

69492

UNCLASSIFIED

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

HAITI

PROJECT PAPER

AGROFORESTRY II

AID/LAC/P-562

Project Number: 521-0217

UNCLASSIFIED

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT DATA SHEET

1. TRANSACTION CODE

A = Add  
 C = Change  
 D = Delete

Amendment Number

DOCUMENT CODE  
3

COUNTRY/ENTITY  
Haiti

3. PROJECT NUMBER  
521-0217

4. BUREAU/OFFICE  
Latin America & Caribbean  05  Agroforestry II

5. PROJECT TITLE (maximum 40 characters)

6. PROJECT ASSISTANCE COMPLETION DATE (PACD)  
MM DD YY  
1 | 12 | 3 | 1 | 9 | 4

7. ESTIMATED DATE OF OBLIGATION (Under "B" below, enter 1, 2, 3, or 4)  
A. Initial FY  9 | 0 | B. Quarter  C. Final FY  9 | 4

8. COSTS (\$000 OR EQUIVALENT \$1 = )

A. FUNDING SOURCE	FIRST FY 90			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total						
(Grant)	( 2773 )	( 2227 )	( 5000 )	( 14,127 )	( 15,873 )	( 30,000 )
(Loan)	( )	( )	( )	( )	( )	( )
Other						
U.S.						
Host Country						
Other Donor(s)						
<b>TOTALS</b>	<b>2773</b>	<b>2227</b>	<b>5000</b>	<b>14,127</b>	<b>15,873</b>	<b>30,000</b>

9. SCHEDULE OF AID FUNDING (\$000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE		D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
(1) ARDN	210	160				5000		30,000	
(2)									
(3)									
(4)									
<b>TOTALS</b>						<b>5000</b>		<b>30,000</b>	

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each)  
066 | 067 | 096 | 878

11. SECONDARY PURPOSE CODE

12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)

A. Code	BS	DEL	ENV	PVOU	PVON	TNG
B. Amount						

13. PROJECT PURPOSE (maximum 480 characters)

The purpose of AFII is to achieve sustainable increases in on-farm productivity and farmer income by integrating into existing farming systems appropriate land use and soil conservation measures, involving trees, shrubs, grasses, and other plant materials which will enhance soil fertility.

14. SCHEDULED EVALUATIONS

Interim MM YY | MM YY | Final MM YY  
 0 | 1 | 9 | 2 | | | 0 | 1 | 9 | 4

15. SOURCE/ORIGIN OF GOODS AND SERVICES  
 000  941  Local  Other (Specify)

16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a \_\_\_\_\_ page PP Amendment).

I have reviewed and approved the methods of implementation and financing for this project.

Igor Nesterchuk  
 Controller, USAID/Haiti

17. APPROVED BY

Signature: Gerald Zarr *Gerald Zarr*

Title: Director USAID/Haiti

Date Signed: MM DD YY  
 1 | 12 | 1 | 3 | 1 | 9

18. DATE DOCUMENT RECEIVED IN AID/W. OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION  
 MM DD YY

PROJECT AUTHORIZATION

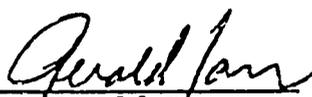
Name of Country: Haiti  
Name of Project Agroforestry II  
Number of Project: 521-0217

1. Pursuant to Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Agroforestry II project for Haiti (hereinafter referred to as "the project"). The project involves planned obligations of not to exceed thirty million dollars (\$30,000,000) over a five year period from the initial authorization, subject to the availability of funds, in accordance with the A.I.D. OYB/allotment process, to help in financing foreign exchange and local currency costs for the project. The planned life of the project is five years from the date of initial obligation.

2. The project involves a follow-on and expansion to the Agroforestry Outreach Project (521-0122) and comprises five main components: Nursery Production, Seed and Germplasm Improvement, Applied Research, Outreach and Extension, and Training.

3. Goods and Services financed by A.I.D. under the project shall have their source and origin in Code 000 or in Haiti, except as A.I.D. may otherwise agree in writing.

4. The project agreements, which may be negotiated and executed by the officers to whom such authority is delegated in accordance with A.I.D. regulations and Delegations of Authority, shall be subject to such terms and conditions as A.I.D. may deem appropriate.

  
Gerald Zarr  
Director  
USAID/Haiti

December 12, 1989  
Date

Clearances: PPS:RFanale RF Date 12.5.89  
PPS:AFord, in draft Date 11-30-89  
ADO:LHarms, in draft Date 12-1-89  
CONT:INesterczuk JN Date \_\_\_\_\_  
D/DIR:FHerder, in draft Date 12-4-89  
Drafted: PPS MGilbert, in draft Date 11-30-89

## TABLE OF CONTENTS

	Page
<b>ACRONYMS AND ABBREVIATIONS</b> .....	iii
<b>EXECUTIVE SUMMARY</b> .....	iv
The Rationale for Agroforestry II.....	iv
Why AFII is Different.....	v
Project Goal and Purpose.....	v
The Elements of the Project.....	vi
Expected Achievements and Accomplishments.....	vii
<b>BACKGROUND</b>	
The Agroforestry Outreach Project.....	1
Key AOP Design Assumptions.....	3
Lessons Learned from the AOP.....	3
<b>PROJECT RATIONALE</b>	
Relationship to AID Country Strategy and Objective.....	5
Relationship to Host Country and Other Donor Programs.....	7
Five Key Reasons.....	8
<b>KEY DESIGN ISSUES</b>	
The Project Focus.....	9
Sustainability.....	11
<b>PROJECT DESCRIPTION</b>	
Project Goal and Purpose.....	16
Overall Project Outputs.....	16
The Elements of the Project.....	16
Expected Achievements and Accomplishments (EOPS).....	18
Nursery Production and On-Farm Propagation.....	19
Seed and Germplasm Improvement and Multiplication.....	22
Applied Research and Technology Generation.....	23
Outreach and Extension.....	27
Training and Environmental Education.....	30
<b>FINANCIAL PLAN</b>	
Project Funding.....	34
Project Costs.....	34
Budget Summary.....	34
Methods of Disbursement.....	35
Detailed Budgets.....	36
Table III.....	37
Table IV.....	38
Table V.....	39
Table VI.....	41
Table VII.....	43
Table VIII.....	44
Auditing Requirements.....	45

**PROJECT MANAGEMENT AND IMPLEMENTATION**

The Present Institutional Landscape.....46  
Proposed Staffing Changes.....47  
AID Support for the AFII.....48  
Implementation Schedule.....49

**MONITORING AND EVALUATION**

Monitoring AFII Activities.....51  
Reporting Requirements.....51  
Annual Work Plans and Key Indicators.....52  
Evaluations.....53

**SUMMARIES OF ANALYSES**

Social Soundness Analysis.....54  
Economic and Financial Analyses.....57  
Agroforestry.....61  
Forestry.....63  
Seed and Germplasm.....66  
Conservation of Biological Diversity.....67  
Agronomy.....69  
Extension Training.....72  
Extension.....74  
Institutions.....78  
Environmental Assessment.....80

**PROCUREMENT PLAN FOR TECHNICAL ASSISTANCE**

Justification for Non-Competition of  
Cooperative Agreements.....84

**ANNEXES**

- A. Logframe
- B. Statutory Checklist
- C. PID Approval Action Memo
- D. AID/W Approvals and Redelelegation Cables
  - D1. New Project Description Approval Cable
  - D2. Redelelegation of Authority
  - D3. Environmental Assessment Approval Cable

\* VOLUME II CONTAINS THE FOLLOWING PROJECT ANALYSES:

- A. Social Soundness
- B. Economic and Financial
- C. Agroforestry
- D. Forestry
- E. Seed and Germplasm Improvement
- F. Forage and Livestock
- G. Agronomy
- H. Training
- I. Extension
- J. Institutional

\* VOLUME III CONTAINS THE ENVIRONMENTAL ASSESSMENT

## LIST OF ACRONYMS AND ABBREVIATIONS

AFII	Agroforestry II
AID	U.S. Agency for International Development
AOP	Agroforestry Outreach Project
CIC	Consortium for International Crop Protection
DESFIL	Development Strategies for Fragile Lands
EA	Environmental Assessment
EPA	U.S. Environmental Protection Agency
FAC	Fond d'Aide et de Cooperation (France)
FAO	Food and Agricultural Organization of the United Nations
IPM	Integrated Pest Management
IRG	International Resources Group, Ltd.
LD5	Lethal dose of a pesticide required to kill 50% of test organisms
LOP	Life of project
LRD	Local Resources Development
NGO	Non-governmental organization
PADF	Pan-American Development Foundation
PID	Project Identification Document
PP	Project Paper
STAB	Technical Secretariat for Watershed Management (French acronym)
TWMP	Targeted Watershed Management Project
WHO	World Health Organization

## EXECUTIVE SUMMARY

### The Rationale for Agroforestry II (AFII)

- \* The rationale for continuing to support agroforestry activities under AFII is basically fivefold:
- \* **Congruence with AID Strategy:** The AFII fully reflects the development strategies of both the mission and the LAC Bureau, and, in fact, is the Mission's "flagship" project.
- \* **Looking Towards the Future:** The national attention and public interest generated by a project of this scope, even when it is implemented entirely by private sector agencies, will serve to keep the door open for policy dialogue opportunities with the Government of Haiti (GOH). Using AFII as a platform, the Mission should be able to leverage -- or at least to influence -- certain important policy reforms and public planning decisions in the area of natural resource legislation.
- \* **Responding to the Peasants' Needs:** The resource transfer has significantly expanded the production and management options of the hard pressed Haitian peasants. Their deeply ingrained predisposition to the novel, the interesting, and the useful encourages the non-directive transfer of new resources to them, and stimulates their maintenance of innovation in the absence of external support.
- \* **Building on Success:** The design of AFII has been based on the belief that development is an evolutionary process that builds on lessons learned in the process of implementation. The AOP has stimulated peasant interest in tree production and hedgerow technology. The time has come to capitalize on this success and to diversify the resources and services available -- thereby increasing the range of technical options available to the hillside farmers of Haiti.
- \* **Accepting Responsibility:** Given the present social and developmental climate in Haiti and the dominant role of AID in assistance to hillside agriculture under the AOP, there appears to be no other competing priority which would divert AID's attention and resources from continuing this major and vital program under the planned AFII. At present, no other national organization or foreign donor can replace this AID initiative in agroforestry.

## Why AFII is Different

The proposed project is similar to the current Agroforestry Outreach Project (AOP) in its fundamental orientation to outplanting multipurpose trees on private farms, providing the peasant with an economically viable crop. Where the project differs from the current AOP is that it will:

- Continue the seedling production and distribution program in terms of the technology, but will include a broader selection of perennial species of forages, grasses, and non-woody vegetation. This emphasis on vegetation other than trees will necessitate some additions to the presently elaborated nursery production system.
- \* Introduce a program of on-farm propagation techniques, tree management, and harvest schemes that will serve the needs of the more experienced farmers, who have participated in the AOP and who want to go beyond the present technologies and practices.
- \* Diversify interventions beyond simple hedgerow installation and management as a viable method of soil conservation and into development of stable alley cropping systems, improvements in soil fertility by use of green manures, mulch, and livestock forage, and more use of indigenous seed and germplasm.
- \* Identify ecologic, topographic, and soil conditions where rehabilitation of the soil, i.e., reversing erosion and increasing fertility, is possible by better management on the farm, and, where it is not possible, perhaps opting for more extensive use of forestry on those poorer sites.

## Project Goal and Purpose

The goal of AFII is to maximize the productive potential of Haitian hillside agriculture by reducing the ongoing degradation of the country's natural resource base through sustainable land use interventions.

The purpose of AFII is to achieve sustainable increases in on-farm productivity and farmer income by integrating into existing farming systems appropriate land use and soil-conservation measures, involving trees, shrubs, grasses, and other plant materials which will enhance soil fertility.

## The Elements of the Project

This five-year project will consist of five components. The first is nursery production, the motor which drives the other components, by producing the necessary seedlings. The major achievement of the AOP has been to establish a chain of 45 regional and 30 community level nurseries that extend the length and breadth of Haiti, many of them owned and operated by local NGOs. They have operated relatively successfully over a period of years and will continue to do so under AFII.

Nursery production is reinforced by the second component, seed and germplasm improvement, which will strengthen AFII's capacity to supply the nurseries with high quality seed and plant material. This component provides the fuel to keep the nursery motor running well. Two of the principal objectives are first, to establish seed orchards, one in each of the major regions of Haiti, and, second, to organize a central seed processing and storage facility for AFII. In this way, the project will assure the availability of high quality seed for use in the nurseries.

The third component -- applied research and technology generation -- will enhance the impact of AFII, particularly in terms of the technologies to be disseminated. This will be particularly important in promoting hedgerow technologies for soil conservation on individual farms and selected sub-catchment basins. There is a growing awareness and appreciation that the AOP is at the cutting edge of agroforestry approaches to natural resource management -- particularly on fragile lands such as those found in Haiti. There are many technical questions to be answered and AFII will focus on the most crucial. The results of this research will provide more technical options for hillside peasants.

The fourth component, outreach and extension, will distribute the material produced by the nurseries and disseminate the technologies produced by the research component. The wide-flung extension network will function as the wheels for AFII nursery motor. This transfer of resources to the peasants will provide them with additional options for management and production on their plots. The key to date has been the non-directive nature of this transfer -- the individual peasant is free to accept or reject what is offered. The project proposes, and the peasant disposes.

The final component, training, is directly primarily at the extension service, which is responsible for training the project coordinators and animators who work directly with the peasants. The messages these agents carry are only as good as the results of the applied research and the practical manner in which they are presented.

The materials they offer, primarily seedlings, are direct products of the nurseries, which, in turn, are affected by the seed and germplasm component. As the project matures, there is a growing awareness of the increasing importance of training, particularly as the project diversifies and becomes more complex.

#### **Expected Achievements and Accomplishments**

By the end of the project in 1995, the project seeks to record the following quantifiable accomplishments:

- \* An increase in seedling survival rate to 50 percent after one year, from a rate of 42-45 percent under the current Agroforestry Outreach Project (AOP).
- \* An increase in the number of hillside farmers planting trees, shrubs, and grasses to 400,000, from the estimated 200,000 who presently do so under the AOP.
- \* 200,000 farmers effectively practicing agroforestry techniques, including planting new multipurpose trees, hedgerows and forage species.
- \* 50,000 project participating farmers practicing on-farm plant propagation, including direct seeding, stem and root cuttings, stump-propagation, and bare rooting.

In addition, a number of qualitative achievements are expected to take place. These include:

- \* A continued improvement in the local genetic resource base for tropical forest species through the production of seed by the seed orchards established under AFII.
- \* Effective operation of a central seed processing and storage facility for each of the grantees.
- \* Strengthening Haitian capability towards better management of its productive natural resource base through the intensive training of agronomists, agricultural technicians, extension agents, and peasants.
- \* An increase in the volume and variety of wood products produced by hillside farmers to increase household income. At the present time, reliable data on either volume of production or household income are virtually non-existent.
- \* Establishment, by both grantees, of pilot environmental education programs in selected, interested regions.

## BACKGROUND

### The Agroforestry Outreach Project

The Agroforestry II (AFII) is best understood as a follow-on project to the current Agroforestry Outreach Project (AOP), whose Project Assistance Completion Date (PACD) is 3/31/90. As such, AFII is explicitly intended to refine and to build upon the successful outreach methodologies and farm level interventions that have been developed under the AOP. However, the new project also represents an evolution -- rather than a simple extension -- of current activities, for it is grounded in the recognition that the time has come to capitalize on the AOP's successes by expanding the range of services provided to farmers through the existing extension network.

Currently, this nationwide network is primarily engaged in the production and distribution of fast growing hardwood seedlings for outplanting on peasant farms, and in promoting the establishment of contour hedgerows for erosion control on fragile agricultural lands. It also provides some basic agroforestry information and technology to participating farmers.

The AOP is implemented by four distinct agencies: two grantees responsible for field-level operations -- CARE and the Pan American Development Foundation (PADF); a Title XII contractor responsible for research -- SECID/Auburn University; and a fourth contracted institution responsible for seed and germplasm improvement -- the International Resources Group (IRG). CARE works directly with peasants in the Northwest, while PADF operates throughout the rest of the country. They are charged with establishing and maintaining outreach programs that provide small farmers with extension services and plant materials in support of tree planting and other environmentally sound land use practices. The two institutional contractors -- Auburn and IRG -- provide research and technical support services to enhance the efficiency and impact of grantee outreach programs.

By the PACD, after eight full years of implementation, the AOP will have produced and distributed more than 50 million trees to more than 200,000 peasants, 30 percent of whom are repeaters planting for the second time. Generally speaking, 40 percent of the trees will survive outplanting. In addition, the AOP carries out a comprehensive program of soil conservation whereby live vegetative barriers, litter terraces, and gully plugs are promoted and monitored. Some one million meters of hedgerows have helped stabilize soil on the hillsides. There are also demonstration gardens where soil conservation, agroforestry, and bio-intensive gardening techniques are being shown to peasants.

In the Northwest, CARE implements field-level activities directly, operating its own nursery program and extension network, based on four

regional teams headed by Haitian agronomists and staffed by agricultural technicians, animators, monitors, and nursery workers. This grantee has approximately 300 people on its payroll. In contrast, PADF works primarily through local intermediary organizations -- presently more than 80, assisting them to establish nurseries -- currently 33 -- and extension programs of their own. Five regional agroforestry teams, two of which are headed by Haitians and three by expatriates who are grooming Haitian counterparts to assume these leadership positions in the future, provide material support, training, and technical assistance to local NGOs interested in offering agroforestry services to their constituents. PADF supports a national network of 800 people, either directly or indirectly, in its outreach program.

The two basic approaches to field-level implementation reflect the actual possibilities and constraints of operation in each of the outreach areas. Direct implementation is, in effect, required in the Northwest, where viable and credible local level NGOs are neither common nor widespread. Such direct implementation is facilitated by the fact that CARE has an established grassroots presence in the area, based on more than 30 years of continuous, field-level development activity throughout the region.

Conversely, a strong local level NGO presence across the remainder of the country offers the possibility of collaboration with intermediary organizations of this kind, while the geographic scope and sheer magnitude of operations of PADF operations demands it. Thus, although these two quite distinct approaches to agroforestry outreach were originally conceived as pilot "alternatives" to each other -- essentially representing competing models for providing extension services in rural Haiti -- time and experience have conclusively demonstrated that both are well-suited to the particular regional contexts in which they are currently deployed. That is, neither can simply be "replaced" by the other, given the significant differences between the field-level circumstances each confronts -- unless, of course, one of the grantees decides to radically change the focus of its activities.

The fundamental premise of the AOP has been that farmer motivation is a function of the realistic expectation of a reasonable economic return in the relatively near term. The basic strategy of the project has been to promote the planting and maintenance of substantial numbers of hardwood seedlings -- by individual peasant participants, on their own land -- as an economically viable crop; a product, in effect, which the farmer has a reason to plant -- and a right to harvest -- in the same fashion that he/she plants and harvests corn, millet, sugar-cane, and other traditional crops.

The economic utility of tree planting and related agroforestry activities, and the informed self interest of the planters, have received primary stress from the outset, as opposed to the more abstract ecological or social benefits of "natural resource management,"

"reforestation," or "conservation." The same motivational approach has worked equally well in encouraging the establishment of contour hedgerows, with their multiple utility as a source of forage and green manure, in addition to their soil conserving effect.

#### **Key AOP Design Assumptions**

The AOP design in 1981 was closely guided by some key insights about the Haitian peasantry and the developmental context in which they operate. Many of these were made explicit in the original social soundness analysis, while others were implicit in the overall design. These assumptions can be briefly summarized as follows

- \* Haitian peasants are the managers of complex farm enterprises.
- \* The unit of production and consumption is the peasant household.
- \* The overwhelming majority of peasant households have secure access to one or more plots.
- \* Peasants are not subsistence farmers, but are fundamentally market-oriented producers.
- \* Peasant lands are underutilized in certain respects, particularly in terms of their potential for the cultivation of hardy, deep-rooted, perennial species.
- \* Peasants are risk-averse, but seek to spread risk through the diversification of the farm enterprise.
- \* For most peasants, labor is the least scarce factor of production.
- \* Peasants are staunchly self-interested and will work hard to improve their own lot.
- \* Trees have always occupied a special place in peasant life and culture.

#### **Lessons Learned from the AOP**

While these assumptions have stood the test of time and implementation well, experience indicates that both designers and implementers have much to learn from peasant participants. These key lessons learned -- which have a direct bearing on the design of AFII -- are briefly summarized below:

- \* **Diversity of Peasant Production Goals:** Relatively near-term, regular cash returns are not the primary peasant

production goal in planting project trees. Very few planters appear to be growing trees exclusively for charcoal production.

Even in parts of the Northwest, a major commercial charcoal production zone, some trees within each plot are being retained and managed for the production of higher value end products such as poles, posts, and saw timber. In addition, trees have supplemented pigs and other livestock in the overall domestic economy as an interest-bearing store-of-value to be used to cover major unforeseen or periodic expenditures. Finally, significant numbers of participants are planting project trees primarily or exclusively for domestic use.

- \* **Beyond Wood Production Objectives:** The primary motivation for at least some of those planting trees was to improve soil conditions. Others were using them as key elements in an effort to transform on-farm production, for example deploying project trees to establish or re-establish coffee groves on land that might otherwise never have been put to, or returned to, this relatively sustainable use. Still others are using project trees as an alternative strategy for dealing with relative and absolute labor-shortages within the production unit.
- \* **Trees Do Not A Garden Make:** Browsing by free-ranging livestock -- particularly goats -- remains perhaps the single most important cause of seedling mortality and hedgerow damage within the project. The seemingly logical progression from the recognition that "trees are a crop" to the definition of the land upon which trees or hedgerows stand alone as a "garden" has simply not occurred. Some farmers, when outplanting trees or hedgerows, also broadcast a handful of crop seed -- not in any expectation of harvest, but solely for the purpose of defining the space they share with the seedlings or hedgerows as a "garden," in order to protect the latter from free grazing.
- \* **Soil Conservation and Diversification:** Peasants are interested in a variety of low input soil conservation and land improvement techniques. A case in point is hedgerows, and the positive peasant response appears to be based on: first, they are neither land-extensive initially nor capital-intensive; second, soil retention results are usually visible relatively quickly, as soil and organic material build up behind each contour row; finally, they are living barriers which generate trimmings for on-farm use as green manure, mulch, forage, and firewood.

To the extent possible, these lessons have been incorporated into the design of AFII.

## PROJECT RATIONALE

### Relationship to AID Country Strategy and Objectives

The 1984 Country Development Strategy Statement (CDSS) called for a development strategy that included a comprehensive restructuring of the rural and agricultural sectors. The decision was made to include natural resource management and conservation as part of that strategy. Subsequent Action Plans took into account the decline in per capita productivity and income for rural Haiti, the rapid deterioration of the natural resource base, and threats to the agricultural areas in the plains from hillside erosion, in the form of siltation, flash-flooding, and damage to irrigation systems. AID concluded that agricultural development efforts in Haiti had to focus on what constitutes the bulk of Haitian agriculture -- hillside farming.

This awareness guides the AID/Haiti agricultural development strategy, which emphasizes increased agricultural production through the promotion of environmentally sound agricultural practices and farm management on Haiti's fragile hillside lands. The success of this strategy hinges on:

- \* Promoting the increased use of perennial species to enhance soil fertility, minimize soil erosion, and maximize infiltration and retention of rainfall; and,
- \* Achieving sustainable increases in yields for annual food crops and in overall on-farm productivity to alleviate the overexploitation of fragile lands.

The proposed project directly supports these objectives by making agroforestry technologies and inputs accessible to substantial numbers of small farmers nationwide. It also enhances farm income and promotes the involvement of local, Haitian non-governmental organizations (NGOs) in agricultural development.

The AFII directly supports three general areas of emphasis of the FY 1989/1990 Action Plan, as well as related LAC Bureau objectives. These are:

- \* **To Increase Sustainable Agricultural Production:** The soil conservation, soil improvement, and moisture retention benefits of nitrogen-fixing trees and shrubs in hedgerows and fields; increased organic matter in the soil; contour farming; and other AFII interventions directly respond to this priority. This incorporates LAC objective 1: to increase agricultural production; and LAC objective 2: to preserve and manage natural resources.

