term support in these countries will thus differ considerably from those in countries just beginning to think about concerted efforts to conserve or develop forest resources.

D. Resources

A.I.D. continues to face constraints of funds, skilled manpower, and relevant technology. A.I.D. can begin to marshall existing resources in ways which will help to address the problems of deforestation by:

- exploring opportunities for piggybacking forestry-related interventions in rural development sector efforts
- expanding in-house ability through extensive use of collaborative modes of programming
- undertaking forestry-specific initiatives where conditions are most urgent.

The interdisciplinary mode of intervention, which has already been mentioned as an important prerequisite to effective action in the forestry area, will pose some challenges in implementation.

By stressing project complementarity in achieving forestry-related assistance objectives and by the incorporation of forestry-related components in other rural development activities, A.I.D. Missions can effectively piggyback new initiatives on old. As has already been pointed out,

this is likely to be a useful start-up mechanism for Missions already committed to a wide range of development efforts. But in many developing countries, additional efforts geared especially to forestry-related objectives will be needed. Current budget and staff constraints indicate that in-house abilities to develop and fund such additional activities will need to be expanded by collaborative programming.

Three potential collaborators need to be more actively engaged in dialogue, planning, and programming:

- Peace Corps
- Private Voluntary Organzations
- Other Donors

Forestry activities should be a major field of concentration between Peace Corps and A.I.D. The reforestation effort is never going to be solved by a top-down approach. It is going to require thousands upon thousands of community-based fuelwood efforts--the kind of approach that Peace Corps Volunteers, working with villagers and host country officials and backed by A.I.D. resources, are uniquely suited to tackle.

Successful collaboration with Peace Corps will require A.I.D. attention to developing means for rapidly making small grants (generally less than $50,000) available. Volunteers, typically in-country for only two years, need to be able to apply for and receive needed material support for forestry activities--support which the Peace Corps cannot, by law, supply.

A.I.D. can also collaborate with Peace Corps by providing technical support and on-the-job technical training for volunteers and their host country counterparts. One such project being centrally developed by A.I.D. and Peace Corps will provide two technical backstoppers to volunteers, but more will be needed as Peace Corps expands its forestry programs and its forestry volunteer corps over the next several years.

A.I.D. needs to make the same kind of effort with other voluntary agencies. There is great capacity among some of the private voluntary groups to identify, design and implement reforestation projects at the community level. Among those private voluntary agencies with expertise in appropriate technology, there is substantial capability to address the challenge of more efficient forest product utilization (through improved stoves for cooking and better tools and technologies for tree cutting, for example) and the design and development of alternative energy sources.

Finally, A.I.D. must continue to join in efforts needing multilateral cooperation. The World Bank and other donors are already seeking opportunities to co-finance projects with A.I.D. Perhaps some "division of labor" on such projects might be worked out, with the Bank funding more capital intensive components, for example, and A.I.D. funding other items such as technical assistance, training, or other areas in which the Agency has a particular competence. As a practical start in this direction, Africa Bureau is consulting with the World Bank regarding collaboration on the Forestry and Ecology Team of the CILSS/Club du Sahel. Asia Bureau is also engaging in informal discussions with Bank and FAO staff. On a country by

country basis, other opportunities to join resources will certainly be identified as Mission proceed with assessment and analysis of forestry needs and potentials.

Where conditions are most urgent, Missions may wish to exercise greater bilateral initiative in undertaking and supporting forestry-specific programs. In addition to the resources normally available from their regional bureaus, Missions can tap skills and expertise of the Development Support Bureau personnel, programs, and projects as well as those of the Title XII institutions.

- Six IQC contractors in Environment and Natural Resources can provide some expertise in forestry. The list of IQC firms was attached to AIRGRAM-210. IQC's and ongoing projects in other related subject areas such as Agriculture, Energy, and Rural Development can also provide needed expertise.

- A number of DSB and Regional bureau personnel and IDIs with formal training in forestry can be made available for support of Mission needs. The new DSB Office of Environment and Natural Resources (DS/ENR) which is now being formed will serve as a key point of contact on forestry matters. Other personnel having knowledge of related fields such as remote sensing, environment, hydrology, agronomy, soils management, energy, land use planning, land tenure, local organizations, and community participation can also be made available in response to specific Mission requets.

- A four-year RSSA with the U.S. Forest Service will provide Missions with the services of resident forestry advisors and with expert referral information and limited on-call services for technical expertise in forestry and natural resource management. Missions should be able to request such services from DS/ST (soon to become DS/ENR) by mid-FY 81. A RSSA with the Department of Energy managed by the Office of Energy can also provide short-term services to Missions upon request.

All of these resources, expertly used, will only begin to address the problems of deforestation and natural resource degradation in developing countries. Indeed, the magnitude of the problems is likely to require a vastly increased effort, including considerably more significant allocations of resources, by donors and developing countries themselves, before sustainable solutions can be achieved on any broad scale.

APPENDIX K

UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

and

PEACE CORPS

Sahelian Forestry Design Workshop

Ouagadougou, Upper Volta

February 18-22, 1980

Workshop Report

EXECUTIVE SUMMARY

The USAID/PC/HC Environmental Management Forestry Design Workshop held in Ouagadougou, Upper Volta, February 18-22, explored possible environmental strategies which would be applicable in the difficult and threatened Sahelian Milieux. Attention was especially given to strategies which would eventually promote autonomous village level control over natural resources.

Workshop personnel drawn from the staffs of the three main participating agencies (USAID/PC/HC), Peace Corps Volunteers and Private Voluntary Organizations active in six West African Sahelian countries initially analyzed a series of common problems which have hampered reforestation efforts to date. These problems fell generally into three categories:

1. Difficulties in finding technically viable solutions;

2. Lack of personnel trained to handle both the technical and social aspects of village level reforestation,

3. A lack of adequate and appropriate financing available when people are ready to use it constructively.

A second round of workshop discussions concentrated on stating specific criteria which must be met if future efforts in the problem area are to succeed. To ensure success, these criteria must enable villagers to have greater control over their local environments and permit them to effectively manage renewable natural resources for sustained yield. Given a fragile ecological balance, uncertain meteorological conditions and heavy population pressure, participants agreed that it would not be an easy task.

Using these criteria to structure individual country specific discussions, workshop participants then proceeded to tackle the job of exploring with each other opportunities to collaborate in meeting these criteria and thus improving odds that environmental management goals of specific programs and projects will be realized.

INTRODUCTION

USAID/PC/PVO agency representatives from the Sahel met February 18-22, 1980 in Ouagadougou Upper Volta to discuss current problems of Sahelian reforestation efforts and possible solutions. This workshop, sponsored jointly by AID/UV and PC/UV, was under the patronage of the Minister of Environment and Tourism , Mr. Tamboura Ahmadou whose aid in preparations and dedication to forestry made the workshop and resulting recommendations a reality. The opening ceremonies had the tone set for workshop expectations with remarks by the Minister of Higher Education and Scientific Research Mr. Traoré Harouna. The workshop conclusions were aptly summarized at the closing session by the Minister of Education and Culture Mr. Domba Konaté.

The overall goal of the workshop was to facilitate the development of reforestation projects in the Sahel as well as the collaboration of USAID/Peace Corps and Host Country Agencies in such projects. Four objectives were used as a base for accomplishing this goal:

1. Provide an opportunity for workshop participants to exchange ideas and information, in order to increase the technical, managerial and community development skills of PCVs and other forestry technicians, in current and future projects.

2. Define, from the above exchange, critical elements for the success of a project.

3. Clarify the kinds of further technical and resource support and back-up required from AID, PC and other donors in order to assure project success.

4. Prepare specific plans of action for suggested collaboration efforts and define measures to be taken for their execution.

Proposed workshop solutions focused on environmental management approaches that could draw on the experience and capabilities of the four organizations to implement and sustain autonomous village-level projects. An overriding criterion for success of these approaches is project ability to rejuvenate and upgrade Sahelian woodstocks in the context of an ongoing concern for locally autonomous environmental management.

This report consists of the following five parts:

1) an overview of the workshop purpose;

2) a review of common problems encountered to date in USAID/PC/HC collaborative efforts to promote reforestation and environmental management at the local level in the Sahel,

3) a discussion of workshop consensus on criteria for successful, eventually autonomous Sahelian reforestation activities,

4) a brief description of specific collaborative projects involving tripartite efforts by USAID/PC/HC agencies developed during workshop negotiations (and further amplified in a series of country-specific reports appended to this document);

5) a description of in-service training undertaken at the workshop

and

6) conclusions and recommendations.

WORKSHOP PURPOSE

In post-drought years many Sahelian and International Development Agencies have become disenchanted with apparent failures of large-scale, top-down approaches aimed at improving a seriously threatened environment which now only barely provides a home for some 20 million people. In particular, these agencies have been impressed by the difficulties of involving villagers in a large number of small-scale, locally adapted reforestation efforts. While industrial plantations have been measurably more successful and will continue to serve a salient role in meeting urban fuel and construction wood needs, a growing concensus asserts that environmental management must involve another dimension : active village initiative in moving to protect, increase and control the exploitation of their own existing forest resources. Also, both industrial and village approaches cannot be conceptually or practically seperated from a series of related problems, such as maintenance of agricultural productivity in the context of growing population pressure and the intricacies of range and watershed management. Various agencies represented at the workshop began independently to identify opportunities for more effective collaboration based on a mutually productive division of labor among all agencies involved in environmental management efforts.