- \* **To Strengthen the Private Sector:** Haiti's rural population represents the country's largest single block of private sector producers and consumers. The cash returns from increased crop yields, increased supplies of marketable wood products, and related benefits will augment both the productivity and buying power of this block. This incorporates LAC objective 2: to strengthen the private sector.
- \* **Strengthen Human Resources:** The training to be provided to farmers, NGOs, and the staff of implementing institutions addresses this priority. This incorporates LAC objective 12: to improve educational opportunities; and LAC objective 13: to increase participant training.

In the mission's **Strategy Paper for FY 1989/1990**, the AOP and its successor, AFII, form the linchpin of AID's strategy in agriculture and natural resources.

In addition, the proposed AFII directly responds to the 1988 Policy Paper on the Environment and Natural Resources by:

- \* Promoting and providing support for the development of programs specifically designed to maintain and enhance natural resource productivity while protecting the environment; and,
- \* Supporting extensive activities in risk-reducing and resource-conserving aspects of peasant farming, integrated pest management systems, ecological processes such as water conservation and soil retention, agroforestry research, and environmental education.

In assessing constraints, the 1987 **Agriculture Sector Assessment** states unequivocally that: "Soil erosion is the obvious and indisputable major constraint to sustainable crop production in hillside farming in Haiti." Soil and water are the two most basic factors of production. The thrust of AID's current and planned project activities is to develop and to extend improved agricultural production systems for application on Haiti's hillsides. These improved production systems are based on the increased integration of perennial crops of various kinds -- including trees, shrubs, and grasses -- into present farming systems.

Appropriate perennial vegetation, properly deployed on hillside plots, helps maintain soil fertility, minimizes soil erosion, assures maximum infiltration of rainfall, and generally preserves the upper watersheds, thereby protecting downstream areas from destruction by excessive runoff and siltation. On-site benefits extend to yield improvements of intercropped annual food and cash crops. Moreover, the perennials being promoted are themselves harvested periodically,

providing fuelwood, charcoal, lumber, fodder, green manure, and fruit -- thereby increasing productivity and income.

#### **Relationship to Host Country and Other Donor Programs**

The AFII will have a complementary relationship -- conceptual rather than institutional -- with other programs. The National Forestry Project being implemented by the GOH is now in its fifth and final year. The GOH has provided approximately 10 percent of the funding, and the balance has come from the Canadians, the French, and the World Bank. The focus has been on creating the necessary human resources to undertake forestry activities in Haiti. Consequently, there has been a heavy emphasis on the training of forestry technicians. There have been three substantive components: an energy component with the planting of 500 hectares of trees on state lands; a research component which has focused on species and provenance trials, with some agroforestry and demonstration sites; and a management component of 29,000 hectares of pine forest for energy needs.

At the present time, a follow on project is being designed with assistance from the World Bank which will build on these experiences, but with a heavy emphasis on classical reforestation of state lands. Interestingly enough, however, the project proposes to incorporate an NGO component, modelled very much along the lines of the AOP experience, though recent reports indicate that the World Bank is considering dropping this component, preferring to leave funding of such activities to AID.

The FAO has undertaken reforestation activities in the north but their most important contribution has been the creation of a training school at Limbé, where farmers are given instruction in reforestation and soil conservation. AOP staff and farmers have participated in these training sessions. They have also used these facilities for mounting their own training activities.

The AFII, like the AOP, will also serve to "leverage" other donor funding to supplement AID resources within and beyond the framework of the project itself. For example, one important local-level NGO in the south, the Union of South Region Cooperatives (UNICORS), initiated an AOP-sponsored nursery and extension activity several years ago. After only a few years of operation under the AOP umbrella, UNICORS was able to procure independent funding for its agroforestry program from the Canadian Government. Both financing and technical assistance for this significant outreach program in the southwestern portion of the southern peninsula continue to be provided by the Canadians.

More recently, PADF was able to sign a parallel project assistance agreement with the Belgian Association for Cultural, Educational, and Technical Cooperation (ACTEC), for \$500,000, in order to expand its agroforestry operations in the north. Likewise, CARE has been able to

find additional funding for the construction of its training centers. Such supplementary financing, leveraged from other donors by AFII grantees, will continue to play an important role in building the agroforestry resource base necessary to mount a credible and effective response to Haiti's pressing agricultural and natural resource constraints.

#### **Five Key Reasons**

The rationale for continuing to support agroforestry activities under AFII is basically fivefold:

- \* **Congruence with AID Strategy:** The AFII fully reflects the development strategies of both the mission and the LAC Bureau and, in fact, is the Mission's "flagship" project.
- \* **Looking Towards the Future:** The national attention and public interest generated by a project of this scope, even when it is implemented entirely by private sector agencies, will serve to keep the door open for policy dialogue opportunities with the Government of Haiti (GOH). Using AFII as a platform, the Mission should be able to leverage -- or at least to influence -- certain important policy reforms and public planning decisions in the area of natural resource legislation.
- \* **Responding to the Peasants' Needs:** The resource transfer has significantly expanded the production and management options of the hard-pressed Haitian peasants. Their deeply ingrained predisposition to the novel, the interesting, and the useful encourages the non-directive transfer of new resources to them, and stimulates their maintenance of innovation in the absence of external support
- \* **Building on Success:** The design of AFII has been based on the belief that development is an evolutionary process that builds on lessons learned in the process of implementation. The AOP has stimulated peasant interest in tree production and hedgerow technology. The time has come to capitalize on this success and to diversify the resources and services available -- thereby increasing the range of technical options available to the hillside farmers of Haiti.
- \* **Accepting Responsibility:** Given the present social and developmental climate in Haiti and the dominant role of AID in assistance to hillside agriculture under the AOP, there appears to be no other competing priority which would divert AID's attention and resources from continuing this major and vital program under the planned AFII. At present, no other national organization or foreign donor can replace this AID initiative in agroforestry.

## KEY DESIGN ISSUES

### The Project Focus

#### Trees Forever

During the development of both the PID and the PP, it was debated whether or not to continue with the status quo by funding only the AOP's current activities such as tree planting, hedgerow technology, and basic training for farmers in tree planting, maintenance, and harvesting. This was viewed as one viable alternative route for the project to pursue — "If it ain't broke, don't fix it!" is the commonly heard epithet.

Because the project is a success, as attested in the PID and other documents, the temptation is either to continue at present levels or to increase funding to do more of the same, but on a wider geographic basis. Some current project staff even believe that the project would be more successful by focusing any additional resources on one or two key catchment basins in each region of the country. The intensification of similar, proven techniques and training modules can be justified as a viable alternative to the proposed project.

The justification for this basically conservative approach was based on the fact that the AOP has managed to do what no other project has achieved -- establish a system of centralized nurseries that produces seedlings in an efficient and timely manner, create an extension service that distributes these seedlings to hillside farmers, and manage to interest farmers sufficiently so that a large number of trees have survived over time. In the context of contemporary Haiti, this is regarded as little short of miraculous and there are those who, knowing the AOP well, would argue passionately and articulately for an AFII whose principal objective would be to fine-tune this "lean, mean, tree-planting machine."

#### Diversify or Die

At the other end of the spectrum are those who argue that the AOP has just scratched the surface in terms of its potential for establishing sustainable agriculture on the hillsides of Haiti. From the perspective of the peasant, crops are more important than trees -- since you can eat the former, but not the latter. The AOP has helped reduce soil erosion and improve the fertility of the soil that remains. Hence, it is incumbent upon AFII to capitalize on these gains. And this means moving much more into agriculture and annual crops.

Furthermore, the problems the peasant faces are multifaceted and their resolution calls for an integrated approach which moves far beyond the planting of trees and the establishment of hedgerows -- into widespread alley cropping, improved seed, production credit, and

marketing assistance. Without such diversification, it is felt that AFII will gradually wither away, partly because it is not responding to the peasants' needs and partly because it is still heavily dependent on the provision of external inputs, which are simply not sustainable on a long-term basis.

### **Building on Experience**

The PP design team proceeded on the assumption that development is an evolutionary process that is dynamic, subject to change, and based on previous experience. As the earlier section on lessons learned from the AOP underlined, participating peasants have taken the germplasm ball and run with it -- demonstrating that they are interested in aspects other than the purely economic. The resource transfers undertaken -- both biological and informational -- have significantly expanded the production and management options of hillside peasants. An experimental base has been created upon which AFII can incrementally build with confidence.

Field trips to visit ongoing AOP activities indicated that this expanded, more comprehensive approach is the strategy preferred by many project technicians, on the grounds that since the AOP is helping participating farmers to improve the quality of their soil, it should also help them to take full agronomic advantage of those improvements. "Il faut valoriser la terre" was a refrain heard in many of the PADF regions.

### **Why AFII is Different**

The proposed project is similar to the current AOP in its fundamental orientation to outplanting multipurpose trees on private farms, providing the peasant with an economically viable crop. Where the project differs from the current AOP is that it will

- \* Continue the seedling production and distribution program in terms of the technology, but will include a broader selection of perennial species of forages, grasses, and non-woody vegetation. This emphasis on vegetation other than trees will necessitate some additions to the presently elaborated nursery production system.
- \* Introduce a program of on-farm propagation techniques, tree management, and harvest schemes that will serve the needs of the more experienced farmers, who have participated in the AOP and who want to go beyond the present technologies and practices.
- \* Diversify interventions beyond simple hedgerow installation and management as a viable method of soil conservation and into development of stable alley cropping systems,

improvements in soil fertility by use of green manures, mulch, and livestock forage, and more use of indigenous seed and germplasm.

- \* Identify ecologic, topographic, and soil conditions where rehabilitation of the soil, i.e., reversing erosion and increasing fertility, is possible by better management on the farm, and, where it is not possible, perhaps opting for more extensive use of forestry on those poorer sites.

## **Sustainability**

### **The PID's Position on Sustainability**

During the preparation of the PID, one of the key design issues identified was sustainability. At that time it was argued that, from the perspective of AID, long-term sustainability would depend on two factors. One was the extent to which local NGOs would be willing and able to assume some -- or all -- of the costs of the nursery, outreach, and extension activities. A second factor was the extent to which appropriate, low-input techniques could be developed for independent on-farm application. In brief, a realistic appraisal of what AFII could do in terms of working towards sustainability -- financial, technical, and institutional -- within a developmental context in which the central government has effectively abrogated all responsibility, included the following:

- \* Increasing the managerial and technical capacity of collaborating, local level NGOs through intensive training; obliging them to pay their share of recurrent costs from profits generated by the seedling purchase agreements; and encouraging the more sustainable to find their own funding sources for AFII activities;
- \* Provision of intensive training to participating farmers in order to increase their technical and managerial capability in seed production, planting, harvesting, and agroforestry; and
- \* Institutionalizing local demand for sustainable land use interventions by having farmers lobby their respective NGOs and, ultimately, the GOH, for more effective and comprehensive services.

During the design effort, it became apparent that Points 2 and 3 were the more relevant and important -- given the prevailing institutional and political situation in Haiti.

### **What Do We Mean By Sustainability?**

On one level, AFII is a subsidized, resource-transfer activity

and as such should not itself be assessed in terms of sustainability. Rather, the question is whether AFII can stimulate self-sustaining processes within society at large which, in turn, will continue following the termination of project assistance. The most promising focus for sustainability in this sense is the peasant household production unit. The AFII will succeed in setting the stage for the relatively long-term sustainability of both multipurpose tree cropping, and soil and water conservation measures, at the level of the individual farm enterprise.

The resources and services to be offered by AFII include the following:

- \* A cumulative total of at least 34 million multipurpose trees, their naturally occurring progeny, and their sustained production of fertile seed, shoots, and cuttings;
- \* A similar biological resource of indigenous and exotic grasses and leguminous forages, and their progeny -- on a somewhat smaller scale;
- \* Validated and demonstrated information on species propagation, performance, and management, and on biologically based soil conservation/soil amendment/moisture management technologies; and
- \* Validated and demonstrated information on the additional, economically useful by-products of such biologically based conservation measures.

Quite simply, the Haitian peasant is no fool. To the extent that these biological and informational resources are indeed effective in improving on-farm productivity, they will be appropriated by the peasantry, and sustained at the farm level. Conversely, to the extent that they are not useful, or not in keeping with the broader constraints confronting the peasant, they will be abandoned. AOP participants in several regions are already experimenting with the on-farm propagation of project trees, on their own, with little or no direct stimulus from the project.

These essentially "spontaneous" developments -- though they are clearly a "result" of project interventions in the broadest sense of that term -- obviously bode well for the long-term sustainability of relatively large-scale agricultural tree-planting beyond the life of the project, now that the concepts, experience -- together with the biological resources necessary to facilitate such peasant behavior -- have begun to accumulate.

It should be noted that the biologically based soil conservation programs hold precisely the same prospect of being sustainable in this

most important of senses -- by introducing concepts, techniques, and living, i.e., reproductive, germplasm. Their continued presence and spread in local farming systems are not ultimately dependent upon the continued presence of the project itself, but simply upon the extent to which they help peasants respond effectively to particular farm-management and productivity problems.

### **The Institutionalization of Demand**

The sustainability question is an important design and implementation concern:

- \* First, what behavior, activities, and action might and should be sustained?
- \* Secondly, what institutional capacity is required for these to continue in the future?

As discussed above, tremendous strides have been made by the AOP in persuading farmers to plant a large number of trees on their own farms. Farmers understand that trees are a production crop, one that can be farmed and incorporated into improved farm management practices. As a result, there is already a large, unmet demand for seedlings, by both new planters and repeaters. The continued stimulation of a **strong, permanent demand** by the rural, hillside farmer for hardwood seed and seedlings, including hedgerow species, is the bottom line of sustainability within AFII.

If such a demand continues after AFII, the project will have achieved something few other projects have been able to do in Haiti -- create an environment where farmer demand will become an important force in shaping the type of assistance and extension that is directly relevant to his needs.

Continuing to stimulate this demand for hardwoods and hedgerows and their incorporation into present hillside farming systems demonstrates that farmers can influence what happens to their soil. This engenders the need, acceptance, adaptation, and utilization of new and different approaches to land use -- some generated externally, but others by the farmers themselves. This **process of demand** will become more sustainable through AFII activities. A critical mass of trees and hedgerows will create the physical setting necessary for the process to really take hold.

Efforts that assist the movement toward cheaper, i.e. sustainable, seedling production in centralized nurseries include better seed quality and the testing and use of locally made potting mixes. In addition, research in bare-rooting planting stock may reduce the dependence on imported containers.

By working through local NGOs for nursery production and extension activities, PADF is directly contributing to a transfer of knowledge, and building responsibility and expertise within these NGOs. These two elements, knowledge and responsibility, are key elements that allow for greater sustainability if other resources are adequate. PADF should work seriously with the best local NGOs to increase their capacity to find and exploit external resources, i.e., other donors. Sustainability of seedling production and seedling distribution is directly tied to improving this capacity. Such improvements are expected under AFII.

The training activities of CARE and PADF are geared to not only increasing the technical knowledge of their staffs and that of the NGOs, but also to strengthening individual capacity to contribute to agroforestry work in Haiti. These trained people will form part of a growing and permanent human resource base that will remain available to participate in and contribute to agroforestry work in Haiti.

The seed and germplasm improvement activities of AFII will establish seed orchards to be used as points of improved seed collection and gene conservation banks. This activity will help sustain biodiversity in Haiti and guarantee quality seed for many species of hardwoods. Improved seed technology will be one of the outputs that will be available from this component. Seed processing and storage facilities are to be built and will contribute to sustaining better seed supplies for agroforestry work throughout Haiti.

#### Will Peasants Ever Purchase Seedlings?

The answer to this question, which has sometimes mistakenly been put at the center of the sustainability issue, remains a qualified "yes." Some peasants, at some time in the future will likely be willing to purchase some kinds of tree seedlings at some price. More to the point are the following observations, offered in summary form here in an effort to put this question to rest:

- \* Asking peasants to purchase seedlings, at even nominal or token price, raises serious equity concerns. The poorest segments of the landed population, now able to benefit significantly from fully subsidized seedling distribution, will effectively be driven out of participation in this aspect of the project. In other words, those who need the trees most will be denied access to them.
- \* Expecting peasants to purchase seedlings, essentially because "their own" government is unwilling or unable to foot the bill, is simply another form of what can politely be called "regressive taxation" in the Haitian context. The rate of public sector investment in the peasant agricultural sector has remained at relatively constant, at what could be called

irresponsibly low levels throughout most of Haiti's post-revolutionary period.

- \* Once on-farm propagation techniques have been developed to a point where their efficiency and scale of application promise outputs comparable to those of the containerized nurseries, it may be reasonable to try to produce seedlings for sale, at an acceptable profit, within the nurseries. At that point, at least, all peasants interested in continued extensive tree-planting will face an acceptable pair of options -- either purchase or produce the desired commodity.

## PROJECT DESCRIPTION

### Project Goal and Purpose

The goal of AFII is to maximize the productive potential of Haitian hillside agriculture by reducing the ongoing degradation of the country's natural resource base through sustainable land-use interventions.

The purpose of AFII is to achieve sustainable increases in on-farm productivity and farmer income by integrating into existing farming systems appropriate land use and soil-conservation measures, involving trees, shrubs, grasses, and other plant materials which will enhance soil fertility.

### Overall Project Outputs

The Project will seek to achieve the following outputs, which will emerge as end results from the project components described in the next section. This formulation of project outputs is drawn from the project's logframe, presented in Annex A.

1. Improved management and productivity of centralized and local nurseries developed through the application of nursery technologies and proven plant propagation.
2. Seed and germplasm improvement and multiplication achieved through the establishment of seed nurseries and central seed processing and storage facility.
3. Generation and testing of land-use technologies accomplished through applied research.
4. Appropriate land-use technologies disseminated and practiced by participating farmers through project outreach, extension and training.

### The Elements of the Project

This five-year project will consist of five components. The first is nursery production, the motor which drives the other components, by producing the necessary seedlings. The major achievement of the AOP has been to establish a chain of 45 regional and 30 community-level nurseries that extend the length and breadth of Haiti, many of them owned and operated by local NGOs. They have operated relatively successfully over a period of years and will continue to do so under AFII.

Nursery production is reinforced by the second component, seed and germplasm improvement, which will strengthen AFII's capacity to supply the nurseries with high quality seed and plant material. This

component provides the fuel to keep the nursery motor running well. Two of the principal objectives are first, to establish seed orchards, one in each of the major regions of Haiti, and, second, to organize a central seed processing and storage facility for AFII. In this way the project will assure the availability of high quality seed for use in the nurseries.

The third component, applied research and technology generation, will enhance the impact of AFII, particularly in terms of the technologies to be disseminated. This will be particularly important in promoting hedgerow technologies for soil conservation on individual farms and selected sub-catchment basins. There is a growing awareness and appreciation that the AOP is at the cutting edge of agroforestry approaches to natural resource management -- particularly on fragile lands such as those found in Haiti. There are many technical questions to be answered and AFII will focus on the most crucial. The results of this research will provide more technical options for hillside peasants.

The fourth component, outreach and extension, will distribute the material produced by the nurseries and disseminate the technologies produced by the research component. The wide-flung extension network will function as the wheels for AFII nursery motor. This transfer of resources to the peasants will provide them with additional options for management and production on their plots. The key to date has been the non-directive nature of this transfer -- the individual peasant is free to accept or reject what is offered. The project proposes, and the peasant disposes.

The final component, training, is directly primarily at the extension service, responsible for training the project coordinators and animators who work directly with the peasants. The messages these agents carry are only as good as the results of the applied research and the practical manner in which they are presented. The materials they offer, primarily seedlings, are direct products of the nurseries, which, in turn, are affected by the seed and germplasm component. As the project matures, there is a growing awareness of the increasing importance of training, particularly as the project diversifies and becomes more complex.

The PID proposed a sixth component, institution-building, which, after careful reflection, the design team decided to drop. The idea was to develop a systematic plan for strengthening the intermediary, local-level NGOs collaborating with AFII, and increasing the role of formal and informal farmer groups in outreach activities. During the preparation of the PID, it was believed that local-level institutional viability was a key component in overall project sustainability. Consequently, selected collaborating NGOs were to receive AFII support -- through the provision of training, resources, and technical assistance -- to enhance not only their agroforestry capabilities, but also their administrative and managerial capacities.

While the PP team accepted that there is certainly a need for this type of support, there was a realization that effective institution-building at the grassroots level in Haiti is a long-term proposition requiring considerable commitment of time and resources. Even participating NGOs agreed that the AOP is not in the business of building institutions -- only working through intermediary NGOs and building their capacity to produce and distribute seedlings, and to extend low-input soil conservation techniques to peasants.

#### **Expected Achievements and Accomplishments (EOPS)**

By the end of the project in 1995, the project seeks to record the following quantifiable accomplishments:

- \* An increase in seedling survival rate to 50 percent after one year, from a rate of 42-45 percent under the current Agroforestry Outreach Project (AOP).
- \* An increase in the number of hillside farmers planting trees, shrubs, and grasses to 400,000, from the estimated 200,000 who presently do so under the AOP.
- \* 200,000 farmers effectively practicing agroforestry techniques, including planting new multipurpose trees, hedgerows and forage species.
- \* 50,000 project participating farmers practicing on-farm plant propagation, including direct seeding, stem and root cuttings, stump-propagation, and bare rooting.

In addition, a number of qualitative achievements are expected to take place. These include:

- \* A continued improvement in the local genetic resource base for tropical forest species through the production of seed by the seed orchards established under AFII.
- \* Effective operation of a central seed processing and storage facility for each of the grantees.
- \* Strengthening Haitian capability towards better management of its productive natural resource base through the intensive training of agronomists, agricultural technicians, extension agents, and peasants.
- \* An increase in the volume and variety of wood products produced by hillside farmers to increase household income. At the present time, reliable data on either volume of production or household income are virtually non-existent.

- \* Establishment, by both grantees, of pilot environmental education programs in selected, interested regions.

## **Nursery Production and On-Farm Propagation**

### **Centralized and Local Nurseries**

The AFII should continue to rely on central nurseries to produce at least 6.7 million seedlings per year, 4.5 million from PADF's NGO-operated nurseries and 2.2 million from CARE's. Discussions with peasant informants indicated that:

- \* Virtually everyone is pleased with the trees that they have received from the project;
- \* The seedlings produced in the central nurseries are perceived to be of higher quality and to perform better than any seedlings that farmers would be able to produce themselves, if they had the necessary skills and materials;
- \* Seedling demand can be expected to continue at past levels, and will probably even increase for the foreseeable future; and
- \* The seedlings that have been planted in the past are beginning to furnish usable products that are considered to be both useful and economically beneficial.

The main seedling production should continue to come from the centralized nurseries -- for the simple reason that these nurseries function well and are relatively cost-effective, given their levels of production. A sudden attempt to change to other types of nurseries or production technologies would risk seriously disrupting the tree distribution program of AFII. However, this is not to say that the exploration and development of alternative production techniques and materials should not be investigated and, if possible, developed to provide a complementary source of low-cost seedlings.

Efforts to support the development of local or community-level nurseries, which focus on producing small numbers of trees for local needs, should continue on a small scale. The priority sites for these efforts should be those locations that cannot be easily serviced through the centralized nursery system. It should be remembered, however, that it takes much more time and effort to train the staff and to provide the necessary technical and administrative support required to set up and run 15 small nurseries, which produce 10,000 seedlings each, than it does to set up one nursery to produce 150,000 seedlings.

## **Improved Nursery Management**

Many of the NGOs and other participants wish to increase annual seedling production under AFII, but this may not be the best use of project funds, given present resource constraints. Rather than just "pumping out the germplasm", the time has come to begin to focus on improving extension efforts which may result in greater survival of the seedlings that are being outplanted, and which could result in a greater diversification of existing and proposed activities.

It is preferable, then, to produce seedlings that are of the best possible quality, and to put greater efforts into increasing survival through better control of the tree planting and protection processes.