USAID can provide funding and trained technical expertise essential to effective, broad guage reforestation activities. Peace Corps can field significant numbers of Volunteers prepared to work at the grass roots level and acquire technical, linguistic and cross cultural skills which enable them to work closely with target village populations. Private Voluntary Organizations have a history of innovative approaches to development, frequently associated with diverse philosophies, lighter administrative structures and greater flexibility in program implementation.

Finally, Sahelian Environmental Management Agencies (Departments of Water and Forests) have long been hampered by a lack of trained personnel and adequate material and financial support. Barred as a result from moving towards more productive extension oriented actions, they have continued to engage in stop gap repressive conservation measures recognized as ineffective. Nonetheless, top administrators of these agencies realize the need and have expressed active interest in reforming their services to promote cooperative interaction with Sahelian villagers. They assert that in the end, this approach will be be more efficient. Environmental agency heads have repeatedly requested financing to permit this reorientation. They have also requested Peace Corps

and USAID personnel to provide temporary technical assistance in those job slots which local technicians cannot as yet fill. Furthermore, they have argued in favor of shifting increasing responsibility for environmental management to local communities prepared to accept it. This would liberate foresters and other conservation technicians from policing operations so they could focus their efforts more fully on perfecting technical reforestation solutions and diffusing this information to the villagers. Ultimately, as everyone recognizes, it is the villagers who must convert this information into trees in the fields, windbreaks, woodlots, microcatchment basins, anti erosive terraces and dune stabilization efforts, all tailored to the realities of the individual Sahelian situation.

This perception of possibilities for a more fully cooperative approach by all parties trying to promote autonomous village environmental management, generated the idea for the workshop.

The organization of the workshop was a collaborative effort between the Peace Corps and USAID Mission in Upper Volta and their respective directors, John P. Hogan and Richard C. Meyer and was an extension of an already vigorous AID/PC collaboration in Upper Volta.

Appreciation is expressed to James R. Seyler, APCD/UV, and Mary M. Young, Consultant whose participation contributed greatly to the success of the conference and last but certainly not least Dr. James T. Thomson, Consultant who was a major contributor to the workshop and the principal author of this report.

Additional thanks are also in order to John Blumgart, AID/AFR/DR/SDP ans Sam Kunkle (U.S. Forest Service on loan to Peace Corps) for technical backstopping and funding arrangements.

PROBLEMS ENCOUNTERED IN USAID/PC/HC REFORESTATION EFFORTS IN THE SAHEL

As a first step in shaping more productive reforestation initiatives, workshop participants reviewed and analyzed relevant Sahelian experiences in this area. The following critical problems have hindered or frustrated many previous environmental management operations undertaken in Niger, Upper Volta, Mali, Mauritania, Senegal and The Gambia.

1) Regional political and social land tenure differences,

2) Inadequate community education and participation,

3) Potentially competitive land uses (i.e. farming, herding and tree raising),

4) Inadequate protection of reforestation plantings and natural regeneration,

5) Lack of appropriate resources (i.e. money and materials in the right place at the right time)

6) Lack of adequately trained personnel,

7) Inadequate exploitation of more energy efficient techniques of cooking, charcoaling, heating and harvesting;

8) Insufficient and inappropriate research for improved management of environmental systems and recurrent evaluation of existing techniques.

CRITERIA FOR EVENTUAL AUTONOMOUS SAHELIAN VILLAGE REFORESTATION ACTIVITIES

The above problems currently inhibit autonomous local reforestation efforts. From this list of problems, workshop participants elaborated a series of criteria which must be respected in the design, funding, staffing and implementation of workable environmental management programs. "Workable" in this context and as participants repeatedly stressed, "tending to enable villagers to meet their consumptive and non consumptive forest product needs through autonomous control and management of their own local renewable resources". Without such local autonomy, this kind of subtle approach to village involvement is impossible. Without local flexibility, inventiveness and a willingness to struggle, solutions permitting villagers to master a particularly diverse set of management needs, will not be forthcoming. The extent to which those needs vary within relatively small geographic areas, it was agreed, precludes any centrally planned response to management needs. Weak transportation systems and materials shortages which plague operations of contemporary national environmental agencies in the Sahel, further reinforce the argument for local autonomy as a long run goal of environmental efforts.