The NGOs that produce seedlings under PADF's guidance have requested that the seedling payment be increased by one to two cents. This is not an unreasonable request, given that there has not been any price adjustment since 1986 and that the cost of seedling production has risen to a level that equals or even surpasses the price paid by PADF. One option to consider would be to offer a variable price increase, based upon the relative quality of the seedlings produced, the nursery's success at meeting their contracted production targets, and the amount of technical supervision and support required from the regional Team Leader or other team members.

Efficient nurseries that require minimal supervision from PADF technicians and meet the contracted seedling numbers would receive ten cents per tree. "Non-performing" nurseries which required repeated, significant guidance from PADF technicians and which manifested other performance problems would only receive the current eight cents per tree. Chronically deficient, non-performing nurseries should be dropped from the PADF nursery production system, if they do not respond to technical recommendations concerning performance.

## **Alternative Nursery Technologies**

Three methods are presently in use for propagating seed in the nurseries -- Rootainers, Winstrips, and plastic sacks. Both Rootainer and Winstrip nurseries have greater water requirements than do plastic sack nurseries. They also require a much greater initial investment for material costs. The Rootainers generally last only three or four seasons, while the Winstrips reportedly last up to 10 years or longer. The Winstrip was originally developed in Haiti, but both containers are now imported -- the Winstrip from Taiwan and Korea and the Rootainer from Canada. There are significant costs in buying the special holding racks that are needed for the Rootainers, and periodic maintenance, occasional repair, or replacement.

Plastic sack nurseries are being used successfully throughout the developing world. They offer two distinct advantages in areas with poor

soils and erratic or limited rainfall. The relatively large amount of potting soil in the sack frequently has a better nutrient status than the soils into which the seedling will be planted. The large soil volume also provides a moist rooting medium which can often maintain the plant for several days or more, if the rains should fail briefly following outplanting. Another advantage of plastic sacks is that they are relatively low cost.

Plastic sack technology, however, does have several important limitations. Not only do the sacks with seedlings weigh more than Rootainers or Winstrips, but they also take up approximately three times the surface area that a seedling raised in a Rootainer does. This means that, in order to maintain a given level of seedling production, a nursery would need at least three times the surface area, three times the amount of potting mixture, and would require significantly more labor than a similar Rootainer nursery. Consequently, seedling production using plastic sacks is substantially more expensive than the other known techniques.

A study currently being conducted by the SECID/Auburn research team at the ODH nursery will provide an indication of the actual differences in terms of growth between the Rootainer, Winstrip, and plastic sack containers and the GRO-mix, Haiti-mix, and CARE-mix potting mixes.

#### **On-Farm Propagation**

There is a need to make farmers aware of alternative means of propagating trees. Among the alternatives are direct seeding, stem and root cuttings, stump propagation, and bare rooting. Although farmers know of and practice direct seeding, planting by stem and root cuttings, and bare-rooted transplanting of some indigenous species on a small scale, the level of replacement relative to their needs is inadequate. Furthermore, farmers tend to rely on those species that are the most convenient to work with, or for which adequate germplasm is available.

Due to their relative newness, these alternative means of plant propagation should be undertaken first as a pilot program of modest size. Formal protocols should be established prior to commencement of testing of the techniques, so that the test results can be compared throughout a range of soil and climatic circumstances, prior to extending the techniques to farmers. Once it has been established which species of trees, grasses, and shrubs hold the greatest promise of good survival and growth on peasant lands, the techniques can then be incorporated into a formal extension program.

#### **Expected Outputs**

Over the life of AFII, this component is expected to achieve the following outputs:

- \* Production at 7 million seedlings a year -- primarily by centralized, containerized nurseries.
- \* Increase in seedling survival rate -- to 50 percent after one year.
- \* Applied research on nursery technologies and appropriate potting mixes.
- \* Improved nursery management at the NGO level.
- \* Proven and appropriate methods of on-farm plant propagation extended to 50,000 project participants.

### **Seed and Germplasm Improvement and Multiplication**

#### **Present Situation**

The AOP's nascent seed and germplasm improvement and multiplication component -- in operation for little more than a year -- will be maintained and expanded under AFII. The goal of this component is to improve and control the quality of seed outplanted through the nursery production system. The major outputs for this component are:

- \* Establishment of at least five seed orchard sites, composed of approximately 15 orchards, one in each of the major regions of Haiti. The sites are located on private lands, in conjunction with well-established NGOs to ensure stability of site access and protection of the orchards from vandalism. These seed orchards provide regional production of adequate quantities of seed of selected species for agroforestry activities in Haiti, and the improvement in genetic quality and provenance characteristics of this seed.
- \* Introduction of new multipurpose tree and forage species and new provenances of currently planted species and lesser known indigenous species with potential for use under the project. The germplasm introduced reflects grantee recommendations and requests for filling a niche in the farming systems peculiar to each of the different regions of Haiti. Species and provenance trials are established to monitor tree species performance and to guide the selection process in future genetic improvement activities.

- \* Organization of a central seed processing and storage facility for each of the grantees in the Port-au-Prince area. The purpose of these centralized facilities is to ensure that all seed procured, either locally or abroad, is of high quality in terms of genetic uniformity, viability, and purity, and of known provenance.
- Preparation of a document defining a recommended framework for long-term genetic work with agroforestry species in Haiti. Because tree improvement is a long-term proposition, this framework is necessary to develop institutional commitments so that realized gains are maintained and improved.

### **Proposed Activities**

The continuation of this component under AFII will build upon the above activities, with a focus on the following:

- \* Long-range program for tree improvement and seed multiplication;
- \* Information systems for tree improvement;
- \* Seed collection, storage, and international procurement;
- \* Seed orchard establishment and management; and
- \* Preservation of biological diversity.

### **Expected Outputs**

Over the life of AFII, this component is expected to achieve the following outputs:

- \* Effective establishment of five regional seed nurseries;
- \* Effective establishment of a central seed processing and storage facility for each of the grantees in the Port-au-Prince area.
- \* Institutionalization of tree improvement by sharing the relevant information with NGOs, the GOH, and other donors, by maximizing Haitian and NGO roles in tree improvement, and by training Haitian staff to assume ultimate responsibility.

## **Applied Research and Technology Generation**

### **The Role of Research**

The research component of AFII will provide continued, applied, and punctual support to the grantees. As such, it should remain focused

on project-specific applied research activities and continue to be formulated in conjunction with, and as a direct response to, the expressed needs of the grantees. The possibility exists that the research component of AFII could become sidetracked or misdirected towards research activities less relevant to project implementation needs. To avoid this, the grantees must be closely involved in the conceptualization, development, and formalization of the research program, through the use of formal research protocols which clearly define the responsibilities of all participants, the goals of the research, and the research design.

Research priorities and future directions should be established by the grantees, in collaboration with the research unit, one of whose major responsibilities will be to assist the grantees in identifying possible topics, as well as to provide them with feedback on the feasibility, cost, time requirements, and potential benefits of various research topics and proposals. The research unit staff should bring to the attention of the grantees potential research topics which they feel are potentially of importance to AFII. It is only through active interaction and dialogue that a dynamic and mutually satisfactory research program will continue to function under AFII.

There are three technical areas, currently being investigated under the AOP, that will merit increased research efforts under AFII. These are: nursery technology, hedgerow technology, and alley cropping which, under AFII, will also include forage and grasses.

#### **Nursery Technology**

Work is currently under way in the AOP, much of it undertaken by CARE, to quantify the relative performance of the three containers currently in use -- Rootainers, Winstrips, and plastic sacks; and three potting mixes -- CARE-mix, Haiti-mix, and GRO-mix -- currently being used in the AOP nursery program. The initial studies at the ODH nursery should be followed by similar, comparative studies under the less-controlled conditions found in the centralized nurseries operated by CARE or the NGOs. A study to evaluate field performance following outplanting is currently being carried out and will continue to be monitored.

There is limited information available concerning appropriate nursery techniques for containerized production of many indigenous Haitian tree species. There is also a dearth of information on techniques for successfully producing indigenous and exotic species through alternative, i.e., non-nursery, methods. Of particular interest are direct seeding and stump production techniques for Haitian conditions. Such information is absolutely vital before any major initiatives can be undertaken in the areas of alternative production techniques and on-farm tree production. Protocols for these areas have yet to be developed.

## **Hedgerow Technology**

Under the AOP, approximately one million linear meters of hedgerows have been established, many of them spontaneously -- with no direct project involvement. The hedgerow technology in place requires refinement. The question is not whether it is a positive soil conservation and erosion control practice or whether it produces forage material of nutritional value for animal feed, but rather what are the most suitable shrubs and grass/forage species to plant singularly or in combination. Forages are viewed as a means of soil conservation and as a source of improved soil fertility through their use as a green manure crop.

The following topics of interest should be investigated:

- \* **Planting:** What planting method(s) for hedgerows will have the greatest positive effect in terms of soil conservation?
- \* **Moisture:** To what extent will the moisture requirements of the hedgerow combinations compete with those of the agronomic crops planted between the hedgerows?
- \* **Green Manure:** The material to be used as green manure is the grass/forages produced on the hedgerows, which has different decaying properties than a leguminous green manure crop, such as velvet bean. This implies a longer waiting period for planting between crops. What is the optimum time to harvest the green forage and the most appropriate method of incorporating it into the soil?

## **Alley Cropping**

Alley cropping research for improvement of hillside farming is one of the most complicated tasks imaginable, given the number of variables and possible crop combinations that must be dealt with. It is important, therefore, to restrict the study to the most practical, applied topics. The primary focus should be on crop yield, rate of rebuilding of soil fertility, and erosion control. Experimental treatments agreed upon for each region should be in response to the most pressing local problems, the solutions for which are needed for agricultural decision making.

Field research into alley cropping, with hedgerows as part of the intercropping system, will focus on: optimum crop and hedgerow species; planting density and timing of both trees and crops; soil fertility and soil moisture characteristics as influenced by hedgerows; possible measures for soil conservation on the sloping portion of the terraces, such as contour row planting; spatial distribution of all components in the system; crop management practices; extent of shading; potential for improved crop varieties; ways and means of further raising crop yields at greater distance from the hedgerows; use of animal manure collected and

cured elsewhere on the farm; optimum use of hedgerow trimmings for crop mulching and livestock forage throughout the year; and abolishing all burning practices and replacing them by green manuring.

### **Structure**

Long-term team members will provide technical assistance covering the disciplinary areas of tropical agronomy & agroforestry, rural sociology & agricultural economics, seed germplasm improvement, nursery management, and business administration/management. Proposals should present staffing patterns for each year of the project (years 1 through 5) utilizing a narrative description or by a timeline/bar chart. Budgeted resources in AFII for applied research/seed improvement will support approximately 18 person years of long-term assistance (distributed among the following suggested positions) and 2 years of short term technical assistance.

Placing the entire research and germplasm team under one institutional contract makes sense from both an economic point of view and the fact that most of the applied research is often closely related.

The research unit should be responsible for the hiring, training, and management of their own field technicians. Generally, the grantees should not provide people from their own field staff, nor should they fund people, to perform major activities for the research unit. This should not preclude the research unit from hiring grantee field technicians on a part-time basis, who are employed on a part-time basis in the first place. However, the research unit should not "hire away" grantee field technicians. The two areas where the grantees should actively participate in research implementation and monitoring are for nursery trials that will eventually have to be done in the centralized nurseries under field conditions, and for monitoring any trials that may be set up at the various demonstration sites.

### **Linking Research to Extension**

A key assumption justifying the continuation of a research component under AFII is that there will be a direct and effective linkage with the programs of grantees and their extension activities. Close and frequent interaction, collaboration, and information exchange between the respective technical and administrative personnel will be important for fostering such linkages.

The only way that information exchange will come about is if the reports and documentation developed by the research unit are translated into either French or Creole. Failure to do so significantly limits the value of the information produced by the research unit. The Research Steering Committee (RSC) established under the AOP should continue to function under AFII and should be used as a sounding board for the identification of research priorities and activities.

The Cooperative Agreements (CAs) and contracts that will be issued under AFII should stipulate that there continue to be active participation at the monthly RSC meetings by the grantee research and administrative staffs, the research team members, the germplasm improvement staff, and the AID project manager. The continued use of formalized research protocols that clearly stipulate the activities to be undertaken, the responsibilities of the grantees and the researchers, and the expected outputs will also facilitate such efforts.

Absolutely no AFII funds should be used for any activities that have not been formalized and agreed to in advance through the preparation of a research protocol.

### **Expected Outputs**

Over the life of AFII, the research component will achieve the following outputs:

- \* Proven recommendations concerning the comparative advantages of both containers and potting mixes that can be utilized in the nurseries.
- \* Proven recommendations concerning on-farm plant propagation that will be useful to participating peasants.
- \* Proven recommendations concerning hedgerow technology -- particularly as they relate to planting practices, grass/shrub combinations, and the production and utilization of green manure.
- \* Proven recommendations on intercropping patterns between the hedgerows.
- \* Proven recommendations on how best to utilize the forages and grasses cultivated between the hedgerows.

### **Outreach and Extension**

#### **Specific Objectives**

The fundamental purpose of AFII extension component is to provide the Haitian farmer with both high quality biological material and high quality technical information that he or she is free to use as he/she sees fit. The overall goal is to provide this material and information in an efficient, cost-effective, and non-directive manner. The key player in this transfer of biological and informational resources is the individual extension agent.

Specific objectives are to:

- \* Produce and deliver high quality plant materials;
- \* Provide current and validated information about tree planting and tree management;
- \* Provide current and validated information about soil conservation, including information on how to manage hedgerows, alternative species for these hedgerows, and other methods of soil conservation;
- \* Provide current and validated information about more efficient agricultural practices; and
- \* Develop relevant visual, audio, and other tools designed to facilitate the transfer of information.

### **Planters and Managers**

The AFII will divide farmers into two categories -- the new planters and the farmers/managers. For the new planters, extension will include information on planting methods, spacing, recommended configurations, and the most efficient site-species matches. Information will also be provided on soil conservation and improved farming practices, where applicable.

Farmer/managers are those who have been with the project long enough to plant trees and are now ready to harvest them. For this group, information will be provided on tree harvesting, particularly for those trees which resprout -- with specific information on coppice management. In addition, information on stand and tree management will be provided.

In addition to planting trees, many in this group have already implemented soil conservation activities or adopted new farming practices such as bio-intensive gardening. These farmers can be worked with intensively -- with the objective of taking a long look at the overall management of their plots and providing them with additional technical information and options, where applicable. This information will concern: improved soil conservation systems; improved species; on-farm tree propagation; improved cultural and gardening practices; and seed selection, collection, and storage. The driving factor is to offer farmers options that may assist them in achieving more consistent crop yields from any agroforestry activity they see as relevant and appropriate to their needs.

### **Structure**

The structure of extension systems utilized by both grantees should remain essentially the same. Team Leaders in the PADF regions should be

encouraged to develop their extension priorities and activities based on the local social, economic, and ecological situation. In the CARE project, the training unit should become more of a technical advisor to the Regional Managers who should, like their PADF counterparts, set the agenda for training and extension in their respective regions. The key interface will be the animator/farmer in PADF, and the monitor/farmer in CARE.

The capacity of extension agents to effectively transmit a wide body of knowledge should be considered. It seems likely that a happy medium could be reached somewhere between the PADF system of one field of expertise for one set of animators, and another for a second set, and CARE's system of hanging all information transfer on the back of the monitor.

Information that is selected to be transferred should be simple. One example is teaching of contour farming. Another is showing people how to use live stakes for ravine stabilization. Information should be relevant to the task at hand, focused, and fit within the defined objectives of the extension activities.

It is recommended that during AFII a conscious effort be made to establish a feedback mechanism whereby the grantees can be made aware whether their extension services are appreciated by local farmers, and whether they are responding to the needs of farmers. They should be prepared to take remedial action if necessary.

One way to do this is to hold farmer "days of reflection", already held twice a year in the Northwest, when farmers get together and speak directly to monitors about their performance during the last six months. Extension agents should be taught ways to elicit comments from farmers regarding the extension component and the project activities. Finally, senior staff in all regions should be encouraged, to the extent that it is possible, to spend time with farmers and get to know them.

It is quite clear that PADF is under great pressure to continue its geographically extensive type of extension. As the only agency providing support for tree planting in many parts of the country, it cannot easily leave places untouched. It is, however, recommended that, where possible, a more intensive, geographically concentrated approach be tried. A logical place to start would be the Upper Central Plateau where the Team Leader has already expressed interest in intensifying the approach.

The CARE extension project should continue its intensive approach and the intensification of activities may be facilitated by concentrating more effort on repeat planters. The outplanting of trees will continue apace in both projects, but because it is already an efficient system with little waste, efforts to point additional resources in the direction of demonstrably interested farmers may be considered.

### **Important Grantee Staff**

The most important links in the chain are the PADF animators and the CARE monitors. Effort should be devoted to developing their communications skills in order to increase the efficacy of the message transfer. Because these staff members will be the principal long-term contact with farmers, they should be encouraged to transmit messages from the farmers to regional staff regarding their views and desires.

The immediate supervisors of these agents play an important role since they can motivate them and also serve as a preliminary sounding board for the feedback loop running from the farmer to senior staff. They also should have solid technical knowledge and be able to help the agents if the latter have any problems.

Aside from these people, the most important staff members are the CARE Regional Managers and the PADF Team Leaders. It is these senior staff members who will set the agenda for the activities to be undertaken in their respective regions. The AFII should make a concerted effort to decentralize decision making.

### **Expected Outputs**

Over the life of AFII, this component will achieve the following outputs:

- \* An increase in the number of hillside farmers planting trees, shrubs, and grasses from the estimated 200,000 who presently do so -- to approximately 400,000;
- \* A target of 200,000 (50 percent) farmers who are effectively implementing a variety of agroforestry techniques through the introduction of new, multipurpose trees, hedgerows, forage species, and new provenances of currently planted species.
- \* A conscientious effort by PADF to implement a geographically concentrated approach to extension wherever possible.

### **Training and Environmental Education**

#### **Overall Purpose**

The overall purpose of training in AFII is the fostering of improved knowledge and capacities in the extension agents who in turn train the farmers. Whatever materials are produced should be aids and resources for the training process -- and not an end in themselves.

Training is a support for extension activities and its content should be guided by the practices and knowledge that the extension agents wish to teach. With training AFII needs to: carefully identify training needs through observing farmers' current farming practices; conduct baseline and anthropological studies -- the latter dealing with the attitudes behind farmers' practices and how people learn; monitor the effectiveness of past training on farmers, extension agents, school children, and teachers; and monitor all training through small, focused evaluations.

### **Training Materials**

Good materials are already developed and in use, but their impact needs to be carefully monitored. While it is anticipated that new materials will be justifiable, they should be modest in number, born out of the knowledge of past programs, and carefully pre-tested and monitored. The AFII will not be heavily oriented towards producing books, manuals, and aids, but rather in training people at all levels -- from the animators through to mid-level extension staff -- who can communicate with farmers effectively and motivate them to try the various technical options offered by AFII. The animators and mid-level staff will be encouraged to develop simple training materials for their own use, such as songs, drawings, and dramatic presentations.

Just as the Haitian farmer needs to be economical and adaptive in his farming practices, this project will be economical and adaptive in the development of training materials. To the extent possible, portions -- pictures, chapters or individual dialogues, and stories -- from existing training materials will be used, and then made new and lively by the improved communications skills of the animators. Nevertheless, during the course of this project, booklets, manuals, filmstrips and other materials will be produced and radio may be used, as needed.

### **Key Points for Training**

To be effective, training under AFII will be based on the following points:

- \* Keep it simple, focused and practical.
- \* Teach only a few messages or practices and only add after the basic ones have been mastered by participants. Repeat messages and practices during the training session. Much training errs by being too rich and offering too many messages.
- \* Make the training as participatory and "hands-on" as possible. Practical exercises and field training should take up the greater part of the training sessions.
- \* Use various training methods, but not so varied that seminars become confusing or unfocused.

- \* Base training design on actual field observation of farmers' needs, practices, and how they learn, as well as on staff needs, knowledge, and performance.
- \* Continuously monitor the effects of training.

#### **Training Focus for AFII**

Training under AFII will be undertaken in the following four core areas:

- \* **Effective Communication:** All levels of project staff need to effectively communicate with farmers and core staff;
- \* **Agricultural Production Techniques:** This is especially important for the extension agents, who will be training the farmers.
- \* **Monitoring:** Both grantees must establish a monitoring system in order to make accurate and perceptive field observations, make effective verbal reports, and use simple, written reporting techniques.
- \* **Administration:** All levels of project staff need to know how to complete the relevant forms required by project management.

#### **Environmental Education**

Environmental education has been a basic component of the AOP since its inception. Animators and farmers were inculcated with concepts "valorizing" the role of trees in their own economies and in the economy of nature. The positive benefits of planting trees has been described in numerous training courses offered over the LOP. In June 1988, however, PADF undertook a formal pilot program in the Mirebalais area of Region 5 and the initial reaction to the proposal from school directors and teachers was positive.

The basic elements of the program are development and use of a three-year curriculum in environmental concepts, establishment of fruit tree nurseries and demonstration sites for agroforestry species on, or adjacent to, school property, and site visits and training workshops on selected farm or demonstration sites to visit gardens and learn basic principles firsthand.

The target audience is primary school children in rural, not urban, schools between the ages of 10 and 18. There is a wide variance in the ages of primary school children of the same grade in many rural schools. PADF Regions 1, 2 and 5 will implement an environmental education program based on the lessons learned from the Region 5 experience. A training

coordinator , who will be hired by PADF to develop materials for all aspects of the agroforestry project, will dedicate a portion of his/her time to the development of course materials. Over 21,000 students are expected to participate.

In terms of staff, one full-time training assistant and three part-time monitors will be needed for each participating PADF region. The training assistant will train school teachers in how to convey the course materials, will organize seminars and field days for the students, will oversee with the help of monitors the establishment of nurseries, and will work with the training material specialist to refine any course materials developed.

#### **Expected Outputs**

Over the life of AFII, this component will be expected to achieve the following outputs:

- \* Establishment, by both grantees, of comprehensive training programs that reflect the needs of their regional managers and their extension staffs.
- \* Establishment of a monitoring system that effectively monitors the effects of training under AFII.
- \* Establishment, by both grantees, of pilot environmental education programs in selected, interested regions.
- \* Strengthening the collaboration and exchange between the two training programs.

## FINANCIAL PLAN

### Project Funding

Of the \$30 million USAID contribution, approximately \$18.4 million will be used for the production of seedlings, extension, and training; \$4.9 million will be for research and \$900,000 will be for AID project management and audit and evaluation costs. A breakdown of the cost is presented in the budget summary below.

The design team has estimated non AID in-kind contributions of approximately \$500,000/year in the form of land on which nurseries are set up, plus the know-how and managerial capacities of the NGO's. This conservative estimate, coupled with direct AID financing, brings the total five year project value to \$32.5 million.

### Project Costs

Based on the assumption that over the life of AFII 35 million seedlings will be produced, the cost per seedling, including all costs of seedling production, extension, and training, will be \$0.70. These per seedling costs are slightly higher than those achieved under the AOP, due to the fact that AFII proposes to put more emphasis on extension and training.

### Budget Summary

Table I below provides an insight into the major cost components of AFII.

TABLE I

AID BUDGET FOR AGROFORESTRY II (in \$000)							
YEAR	1990	1991	1992	1993	1994	TOTAL	PERCENT
PERSONNEL	1817	1959	2111	2294	2444	10625	36.89
EQUIPMENT	481	527	280	348	218	1854	6.39
TRAINING & EXT. OPER. & MAINTN.	332	349	368	408	459	1916	6.86
HOME OFFICE SUPPLIES	1136	1216	1300	1383	1375	6410	22.38
SUBTOTAL	60	63	66	69	73	331	1.14
OVERHEAD	3826	4114	4125	4502	4569	21136	0.14
TOTAL C.A.	544	615	600	651	667	3077	9.20
RESEARCH	4370	4729	4725	5153	5236	24213	100.00
AID PROJ. MGMNT	1116	1172	1187	699	713	4887	17.00
AUDIT	100	107	115	122	156	600	
EVALUATION	0	0	0	0	200	200	
GRAND TOTAL	0	0	50	50	0	100	
	5586	6008	6027	5974	6305	30000	

Note: The cost of research includes all costs associated with this component, such as personnel, O&M, Overhead and Equipment.