CRITERIA DEEMED ESSENTIAL FOR THE REALIZATION OF SUCCESSFUL AUTONOMOUS RESOURCE MANAGEMENT ENTERPRISES ARE:

1) money in amounts appropriate to the task at hand and available with reasonable rapidity and flexibility in light of diverse local conditions (The current 2-year minimum delay from project conception to funding is considered unreasonably slow, given the high rate of personnel turnover in all participating agencies and the fragility of consensus in many Sahelian social environments),

2) personnel adequately prepared and committed to engage in community extension work and who are knowledgeable about appropriate propagation and sylvicultural techniques,

3) conservation techniques, locally developed for local needs, which can be realistically incorporated into ongoing patterns of resource use, particularly fuelwood consumption,

4) continuing search for better propagation and sylvicultural methods, including more emphasis on indigenous species, as well as related environmental management techniques;

5) participation of all parties, from the village to the national levels, in planning and implementation stages;

6) understanding of reforestation efforts from the perspective of villagers who are being encouraged to exercise greater initiative and to invest more of their time in managing their local renewable natural resources,

7) adequate follow-up support - financing, personnel, materials and maintenance, new information, etc. - whenever appropriate,

8) information sharing and integrated resource planning and development at the project level and consistent with local autonomy,

9) recognition of the critical role of local socio-political structures in determining what sorts of environmental strategies are feasible (or infeasible),

10) willingness to design extension support programs that take into account the variability of local political, cultural and biological environments,

11) project design that can indeed enable villagers to become competent in and have the authority to operate independent resource management programs.

USAID/PC/HC COLLABORATIVE EFFORTS IN ENVIRONMENTAL MANAGEMENT

Individual country discussions during the third and fourth workshop days produced a varying range of agreements on possibilities for initiating or expanding existing collaborative programs. Depending on the extent of prior involvement in environmental management activities by the American agencies and the extent to which agreement in principle already exists between participating parties, talks focused on developing either broad policy lines, specific projects (sometimes including volunteer staffing and financing levels), or a combination of both. There appeared to be a good deal of exchange among conferees about other issues pertinent to effective collaboration. Recurrent themes in these discussions were:

1) that funding delays must be cut from the currently intolerable level of up to 3 years between initial project conception and final authorization to dispense appropriated funds,

2) that Sahelian country infrastructural problems as well as donor agency criteria has to be addressed as preconditions for programs capable of generating autonomous village level reforestation actions over the medium and the long term,

3) that better material support should be provided, including adequate means of transportation for volunteers engaged in reforestation activities, since these activities are frequently extensive and involve the need to sustain effective contact with local communities under difficult communication conditions. Therefore, it was agreed that forestry volunteers might well be provided with bikes or small trucks on a regional basis,

4) that a shift in emphasis from policing to extension activities must take place in Sahelian state forest management planning if villagers are to be expected to engage in resource management on a continuing basis;

5) that in the light of 4, communication skills, both lingual and personal, and cross-cultural skills, are of primary importance to PCV's who must develop relations of confidence with Sahelian rural residents while laying the groundwork for popular participation in reforestation activities. Most concrete proposals which came out of workshop negotiations envisage an extension role for volunteers. This automatically puts a premium on communication abilities.

TECHNICAL IN-SERVICE TRAINING

To the conferees' disappointment, efforts to engage a forestry technician with extensive experience in innovative and tested strategies of arid land reforestation came to naught. Upgrading of volunteer foresters' skills was therefore limited in large part to exchanges in small group workshop sessions devoted to technical aspects of sahelian environmental management. Aspects covered were:

1) seed and seedling production

e) site preparation and planting techniques

3) protection, maintenance and management

and

4) improved, energy-efficient, wood utilization techniques (2 conferees provided considerable background information on appropriate approaches to the development of locally feasible, improved woodstoves).

Some additional technical information was imparted to workshop members during a day-long site visit to village reforestation projects being promoted in the Kombissiri sous préfecture by a Swiss/Dutch forestry team. Much of the on-site discussions concerned local political modalities of successful reforestation efforts, however, several techical points were also made. The following are most important:

1) village tree plantations must be cleaned of competing grasses to avoid water loss and consequent stunting, both during and at the end of the rainy season in the first year. Also, one annual cleaning at the end of the 2nd and 3rd year rainy seasons generally suffices to put tree roots beyond the reach of competing grass roots

2) It was noted that most technical/currently available information about Sahelian reforestation practices has been derived from industrial plantation experience. Frequently, this is not comparable to village woodlot operations as sylvicultural techniques differ significantly between the two operations For instance, consider the practice of intercropping. Industrial experience shows that crop returns are adversely affected by mechanical site preparation and maintenance which leave the soils deplaced and compacted. Wood production also decreases as a result of excessive competition with the crops. However, intercropping in village operated non-mechanically cultivated sites contributes to increased

wood production and satisfactory crop yields even when industrial crops such as cotton are farmed simultaneously with the trees. Persistent weeding and cultivation also reduces noxious plant competition with the trees and increases water infiltration rates.

3) protection is essential. Fencing, non-fencing and patrolling have all been tried in numerous Sahelian reforestation programs. The Swiss/Dutch team has concluded to their satisfaction that only relatively expensive hog-wire fencing (220 CFA/m) will adequately protect trees. They therefore supply villagers with wire on the assumption that it can be used at least 3 times during a 9-year span to get woodlot plantations past critical initial growth stages (2-3 years). This hand-me-down approach substantially reduces per unit protection costs. They insist - and most workshop members agree - that even 6-strand barbed wire fences, nearly as exponsive as the hog-wire variety, do little more than tickle tree-eating goats.

4) early returns and on-going benefits in all reforestation schemes should be sought. Possibilities exist for associating selected varieties of forage plants with woodlot plantings within the same protected (fenced) area. Also, the immediate benefit of nutrient rich forage perennials harvested by villagers at the end of the rainy season, increases local interest in the tree-planting effort and accomplishes the recommended annual cleaning.

CONCLUSIONS AND RECOMMENDATIONS

Given the above constraints to village oriented reforestation efforts in the Sahel to date, past history of collaborative projects (AID/PVO/PC/HC) and the criteria deemed essential for successful autonomous Sahelian reforestation activities, workshop participants made the following recommendations:

1) there must be a more speedy and efficacious system for the financing of feasible natural resource projects

2) all interested elements of village populations, including women, must be involved in reforestation efforts

3) given the thrust of collaborative projects towards autonomous local resource management, language, cross cultural and community development skills are every bit as vital as technical skills and must be accorded appropriate emphasis in any training program

4) all natural resource projects should promote and encourage autonomous local resource management, however, conferees were in agreement that the move from top down control of environmental management activities to a broad based local involvement characterized by substantial autonomy of village operations, will be extremely difficult to accomplish

5) environmental education and reforestation projects should only be implemented in areas where the rural populations are interested because they perceive natural resource shortages

6) the workshop should be viewed as the first of similar collaborative efforts and as such, should serve as a model for similar AID/Peace Corps exchanges elsewhere in the Third World.

I - Financing

One of the biggest frustrations experienced by many workshop participants from all involved agencies is the difficulty in obtaining funds for small scale projects within a time frame which respects the fragility of local consensus and the need to act while everyone's interest is high. That includes, first and foremost the villagers with their exigencies of a frequently marginal existance as well as the PCV's who tend to have the least staying power in terms of project interest due to short term contracts.

Volunteer manages to establish working contacts within a village, he must have the flexibility to be able to respond to the resulting opportunities. Otherwise, his replacement has the entire job to do over again - he must be examined by local people, found to be reliable, etc. - and then again pick up the threads of frustrating financing. In effect, current financing arrangements (IR's included) amount to anything but collaborative efforts. Greater local (mission level) flexibility is imperative.

II - NECESSITY OF INVOLVING ALL INTERESTED ELEMENTS OF VILLAGE POPULATIONS, INCLUDING WOMEN, IN REFORESTATION EFFORTS

One potential problem in many Sahelian village reforestation programs is their tendency to focus on a subgroup within the village community to the exclusion of other groups. This tendency is commonly - and accurately - explained as a donor/forester effort to economize on local management costs by piggybacking forestry efforts onto locally organized and operational groups. There is nothing wrong with this strategy, as long as reforestation efforts are not allowed to enrich one particular subunit within the community at the expense of others. Techniques for developing locally viable reforestation groups remain to be explored, tested and perfected.

Particularly important is the case of women. In certain village cultural situations, women - typically responsible for collecting household firewood supplies - have a vested interest in reforestation. In many cases this interest is clearly not directly convertible into tree planting activities, but several conferees cited examples of clever and innovative strategies that might bring women into the reforestation picture. Their examples have a common characteristic. They make reforestation activity a relatively low cost (in terms of time and effort) addition to women's daily work pattern and in ways that do not affront local customary beliefs about traditional sex-division of tasks. In the long-run, such incremental innovations may well create a larger role for women in reforestation efforts than insensitive attempts to ignore traditional sex-role beliefs.

Workshop discussions did reveal that women are making some inroads into forestry at all levels. Host-country females in Mali and Upper Volta have received forestry training and will shortly be given field assignments. Village women at several sites are producing seedlings in cooperative enterprises for later sale to their husbands. Senegal has launched a "ONE WOMAN-ONE TREE" program in an attempt to stress the important role women can play in Sahelian reforestation. Youth and schools groups among others, often include girls as well

as boys and in some cases the girls in these groups take an active part in planting operations rather than merely providing food and distractions for male workers. Female PCV's have experienced some difficulties but all conferees agreed that they can make a significant contribution to reforestation efforts and should be actively recruited by Peace Corps.