**Methods of Disbursement**

CAs will be drawn up between the grantees who are presently implementing the AOP - CARE & PADF, and a contract will be awarded to the research institution. The primary method of payment will be the Federal Letter of Credit (FRLC) as shown in table II below:

**TABLE II**

**METHODS OF IMPLEMENTATION AND FINANCING**

Method of Implementation	Financing	Amount (\$'000)
CARE (US PVO) Cooperative Agreement:	FRLC	9,076
PADF (US PVO) Cooperative Agreement:	FRLC	15,137
RESEARCH COMPONENT: Direct Contract - cost reimbursable	FRLC	4,887
AID direct contracts for:		
Evaluation	Direct Pay	100
Audits	Direct Pay	200
Balance planned for AID Project Management - USPSC's & Consultants	Direct Payment	600
Total AID budget		30,000

## Detailed Budgets

On the following pages detailed budgets for AID's proposed overall financial contribution for AFII project are presented. For the purpose of this presentation, it is assumed that CAs will be signed between AID on the one hand, and the present AOP grantees, CARE and PADF, on the other hand. It is also understood that the research contract will be awarded competitively, on the basis of open bidding.

Based on the above assumption, two separate budgets for each of the grantees have been established, as well as a research budget.

The budgets were arrived at by using previous grantee spending data, adapted to take into account the additional activities proposed under AFII. Budget increases reflect additional requirements for personnel and training, as well as adjustments for inflation.

A separate budget was prepared showing \$US and local currency costs. The annex dealing with the financial and economic analyses provides a brief analysis of historic costs, as well as detailed analyses of seedling production costs.

The following proposed budgets are illustrative only. The grantees and institutions concerned will be asked to present their detailed budgets prior to the signing of the CAs. Tables III - VII are listed below:

- Table III - PROPOSED AID BUDGET FOR AFII
  - " IV - AFII BUDGET BREAKDOWN - \$US and LOCAL CURRENCY EXPENSES
  - " V - PROPOSED AFII BUDGET - PADF COMPONENT
  - " VI - PROPOSED AFII BUDGET - CARE COMPONENT
  - " VII - PROPOSED AFII BUDGET - RESEARCH COMPONENT
  - " VIII - AID SUPPORT BUDGET

TABLE III

PROPOSED AID BUDGET FOR AGROFORESTRY II  
(amounts in \$'000)

YEAR	1990	1991	1992	1993	1994	TOTAL	PERCENT
PERSONNEL							
Expatriate	622	656	703	747	796	3524	12.30
National	1195	1303	1408	1547	1648	7101	24.62
Sub-Total	1817	1959	2111	2294	2444	10625	36.91
EQUIPMENT							
Vehicle							
Mot. bike	332	368	100	150	0	950	3.27
Off. Equi	21	25	30	33	30	139	0.80
Sub-Total	353	393	130	183	30	1089	6.40
TRAINING + EXT.							
Educ. &							
Ext. Mat.	111	118	133	147	162	671	2.32
Training							
& Educ.	97	104	111	120	129	561	1.93
Extension	235	245	257	288	330	1355	4.94
Sub-Total	443	467	501	555	621	2587	6.87
OPER. + MAINTN.							
Seedl. Purch.	633	665	697	729	739	3463	12.04
Per Diem							
/Travel	75	82	90	98	85	430	1.48
Office	132	146	154	151	165	748	2.19
Vehicl.							
& M. bike	293	322	354	390	372	1731	6.16
Misc.	20	27	32	33	40	152	0.53
Sub-Total	1153	1242	1327	1401	1401	6524	22.39
HOME OFFICE							
SUPPORT	60	63	66	69	73	331	1.14
SUBTOTAL	3826	4114	4125	4502	4569	21136	
OVERHEAD	544	615	600	651	667	3077	<u>9.27</u>
TOTAL C.A.	4370	4729	4725	5153	5236	24213	100.00
RESEARCH	1116	1172	1187	699	713	4887	17.01
AID PROJ.							
MGT.	100	107	115	122	156	600	
AUDIT	0	0	0	0	200	200	
EVAL.	0	0	50	50	0	100	
GRAND TOTAL	5586	6008	6027	5974	6305	30000	

Note: The proposed expenditures for the research component include all costs, such as personnel, logistical support, and overhead.

TABLE IV

BREAKDOWN - \$U.S. EXPENSES AND LOCAL CURRENCY EXPENSES  
(amounts in \$'000)

YEAR	1990		1991		1992		1993		1994		TOTAL	
	\$US	LC	\$US	LC								
PERSONNEL												
Expatriate	622	0	656	0	703	0	747	0	796	0	3524	0
National	0	1195	0	1303	0	1408	0	1547	0	1648	0	7101
Sub-Total	622	1195	656	1303	703	1408	747	1547	796	1648	3524	7101
EQUIPMENT												
Vehicle & M.cycl.	332	0	368	0	100	0	150	0	0	0	950	0
Off. Equi	10	11	10	15	15	15	18	15	15	15	68	71
Sub-Total	342	11	378	15	115	15	168	15	15	15	1018	71
TRAINING + EXT.												
Educ.& Ext.Mat.	0	111	0	118	0	133	0	147	0	162	0	671
Training & Educ.	0	97	0	104	0	111	0	120	0	129	0	561
Extension	0	235	0	245	0	257	0	288	0	330	0	1355
Sub-Total	0	443	0	467	0	501	0	555	0	621	0	2587
OPER. + MAINTN.												
Seedl. Pur.	200	433	225	440	237	460	259	470	289	450	1210	2253
Per Diem/ Travel	5	70	7	75	5	85	8	90	5	80	30	400
Office Veh & M. Bikes	0	132	0	146	0	154	0	151	0	165	0	748
Misc.	200	93	200	122	250	104	200	190	240	132	1090	641
Sub-Total	10	10	14	13	16	16	16	17	20	20	76	76
Sub-Total	415	738	446	796	508	819	483	918	554	847	2406	4118
HOME OFFICE SUPPORT	60	0	63	0	66	0	69	0	73	0	331	0
OVERHEAD	544	0	615	0	600	0	651	0	667	0	3077	0
TOTAL C.A.	1982	2378	2168	2561	2007	2728	2130	3023	2120	3116	10407	13806
RESEARCH	800	316	800	372	850	337	400	299	400	313	3250	1637
AID PROJ. MGT.	50	50	50	57	40	75	50	72	80	76	270	330
AUDIT	0	0	0	0	0	0	0	0	100	100	100	100
EVALUATION	0	0	0	0	50	0	50	0	0	0	100	0
GRAND TOTAL	2832	2744	3018	2990	2947	3140	2630	3394	2700	3605	14127	15873

**TABLE V**  
**PROPOSED AFII BUDGET, PADF COMPONENT**  
(amounts in \$'000)

YEAR	1990	1991	1992	1993	1994	TOTAL	PERCENT
<b>PERSONNEL</b>							
Expatriate	418	438	470	497	535	2358	16
National	495	540	588	641	678	2942	19
Sub-Total	913	978	1058	1138	1213	5300	35
<b>EQUIPMENT</b>							
Veh. & M.							
Bikes	0	350	0	0	0	350	2
Off. Equip.	6	6	7	10	10	39	0
Sub-Total	6	356	7	10	10	389	5
<b>TRAINING + EXT.</b>							
Educ.&							
Ext.Mat.	66	72	79	87	96	400	3
Train. & Educ.	47	51	56	62	68	284	2
Extension	235	245	257	288	330	1355	9
Sub-Total	348	368	392	437	494	2039	11
<b>OPER. + MAINTN.</b>							
Seedl.Purch.	543	570	598	625	630	2966	20
Per Diem							
&Travel	30	35	40	45	30	180	1
Office	75	79	84	86	91	415	3
Vehicl.&							
M.bike	210	231	254	280	250	1225	8
Miscellaneous	10	17	20	21	25	93	1
Sub-Total	868	932	996	1057	1026	4879	32
HOME OFF.SUPP.	40	42	44	46	49	221	1
<b>SUBTOTAL</b>	<b>2175</b>	<b>2676</b>	<b>2497</b>	<b>2688</b>	<b>2792</b>	<b>12828</b>	<b>85</b>
<b>OVERHEAD</b>	<b>392</b>	<b>482</b>	<b>449</b>	<b>484</b>	<b>503</b>	<b>2309</b>	<b>15</b>
<b>GRAND TOTAL</b>	<b>2567</b>	<b>3158</b>	<b>2946</b>	<b>3172</b>	<b>3295</b>	<b>15137</b>	<b>100</b>

**Notes**

1. **Staff:** When compared with the actual 1988 expenditures of \$2,211,879, the proposed 1990 budget shows an increase of \$281,700. This increase is due to the addition of one expatriate (\$70,000) and 18 Haitian staff (\$167,000). Additional operational expenditures and inflation also contribute to the increase.

2. **Equipment:** The vehicles and motorbikes, purchased under the AOP, need to be replaced in 1992. Approximately 16 vehicles and 30 motorbikes will have to be purchased. Office equipment are regular requirements for the functioning of the office.
3. **Training and Extension:** Education and training materials include printed booklets for farmers, teaching material, and seeds for hedgerows. Training costs are for the training of PADF staff, extension agents, and nursery personnel. PADF pays the participating NGOs for their extension personnel. This reimbursement is calculated on the number of extension visits carried out.
4. **Operation and Maintenance:** The budgeted amount for the purchase of seedlings from NGOs allows PADF to buy approximately 23 million seedlings over the life of AFII. Per diem and travel costs are primarily for in-country travel. Office expenditures include: rent, utilities, communications, and maintenance of office equipment. Vehicle maintenance costs are based on \$8,000/vehicle/year and on \$1,300/motorbike/year. Miscellaneous expenditures are for various small expenditures.

**TABLE VI**  
**PROPOSED AFII BUDGET, CARE COMPONENT**  
(amounts in \$'000)

YEAR	1990	1991	1992	1993	1994	TOTAL	PERCENT
<b>PERSONNEL</b>							
Expatriate	204	218	233	250	261	1166	13
National	700	763	820	906	970	4159	46
Sub-Total	904	981	1053	1156	1231	5325	58
<b>EQUIPMENT</b>							
Vehicl.&							
M.Bike	332	18	100	150	0	600	7
Off. Equip.	15	19	23	23	20	100	2
Sub-Total	347	37	123	173	20	700	11
<b>TRAINING + EXT.</b>							
Educ.&							
Ext.Mat.	45	46	54	60	66	271	3
Training & Educ.	50	53	55	58	61	277	3
Extension							0
Sub-Total	95	99	109	118	127	548	3
<b>OPER. + MAINTN.</b>							
Seedl. Pur.	90	95	99	104	109	497	5
Per Diem /Travel	45	47	50	53	55	250	3
Office	57	67	70	65	74	333	3
Vehicl.&							
Mot. Bike	83	91	100	110	122	506	6
Miscellaneous	10	10	12	12	15	59	1
Sub-Total	285	310	331	344	375	1645	17
HOME OFF.SUPP.	20	21	22	23	24	110	1
SUBTOTAL	1651	1438	1628	1814	1777	8308	91
OVERHEAD @9.24%	153	133	150	168	164	768	8
<b>GRAND TOTAL</b>	<b>1804</b>	<b>1571</b>	<b>1778</b>	<b>1982</b>	<b>1941</b>	<b>9076</b>	<b>100</b>

**Notes**

1. **Staffing:** The actual expenditures from July 1, 1987 to 30 June, 1988 were:

Total 1987-88 expenditures	: \$ 1,369,854
Proposed 1990 expenditures	: \$ 1,803,330
Increase	: \$ 433,476

The additional budgeted funds are due to increased levels of staffing as a result of the proposed additional activities. Approximately 20 Haitian staff will be added. Total additional costs will be around \$ 200,000. The remainder of the increase is due to vehicle purchases, increased training activities, and inflation.

2. **Equipment:** Costs for vehicle and motorbike purchases are for the replacement of those presently in use.
3. **Training:** The costs for extension personnel are included in the budget line for national personnel. The costs for training are for the use of buildings, radio messages, food handed out during training classes, and the like.

Education materials include booklets and other printed matter. Extension costs are primarily for the purchase of seeds, used in the hedgerows, and agricultural inputs used for demonstration purposes.

4. **Operation and Maintenance:** The costs of seedling production are for the purchase of containers, potting soil, nursery equipment, and consumables. Per diem and travel are primarily for in-country travel. Office expenditures include rent, utilities, communications, and maintenance. Vehicle and motorbike costs are based on historic 1987-88 costs.

TABLE VII

PROPOSED AFII BUDGET, RESEARCH COMPONENT  
(amounts in \$'000)

YEAR	1990	1991	1992	1993	1994	TOTAL	PERCENT
PERSONNEL							
Expatriate	385	468	438	404	432	2127	47
National	130	142	155	51	42	520	12
Sub-Total	515	610	593	455	474	2647	59
OPER. + MAINTN.							
Travel	15	10	25	5	8	63	1
Logistics	141	79	85	40	40	385	9
Field Supp.	50	60	60	10	10	190	4
Miscellaneous	149	155	161	35	35	535	12
Sub-Total	355	304	331	90	93	1173	26
CONSULTANTS	60	63	65	37	27	252	6
SUBTOTAL	930	977	989	582	594	4072	91
OVERHEAD	186	195	198	117	119	815	18
GRAND TOTAL	1116	1172	1187	699	713	4887	100

Notes

1. This budget covers research activities for the development and production of seed and germplasm, as well as research in the fields of agriculture and agroforestry.
2. Operation and Maintenance: Travel covers in-country and international travel. Logistics covers vehicle purchases, costs associated with the operation of an office, and vehicle maintenance and operation. Field support expenditures are for the costs associated with field research activities.
3. Miscellaneous expenditures include the purchase of research equipment.

**TABLE VIII**  
**AID SUPPORT BUDGET**  
**(\$'000)**

	1990	1991	1992	1993	1994	Total
Audit	0		0	0	200	200
Eval.	0	0	50	50	0	100
PCU	80	80	80	80	80	400
Consultants	10	10	20	20	40	100
Miscellaneous	10	17	15	22	36	100
	100	107	165	272	256	900

**Indication of Costs per Proposed Activity**

The proposed AFII has several components that are complementary. Listed below are illustrative estimates for five major project activity areas.

- Nursery Production and On-Farm Propagation:** This activity is the linchpin of the proposed AFII. An estimated 35 million seedlings will be produced during the life of AFII. Based on the financial analysis carried out, the total cost of producing these seedlings will be \$ 3.15 million at \$0.09/seedling. This covers the direct seedling production costs. Four expatriates will be occupied full-time with this activity and the regional coordinators are estimated to be spending 50 percent of their time on this activity. It is estimated that 30 percent of vehicle costs can be attributed to this activity.

Direct Seedling Production Costs	\$ 3,150,000
Personnel (managerial)	\$ 3,965,417
Vehicle costs (Purch.+ O&M)	\$ 1,008,437
Total	\$ 8,123,854

- Training and Extension:** Four expatriate staff members will be involved full-time with this activity. A large proportion of the time of the national staff will be devoted to these activities. 50 percent of the costs of vehicles and motorbikes can be attributed to this activity.

Personnel	\$ 7,880,437
Materials	\$ 770,437
Vehicle + Motorbike costs	\$ 1,647,437
Total	\$10,298,311

- Research and Seed and Germplasm Development:** The breakdown of the estimated costs of this component is given in the budget for research, which totals \$4,887,000.

4. **General Support and Management:**

Personnel	\$ 1,240,837
Office	\$ 964,437
Transportation	369,437
Home Office Support	\$ 427,437
Overhead	\$ 2,788,687
Total	\$ 5,790,835

5. **AID Management, Audit, and Evaluation Costs:** The total budgeted amount for AID direct costs is \$900,000.

**Auditing Requirements**

Both CARE and PADF are U.S. NGOs and are required to have A-110 audits performed. In the CAS, AID will require that these audits also cover field operations.

A financial audit will be requested for close-out of the research contract. Close out audits will also be requested for CARE and PADF in 1994 if the need is determined. In the case of CARE, it is anticipated that such audit would cover several projects and the costs would be allocated to the projects involved. These will be non-federal audits under the supervision of the Regional Inspector General.

## PROJECT MANAGEMENT AND IMPLEMENTATION

### The Present Institutional Landscape

The AOP is currently implemented by four distinct implementing agencies: the two outreach grantees, CARE and PADF, responsible for field-level operations; a research institution; and an institution responsible for seed and germplasm improvement. Collaboration between these institutional entities has been achieved, to a certain extent at least, through the Technical Coordinating Unit (TCU), the AOP Management Committee, and the RSC.

#### PADF

PADF works primarily through local NGOs, assisting them to establish extension programs of their own through a system of sub-projects -- in reality these are contracts for seedling production and extension support for outplanting. PADF's five regions cover all of Haiti except the Northwest. Each region has relative program autonomy and is headed by a Team Leader. Currently two managers are Haitian and three are expatriates. These managers work with some 80 NGOs through 34 production contracts and more than 80 extension contracts under which some 700 agents are employed. Extension activities reach over 40,000 farm families annually.

#### CARE

CARE operates its own seedling production, with production concentrated in 14 centralized nurseries. The extension system throughout the Northwest is directly controlled by CARE's four Regional Managers, all of whom are Haitian. The planned division of one region into two separate regions will give CARE a total of five operating regions. Approximately 300 extension agents work for CARE in the Northwest. Its field activities are managed by the sub-regional administrator based in Gonaives.

#### SECID/Auburn University

The current research team of six expatriates, employed by Auburn University as the lead university for the Southeast Consortium for International Development (SECID), began present operations in June of 1988. This team is assisted by a local staff of six technicians. The SECID mandate is to conduct research and other activities to support and improve the implementation efforts of CARE and PADF.

#### IRG

This component is being implemented by a team consisting of one long term expatriate and three local hire national staff. IRG's role is to improve and control the quality of seed outplanted through the project nursery production system. This is being accomplished by a nation wide selection of superior tree species for seed collection, the establishment of tree progeny trials, and the establishment of 15 seed orchards located in 5 major sites throughout the country.

### **AOP Management Committee**

This committee is currently composed of the AID Project Officer, his replacement, the directors of the grantee and contractor institutions, and one project-funded PSC -- the AOP Senior Forestry Adviser. This committee meets on a monthly basis and discusses matters and issues of concern to the participating parties.

### **Research Steering Committee (RSC)**

This committee, which also meets on a monthly basis, is composed of the Senior Forestry Advisor, the Chiefs-of-Party (COPs) from Auburn and IRG, as well as the technical heads from the grantees. At these meetings, members discuss the AOP research agenda, upcoming research activities, and proposed field trips.

### **Proposed Staffing Changes**

In keeping with the belief that development is an evolutionary process that builds on the lessons learned during the process of implementation, no radical changes are proposed for AFII, at this time. PADF and CARE will have implementation responsibility for direct agroforestry interventions with the same areas of geographic concentration. Certain changes are recommended for the research component -- that all research activities be consolidated under one institutional contract.

In order to make sure that what was once designated "a lean, mean, tree-planting machine" continues as a well-oiled, efficient operation, the following staffing changes are strongly recommended:

- \* **PADF:** At the regional level, this grantee should strengthen its technical presence at the regional level and, at the central level, establish two new positions -- a training coordinator and a technical coordinator.
- \* **CARE:** This grantee should decentralize more decision making authority to the regional level. This subject, however, is largely an internal personnel management issue within CARE and largely beyond the control of AID.
- \* **Research:** Given the budgetary limitations, the benefits of incorporating seed and germplasm activities, and the need to maintain a multidisciplinary research team, a major staff re-alignment is in order. The AFII research team will be composed of: a socio-economist, a nursery specialist, an agronomist/agroforester, a seed specialist, and an administrator.

## AID Support for AFII

The AFII will be located in the Agriculture Development Office (ADO) of the Haiti AID Mission. Supporting this effort will be a project officer, a technical coordinator, an administrative coordinator and an administrative support assistant. The latter three positions will be financed through project funds, with each individual directly responsible to the project officer.

A Technical Coordinating Unit (TCU) was established under the AOP in 1981, located outside of AID, in order to facilitate coordination of AOP activities while maintaining a certain independence from both the grantees and AID. In 1985, the TCU was physically moved into the ADO, with the result that the coordination and technical support function received less attention, while administrative requirements within AID took a large part of available time. This situation resulted in the TCU becoming less useful to the grantees.

The TCU currently consists of an expatriate technical advisor, a coordinator, and an administrative assistant. The TCU will disappear at the end of the year. The reasons for these changes are as follows:

- \* Both grantees have much more experience, technical knowledge, and qualified staff;
- \* A research institution with an established agenda is now functioning;
- \* Training for extension agents and personnel has improved;
- \* Mechanisms for coordinating research and exchanging information among the principal AOP actors are functioning;
- \* Both grantees have improved their monitoring and reporting systems; and
- \* The documentation flow to AID has improved.

The above differences and improvements, helped in large part by the TCU, mean that most of the technical decision making is now shouldered by the grantees and research institutions. As a result, less direct technical input is required from AID. Further improvements in communication and coordination among those participating in AFII are desirable, however, and will be pursued through the new Program Coordinating Unit (PCU).

Discretionary funds should be made available to the AID project officer to enable the ADO to address issues that cannot be addressed by the grantees or the research institution. These funds would be available primarily for short-term technical assistance of various sorts. They could be utilized for assessing work being performed under AFII, addressing project-related issues that are beyond the scope of the grantees or the research institution, or answering questions of specific interest to AID.

Responsibilities for the Technical Coordinator of the PCU working in the ADO office should include:

- \* Regular and extensive field visits to achieve a full understanding of the field programs and activities of the grantees;
- \* Direct involvement in the RSC as a full participating member;
- \* Active participation in AFII Management Coordinating Meeting, a continuation of the present system established under the AOP;
- \* Presentation of periodic reports to the ADO on issues that face AFII, with an emphasis on options open to AID and participating institutions;
- \* Preparation of the terms of reference for short-term technical assistance financed by the ADO;
- \* Collaboration with the AID program office to ensure that adequate information is available with which to evaluate and monitor all AFII activities; and
- \* Collaboration with the GOH/STAB, other USAID Projects, and the donor community in matters concerning agroforestry in general and AFII experience in particular.

#### **Implementation Schedule**

Detailed implementation and annual work plans will be required of all project contractors and grantees which will include explicit schedules and scopes for activities; targeted areas, groups, and objectives; verifiable indicators of progress and achievement; and monitoring, reporting, and feedback mechanisms. Presented below is a summary of implementation activities over the LOP.

#### **FY 90, First Quarter**

1. USAID/Haiti completes and approves the PP, and AFII authorization is signed.
2. Contract is negotiated and signed for the research component of the project.
3. Cooperative Agreements with CARE and PADF are drafted, negotiated and signed. CA's will include standardized reporting requirements and common indicators.

### **FY 90, Second Quarter**

1. Implementation plans for AFII are prepared and presented by both grantees.
2. The grantees present annual work plans to AID for review and comment, particularly in terms of the monitoring and evaluation requirements of AID.
3. First annual AFII retreat involving all the key institutions and selected representatives to discuss objectives and priorities over the coming year.
4. Research contractor presents implementation plan, annual work plan, and signs the required protocols with the grantees and/or other participating institutions.

### **Summary of Schedule**

Over the LOP, the three involved institutions will develop detailed work plans on an annual basis. This is further described in the next section entitled Monitoring AFII Activities. In addition to semi-annual field implementation reviews, several external evaluations and audits are to be held. RIG supervised audits of CARE and PADF will be held in 1990 and 1992. The research contract will be audited as needed based on the determination of the USAID Controller. A Project wide program evaluation will take place at mid-term (1992) and the final evaluation will be held during 1994 in order to set the stage for the design for the follow-on project activity.

## MONITORING AND EVALUATION

### Monitoring AFII Activities

There is a consensus by the design team and the ADO that both the implementing and the research institutions will be professional and mature enough to do much of their own monitoring. Therefore, it is their responsibility to present the necessary information in a readable form and on a timely basis. AID, in its turn, is responsible for reading and commenting upon the information presented and for appropriate feedback to the implementing institutions.