III - LANGUAGE AND CROSS CULTURAL SKILLS NECESSARY IN SAHELIAN FORESTRY

Volunteers who wish to use AID funds to do reforestation projects tending towards autonomous village and family resource management must likewise be prepared (though not initially competent) to learn the language and cross cultural skills indispensable to establishing rapport with villagers. Add nauseum has been repeated the importance of these skills. One can only add that for technical volunteers -if one is prepared to listen to the local level experiences reported by forestry volunteers now actually "fussing" with "community development" problems as part of their daily activities- technical preparation is not enough. Involving villagers in the process of learning how to do reforestation in a thousand subtly different milieux takes teaching skills. It is difficult to teach when one can't get one's tongue around concepts meaningful to peasants who are potential learners. It is difficult as well to teach if one cannot figure out the community framework within which learning is possible: when and to who and under what circumstances should the volunteer try to transfer his knowledge of forestry. Only cross cultural skills and the teacher's willingness to learn while on the job can supply the necessary answers. Failure to acquire those skills and the information they will lead to can only frustrate all involved. Success in acquiring those skills will bolster initially fragile attempts at village autonomy and encourage villagers to investigate what will work in their own particular combination of soils/rainfall/groundwater/land tenure/socio-political patterns.

IV - INEVITABLE DIFFICULTIES

Workshop members recognized that a reorientation of past environmental strategies in favor of more popular involvement is indispensable. They further recognized that existing peasant-forester relations will be difficult to change unless the current policing responsibilities of the Sahelian Forestry Departments are shifted from the extension agents to other personnel not involved in village community development activities. They realize the lack of technically appropriate solutions makes autonomous local forestry projects harder to sell

because benefits of long term investments are less certain. Even when technically feasible solutions are developed in one local context, they are not automatically exportable and replicable in other local contexts. Technical and socio-political factors differ enormously over even minimal distances. Frequently, adjustments must be worked out in new technical and human environments before a reforestation strategy (or more efficient woodstoves) can become locally viable.

Finally, everybody's unconscious or conscious familiarity with hierarchical patterns of organization and the demands they impose, will function as a long term brake on efforts to free up local initiative and get everyone to the point where local efforts and mistakes are viewed as necessary costs of experimentation rather than a waste of scarce and valuable resources. However, these resources are indeed valuable and should not be gratuitously wasted. Techniques should be rigoursly tested to the extent possible and should have a reasonable prospect of success in a setting before being disseminated in the field.

V - PEASANTS' PERCEPTIONS OF RESOURCE/SHORTAGES AND WILLINGNESS TO LEARN ENVIRONMENTAL MANAGEMENT TECHNIQUES

Recent research in Sahelian local renewable resource management activities tends to suggest that there is a time and a place for environmental education. It is determined often by villagers' perceptions that the resource management system has gotten out of hand. Unless they see serious environmental degradation which threatens their continued existence in the area, they frequently are little interested by messages which stress the importance of "doing something now" to ensure sustained yield of renewable resources. That such efforts to conserve and promote sustained yield use of resources are almost inevitably costly, reinforces peasants' unwillingness to become "prematurely" involved in such programs.

Since there are - unfortunately - many Sahelian areas already badly degraded and seriously threatened by desertification, scarce financial and personnel means available to promote autonomous village management should be directed to communities who perceive the problem and are willing to engage in specific management practices.

FUTURE POSSIBILITIES FOR USAID/PC/HC AUTONOMOUS FORESTRY INITIATIVES

workshop interaction led to concrete results. It produced new exchanges and contributed to a fuller understanding of what opportunities exist for mutually reinforcing efforts of all agencies involved in furthering locally viable ventures in resource management and energy independence. The workshop allowed participants who had already developed joint project proposals in their countries of operation to examine their current status and what might be done in the future to facilitate their implementation and execution. It introduced some conferees to new approaches which - with suitable tailoring - might work in their own areas.

In view of the above points, the workshop provides an example which might be relevant to future AID/Peace Corps Forestry Initiative exchanges in other Third World regions and countries.

A P P E N D I C E S

I. Country specific reports:

A. The Gambia

B. Upper Volta

C. Mauritania

D. Niger

E. Mali

F. Senegal

II. Names and addresses of conference participants

APPENDIX I.A.

The Gambia:

A USAID multi-faceted reforestation project that includes village nurseries, woodlot plantings, industrial plantations, exploitation of a mangrove swamp, charcoaling research, sawmilling, forestry extension services, equipment upgrading and personnel training has recently been approved by The Gambia. It will become operational over the next 12 months, with a first-phase duration of 5 years.

At workshop discussions involving USAID, Peace Corps and The Gambian Forestry Department personnel, it was commonly agreed that bush fires currently pose the most serious threat to the environment in The Gambia. Other issues of great concern to The Gambian Forestry Department include uncontrolled cutting in remaining natural forests, poor utilization of existing resources, lack of trained personnel and limited mobility.

It was determined that Peace Corps Volunteers could be usefully integrated into ongoing reforestation activities in the context of current USAID projects. Some will be assigned to develop village-level bushfire-fighting committees after preliminary efforts in the area at environmental education. Other volunteer responsibilities will include the establishment of village woodlots and nurseries, conservation education emphasizing techniques of environmental management, and in-service training of Gambian Forest Scouts responsible for protecting the 34,000 ha. of natural forest remaining in the country.

The current USAID project makes no provision for PCV transport, and it was noted that vehicles for Volunteers would have to be sought from other (PVO ?) sources.

APPENDIX 1.B.

Upper Volta:

Previous Ministry/USAID/PC collaboration has already produced a specific proposal for village reforestation using USAID Integrated Technology Funds. Another pre-conference project proposal involves collaboration among the three agencies in the preparation and use of audio-visual materials in environmental management education programs at various levels including localized village forestry extension work.

Upper Volta's workshop discussion centered on defining further possibilities for mutually reinforcing efforts. Six areas in terms of Voltaic environmental management priorities are:

1) agro-sylvo-pastoral project in the Department of the Sahel in the northernmost section of the country;

2) industrial plantations around urban centers;

3) the protection and management of natural forests and natural regeneration;

4) village woodlots;

5) energy conservation (i.e. wood stoves - where much experimentation is currently underway);

6) the exploration of new energy sources.

In light of interested parties' capabilities and criteria for priority areas of activity, it was agreed that the following two areas have been and will continue to be appropriate areas for collaboration:

1) village woodlots;
and 2) energy conservation through improved utilization techniques.

All parties agreed that intensive efforts should be made to respond quickly (less than 3 months) to local requests for small scale financing of relevant village micro-environmental projects. All concluded that such financing involving amounts of $4,000 or less, must be made available on an in-country basis, without the need for prior authorization from USAID/Washington to dispense the funds.

A broader policy concern addressed by conferees focused on the usefulness of defining possibilities for coordination among the three host country agencies currently engaging in environmental management operations, i.e., the Environmental Management Service, the Regional Development Organizations and the Volta Valley Authority.

APPENDIX I.C.

Mauritania:

Mauritania, represented at the conference by a single APCD, indicated that PC Mauritania is currently operating with a restricted number of Volunteers concentrated heavily in agricultural projects. The APCD participated in the Upper Volta country workshops in order to explore new programming ideas in the area of autonomous village environmental management projects.

APPENDIX I.D.

Niger:

PC/USAID/Eaux et Forêts/PVO discussions at the workshop produced agreement on the advisability of continuing and expanding currently operational dune stabilization projects. Combined efforts undertaken by Waters and Forests/CARE/PC in Bouza Arrondissements have tested and developed a workable method of dune stabilization. It consists of using millet stalks as dead fencing to cut wind currents on the dune surface. Exotic and indigenous species are then planted within the stalk palisades. Rapid growth of all species has typically resulted. Some problems remain to be resolved, particularly in the area of recolonization of the dune surface by annual grasses which threaten to reduce tree growth rates. Nonetheless the approach appears essentially feasible and will be extended through Water and Forests/PC/USAID collaboration to the marches of the Saharan desert at the rate of two or three pilot sites in five Departments: Niamey, Tahoua, Maradi, Zinder and Diffa. During the initial phase of three years, operations in each department will attempt to reclaim 50 ha./year at a rough estimate cost of 120,000 CFA/ha/yr. Overall responsibility for the project will lie with the Ministry supervising Eaux et Forêts operations; project execution will fall under the field supervision of the Departmental and Arrondissement Department of Forests and Waters.

APPENDIX I.E.

Mali:

Mali Eaux et Forêts/PC/USAID representatives met with a small group of PCV foresters drawn from Upper Volta and Niger, and representatives of two Niger pVO's during the country-specific discussions.

A review of Mali Peace Corps and AID projects already operational, and a similiar review of activities currently underway or projected by Mali Eaux et Forêts produced specific agreement in principle on one village woodlot project and indicated opportunities for cooperation on two other projects.

Village Reforestation in the Mopti (V) Region:

The goal is to promote multi-faceted village reforestation in the Mopti, Bandiagara and Djenné cercles of the V Region. To stem desertification and promote increased food production, the project will respond to villagers' desires for family and/or collective woodlots, windbreaks, in-field plantations and protection of natural regeneration.