The monitoring and reporting system which will be carried out in AFII will track 2 "levels" of information and indicators which are necessary for both the implementing agencies and AID. This information will be collected and reported on by CARE and PADF, as described below, with technical oversight from the AFII research component and with overall monitoring by USAID.

At the national level, the project will collect data for the analysis and tracking of indicators which help AID assess the progress of the project and the ADO portfolio. Some of these indicators are 1) #'s of tree seedlings produced and distributed on an annual basis, 2) #'s of participating farmers, 3) #'s of linear kms of hedgerows, and 4) #'s of hectares protected by soil and water conservation measures.

At the regional and field levels, the grantees will monitor and report on more detailed indicators which will be used to track and adjust program strategy and management. These indicators reflect regional and site specific differences throughout the country for project activities which when collectively analyzed should show the success of interventions on a project-wide basis. This is especially important since one of the key resources AFII will provide to participating peasants will be information -- information about available material resources, tree technology, hedgerow technology, alley cropping, forages and grasses. Acceptance and use of new information will be compared for different sites. This will help project managers to encourage and understand the effectiveness of project innovations.

### Reporting Requirements

No major changes are expected in the way the grantees or the research institution manage their activities. Internal management functions and information flow will remain where they belong, with the grantees and the research unit. AID should receive adequate information to monitor AFII activities through the following mandated actions:

- \* CARE, PADF and the research institution will submit semi-annual reports which include a description of activities undertaken, costs

involved, and results obtained. The first report will be due on February 28 of each year and will present a comprehensive review of the progress attained during the preceding year, as measured against the work plan for that year. This report will also present the proposed work plan for the coming year, detailing important events, estimated dates and budget details. For the research component, the report will also include a brief description of all protocols signed during the period, a short summary of work performed on all active protocols, and a summary of research results.

A joint project review comprising CARE, PADF, the research contractor, and USAID will take place during March of each year, based largely on these reports. The second semi-annual report from each implementing agency will be due on July 30 of each year, covering progress made since the last report and noting any changes in the workplan for the current year or problems incurred during the period which may impede future work. Similarly, a joint review will be held in August to consider these reports and their implications.

#### **Annual Work Plans and Key Indicators**

As previously described, these annual work plans will be the benchmark for monitoring project progress and the mechanism that relates information to project objectives. The AID monitoring effort, based primarily on information associated with the annual work plans, will be largely dependent on the time and effort that the participating institutions devote to the development of these plans, as well as their ability to generate timely and adequate information. All reports presented to AID should show a direct relation to the work plan and its fulfillment.

Such a monitoring approach demands comprehensive, annual work plans that allows progress to be measured against specific activities that are tied directly to overall project goals. For this system to work, these plans should -- to the extent possible -- include quantifiable indicators that are standardized and acceptable to AID. Among possible key indicators are the following, listed in order of importance:

- \* The number of seedlings produced in the nursery. This is still a key indicator.
- \* Survival rate for seedlings. This could be a key indicator for measuring improvements in nursery management. Suggested target is 50 percent after one year.
- \* The number of linear meters of hedgerow established.

- \* The number of farmers using on-farm plant propagation methods, such as direct seeding, stem and root cuttings, stump propagation, and bare rooting.
- \* The number of farmers who are effectively implementing a variety of agroforestry techniques through the introduction of new, multipurpose trees, hedgerows, forages, and new provenances of currently planted species.
- \* The number of farmers who are effectively managing and harvesting their trees.
- \* Effective establishment of five regional seed nurseries.
- \* Effective establishment of a central seed processing and storage facility for each of the grantees in the Port-au-Prince area.

### **Evaluations**

Evaluations will take place as described in the Summary Schedule of implementation activities. An external mid-term evaluation will assess the progress towards the accomplishment of project output and purpose level indicators, make recommendations on required program adjustments, and revise (if necessary) output indicators for the remainder of the LOP. The final evaluation will take place in 1994 and will provide the basis for future project design.

## SUMMARIES OF ANALYSES

### Social Soundness Analysis

#### Social Feasibility

To the extent that proposed AFII extension programs target the same set of beneficiaries -- peasant household production units, with the same basic extension strategies -- non-directive and simple, and offer the same basic extension services -- subsidized biological and informational resource transfer as has the AOP, there is no reasonable doubt of its sociocultural feasibility at the peasant level. The peasantry has, for the past eight years, been "voting with its feet" on this issue. In terms of the social acceptability of proposed new technical interventions at the farm level, three simple "rules-of-thumb" should be consistently applied:

- \* Land-extensive, capital-intensive interventions will not likely work, certainly not on a widespread basis. Labor-intensive interventions are possible, insofar as labor demands are not overly stringent during periods of peak demand within the agricultural cycle, and to the extent that the labor expended yields visible results and/or usable by-products within a relatively short period of time.
- \* Interventions that require coordinated group activity beyond the household are simply unworkable, except insofar as group organization has been the successfully achieved priority development objective of a local NGO over several years preceding any such interventions.
- \* Complex interventions, with end results "predicted" by technicians, are probably "over-determined" with respect to the idiosyncratic and micro-climatic variations characteristic of peasant farm-management strategies. The creative appropriation of relatively simple interventions, and the tailoring of new options to on-farm production objectives, is the peasant's "job," and he/she has already proven quite capable of handling it.

Two proposed new technical interventions under AFII -- the on-farm propagation of trees and the introduction of grass and leguminous forage strips into hedgerow systems -- satisfy these three criteria.

#### Political Feasibility: A Cautionary Note

While it is difficult at this point in the evolution of Haitian political culture to predict what the future may hold, it is only realistic to stipulate that the next five years are not likely to be

passed serenely. There are basically three different types of potential political constraints to project feasibility:

- \* General political unrest, most commonly manifest in the contemporary Haitian context in terms of interference with the national transport system, through the blockage of vehicular traffic on major arteries;
- \* Aggravated anti-American sentiments, both locally and nationally, on the part of the progressive left and its associated populist organizations; and,
- \* Government interference in the operation of local and international NGOs.

#### **Who Is Served: The Beneficiary Profile**

With an estimated 400,000 direct beneficiaries under its seedling production and distribution program alone, AFII will obviously serve an unprecedented proportion of the rural population over the next five years. Still, concerns about the "beneficiary profile" can and should be raised here.

The age, gender and resource trends in the AOP planter profile were analysed in some detail in the brief social soundness analysis prepared in 1986, for use in the second PP amendment. Several points made in that analysis should be reiterated here.

- \* Truly landless members of the target population are unavoidably excluded from direct project benefits, as they must be in the majority of agricultural development initiatives aimed at peasant freeholders.
- \* Land-poor peasants are understandably less likely to be able or willing to innovate -- at least initially -- than their relatively better-off neighbors.
- \* The sheer numbers of seedlings distributed per participant, at the time, clearly required a more than minimal holding size to accommodate outplantings.
- \* The slight age difference between planters and non-planters was seen as attributable to a number of convergent factors, including, first, land tenure dynamics; second, relative labor scarcity; finally, relatively longer time horizons.
- \* Likewise, the overwhelming preponderance of men among official participants could be explained by the underlying dynamics of women's role within agriculture and peasant society in general.

- \* That the skewing of the planter profile might well be more apparent than real, since the outplanting of up to 25 percent of project seedlings by unofficial, non-registered "participants," on the basis of informal redistribution networks, was not accurately reflected in the planter profile.

The AOP extension (1987-1989) mandated two significant changes in the outreach programs designed, among other things, to redress whatever actual skewing remained in the beneficiary profile. The remedial measures were, first, to lower the minimum number of seedlings made available to registered planters and, second, to increase emphasis on the second major component of the outreach program -- hedgerow establishment and related soil conservation activities.

All current indications from the field affirm the 1986 analysis, and the effectiveness of the recommended adjustments to the outreach program in relieving whatever systematic skewing the planter profile had revealed. While statistically reliable data are not currently available, it appears that over the last few years the AOP has indeed served a somewhat wider, less well-endowed, and younger constituency. There are no plans for program changes under AFII that threaten to reverse that trend. On the contrary, a continuing reduction in seedling lot sizes -- down to between 80 and 125 -- is projected for several regions. Moreover, the greatly expanded program emphasis on low-cost, biologically based soil conservation technologies and sustainable agriculture promises positive impacts for virtually any freeholder, regardless of the extent of his or her land resources.

#### **Women in Development: The Hidden Beneficiaries**

For the purposes of this analysis, Haitian peasant women either have regular access to male agricultural labor, land, and management skills, through a conjugal relationship, or they do not. That is, women are either in-, or out-of-, union at any given point in time. In the broadest possible terms, the economic utility of union, from a woman's point of view, is this access it affords to male resources. Furthermore, it is precisely the economic utility of union that is of paramount cultural importance to women.

This is the feature of union that is "marked" or highlighted culturally. Finally, while they are quite capable of living without men entirely -- and a not insignificant minority positively choose to do so -- most women prefer to participate in a system of conjugality that explicitly makes them, and their children, the primary economic beneficiaries of male agricultural productivity.

In terms of AFII, the important question is whether there is something intrinsic to the interventions being proposed, or the material resources being transferred, that systematically works to exclude women

as beneficiaries and/or participants, or to impact negatively on their overall status within society. Earlier in-depth field research, and the minimal fieldwork conducted in the course of preparing this analysis, suggest that neither of these reservations is well-founded. Women everywhere are benefitting, as active and relatively "empowered" members of their household production units, from project resources and interventions in the peasant agricultural sector. One of the few things that project trees are not being used for, it seems, is as a "tool" for somehow leveraging greater male control over agricultural production within the context of conjugal households.

## **Economic and Financial Analyses**

### **Seedling Production Costs**

The financial cost per seedling produced under the PADF program from 1982 through 1988 is \$0.30. The cost has been \$0.75 per surviving tree, 40 percent of seedlings produced. That costs are rising is evident: the cost per estimated surviving tree, planted in 1989, is \$0.88.

The financial cost to produce one seedling was substantially higher in the CARE regions. This amounts to \$0.49 per seedling or \$1.23 per surviving tree. It must be noted that the CARE area suffered badly from the political turmoil in 1987 which may have contributed to the increase in costs. The financial cost per CARE seedling produced during 1988 was \$0.52.

The above cost per seedling calculations assume that all costs incurred are linked to the production of hardwood seedlings. However, this is not the case. Considerable time and effort are devoted to extension, training, and the planting of hedgerows. Data are insufficiently broken down to get a clear picture of what can be attributed to which activity. The financial analysis section will provide a more detailed picture about the seedling production costs at nursery level.

Another explanation for CARE's higher per seedling cost is the fact that the area in which CARE operates is quite different from the regions in which PADF works. Access to the area is difficult due to the poor infrastructure. CARE handles its own seedling production, while PADF purchases seedlings from local NGOs. These NGOs carry the risk in case of production failures. PADF's seedling purchases have been approximately three times higher than CARE's output over the same period of time, so economies of scale also play an important role.

### **Nursery Production Costs**

During the AOP a lot of time and energy went into improving centralized nursery production of seedlings with the aim of achieving the lowest possible production cost for the highest quality. Three types of containers are presently in use: Rootainers, Winstrips, and plastic sacks.

Rootrainers last an average of four production seasons. The present C.I.F. price of this container is \$1.30 per box containing 2500 cells, or \$0.052 per cell. Each cell can produce four seedlings, so the use of this type of container costs \$0.013 per produced seedling. Rootrainers need special racks to hold them which cost approximately \$0.002 per seedling produced.

Winstrips can be used for a minimum of 16 production seasons. The cost of this container amounts to around \$0.005 per seedling produced. Winstrips can be placed on simple tables.

Sacks cost around \$7.50 per 1000. They can be used only once, and the cost per seedling is therefore \$0.0075. Ideally they are placed on concrete slabs, in order to prevent the roots from growing into the soil. They require approximately three times as much soil, twice as much labor, and are more expensive to transport from the nursery to the farm, when compared with Rootrainers.

Another important cost is the cost of potting soil. Experiments are going on to replace the imported GRO-mix with locally produced soil mixes. These are at present still mixed with GRO-mix, usually in the ratio of one-to-one. One bale of 113 liters of GRO-mix costs \$19 C.I.F. Port-au-Prince, while a similar quantity of so called CARE-mix costs \$5.60 to produce. CARE tests have shown that seedlings produced with the CARE-mix are of satisfactory quality.

In brief, production systems using Winstrips are the cheapest, while sacks are the most expensive. It is also evident that personnel, seedling container, and potting soil count for approximately 80 percent of the cost of production in the case of a nursery system using Rootrainers.

A comparison of the costs when expressed as percentages of total production costs between a CARE Rootrainer nursery and a PADF Rootrainer nursery shows the following:

Table 1  
Percentage Cost Comparison Between CARE and PADF Nurseries

	CARE Percentage	PADF Percentage
Personnel (incl.water)	56.06	46.21
Rootrainers	22.61	19.35
Potting soil	10.43	14.12
Racks	4.35	3.33
Shading	.24	6.99
Transportation	3.10	5.88
Various	1.21	4.12

The CARE nursery produces five times more than the PADF nursery and has a much higher level of supervisory staff, one manager with two assistants and two permanent employees. Water haulage costs are high at the CARE nursery. The PADF nursery is still using the 100 percent imported GRO-mix, while CARE is using a mixture which includes 50 percent GRO-mix and 50 percent CARE-mix. Shading costs are much higher at the PADF nurseries due to the shadehouses. The transportation costs of inputs for the nurseries are the consultant's best estimates.

Production costs vary from nursery to nursery. The majority of the costs are for personnel, Rootrainers, and potting soil. 80 percent in the case of PADF, and 88 percent in the case of CARE.

The payment of \$0.08 per seedling by PADF to the cooperating NGOs does not cover any risks nor does it sufficiently reimburse management time of senior NGO staff.

The substantially lower production costs of the CARE nursery are probably due to economies of scale, and very low investment costs.

#### **Financial Benefits to Participating Farmers**

To date very little is known about tree yields in the various regions of the country. The Auburn research team is in the process of collecting these data, and towards the end of 1989 more results should be available.

From data collected during fieldwork, the following calculations were made. Under the AOP, farmers generally receive 125 seedlings each for planting. Assuming that 40 percent of these will grow into mature trees, farmers are left with 50 trees occupying 0.02 hectares. It is also

assumed that the farmer will harvest his trees at five-year intervals and that half the trees will be used to make charcoal, and the other half will be sold off as posts or saw timber.

Table 2  
Estimated Production Data for Leucaena leucocephala  
Planted On-Farm

---

The value of production per five years would be:

25 trees and branches and tops of trees sold as posts, yield 5 bags of charcoal @ \$2.50	\$ 12.50
25 trees sold as posts @ \$ 3.00	<u>\$ 75.00</u>
Total	\$ 87.50

---

Source: Calculation based on data collected in northwest Haiti.

When expressed on a per hectare basis, the value of production would be \$4,375 over five years, or \$875 per year per hectare. The value of production of one hectare of fertile land, growing maize intercropped with beans, would be around \$ 400. Tree lots are primarily established on marginal lands, where it would not be feasible to cultivate other crops. However, a lot of trees are planted as border plantings or planted in gardens where growth rates may be higher.

From the above calculations it is clear that producing trees is an attractive enterprise from the farmer's perspective. Labor requirements are minimal, and it can even be argued that time is saved because the farmers can use the wood from pruning for firewood, which otherwise might have to be collected from a much greater distance. Trees allow farmers to make marginal lands productive again. The success of the AOP confirms this.

#### **The Economic Internal Rate of Return**

The calculated economic IRR using Lotus 123 is 33 percent. The sensitivity analysis shows that a 10 percent reduction in project benefits will lower the IRR to 30 percent. An increase in project costs with 10 percent still yields an IRR of 30 percent. The Net Present Value at the cut-off rate of 12 percent is over \$44 million. All these calculations are based on the sole benefit of the estimated number of trees produced under AFII. The real IRR of the proposed project is therefore substantially higher. From an economic viewpoint, the decision to go ahead with this project is justified.

## Agroforestry

### A Question of Definition

Agroforestry can be defined as the association of trees and agricultural crops, on the same parcel of land, either at the same point in time, or sequentially. There are numerous land management or tree-crop associations that are possible within the scope of agroforestry. While agroforestry is considered by many to be a new, modern form of appropriate land use recently introduced into many regions in the tropics, it is, in fact, a land-use system that has been in existence in peasant agricultural systems long before present day technicians became aware of it or its potential benefits. Agroforestry is a new term for a very ancient, but very common form of land management.

For the peasant farmer, agroforestry offers several potential benefits in the form of more favorable product mixes and yields, as well as environmental considerations. However, the actual impacts will depend on site-specific conditions and the types of interventions that are undertaken.

### Haitian Agroforestry Systems

The following Haitian agroforestry systems have been identified, according to their geometrical configurations and land use, and instituted under the AOP, to varying degrees:

- \* **Intercropping:** Multiple crop species are planted in rows, on a common piece of land, and trees are included among the crop species;
- \* **Alley Cropping:** Planting multiple rows of the same woody species across a garden, with agricultural cropping between the rows;
- \* **Contour Planting:** The planting of woody, herbaceous, or other plant materials on the slope along the contour to reduce or prevent erosion;
- \* **Border Plantings:** Usually single rows of trees planted to delimit land, either by ownership boundaries or by separate fields, delimit paths, and the like;
- \* **Interspersed Plantings:** Multiple crop species, including trees, are planted in the field in a non-systematic fashion -- rows are not evident; and
- \* **Tree Plantations:** Trees are planted closely together, usually for the production of wood as the primary crop.

All of the agroforestry activities promoted under the AOP require at least some level of continuing management on the part of project participants. For some interventions the management requirements may be rather limited in terms of duration, frequency, and the required effort, with a certain amount of risk if proper management is not practiced. However, the management and risk factors can be considerable for other interventions and species combinations. It is important that AFII extension and outreach personnel make a concerted effort to explain this to participants, in suitable detail, for each species and intervention that is being promoted. There is reason to believe that this has not necessarily been the case under the AOP.

### **Priorities for AFII**

Seedling production has been a major activity under the AOP and should continue as a significant component of AFII. An estimated 200,000 peasant farmers will have received seedlings from the AOP project by the end of 1989. Seedling production techniques have been more or less successfully mastered under the AOP.

Based upon the field visits undertaken for the preparation of the PID and the PP, it would appear that the only proven large-scale seedling production technology currently available, and tested under Haitian conditions, is that of the large containerized nurseries funded under the AOP.

The main seedling production should continue to come from the centralized nurseries -- for the simple reason that these nurseries function well and are relatively cost-effective, given their levels of production. A sudden attempt to change to other types of nurseries or production systems would risk seriously disrupting the tree distribution program of AFII. However, this is not to say that the exploration and development of alternative production techniques and materials should not be investigated, and, if possible, developed to provide an additional source of, low cost, low volume nursery production.

Efforts to support the development of local or community-level nurseries, which focus on producing small numbers of trees for local needs, should continue on a small scale. The priority sites for these efforts should be those locations that cannot be easily serviced through the centralized nursery system. It should be remembered, however, that it takes much more time and effort to train the staff and provide the necessary technical and administrative support required to set up and run 15 small nurseries, which produce 10,000 seedlings each, than it does to set up one nursery to produce 150,000 seedlings.

Farmers for the most part are managing their hedgerows in a manner that satisfies their individual needs. As long as the grantees continue to advise these planters of the various management options that can be undertaken, based upon the end results desired by the planter -- soil improvement, erosion control, or fodder production -- they will have the means to continue making management decisions in an informed manner.

There is concern on the part of the design team that the laissez-faire dissemination of hedgerows may be a potential pitfall for AFII. Farmers are planting hedgerows, at excessively wide spacing, on the steepest sites, where the soils have all but disappeared. There is the risk that they may become over-extended and be unable to successfully manage the hedgerows -- at the risk of having the unmanaged areas seed in otherwise productive sites. The grantees and the research unit of AFII should attempt to carefully examine and evaluate when and where hedgerows should and should not be promoted, before beginning any major initiatives in hedgerow technology dissemination.

A key characteristic of the AOP that should be retained under AFII is to maintain grantee flexibility in the activities and direction of their programs. The grantees should continue to have the latitude to explore new directions and initiatives, given that new activities be undertaken at reduced levels suitable for new and unproven ideas.

Experience has shown that AOP participants have decided, on their own, what they thought were the most effective options or activities for their individual needs. They have used that as the basis to decide how they would use the trees and what technical assistance they might need. As of yet, there does not appear to be adequate information available to support an attempt to identify priority interventions that should be disseminated before all others under AFII.

It is important that there be a dialogue between project extension personnel and their clientele. This should include the presentation of complete information packages, detailing the potential hazards and the management requirements, as well as the potential benefits, that apply to various activities. Project staff would be doing a great disservice to the farmers if only the positive aspects of proposed interventions are presented, leaving either hard experience or word-of-mouth as the only sources of additional information.

## **Forestry**

### **The Need for Better Management**

Concern about forest product utilization is currently not a prominent part of the AOP extension activity. As trees mature beyond the nominal three to five years considered to be most suitable for conversion to fuelwood, more attention should be given to management of individual trees and stands that remain and to their increasing importance in the farming economy. It is estimated that 10 to 20 million trees planted under the AOP still remain to be harvested. The evidence suggests that upwards of 60 percent of PADF trees survive after six months. The survival rate for CARE has always been reportedly higher, due perhaps to the greater attention paid by CARE field staff to extension activities.

While a 1985 PADF survey suggests that poles or planks were items most sought after by 95 percent of project planters, most of the products actually harvested went for charcoal. Under such circumstances, there would seem to be little need to concentrate on improving tree characteristics, such as good form. However, of the estimated 10 million AOP trees remaining to be harvested, better management would likely improve their quality and sale value. The AFII should assist peasants in making intelligent choices of species for planting, based not only on site and soil matching, but also on income production potential and preferred utilization.

A closer attention to management techniques could have the effect of improving the growth rate of individual trees and stands, of producing healthier stock, and increasing the sale value of the harvest.

### **Pruning**

More thought should be given to proper pruning techniques. At present, the most common mistake in the AOP is pruning too early, thus decreasing photosynthetic activity, often wounding the tree in the process. Since a dull machete is usually employed to prune off side branches, the branches are sometimes split or stripped from the stem when the cut is not cleanly made. Early pruning thus affects growth rate and plant vigor. Extension messages should emphasize that sharp tools must be used to insure that pruning is done properly.

Delayed pruning is more difficult to accomplish with a machete, and the added branchiness will affect light penetration into the understory. Nevertheless, there is a potential tradeoff in added branchwood for fuel if side branches are allowed to remain for a few more seasons.

### **Coppicing**

One aspect of management of individual trees that could be improved is coppicing. Farmers who harvest trees primarily for charcoal tend to sever the tree at ground level. Among those trees that coppice well, such as Azadirachta, Leucaena spp., Gliricidia, Casuarina, and Calliandra, cutting too low reduces the overall vigor and inhibits rapid regrowth. Although a limited amount of advice on coppicing potential of tropical hardwoods in Haiti was provided by the University of Maine research team, guidelines for proper stump height have not been verified. In general, however, satisfactory results have been observed when the stump height is between 25 cm and 50 cm. More applied research is needed, and the information must be systematically recorded and disseminated, if it is to be followed.

A second important aspect of coppice management is maintaining an ideal number of stems that emerge from the base of the severed parent tree. In general, peasants who maintain stands for the purpose of harvesting charcoal keep too many stems. The net effect is to reduce the

diameter growth of each of them, while suppressing the overall vigor of the plant. The sum total of stem biomass of seven stems, for instance, probably does not exceed the biomass of two properly selected and managed stems of the same age, in another tree of the same species nearby. No data have been reported to support this claim. However, Leucaena is known, a priori, to produce stagnant stands when too many stems are left unmanaged.

### **Pollarding**

When crown growth of large trees produces excessive competition for light and nutrients in a farm garden, the tops of some species can be removed entirely without killing the tree itself. This permits a continuation of diameter growth, thus maintaining much of the value of the stem and the investment in planting it there. Leucaena spp., Azadirachta, Casuarina, and Gliricidia are known to respond well to pollarding in Haiti. Other native species that are not in general use in the ACP are also pollarded, and are usually employed as living fences, or as property boundary markers. Pollarding is difficult and dangerous to do, especially on tall trees. However, it is one way to get the benefits of wood production in a garden, while simultaneously practicing the cultivation of annual crops.

### **Stands**

Most of what has been said about management techniques pertains to individual trees and to stands. The major focus in an extension effort, however, belongs in promoting stand management. Most emphasis should be put on encouraging rak bois or small plantations on marginal land. Some of the advantages of rak bois over individual planting in fields are: decrease in competition with annual crops; better utilization of vacant lands and steep slopes with typically poor soils; and a natural affinity for subsequent development of pioneer grasses and weeds that may be useful forage in areas removed from crop production. As trees mature, the colonization and maturation of rangeland species in the understory could become an important factor in the subsequent utilization of the land for pasture, and an improvement of animal nutrition.

There is also the possibility of overseeding the ground with grasses and leguminous forage species, in an improved seedbed provided by organic matter in the litter layer, to enhance the productive capacity of the site. Once outplanted, stands of saplings that are mature enough to withstand grazing pressure could be host to small groups of animals which could be allowed to utilize the stands on a regular, but rotational basis. It is recommended that land over 50 percent slope be given special emphasis on the part of extension personnel, with a view toward maximizing the productive potential of the land itself, optimizing environmental stability, and promoting cost-effective soil conservation through biological means.

## **Fruit Trees**

Most intensive farming takes place on valley floors and on bench terraces above river beds where deeper, more productive soils occur. Fruit trees are often planted there as well, despite their intense shading of annual crops. It is believed that peasants plant a wide variety of fruit tree species on the better lands, as a measure of insurance in providing food from perennial crops, when unfavorable weather limits harvests of annual crops.

Since cropping intensity has increased on all lands over the years, the tendency has been to bring added pressure on the most marginal of sites. Due to the higher risk on steep slopes, fruit trees should not be planted there. There is no justification, therefore, for AFII to go beyond what the AOP has maintained as the production quota of fruit trees. The yearly average of PADF has been about 250,000 fruit trees per year, and has included 19 popular fruit species, about five percent of total yearly nursery production. CARE has maintained an active interest in assisting community groups to grow substantial quantities of fruit species. Furthermore, there have been, and still are, a number of other AID and other donor-financed fruit tree-production projects in Haiti. Most important, perhaps, is the long history of on-farm propagation of fruit species by Haitians themselves, without external subsidies.

## **Seed and Germplasm**

### **Seedling Seed Orchards**

The establishment of seed orchards in Haiti is a major goal of AFII since they offer greater control of both quantity and quality of forest tree seed that can be delivered to current AOP agroforestry activities, as well as future reforestation projects in Haiti. Additionally, the issue of conserving genetic diversity is being met, while biodiversity is addressed through the ever-increasing list of native species identified and selected for possible seed production in life zones receiving the highest degree of demographic pressure.

The AOP has decided to establish the seedling seed orchard rather than the clonal seed orchard for the following reasons:

- \* The vegetative propagation of native hardwoods is still in the experimental stages and, therefore, the risk is too high -- during the remaining months of the AOP -- to depend on adequately propagating the desired families in a clonal system; and
- \* The need to establish "breeding populations" with the widest possible genetic makeup for future tree improvement.

The seed orchard serves two purposes -- it conserves the gene pool of a given species and provides seed of selected parentage.

### Seed Collection

The coordination of seed collection by various umbrella groups and implementing organizations, that range greatly in size, is a logistical nightmare. Seed quality is necessarily compromised by the demand for peak seed quantities of individual nurseries to meet seasonal planting targets. The synchronization of seed demand with seed supply is a tortuous task. Some species fruit within a narrow time period, but do not store adequately. Weather anomalies, such as Hurricane Gilbert, can result in unpredictable seed yields. The pressure to meet production goals often leads to the misconception that any seed is better than no seed. Thus, unselected seed is often sown in the nurseries to appease the demands of the nursery rather than to solve the forestry problems of Haiti.

The transfer of seed collection responsibility to an independent agency might solve some of the problems of seed quality, but not the problems associated with the efficient management of a containerized nursery network. It appears that a single, independent seed collection and storage facility might not be the answer. Centralization runs a high risk of failure in Haiti. It would be better to improve current seed processing and storage systems that have evolved over the past decade, than to dismantle them and start over again in the hopes of achieving a miracle.

### Conservation of Biological Diversity

Although endangered or threatened species are not ordinarily important in the economic life of a peasant farmer in Haiti, the challenge is how to preserve species that the Haitian peasant might not normally plant. The approach is from the perspective of economic botany, i.e., based on utility, not on conservation themes. One species that has been identified as in need of conservation while at the same time has enormous economic implications for peasant households, is Attalea crassispatha, an endangered Haitian palm.

The direct effects of preservation of the existing populations of Attalea would be in situ conservation of the remaining individuals -- two specimens at Fond des Negres and 15 at Dumay, both in the southern peninsula. The consequences are important for the palm because a viable population is the best way of saving its germplasm.

The indirect effects must be borne out over the next few years. Methods of propagation must be identified. The oil-bearing properties and other values, such as for thatch, will be studied. If favorable propagation techniques and economic values can be identified, one objective would be to work this species into the agroforestry outplanting schedule, for example, by year four or five of AFII.

## Forages Within the Agroforestry System

Within the context of the AOP, forages are viewed as a means of soil conservation and as a source of improved soil fertility through their use as a green manure crop. This provides an opportunity to use existing high yielding grass varieties, such as Guinea Grass, and introduce other well-known high biomass, forage-producing varieties to accomplish the targeted objectives, while at the same time benefitting the livestock sector.

Grass/forage species are described as bunch grasses -- those that grow vertically, and creeping/running grasses -- those that grow horizontally close to the ground. Both types have their specific advantages and disadvantages. The bunch grasses lend themselves more to a cut-and-carry system of management, with some specific varieties producing great volumes of forage. In contrast, the creeping grasses produce less biomass and are more for direct grazing or hay making.

Since the objectives of the agroforestry project are mainly soil erosion control and forage production to be used as green manure, the bunch grasses are preferred and recommended. The species that are known to be adapted to Haiti and for which there is a limited amount of seed available are listed in Table Three:

Table 3  
Grass Species Adapted to Haiti

Common Name	Scientific Name
Guinea Grass	<u>Panicum maximum</u>
Napier or Elephant Grass	<u>Pennisetum purpurem</u>
King or Cane Grass	<u>Pennisetum var</u>
Guatemala Grass	<u>Tripsacum laxum</u>
Sugar Cane	<u>Saccharum officinarum</u>
Vetiver	<u>Vetiveria zizanioides</u>

The physical characteristics of these grasses are appropriate for the soil conservation objectives of AFII. These grasses are: first, deep rooted, thus providing soil stabilization; secondly, have a massive and broad ground

base, thus assisting in trapping water, debris and soil; and finally, they are tall, with a high leaf to stem ratio, capable of producing large quantities of biomass, thus providing a solid wall barrier. While there are other promising grasses, both bunch and creeping, their adaptability and seed availability are still under investigation.

### **Technological Packages for Grasses**

If the research recommendations are followed, a complete forage technological package can be organized, promoted, and implemented. The shrub/grass/forage package would include, but not be limited to, the following information:

- \* Recommended tree shrubs and grasses to be planted by region: the above mentioned species could be used as starters;
- \* Proper planting methods and planting times;
- \* Proper shrub-grass planting combinations;
- \* Optimum forage harvest time for green manure, animal feed, and for making hay;

### **Agronomy**

#### **Crop Species**

Increasing population pressure has resulted in cultivation of slopes with such steep gradients that land degradation and erosion have assumed threatening proportions. New cropping systems need to be defined for these steep slopes, involving hedgerows; grain crops, such as maize, sorghum, and millet; root crops, such as sweet potato, cassava, yams, and taro; leguminous crops, such as beans, pigeon pea, groundnuts, and cowpeas; and forage species. Cassava, yams, groundnuts, and sweet potatoes are high-risk erosion crops, since the soil is ripped up during harvest.

Maize is grown everywhere at all elevations and dominates the grain crops planted in the first wet season, in association with grain legumes. Sorghum is the principal cereal in the somewhat drier, second rainy season, followed by maize. Beans are the main source of protein in all regions. All intercropping systems should include beans. Bananas are universally present in all cropping systems.

This range of crop species presently available to the farmer should suffice for the rehabilitation of hillside agriculture. Many other crop species are known and sporadically found in the countryside. Soybeans could play an important role in providing edible oil for domestic consumption, since extraction facilities already exist. Soybeans could profitably take a place as a leguminous grain crop in the intercropping

pattern of relatively humid regions. They could also be grown in the plains to replace the decreasing acreage of sugar cane.

### **Intercropping**

Intercropping of three or more crop species such as maize, sorghum or millet as a grain crop, with beans or peas as a legume, and relay cropping with sweet potatoes and pigeon peas, keeps the field covered during most of the year. This is the best possible use of resources with minimal risk of crop failure. The techniques need to be optimized for each ecological zone, slope category, and soil type and thickness, to reduce soil erosion to a minimum and increase yields to a maximum. Seedbed preparation and planting patterns on the contour, plant spacing and timing, and harvesting in alley systems all need attention.

Peasant farmers have been forced to cultivate slopes which are actually too steep for cropping, and have little or no soil cover remaining. On such slopes profitable crops can no longer be cultivated. Here, trees and grass cover should be established for forage and utilization for feeding livestock. The hillside farmer expects that the crop yields in alley ways will increase significantly as a result of planting hedgerows and, once again, provide him with a livelihood for his family. So dire is his predicament at this time that he cannot accept better spaced or double hedgerows, unless the benefits will be amply supplemented by increased yield from adjoining crops to compensate for the loss of land taken out of production.

For the same reason, the farmer tends to reject planting forage grass in place of crops on even the steepest slopes. He may be disappointed against all expectation, however, where only a few inches of soil remain or none at all. Furthermore, green manure from the hedgerow is often not applied to the soil for improvement of the center of the alley but is carried off for feeding livestock.

### **Hedgerows and Alleycropping**

Hedgerows and alley cropping are the most recent innovation in the struggle for control of erosion, rehabilitation of the remaining soil on the hillsides, and increased productivity of the land. It appears to be the best possible approach under the circumstances. It is also one of the most complicated agricultural systems in the world. Little is known about its adaptation to Haitian conditions. Details and quantitative data on production choices are still to be worked out.

Two mistakes are already visible in farmers' fields. One is inadequate spacing on steep slopes. This will overburden the hedgerow and lead to breaches and erosion gullies. The farmer is interested in the beneficial effects of hedgerows and is willing to accept the loss of space to grow crops in return for livestock fodder and firewood from trimmings, and the expectation of future benefits in crop yields. This

is similar to the way he accepts cash income from the sale of wood for construction, from trees planted under the AOP, as partial payment for the loss of cropping space.

He is not prepared, however, to plant hedgerows closer together as the slopes increase to the top of the hill. The income from wood cannot replace the value of a good crop. He overlooks the fact that his crops are no longer very productive. The role of extension is to convince the farmer to adjust hedgerow spacing according to slope gradient and erodibility of the soil type. Suitable hedgerow spacing, as a function of slope gradient, is described in Table Four:

Table 4

Recommended Hedgerow Spacing According to Slope

Slope (percent)	Spacing (meters)
5-10	17-20
10-15	13-17
15-25	8-13
25-35	6- 8
35-50	4- 6
over 50	2- 4

Hedgerows need to be spaced so closely together on slopes exceeding 50 percent that crops will be shaded out and the terrace essentially becomes a forest area, which is precisely its proper use. In marginal situations, special measures can be taken to manage crop production. Hedgerows may be pruned sufficiently short so as not to shade the crop, but the benefits from the hedgerow will be reduced accordingly. Regrowth may suffer and little fodder and mulch produced. Alternatively, shade tolerant crops can be grown.

The second mistake is to remove all, or nearly all, the forage derived from hedgerow pruning for feeding of livestock. At the same time, the farmer expects the hedgerow to improve the soil and raise crop yields in the alleys. Utilization of hedgerow prunings for building up soil fertility is one of the principles of alley cropping. Most of the prunings, as well as crop residues, are needed for green manure on the severely degraded soils found in Haiti. Extension staff need to convince the farmer to incorporate all green manure into the soil, well before the beginning of each growing season.

Management of Leucaena hedgerows includes a schedule of sufficiently frequent pruning to prevent pod set. Shedding of seed causes weediness. Once established, the plants are difficult to eradicate.

## **Extension Training**

### **The Content of PADF Training**

Discussions regarding the planning, content, and methods used in training were held with the key staff involved in training in each organization: the CARE training coordinator and her assistant, and the PADF regional managers and their staff. Due to limited field time, only four training sessions were observed -- two presented by CARE, one for farmers and one for animators; and two by PADF, both for animators. While providing a sampling of trainers' capabilities and methods, there was insufficient time to be able to give a balanced, overall picture.

Unlike CARE which has a training unit consisting of a training coordinator, an assistant training coordinator, and trainers, the PADF Team Leaders and assistants plan and conduct their own training sessions. Though there are certain constants -- the use of Chapters One and Two in the Gid Animate and the work on the use of administrative forms -- there is variety of content, method, and quality depending on the region.

Virtually all PADF training is centered on the animators, who are responsible for monitoring and training farmers. The Team Leaders, with their coordinators and assistants, design and conduct two seminars for their animators every year -- of one and a half to three days duration -- reaching groups of about 20 animators in each seminar. Some animator training has also been undertaken for PADF by the FAO Training Institute at Limbé.

Training areas in the PADF program which need to be strengthened are:

- \* Training can contain too many new practices and messages. Training sessions on the animators' guide may take many hours, and cover too many different messages. The trainees would better absorb the key messages when they are focused.

This does not happen when they read the chapters in their entirety.

- \* Animators need more training and practice in effective communication with farmers.
- \* There needs to be more hands-on practical training of basic farming techniques.

- \* Training methods and activities need to be more varied to make animators more attentive.
- \* Training design needs to be based upon careful field observation of the people to be trained, ie. the animators and the farmers. But the key training design persons, the Team Leaders, spend an extremely limited amount of time in the field. Thus training needs for farmers and animators may not be accurately or adequately defined.
- \* There is little or no follow-up monitoring of animators' and farmers' capacities in the field, to measure training effectiveness.

### **The Content of CARE Training**

In 1987 CARE hired a training coordinator who has set up a comprehensive training program to reach all project personnel: administrative staff, senior staff, all levels of extension staff, nurserymen, and trainers of trainers. This has recently included establishing four training centers. The training includes these major areas: communications, language, computers, technical topics, nursery techniques, pesticide safety, planning, agroforestry, and grafting. An assistant training coordinator is being trained to take over from the expatriate training coordinator in 18 months. Nine trainers are currently being trained to plan and conduct training in the training centers, and at other sites. The training coordinator plans to develop the capacities of trainees and grass roots extension staff to make their own simple teaching aides, such as drawing.

Training areas in the CARE program which need to be strengthened include:

- \* The cultural appropriateness of training techniques needs to be examined.
- \* Training supports extension and there is a need for better integration and coordination with Regional Managers and their extension staffs for the defining of training needs, selection of participants, and monitoring.
- \* There is a need to monitor the effectiveness of the training given. Regional Managers and their extension staff should play a lead role in defining training needs and monitoring its impact.
- \* Training design needs to be based on careful, accurate field observations of trainees' needs. Apart from structured training sessions, the training coordinator does not currently have the opportunity to visit the field. Joint visits with Regional Managers are to be encouraged.

## **Coordination of CARE and PADF Training Programs**

The training programs, including the production of training materials, should be closely coordinated at all levels. The PADF and CARE training coordinators should meet once a month to share approaches and methods on training and/or the development of training materials. As much as possible, booklets and other printed materials should be jointly designed.

Some of the proposed monthly meetings should take place at regional sites during CARE or PADF training seminars, permitting the training coordinators to share ideas and observations on training techniques. One of the monthly meetings should be a two-day meeting to jointly plan the training materials for each year. Visits by the training coordinators and their involved project staff, should be made to other tree planting programs offering extension training such as the Mennonite Central Committee and the Save the Children Foundation.

Other activities should include joint visits to other training projects, or inviting trainers from other projects to present techniques, and exercises in planning training and measuring its effectiveness. There was positive feedback regarding the 1988 Bombardopolis retreat. CARE/PADF should have one joint training workshop or retreat, from two to three days long each year, for the sharing of training techniques. The participants would be the training coordinators, Regional Managers and Team Leaders, mid-level staff involved in the planning and conducting of training, and selected animators.

## **Training Focus for AFII**

The overall training emphasis in AFII is the fostering of improved knowledge and capacities in the extension agents who in turn train the farmers. Whatever materials are produced should be aids and resources for the training process and not an end in themselves. Training is a support for agriculture extension. Its content should be guided by the practices and knowledge that the extension agents wish to teach. The grantees need to carefully identify training needs through observing peasants' current farming practices, and supporting baseline and anthropological studies dealing with the attitudes behind farmers' practices and how people learn. They also need to monitor the effectiveness of past training on farmers, extension agents, and school children and teachers.

## **Extension**

### **PADF Extension Activities**

The overall objective of PADF extension services is to "improve technical and motivational efforts by project personnel and intermediary groups providing services to peasant farmers." The agency does this by

providing training by technical staff to animators who are attached to the local NGOs with which it works. The extension service is designed to be flexible and adaptable to a wide variety of NGOs, ecological zones, and "changing circumstances over time." It also is designed to be able to provide "appropriate services" based on farmer preference.

A key point of PADF's approach is that it encourages the development and independence of NGOs. PADF also encourages regional Team Leaders to develop their own extension objectives. Based on the local social, economic, and ecological reality, the objectives from region to region may differ.

PADF works in five regions of Haiti: the Southwest, the Southeast, the North, the Upper Central Plateau, and the Lower Plateau. There is a PADF staff of technical experts in each region, headed by a Team Leader assisted by a team of assistants. Regional differences determine the specific job responsibilities of the assistants, but they range from having overall sub-region responsibilities, to training, to research, and agroforestry development.

The basic structure of extension services is the same in each region. The agency transmits information through local NGOs to farmers. There are essentially three different relationships with NGOs. The first, and the ideal, is the relationship with strong, already established NGOs, where the animators are in place. They have received training from the NGO itself in a wide variety of subjects and the PADF tree and/or soil conservation activity becomes another aspect of their work. They receive additional training from PADF and pass on the technical information during the course of their normal day's activities. In these cases control of the animators' activities is the responsibility of the NGO. Usually the stronger NGOs are given contracts to establish and run nurseries. Some of these types of NGOs may have several tree animators. In such cases, animators may be supervised directly by a coordinator who is sometimes paid by PADF and sometimes by the NGO.

In the second case, a group of people in a given area may join together to form a NGO because they believe tree planting is important. Animators are selected by these NGOs and trained. They pass on their information to the farmers in the area, often under the direction of PADF. Their work is only with the project. The third case is a mixture of the first two: the NGO may have already been established, but it may be weak in terms of management, finance, or vision. Again, the animators are trained and technical information transfer takes place with the local farmers. No matter what the supervisory arrangement is, animators generally work with up to 30 farmers a season.

PADF uses a different set of animators to transfer soil conservation information. These hedgerow animators are paid twelve dollars for every 150 meters of hedgerows they plant on farmers' lands. They work with any number of farmers.

One area that may detract from the efficacy of the message information transfer is the absence of any training of animators in communications techniques. Such techniques may include training in how to listen; how to use visual and audio aides; and how to facilitate meetings.

One of the most confusing issues about the PADF extension service is the relationship with the animators. The strong NGOs, such as the Christian Reformed World Council (CRWC) in Pignon and The Institute for Rural Development (IRD) in Les Cayes, already have their own agendas and have trained their own animators. They know that they are working for the NGO and ultimately for the community. The issue arises when weaker NGOs are considered.

If animators need to be paid directly by PADF, where does their allegiance lie -- with the NGO and the community or with PADF? If allegiance is with PADF, the information transfer may be compromised because the animator may be more interested in pleasing PADF than in serving the needs of the community. PADF also has limited financial and human resources. It becomes difficult to determine the efficacy and sincerity of information transfer if PADF has to do it directly.

The final issue that ultimately may affect information transfer is that of having different animators for separate substantive tasks within the project. The case in point concerns soil conservation animators. A possible problem may arise here if PADF becomes accustomed to providing a new set of animators each time a positive, practical, and validated technology is extended. As a result, it may find itself saddled with many different sets of animators.

#### **CARE Extension Activities**

CARE's basic extension objective is to get relevant technical messages out to the farmers. CARE does not work through NGOs so the concentration is directly on the interaction between the monitor and the farmer. There is no intermediary group.

It operates in four regions in the Northwest Province -- Bombardopolis, Jean Rabel, Passe Catabois, and Bassin Bleu. Each region is administered by a Regional Manager and his team of technical assistants, who have different areas of responsibility as determined by him.

CARE's extension service and its training activities are currently directed by a centralized training unit consisting of one expatriate and one Haitian staff member. A CARE Agroforestry Training Center (CAFTCEN) is located in each region, where activities are coordinated by a trainer who is responsible to the training team. A CAFTCEN consists of land for experiments and demonstrations, classrooms for training sessions, and sleeping quarters for students.

The most important interface in the CARE information exchange is that between the monitor and the farmer. Monitors are from the communities in which they work. They are supervised by what CARE calls animators who supervise from seven to 12 monitors. All CARE monitors are salaried and are required to perform certain tasks within an overall job description. Their job is more general than the tasked PADF animators, although their basic function is transfer of messages and materials. CARE monitors work with 35 farmers a season.

The monitors arrange material resource transfer by enrolling farmers to receive trees, which are distributed at the centralized container nurseries at the beginning of each season. With the expansion of CARE nursery coverage, a limited amount of seedlings are transported to central distribution sites.

Like PADF, CARE has a modest extension service involving local schools. Environmental and tree information is provided to teachers, as well as plastic sacks to help schools start their own learning nurseries. It is hoped young people will be inculcated with a lifelong understanding and appreciation of the role of trees in the environment and in their gardens.

The close community contact developed by senior regional staff has allowed them to make administrative decisions based on an understanding of the farmers and their problems. As the central training unit becomes more powerful and assumes more and more control over the direction of training and extension efforts in the various regions, this intimacy is weakened. It becomes difficult for Regional Team Leaders to make informed and sensitive decisions regarding project emphases. This could become a problem in the future, inasmuch as activities undertaken in the project may not relate directly to actual problems faced by the farmer.

Another related problem that may surface is that training for extension might not reflect the realities of the respective regions. Thus messages being transmitted might not represent positive options for farmers and they perhaps could not be validated under local conditions.

Another issue, similar to one raised for PADF, is that of the information load capacity of the monitor. In CARE's case, these agents already receive exposure to many different concepts. Perhaps CARE should consider limiting the extent to which individuals are expected to be technically competent in many different fields.

Although communications training is important, CARE should exercise caution in terms of overload. An assumption has to be made that monitors can already communicate effectively with their neighbors. While form is important in message transfer, relevancy and completeness of content is the key.

CARE should exercise caution under AFII, particularly if it stays with the extension system it describes in its FARM proposal. Training

methods to be implemented for extension staff are innovative -- participatory, learning by doing, and using demonstrations and farmer exchanges to help transmit important messages. It cannot be emphasized enough, however, that if CARE begins to change the content of these messages in order to "confront problems associated with the lack of collaboration between farmers", the project will suffer greatly. It is strongly recommended that CARE sticks to the area it knows best -- the innovative and highly successful provision of validated information regarding trees, soil conservation, and farming practices.

The basic premise of the CARE training and extension component under the FARM proposal is that its activities will be tailored to "confront the problems associated with the farmers' present attitude and knowledge." It is clear that the purpose of extension is to confront problems of lack of knowledge. However, experience and the accompanying social soundness analysis make it quite clear that attitude is not something that hinders Haitian farmers from adopting farming practices that will improve their quality of life -- as defined in their terms.