To identify villagers' needs during the project's initial stages, Peace Corps will furnish 2 Volunteers trained in social science research methods to work with Malian Waters and Forests counterparts. They will investigate local conditions and determine precisely as possible what combination of reforestation strategies will be most suitable on a village by village basis. During this same time period, Malian Waters and Forests personnel trained in eucalyptus and local species propagation techniques will launch nurseries in the three cercle seats. Finally, using data gathered by the social science research teams, extension units composed of PCV foresters (AA or BS level) trained in extension methods, along with their Malian counterparts, will organize the initial rounds of reforestation in a small number of villages (3 to 5) per cercle.

It was agreed that villages must become autonomous in reforestation efforts. To that end, interested individuals are to be trained in central nurseries sited at the cercle seats, so that they may acquire skills and techniques enabling them to operate independent village or family nurseries in their own communities.

Mali Waters and Forests will provide 9 Ingénieurs de Travaux Forestiers (ITF) and 6 forestry Aides. The latter will responsible for controlling day to day nursery operations under the supervision of the ITFs assigned to the cercle propagation centers.

A Malian ITF will enjoy autonomous financial status while remaining subject to policy supervision by the Director of Water and Forests. He will work with an ex-PCV forester having Sahelian experience to be engaged on an USAID personal services contract.

Project duration is estimated at 3 years; financing at approximately $500,000.

Of the other two projects, one is a very similar village reforestation program proposed either for the Gao or Timbuktu Region. It will involve roughly the same sort of personnel and investments as the above project.

The third project involves a proposed industrial plantation in either Gao or Timbuktu and would include a village nursery personnel training component. Negotiations on all 3 projects will be pursued in Mali from March 1980 by all interested parties.

APPENDIX I.F.

Senegal:

In Senegal, USAID/PC/HC collaboration is already on a firm footing. Already accomplished are:

1) Waters and Forests paper submitted to an UN symposium stating the problem

2) proposition submitted by PC Senegal for a woodlot project

3) review of PC proposition by EF Senegal

4) agreement with USAID to fund the woodlot project

5) the drawing up of the initial project paper containing the following elements:

   a) establishment of fifteen 25 ha. woodlots

   b) PC Senegal commitment to provide 8 Volunteers in 2 groups

   and c) Waters and Forests Senegal's commitment to assign 2 host country national counterpart coordinators to the project.

The project will have an initial trial period of 2 years. Presently, interested parties are clarifying details of the project preparatory to submitting the final project paper.

DS/ST Project Activities

Title: Forest Resources Management

Purpose: To improve delivery of effective forestry assistance to LDCs for the benefit of the rural poor by providing AID Missions and LDCs with ready access to sound technical advice and quality professional field support in forest resources, and by mobilizing Peace Corps capabilities in support of collaborative grass roots-level village forestry projects.

Description: The Forest Resources Management project is a four-year, $3.7 million effort intended to provide and improve AID field Mission access to socially and technically relevant professional expertise in forest resources, and to strengthen and complement AID Mission programs through a Joint Collaborative Forestry Initiative with the Peace Corps.

1. International Forest Resources Support Network

Mission access to relevant forestry and natural resources expertise and information is being provided through an International Support Network operated by USDA Forest Service under a Resources Support Service Agreement (RSSA). A central Experts Network unit is developing and managing an international experts system, and delivering short-term consulting and experts referral services through AID administrative channels to LDC field Missions, Regional Field Offices and Regional Bureaus.

Three long-term resident forestry advisors will be placed in the field for up to two years and other Network "Cooperators" will be identified to provide direct assistance and expert advisory service to AID Missions, to on-site Mission project personnel and to LDC counterparts.

The Forest Service will work closely with AID's Regional Bureaus on two Regional Workshops, an International Forestry Assistance Conference and several analytical studies directed at examinations of ongoing and planned forestry assistance efforts, and at promotion of the most promising and effective approaches.

2. Joint AID/PC Forestry Initiative

A Joint AID/Peace Corps Forestry Initiative will build upon the differing but complementary strengths of the two agencies in an effort to deliver grass roots village level forestry assistance programs. An augmented Peace Corps Headquarters Forestry Initiative Programming Unit will promote an expansion of forestry assistance activity and identify and develop opportunities for AID/PC collaboration.

AID will supply professional technical programming and backstopping expertise on a consulting basis to develop collaborative forestry projects in two-to-five AID/PC countries. Peace Corps will recruit, train and place Peace Corps forestry volunteers in AID collaborative project settings, while AID supplies funds for technical backup and support, counterpart training, material support (transportation, tools, tree nursery supplies, etc.) and pre- and in-service training development.

Developmental Accomplishments: The Forest Resources Management project was initiated through RSSA and PASA mechanisms with USDA Forest and Peace Corps, respectively, late in the fall of 1980. Forest Service and Peace Corps are both now engaged in early start-up and staffing activities, but it is still far too early to begin to describe project results and impact.

Project Manager: Dan Deely
December 4, 1980