## **Institutions**

### **AID**

The AFII will benefit a range of institutions from the donor to the farmer. AID's credibility in the area of support to agroforestry throughout the Caribbean has been enhanced through the success of the AOP. This credibility will be strengthened by AFII, which will incrementally add sustainable agroforestry interventions to an already successful effort. These increments will offer AID the chance to continue at the forefront of agroforestry experience and thought, while contributing directly to income generation for the Haitian hillside farmer. The equitable development found in the AOP, to be continued in AFII, will stimulate economic development -- a situation not often found in such large projects and one which will set AFII apart from most development efforts in Haiti.

Utilizing known American organizations, such as CARE and PADF, both with long histories of working with AID, guarantees that AID oversight and accountability will require no more than normal resources. The Cooperative Agreement (CA) approach used under the AOP has worked well: it provides a considerable amount of freedom to the grantees, fostering a professional working relationship with AID -- on both technical and implementation issues. The CA approach should be continued in AFII.

The AFII experience is expected to further refine the process of AID utilizing international NGOs to implement broad-based projects where effective structures for implementation fall outside of government institutions. The successful experience of the AOP and the increased monetary commitment in AFII to Haitian hillside agroforestry, will give AID an experienced voice in pursuing agroforestry issues with the Government of Haiti (GOH).

## **PADF**

The AFII allows PADF to continue and expand on its experience from the AOP. This project will give PADF 13 years of institutional experience in agroforestry work in Haiti. This should be exploited by PADF and applied to other parts of the region. If this does not happen, it will be a missed opportunity.

PADF has established management systems that are effective and appropriate to agroforestry efforts under the AOP. AID, the recipients of project trees, local NGOs, and PADF now stand to benefit further from these already established systems -- PADF should be fully up and running on day one of AFII.

PADF employs over 800 people, including eight expatriates either directly, or indirectly through NGOs with which PADF has production or extension contracts. This makes PADF an important employer, especially in the rural areas of Haiti. This fact provides credibility and respect for PADF from local NGOs and other institutions with which PADF interacts.

The approach followed by PADF in AFII will further develop the institutional relationships between the NGOs and PADF. The breadth of this experience, striking a balance between broad geographic coverage and more diversification under AFII, will show how to avoid killing the goose that lays the golden egg.

## **CARE**

The AOP gave CARE the opportunity to continue a strong presence in the northwest peninsula. Under AFII this presence should continue and remain concentrated in the Northwest. Local response to CARE assistance has been very positive. The AFII will allow CARE to continue to work directly with the local population on income generation through agroforestry efforts.

The AFII will maintain CARE's position as the largest single employer in the northwest area. With 300 people paid directly by CARE in the Northwest and Gonaives, where its sub-regional headquarters are located, CARE salary payments provide an important injection of cash into these areas.

CARE's worldwide credibility in the agroforestry domain has been strengthened by the AOP experience. Moving slowly into more agronomic aspects and soil conservation efforts under AFII offers CARE the possibility to become a recognized leader in hillside agroforestry endeavors. Working successfully in what is often considered the most difficult area of Haiti will give CARE and other NGOs ideas for agroforestry interventions elsewhere.

## **Local NGOs**

The PADF approach of working through local NGOs provides many benefits. The AFII will offer employment opportunities at the local level where seedling production, distribution, and extension take place. More than 750 people will be initially employed by local NGOs utilizing PADF funds coming from AFII. While this an important cash transfer to rural areas, it also pays for work that should have an economic payoff.

By offering employment opportunities, the NGO gains both respect and power. It gives the NGO control of cash payments to those whom it favors or chooses as extension agents, as long as the required work is adequately performed. People so employed are often leaders or members of the NGO, more often than not a church group. While this may be of benefit to the NGO through the building of dependence of people on the NGO, the immediate benefit of rural employment and progress toward AFII goals makes such dependence an acceptable part of the PADF/NGO system.

The central nurseries run by NGOs require good management, though assisted by PADF, the nurseries are ultimately the responsibility of the NGO. This responsibility often means that the NGO must improve its internal management in order to handle the running of a nursery. This entails scheduling, expenses, inventory control, payments, personnel, and technical knowledge. These activities demand skills that have been either created or strengthened by this approach of using local NGOs for seedling production.

Likewise, additional skills are required through the extension contracts signed between local NGOs and PADF. This enables the NGOs to acquire over time a better trained staff of individuals within a defined geographic area.

Under the PADF component of AFII, nursery production and extension will follow closely the system established under the AOP. In many cases the nursery or extension activity has been a new endeavor on the part of the NGO. Very few of the participating NGOs were doing any work in agroforestry before the AOP started. Thus the added activities have introduced new areas of action and knowledge to the NGOs. This benefit is expected to become more important under AFII since additional technical interventions are to be tried and incorporated into the planting and extension activities. More emphasis is to be placed on assisting NGOs to link up and make use of resources outside of PADF.

## **Environmental Assessment**

### **Purpose of the EA**

The purpose of this EA is to provide AID with a full discussion of the positive and negative impacts of AFII project activities on the

natural and human environment. The EA was prepared in accordance with 22 CFR Part 216, Environmental Procedures, or AID Regulation 16. It was reviewed and approved in AID/W, with the EA approval table included as Annex D3. The full text of the Environmental Assessment is included in Volume II, following the project analyses annexes.

The Environmental Assessment deals with the identification, measurement, interpretation and communication of impacts. It is conducted to ensure that environmental factors and values are factored into the AID decision making process. Due consideration has also been given to AID's recent Policy Paper on Environment and Natural Resource (April 1988) in the review of AFII.

Several approaches were taken to arrive at the analysis which follows. A "scoping of issues" was conducted by review of project documents such as the PID, by interviewing key staff who are implementing the existing AOP and who are likely to be involved with the proposed project, by discussion with members of the PP Design Team, and by direct observation.

### **Scoping of Issues**

The key issues identified during the scoping exercise include the following:

- \* Use of pesticides in high production, containerized seedling nurseries;
- \* Allocation of agroforestry research inputs so that meaningful, practical results are obtained; and, how to monitor, track, and disseminate useful results throughout the Life of Project (LOP);
- \* Appropriate use of positive environmental interventions, such as soil conservation methods in the farming systems of Haiti;
- \* Need for and allocation of resources for environmental education in the context of the project; and
- \* Conservation of biological diversity through the seed and germplasm improvement component.

### **Summary and Recommendations**

This EA has examined the five key components of AFII: nursery production; seed and germplasm improvement; applied research and technology generation; extension; institution-building; and training. Positive environmental benefits are predicted to accrue from the various technical interventions proposed to improve soil fertility and to reduce soil erosion. Few, if any, negative or adverse effects are predicted.

The role of research will be to focus on farm practices which employ appropriately effective types of vegetative barriers and productive new systems of alley cropping on steep hillsides, which comprise over 70 percent of Haiti's farmlands. A pilot program in environmental education in three rural regions of the country will teach primary school students between the ages of 10 and 18 the values of trees in farming systems, the general ecology of Haiti and the problems of soil erosion and its causes and cures, as well as practical skills, such as fruit tree propagation in school-run nurseries and ways to manage trees on the student's family's farm.

The seed and germplasm improvement component will address several basic problems, such as: first, matching appropriate species/varieties with peculiar ecological site conditions, second, replenishing the supply of seed for indigenous tree species of potential economic value, many of which have been extirpated from native habitats throughout Haiti because of widespread deforestation, and third, preserving at least one (and maybe more, if additional species can be identified) species of the economically important and biological endangered species of neotropical oil palm, Attalea crassispatha.

Also, a comprehensive analysis of pesticides proposed for use in the centralized, high volume production, seedling nurseries was prepared in accordance with AID Reg 16 and the Agency's Policy on Pesticide Use. A number of "General Use" pesticides are recommended for procurement and use under AFII.

Based on the extensive review of project activities conducted during this EA, the following recommendations are made:

- \* **Pesticides:** Only pesticides included in the list in the EA will be permitted for use or procurement with project funds. These pesticides are recommended as relatively safe, if used according to label instructions and under proper supervision, and in conjunction with the proposed training and IPM practices already begun under the AOP.
- \* **Applied Research:** Applied research on tree species-site relationships and appropriate soil conservation practices will be a critical link toward successful protection of soil resources on steeplands. CARE and PADF project staff should make every effort possible to develop practical applied research tasks with the research unit of AFII and quickly translate these results into their extension/outreach program. Monitoring of the implementation of soil conservation measures on private farmlands should be programmed to determine the effectiveness of extension/outreach based on the results of this research. The mid-project evaluation, planned for AFII, could further review the effectiveness of these practices.

- \* **Environmental Education:** This pilot program, as discussed in Section 6.4, should be implemented during years 1, 2, and 3, then evaluated for effectiveness, including content of messages and impact on target groups. Any redesign should be made during year 4 of this program.
  
- \* **Seed and Germplasm:** Elements of the seed and germplasm improvement component will have significant impact on the quality and quantity of germplasm outplanted in AFII. It is critical to facilitate the continuation of the effort now in-progress by IRG under the AOP, without undue interruption. The timing of the nursery production activities planned by CARE and the Pan American Development Foundation (PADF) are dependent on the success of the establishment of the seedling seed orchards now underway in five regions, as well as the production of viable seed for known species provenances throughout Haiti. The germplasm component should be fully funded and priority given to rapid procurement to ensure the smooth transition from the AOP to AFII, without work stoppage.

## PROCUREMENT PLAN FOR TECHNICAL ASSISTANCE

### Justification for Non-Competition of Cooperative Agreements

In accordance with Handbook 13, Chapter 2, Section 2.B.3d, this project qualifies as an exception to the general rules on competition, with respect to the Cooperative Agreements to CARE and PADF. This exception is based on the fact that these Cooperative Agreements constitute "follow-on awards intended to continue or further develop an existing assistance relationship". The research component, however, will be awarded on the basis of a competitive bid. Following the recommendation of the design team, the two elements of the research component, seed collection/germplasm improvement and applied research will be combined under one institutional contract. The justification for the non-competitive award of the two Cooperative Agreements to CARE and PADF follows.

Based on the experiences and lessons learned from the successful AOP, AFII will build upon the institutional structure created by the present AOP grantees, PADF and CARE. Much time and effort have been directed towards developing the essential contacts and community presence in those regions where the grantees are working. In addition, the grantees have an established, functioning, network of 1,100 trained and experienced professional staff, extension agents, and animators.

The rapidity and success of AFII efforts to build upon past AOP activities will be maximized if the AOP grantees also undertake the implementation of AFII. If the grant to implement AFII is awarded to another institution(s), whether through a direct grant or open bidding, many of the past advances made by PADF and CARE in developing a local presence and establishing community-level credibility, will be temporarily, perhaps permanently, lost. A new grantee (or contractor) will require an extended transition period -- up to one year or more -- for orientation of new personnel, development of a network of competent and trained extension agents, and for reestablishing community-level credibility and presence, before any significant on-the-ground activities would be possible.

The continued involvement of the present AOP grantees will also minimize the risk that the GOH may object to the method of project implementation, i.e. the practice of the U.S. and other donors to bypass completely official GOH channels and agencies to work directly with local NGOs. Both grantees, as well as many of the NGOs that participate in project activities, have complied with the requirements that they register with the GOH. In brief, sole-sourcing AFII to the present grantees is fully justified on two grounds: first, both have demonstrated particular competence in implementing development activities under the difficult conditions that presently prevail in Haiti; and, second,

contracting with a new institution would cause serious disruption which, at best, could delay development activities for at least a year and, at worst, stop AFII dead in its tracks, thereby losing much of the ground gained under the current AOP effort and summarily aborting one of AID's more exciting, innovative, and challenging projects in the Latin American and Caribbean region.

**ANNEXES**

Life of Project  
 From FY 90 to FY 95  
 Total U.S. Funding \$30 Million  
 Date prepared 10/5/89

Project Title & Number: National Program for Agroforestry

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE(INDICATORS)	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Goal: The broader objective to which this project contributes:	Measures of Goal Achievement:		Assumptions for achieving goal targets:
To maximize the productive potential of Haitian hillside agriculture by reducing the ongoing degradation of the country's natural resource base.	-Increase in forested and planted on-farm areas. -Soil erosion reduced -Farmers sensitized and informed on land-use management technologies.	National agricultural production statistics USAID World Bank & FAO estimates  CARE & PADF extension and training records.	Haiti's political environment stabilizes.  Climatic conditions do not vary unduly from historic patterns.

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE(INDICATORS)	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Project Purpose:	End of Project Status:		Assumptions for achieving Project Purpose:
To achieve sustainable increases in on-farm productivity and farmer income by integrating into existing farming systems appropriate land use and soil conservation measures, involving trees, shrubs, grasses and other plant materials.	Increase in seedling survival rate after one year to 50% (from 42-45% under ADP).  Increase in participating hillside farmers planting trees, shrubs and grasses to 400,000 (from 200,000 under ADP)  200,000 farmers effectively practicing agroforestry techniques, including planting multipurpose trees, hedgerows and forage species  50,000 participating farmers practicing on-farm plant propagation (including direct seedling stem and root cuttings, stump-propagation and bare rooting)	National and regional agricultural and income statistics  Semi-annual reports BY CARE and PADF.  Formal project evaluation  Records of local organizations (PVDs & NGOs)	GOH permits NGOs & PVDs to continue to operate independently in development  Technologies generated are technically and financially feasible.  Farmers are receptive to soil conservation measures to avoid further land degradation.

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE(INDICATORS)	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Project Outputs:	Magnitude of Outputs:		Assumptions for achieving Outputs:
1. Improved management and productivity of centralized and local nurseries developed through application of nursery technologies and proven plant propagation	7 million seedlings per year produced 10 plantings from local nurseries 50,000 farmers practicing effective on-farm plant propagation.	Nursery records CARE & PADF reports	CARE and PADF can continue to work with local NGOs with the effectiveness achieved under the ADP
2. Seed and germplasm improvement and multiplication achieved through establishment of seed orchards and central seed processing and storage facility.	-5 regional seed orchards established -Central seed processing and storage facility established each by CARE and PADF	Nursery records and reports  Field inspections CARE and PADF records	
3. Generation and testing of land-use technologies accomplished through applied research.	-Proven recommendations in: nursery research agroforestry research agronomy sociological factors economic factors	Research records and reports CARE and PADF reports	Research recommendations will be practical and favorable to the small farm environment
4. Appropriate land-use technologies disseminated and practiced by participating farmers through project outreach, extension and training.	-400,000 hillside farmers participating in plantings, technology-use and/or reached by project extension efforts  -4,000 linear km of hedgerows planted.  Training programs of both grantees reach 80 NGOs and 230,000 farmers.	Project evaluations Records of local NGOs and PVDs  Field inspections  Farmer interviews	Farmers take advantage of training opportunities and are receptive to extension efforts.

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE(INDICATORS)	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Project Inputs:	Implementation Target		Assumptions for providing Inputs:
CARE, PADF & SECID	Long-term TA advisers CARE 5 positions (25 pers./yrs.) PADF 8 positions (40 pers./yr.)	CARE & PADF Cooperative Agreements	CARE, PADF and SECID will continue to staff positions with experienced and skilled personnel
Personnel			
Research	SECID/ubum contract 5 long-term advisers - Total 18 p/y 24 p/m of short-term TA	SECID contract Grantee and Controller payroll documents  SECID Research Reports	
Equipment	Vehicles, motor bikes Office equipment Educational materials Scientific Equipment	Procurement records  Grantee and Controller Semi-annual Reports	
Training & Extension	Training of PADF & NGO staff, extension agents and nursery personnel; rental of training facilities, radio messages, food for trainees	USAID monitoring  Training records	Planned extension and training activities will receive the cooperation of participating local NGOs

5C(1) - COUNTRY CHECKLIST

Listed below are statutory criteria applicable to: (A) FAA funds generally; (B)(1) Development Assistance funds only; or (B)(2) the Economic Support Fund only.

A. GENERAL CRITERIA FOR COUNTRY ELIGIBILITY

1. FY 1989 Appropriations Act Sec. 578(b).  
Has the President certified to the Congress that the government of the recipient country is failing to take adequate measures to prevent narcotic drugs or other controlled substances which are cultivated, produced or processed illicitly, in whole or in part, in such country or transported through such country, from being sold illegally within the jurisdiction of such country to United States Government personnel or their dependents or from entering the United States unlawfully?
  
2. FAA Sec. 481(h); FY 1989 Appropriations Act Sec. 578; 1988 Drug Act Secs. 4405-07. (These provisions apply to assistance of any kind provided by grant, sale, loan, lease, credit, guaranty, or insurance, except assistance from the Child Survival Fund or relating to international narcotics control, disaster and refugee relief, narcotics education and awareness, or the provision of food or medicine.) If the recipient is a "major illicit drug producing country" (defined as a country producing during a fiscal year at least five metric tons of opium or 500 metric tons of coca or marijuana) or a "major drug-transit country" (defined as a country that is a significant direct source of illicit drugs significantly affecting the United States, through which such drugs are transported, or through which significant sums of drug-related profits are

NO

Recipient is not defined as either a 'major illicit drug producing' or a 'major drug-transit country'

laundered with the knowledge or complicity of the government): (a) Does the country have in place a bilateral narcotics agreement with the United States, or a multilateral narcotics agreement? and (b) Has the President in the March 1 International Narcotics Control Strategy Report (INSCR) determined and certified to the Congress (without Congressional enactment, within 45 days of continuous session, of a resolution disapproving such a certification), or has the President determined and certified to the Congress on any other date (with enactment by Congress of a resolution approving such certification), that (1) during the previous year the country has cooperated fully with the United States or taken adequate steps on its own to satisfy the goals agreed to in a bilateral narcotics agreement with the United States or in a multilateral agreement, to prevent illicit drugs produced or processed in or transported through such country from being transported into the United States, to prevent and punish drug profit laundering in the country, and to prevent and punish bribery and other forms of public corruption which facilitate production or shipment of illicit drugs or discourage prosecution of such acts, or that (2) the vital national interests of the United States require the provision of such assistance?

3. 1986 Drug Act Sec. 2013; 1988 Drug Act Sec. 4404. (This section applies to the same categories of assistance subject to the restrictions in FAA Sec. 481(h), above.) If recipient country is a "major illicit drug producing country" or "major drug-transit country" (as defined for the purpose of FAA Sec 481(h)), has the President submitted a report to Congress listing such country as one (a) which, as a matter of government policy, encourages or facilitates the production or distribution of illicit drugs; (b) in which any senior official of the

N/A

89'

government engages in, encourages, or facilitates the production or distribution of illegal drugs; (c) in which any member of a U.S. Government agency has suffered or been threatened with violence inflicted by or with the complicity of any government officer; or (d) which fails to provide reasonable cooperation to lawful activities of U.S. drug enforcement agents, unless the President has provided the required certification to Congress pertaining to U.S. national interests and the drug control and criminal prosecution efforts of that country?

4. FAA Sec. 620(c). If assistance is to a government, is the government indebted to any U.S. citizen for goods or services furnished or ordered where (a) such citizen has exhausted available legal remedies, (b) the debt is not denied or contested by such government, or (c) the indebtedness arises under an unconditional guaranty of payment given by such government or controlled entity? N/A
  
5. FAA Sec. 620(e)(1). If assistance is to a government, has it (including any government agencies or subdivisions) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities? N/A
  
6. FAA Secs. 620(a), 620(f), 620D; FY 1989 Appropriations Act Secs. 512, 550, 592. Is recipient country a Communist country? If so, has the President determined that assistance to the country is vital to the security of the United States, that the recipient country is not controlled by the international Communist conspiracy, and that such assistance will further promote the independence of the recipient country from international communism? Will assistance be provided NO

either directly or indirectly to Angola, Cambodia, Cuba, Iraq, Libya, Vietnam, South Yemen, Iran or Syria? Will assistance be provided to Afghanistan without a certification, or will assistance be provided inside Afghanistan through the Soviet-controlled government of Afghanistan?

7. FAA Sec. 620(j). Has the country permitted, or failed to take adequate measures to prevent, damage or destruction by mob action of U.S. property? NO
8. FAA Sec. 620(l). Has the country failed to enter into an investment guaranty agreement with OPIC? NO
9. FAA Sec. 620(o); Fishermen's Protective Act of 1967 (as amended) Sec. 5. (a) Has the country seized, or imposed any penalty or sanction against, any U.S. fishing vessel because of fishing activities in international waters? NO  
(b) If so, has any deduction required by the Fishermen's Protective Act been made? N/A
10. FAA Sec. 620(q); FY 1989 Appropriations Act Sec. 518. (a) Has the government of the recipient country been in default for more than six months on interest or principal of any loan to the country under the FAA? (b) Has the country been in default for more than one year on interest or principal on any U.S. loan under a program for which the FY 1989 Appropriations Act appropriates funds? NO
11. FAA Sec. 620(s). If contemplated assistance is development loan or to come from Economic Support Fund, has the Administrator taken into account the percentage of the country's budget and amount of the country's foreign exchange or other resources spent on military equipment? (Reference may be made to the annual "Taking Into Consideration" memo: "Yes, taken into account by the Administrator at time of approval of N/A

Agency OYB." This approval by the Administrator of the Operational Year Budget can be the basis for an affirmative answer during the fiscal year unless significant changes in circumstances occur.)

12. FAA Sec. 620(t). Has the country severed diplomatic relations with the United States? If so, have relations been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption? NO
13. FAA Sec. 620(u). What is the payment status of the country's U.N. obligations? If the country is in arrears, were such arrearages taken into account by the A.I.D. Administrator in determining the current A.I.D. Operational Year Budget? (Reference may be made to the "Taking into Consideration" memo.) Haiti is not in arrears
14. FAA Sec. 620A. Has the President determined that the recipient country grants sanctuary from prosecution to any individual or group which has committed an act of international terrorism or otherwise supports international terrorism? NO
15. FY 1989 Appropriations Act Sec. 568. Has the country been placed on the list provided for in Section 6(j) of the Export Administration Act of 1979 (currently Libya, Iran, South Yemen, Syria, Cuba, or North Korea)? NO
16. ISDCA of 1985 Sec. 552(b). Has the Secretary of State determined that the country is a high terrorist threat country after the Secretary of Transportation has determined, pursuant to section 1115(e)(2) of the Federal Aviation Act of 1958, that an airport in the country does not maintain and administer effective security measures? NO

92-

17. FAA Sec. 666(b). Does the country object, on the basis of race, religion, national origin or sex, to the presence of any officer or employee of the U.S. who is present in such country to carry out economic development programs under the FAA? NO
18. FAA Secs. 669, 670. Has the country, after August 3, 1977, delivered to any other country or received nuclear enrichment or reprocessing equipment, materials, or technology, without specified arrangements or safeguards, and without special certification by the President? Has it transferred a nuclear explosive device to a non-nuclear weapon state, or if such a state, either received or detonated a nuclear explosive device? (FAA Sec. 620E permits a special waiver of Sec. 669 for Pakistan.) NO
19. FAA Sec. 670. If the country is a non-nuclear weapon state, has it, on or after August 8, 1985, exported (or attempted to export) illegally from the United States any material, equipment, or technology which would contribute significantly to the ability of a country to manufacture a nuclear explosive device? NO
20. ISDCA of 1981 Sec. 720. Was the country represented at the Meeting of Ministers of Foreign Affairs and Heads of Delegations of the Non-Aligned Countries to the 36th General Assembly of the U.N. on Sept. 25 and 28, 1981, and did it fail to disassociate itself from the communique issued? If so, has the President taken it into account? (Reference may be made to the "Taking into Consideration" memc.) N/A
21. FY 1989 Appropriations Act Sec. 527. Has the recipient country been determined by the President to have engaged in a consistent pattern of opposition to the foreign policy of the United States? NO

93

22. FY 1989 Appropriations Act Sec. 513. Has the duly elected Head of Government of the country been deposed by military coup or decree? If assistance has been terminated, has the President notified Congress that a democratically elected government has taken office prior to the resumption of assistance?

Current Head of Government was not duly elected

23. FY 1989 Appropriations Act Sec. 540. Does the recipient country fully cooperate with the international refugee assistance organizations, the United States, and other governments in facilitating lasting solutions to refugee situations, including resettlement without respect to race, sex, religion, or national origin?

YES

B. FUNDING SOURCE CRITERIA FOR COUNTRY ELIGIBILITY

1. Development Assistance Country Criteria

FAA Sec. 116. Has the Department of State determined that this government has engaged in a consistent pattern of gross violations of internationally recognized human rights? If so, can it be demonstrated that contemplated assistance will directly benefit the needy?

NO

FY 1989 Appropriations Act Sec. 536. Has the President certified that use of DA funds by this country would violate any of the prohibitions against use of funds to pay for the performance of abortions as a method of family planning, to motivate or coerce any person to practice abortions, to pay for the performance of involuntary sterilization as a method of family planning, to coerce or provide any financial incentive to any person to undergo sterilizations, to pay for any biomedical research which relates, in whole or in part, to methods of, or the performance of, abortions or involuntary sterilization as a means of family planning?

NO

2. Economic Support Fund Country Criteria

FAA Sec. 502B. Has it been determined that the country has engaged in a consistent pattern of gross violations of internationally recognized human rights? If so, has the President found that the country made such significant improvement in its human rights record that furnishing such assistance is in the U.S. national interest?

N/A

FY 1989 Appropriations Act Sec. 578(d). Has this country met its drug eradication targets or otherwise taken significant steps to halt illicit drug production or trafficking?

N/A

5C(2) - PROJECT CHECKLIST

Listed below are statutory criteria applicable to projects. This section is divided into two parts. Part A includes criteria applicable to all projects. Part B applies to projects funded from specific sources only: B(1) applies to all projects funded with Development Assistance; B(2) applies to projects funded with Development Assistance loans; and B(3) applies to projects funded from ESF.

CROSS REFERENCES: IS COUNTRY CHECKLIST UP TO DATE? HAS STANDARD ITEM CHECKLIST BEEN REVIEWED FOR THIS PROJECT?

A. GENERAL CRITERIA FOR PROJECT

1. FY 1989 Appropriations Act Sec. 523; FAA Sec. 634A. If money is sought to obligated for an activity not previously justified to Congress, or for an amount in excess of amount previously justified to Congress, has Congress been properly notified?
2. FAA Sec. 611(a)(1). Prior to an obligation in excess of \$500,000, will there be (a) engineering, financial or other plans necessary to carry out the assistance, and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?
3. FAA Sec. 611(a)(2). If legislative action is required within recipient country, what is the basis for a reasonable expectation that such action will be completed in time to permit orderly accomplishment of the purpose of the assistance?

Project was included in FY 91 congressional Presentation at current funding level.

YES

N/A

4. FAA Sec. 611(b); FY 1989 Appropriations Act Sec. 501. If project is for water or water-related land resource construction, have benefits and costs been computed to the extent practicable in accordance with the principles, standards, and procedures established pursuant to the Water Resources Planning Act (42 U.S.C. 1962, et seq.)? (See A.I.D. Handbook 3 for guidelines.) N/A
5. FAA Sec. 611(e). If project is capital assistance (e.g., construction), and total U.S. assistance for it will exceed \$1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability to maintain and utilize the project effectively? N/A
6. FAA Sec. 209. Is project susceptible to execution as part of regional or multilateral project? If so, why is project not so executed? Information and conclusion whether assistance will encourage regional development programs. NO
7. FAA Sec. 601(a). Information and conclusions on whether projects will encourage efforts of the country to:  
(a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions. (a), (b) & (d): N/A  
(c) Cooperatives, credit unions, are not targets under the project  
(e) Agriculture served through reforestation and anti soil erosion measures.
8. FAA Sec. 601(b). Information and conclusions on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise). NA

9. FAA Secs. 612(b), 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized in lieu of dollars. PL 480 Title II local currency will finance a portion of project costs. Implementing NGOs will make in-kind contributions.
10. FAA Sec. 612(d). Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release? NO
11. FY 1989 Appropriations Act Sec. 521. If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity? NO
12. FY 1989 Appropriations Act Sec. 549. Will the assistance (except for programs in Caribbean Basin Initiative countries under U.S. Tariff Schedule "Section 807," which allows reduced tariffs on articles assembled abroad from U.S.-made components) be used directly to procure feasibility studies, prefeasibility studies, or project profiles of potential investment in, or to assist the establishment of facilities specifically designed for, the manufacture for export to the United States or to third country markets in direct competition with U.S. exports, of textiles, apparel, footwear, handbags, flat goods (such as wallets or coin purses worn on the person), work gloves or leather wearing apparel? NO
13. FAA Sec. 119(g)(4)-(6) & (10). Will the assistance (a) support training and education efforts which improve the capacity of recipient countries to prevent loss of biological diversity; (b) be provided under a long-term agreement in which the recipient country agrees to protect ecosystems or other (a) YES  
(b) YES

- ERRORS
- to identify and survey ecosystems in recipient countries worthy of protection; or (d) by any direct or indirect means significantly degrade national parks or similar protected areas or introduce exotic plants or animals into such areas?
- (c) NO
- (d) NO
14. FAA Sec. 121(d). If a Sahel project, has a determination been made that the host government has an adequate system for accounting for and controlling receipt and expenditure of project funds (either dollars or local currency generated therefrom)?
- N/A
15. FY 1989 Appropriations Act. If assistance is to be made to a United States PVO (other than a cooperative development organization), does it obtain at least 20 percent of its total annual funding for international activities from sources other than the United States Government?
- YES
16. FY 1989 Appropriations Act Sec. 538. If assistance is being made available to a PVO, has that organization provided upon timely request any document, file, or record necessary to the auditing requirements of A.I.D., and is the PVO registered with A.I.D.?
- YES
17. FY 1989 Appropriations Act Sec. 514. If funds are being obligated under an appropriation account to which they were not appropriated, has prior approval of the Appropriations Committees of Congress been obtained?
- N/A
18. State Authorization Sec. 139 (as interpreted by conference report). Has confirmation of the date of signing of the project agreement, including the amount involved, been cabled to State L/T and A.I.D. LEG within 60 days of the agreement's entry into force with respect to the United States, and has the full text of the agreement been pouched to those same offices? (See Handbook 3, Appendix 6G for agreements covered by this provision).
- N/A
- 99-

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

a. FY 1989 Appropriations Act Sec. 548  
(as interpreted by conference report for original enactment). If assistance is for agricultural development activities (specifically, any testing or breeding feasibility study, variety improvement or introduction, consultancy, publication, conference, or training), are such activities (a) specifically and principally designed to increase agricultural exports by the host country to a country other than the United States, where the export would lead to direct competition in that third country with exports of a similar commodity grown or produced in the United States, and can the activities reasonably be expected to cause substantial injury to U.S. exporters of a similar agricultural commodity; or (b) in support of research that is intended primarily to benefit U.S. producers?

NO

NO

b. FAA Secs. 102(b), 111, 113, 281(a). Describe extent to which activity will (a) effectively involve the poor in development by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, dispersing investment from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using appropriate U.S. institutions; (b) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward a better life, and otherwise encourage democratic private and local governmental

Project emphasizes labor-intensive production methods and use of appropriate technology in rural areas. It is follow-on to a successful and popular agroforestry project where farmers were receptive to self-help technology and women benefitted on an equal basis. Both old and new projects are being implemented through US NGOs. Cooperatives are not specifically targeted, and regional cooperation is not an objective.

100

institutions; (c) support the self-help efforts of developing countries; (d) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (e) utilize and encourage regional cooperation by developing countries.

- c. FAA Secs. 103, 103A, 104, 105, 106, 120-21; FY 1989 Appropriations Act (Development Fund for Africa). Does the project fit the criteria for the source of funds (functional account) being used? YES
- d. FAA Sec. 107. Is emphasis placed on use of appropriate technology (relatively smaller, cost-saving, labor-using technologies that are generally most appropriate for the small farms, small businesses, and small incomes of the poor)? YES
- e. FAA Secs. 110, 124( ). Will the recipient country provide at least 25 percent of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or is the latter cost-sharing requirement being waived for a "relatively least developed" country)? Haiti is an RLDC and this is not a bilateral project with the GOH.
- f. FAA Sec. 128(b). If the activity attempts to increase the institutional capabilities of private organizations or the government of the country, or if it attempts to stimulate scientific and technological research, has it been designed and will it be monitored to ensure that the ultimate beneficiaries are the poor majority? YES

g. FAA Sec. 281(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civil education and training in skills required for effective participation in governmental processes essential to self-government.

This is a grassroots project helping small farmers help themselves. It includes practical training in tree planting and soil protection.

h. FY 1989 Appropriations Act Sec. 536.

Are any of the funds to be used for the performance of abortions as a method of family planning or to motivate or coerce any person to practice abortions?

NO

Are any of the funds to be used to pay for the performance of involuntary sterilization as a method of family planning or to coerce or provide any financial incentive to any person to undergo sterilizations?

NO

Are any of the funds to be used to pay for any biomedical research which relates, in whole or in part, to methods of, or the performance of, abortions or involuntary sterilization as a means of family planning?

NO

i. FY 1989 Appropriations Act. Is the assistance being made available to any organization or program which has been determined to support or participate in the management of a program of coercive abortion or involuntary sterilization?

NO

If assistance is from the population functional account, are any of the funds to be made available to voluntary family planning projects which do not offer, either directly or through referral to or information about access to, a broad range of family planning methods and services?

N/A

j. FAA Sec. 601(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?

YES

k. FY 1989 Appropriations Act. What portion of the funds will be available only for activities of economically and socially disadvantaged enterprises, historically black colleges and universities, colleges and universities having a student body in which more than 40 percent of the students are Hispanic Americans, and private and voluntary organizations which are controlled by individuals who are black Americans, Hispanic Americans, or Native Americans, or who are economically or socially disadvantaged (including women)?

NONE. Project will be implemented by CARE and the Pan American Development Foundation.

l. FAA Sec. 118(c). Does the assistance comply with the environmental procedures set forth in A.I.D. Regulation 16? Does the assistance place a high priority on conservation and sustainable management of tropical forests? Specifically, does the assistance, to the fullest extent feasible: (a) stress the importance of conserving and sustainably managing forest resources; (b) support activities which offer employment and income alternatives to those who otherwise would cause destruction and loss of forests, and help countries identify and implement alternatives to colonizing forested areas; (c) support training programs, educational efforts, and the establishment or strengthening of institutions to improve forest management; (d) help end destructive slash-and-burn agriculture by supporting stable and productive farming practices; (e) help conserve forests which have not yet been degraded by helping to increase

Proper Agro-forestry management is the essence of this project.

a) YES

b) YES

c) YES

d) YES

e) YES

115

production on lands already cleared or degraded; (f) conserve forested watersheds and rehabilitate those which have been deforested; (g) support training, research, and other actions which lead to sustainable and more environmentally sound practices for timber harvesting, removal, and processing; (h) support research to expand knowledge of tropical forests and identify alternatives which will prevent forest destruction, loss, or degradation; (i) conserve biological diversity in forest areas by supporting efforts to identify, establish, and maintain a representative network of protected tropical forest ecosystems on a worldwide basis, by making the establishment of protected areas a condition of support for activities involving forest clearance or degradation, and by helping to identify tropical forest ecosystems and species in need of protection and establish and maintain appropriate protected areas; (j) seek to increase the awareness of U.S. government agencies and other donors of the immediate and long-term value of tropical forests; and (k) utilize the resources and abilities of all relevant U.S. government agencies?

f) YES

g) YES

h) YES

i) YES

k) YES

- m. FAA Sec. 118(c)(13). If the assistance will support a program or project significantly affecting tropical forests (including projects involving the planting of exotic plant species), will the program or project (a) be based upon careful analysis of the alternatives available to achieve the best sustainable use of the land, and (b) take full account of the environmental impacts of the proposed activities on biological diversity?

a) YES

b) YES

104

- n. FAA Sec. 118(c)(14). Will assistance be used for (a) the procurement or use of logging equipment, unless an environmental assessment indicates that all timber harvesting operations involved will be conducted in an environmentally sound manner and that the proposed activity will produce positive economic benefits and sustainable forest management systems; or (b) actions which will significantly degrade national parks or similar protected areas which contain tropical forests, or introduce exotic plants or animals into such areas? a) NO  
b) NO
- o. FAA Sec. 118(c)(15). Will assistance be used for (a) activities which would result in the conversion of forest lands to the rearing of livestock; (b) the construction, upgrading, or maintenance of roads (including temporary haul roads for logging or other extractive industries) which pass through relatively undegraded forest lands; (c) the colonization of forest lands; or (d) the construction of dams or other water control structures which flood relatively undegraded forest lands, unless with respect to each such activity an environmental assessment indicates that the activity will contribute significantly and directly to improving the livelihood of the rural poor and will be conducted in an environmentally sound manner which supports sustainable development? a) NO  
b) NO  
c) NO  
d) NO
- p. FY 1989 Appropriations Act. If assistance will come from the Sub-Saharan Africa DA account, is it (a) to be used to help the poor majority in Sub-Saharan Africa through a process of long-term development and economic growth that is equitable, participatory, environmentally sustainable, and self-reliant; (b) being provided in accordance with the policies contained in section 102 of the FAA; N/A

(c) being provided, when consistent with the objectives of such assistance, through African, United States and other PVOs that have demonstrated effectiveness in the promotion of local grassroots activities on behalf of long-term development in Sub-Saharan Africa;

(d) being used to help overcome shorter-term constraints to long-term development, to promote reform of sectoral economic policies, to support the critical sector priorities of agricultural production and natural resources, health, voluntary family planning services, education, and income generating opportunities, to bring about appropriate sectoral restructuring of the Sub-Saharan African economies, to support reform in public administration and finances and to establish a favorable environment for individual enterprise and self-sustaining development, and to take into account, in assisted policy reforms, the need to protect vulnerable groups;

(e) being used to increase agricultural production in ways that protect and restore the natural resource base, especially food production, to maintain and improve basic transportation and communication networks, to maintain and restore the renewable natural resource base in ways that increase agricultural production, to improve health conditions with special emphasis on meeting the health needs of mothers and children, including the establishment of self-sustaining primary health care systems that give priority to preventive care, to provide increased access to voluntary family planning services, to improve basic literacy and mathematics especially to those outside the formal educational system and to improve primary education, and to develop income-generating opportunities for the unemployed and underemployed in urban and rural areas?

5C(3) - STANDARD ITEM CHECKLIST

Listed below are the statutory items which normally will be covered routinely in those provisions of an assistance agreement dealing with its implementation, or covered in the agreement by imposing limits on certain uses of funds.

These items are arranged under the general headings of (A) Procurement, (B) Construction, and (C) Other Restrictions.

A. PROCUREMENT

1. FAA Sec. 602(a). Are there arrangements to permit U.S. small business to participate equitably in the furnishing of commodities and services financed? YES
2. FAA Sec. 604(a). Will all procurement be from the U.S. except as otherwise determined by the President or determined under delegation from him? YES
3. FAA Sec. 604(d). If the cooperating country discriminates against marine insurance companies authorized to do business in the U.S., will commodities be insured in the United States against marine risk with such a company? YES
4. FAA Sec. 604(e); ISDCA of 1980 Sec. 705(a). If non-U.S. procurement of agricultural commodity or product thereof is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity? (Exception where commodity financed could not reasonably be procured in U.S.) N/A

107-

5. FAA Sec. 604(q). Will construction or engineering services be procured from firms of advanced developing countries which are otherwise eligible under Code 941 and which have attained a competitive capability in international markets in one of these areas? (Exception for those countries which receive direct economic assistance under the FAA and permit United States firms to compete for construction or engineering services financed from assistance programs of these countries.) NO
6. FAA Sec. 603. Is the shipping excluded from compliance with the requirement in section 901(b) of the Merchant Marine Act of 1936, as amended, that at least 50 percent of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U.S. flag commercial vessels to the extent such vessels are available at fair and reasonable rates? NO
7. FAA Sec. 621(a). If technical assistance is financed, will such assistance be furnished by private enterprise on a contract basis to the fullest extent practicable? Will the facilities and resources of other Federal agencies be utilized, when they are particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs? YES
8. International Air Transportation Fair Competitive Practices Act, 1974. If air transportation of persons or property is financed on grant basis, will U.S. carriers be used to the extent such service is available? YES
9. FY 1989 Appropriations Act Sec. 504. If the U.S. Government is a party to a contract for procurement, does the contract contain a provision authorizing termination of such contract for the convenience of the United States? YES

10. FY 1989 Appropriations Act Sec. 524. If assistance is for consulting service through procurement contract pursuant to 5 U.S.C. 3109, are contract expenditures a matter of public record and available for public inspection (unless otherwise provided by law or Executive order)? YES

B. CONSTRUCTION

1. FAA Sec. 601(d). If capital (e.g., construction) project, will U.S. engineering and professional services be used? N/A
2. FAA Sec. 611(c). If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable? N/A
3. FAA Sec. 620(k). If for construction of productive enterprise, will aggregate value of assistance to be furnished by the U.S. not exceed \$100 million (except for productive enterprises in Egypt that were described in the CP), or does assistance have the express approval of Congress? N/A

C. OTHER RESTRICTIONS

1. FAA Sec. 122(b). If development loan repayable in dollars, is interest rate at least 2 percent per annum during a grace period which is not to exceed ten years, and at least 3 percent per annum thereafter? N/A
2. FAA Sec. 301(d). If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights? N/A

3. FAA Sec. 620(h). Do arrangements exist to insure that United States foreign aid is not used in a manner which, contrary to the best interests of the United States, promotes or assists the foreign aid projects or activities of the Communist-bloc countries? YES
4. Will arrangements preclude use of financing:
- a. FAA Sec. 104(f); FY 1989 Appropriations Act Secs. 525, 536. N/A  
(1) To pay for performance of abortions as a method of family planning or to motivate or coerce persons to practice abortions; (2) to pay for performance of involuntary sterilization as method of family planning, or to coerce or provide financial incentive to any person to undergo sterilization; (3) to pay for any biomedical research which relates, in whole or part, to methods or the performance of abortions or involuntary sterilizations as a means of family planning; or (4) to lobby for abortion?
- b. FAA Sec. 483. To make reimbursements, in the form of cash payments, to persons whose illicit drug crops are eradicated? YES
- c. FAA Sec. 620(q). To compensate owners for expropriated or nationalized property, except to compensate foreign nationals in accordance with a land reform program certified by the President? YES
- d. FAA Sec. 660. To provide training, advice, or any financial support for police, prisons, or other law enforcement forces, except for narcotics programs? YES
- e. FAA Sec. 662. For CIA activities? YES

110

- f. FAA Sec. 636(i). For purchase, sale, long-term lease, exchange or guaranty of the sale of motor vehicles manufactured outside U.S., unless a waiver is obtained? YES
- g. FY 1989 Appropriations Act Sec. 503. To pay pensions, annuities, retirement pay, or adjusted service compensation for prior or current military personnel? YES
- h. FY 1989 Appropriations Act Sec. 505. To pay U.N. assessments, arrearages or dues? YES
- i. FY 1989 Appropriations Act Sec. 506. To carry out provisions of FAA section 209(d) (transfer of FAA funds to multilateral organizations for lending)? YES
- j. FY 1989 Appropriations Act Sec. 510. To finance the export of nuclear equipment, fuel, or technology? YES
- k. FY 1989 Appropriations Act Sec. 511. For the purpose of aiding the efforts of the government of such country to repress the legitimate rights of the population of such country contrary to the Universal Declaration of Human Rights? YES
- l. FY 1989 Appropriations Act Sec. 516; State Authorization Sec. 109. To be used for publicity or propaganda purposes designed to support or defeat legislation pending before Congress, to influence in any way the outcome of a political election in the United States, or for any publicity or propaganda purposes not authorized by Congress? YES
5. FY 1989 Appropriations Act Sec. 584. Will any A.I.D. contract and solicitation, and subcontract entered into under such contract, include a clause requiring that U.S. marine insurance companies have a fair opportunity to bid for marine insurance when such insurance is necessary or appropriate? YES

WV

ACTION MEMORANDUM FOR THE DIRECTOR, USAID/HAITI

Date : May 11, 1989  
From : Socra Gregoire, Project Development Office  
Through : Richard Burns, Deputy, Program/Project Support  
Subject : National Program for Agroforestry (521-0217)

I. ACTION REQUESTED

Approve the PID for the National Program for Agroforestry (521-0217) project.

II. DISCUSSION

A. Description. The goal of the National Program for Agroforestry (NPA) Project is to maximize the productive potential of Haitian hillside agricultural land and to reduce the ongoing degradation of the country's national resource base. Its primary purpose is to achieve sustainable increases in on-farm productivity and farmer income through the introduction of soil conserving and fertility-enhancing perennial crops and cropping patterns into traditional peasant farming practices, in a variety of locally appropriate agroforestry associations. Its secondary purpose is to continue to institutionalize farmer demand of such appropriate land use interventions, plant materials and extension services.

The NPA is the first five of an envisioned ten-year effort to begin in FY 90 and run over a five-year period. It is a follow-on to the current Agroforestry Outreach Project (AOP), which has an LOP funding of \$27,000,000 and a current PACD of December 31, 1989. The NPA will build upon successful outreach methodologies of the AOP, and expand the range of services to farmers through the elaboration of more specific and more diversified agroforestry associations and the dissemination of appropriate techniques.

Specific objectives of the NPA are as follows:

1. generate and disseminate improved agricultural technologies based on the low-input, regenerative principles of agroforestry and agro-silvi-pastoral systems;
2. make selected inputs necessary for the establishment of such systems available to participating farmers, including substantial numbers of tree seedlings, tree seed and other new or improved plant materials unavailable locally;
3. ameliorate the soil nutrient status and physical characteristics of agricultural micro-sites, through farmer-managed agroforestry interventions;

4. contribute significantly to the satisfaction of national demand for wood products, through the on-farm production of trees, as a crop, for both domestic use and sale;
5. increase the institutional capacity and commitment of local-level NGOs to implement agroforestry outreach activities in their areas of operations; and
6. increase awareness and concern for the rural physical environment on the part of the GOH and the citizens of Haiti.

The proposed project consists of six components. The first is nursery production, the linchpin which holds the other components together by producing the necessary plant material. This is reinforced by the second component, seed and germplasm improvement, which will strengthen the NPA's capacity to supply the nurseries with high-quality seed and plant material. The third component -- applied research, monitoring, and technology generation -- will enhance the impact of the NPA, particularly in terms of the technologies to be disseminated. This will be particularly important in promoting hedgerow technologies for soil conservation on individual farms and selected sub-catchment basins. The remaining three components -- extension, institution-building, and training -- are all focused on disseminating these materials and technologies to hillside farmers and improving and strengthening their capability to exploit them to the full. Each of these components will be carefully analyzed by the PP design team which will determine their appropriateness and the extent to which they are feasible.

Three major target groups are contemplated for outreach activities: farmers planting trees for the first time under the project, the planters; farmers who have planted trees under the AOP and who now require guidance in improved tree management, harvesting and on-farm propagation methods, the harvesters; and farmers interested in maximizing agroforestry techniques, the agroforesters.

Major achievements by the PACD are anticipated to include: (1) an increase in the number of hillside farmers planting trees, shrubs and grasses from 200,000 to 450,000, almost 50% of rural farm families; (2) 25% of past planters effectively managing their trees, shrubs and grasses; (3) an increase in the number of farmers implementing agroforestry techniques; and (4) a strengthened capacity among selected local NGOs. Improvements in on-farm production and increase in income, and improved management of the natural resource base are anticipated to result from the project.

The first phase funding is estimated at 30 million dollars over five years, at a rate of 6 million per year. Of the total amount budgeted, it is expected that PADF will absorb \$15,500,000 (52%); CARE will take \$9,300,000 (31%); the Applied Research and the Seed/Germplasm Improvement components will receive \$5,200,000 (17%).

The proposed NPA will build upon institutional structure created by the present AOP. Implementation arrangements would be similar: research and seed/germplasm improvement will be contracted to appropriate institutions; outreach activities will be conducted under new cooperative agreements with PADF and CARE.

B. Mission Review. The Mission Review of the PID was held on October 28, 1988, chaired by the Director. The Project Committee unanimously recommended that the PID document be approved and the project be designed at a 30 million dollars level. The Mission Director agreed and recommended approval of the PID based upon consensus reached on a number of key issues including:

1. Funding Level. State 293072 granted the NPA the AA/LAC's approval of a 25 million dollars for a five-year project. During the PID development, evidence was provided on the need to increase the life of project funding from a 25 to a 30 million dollars level. This increase in LOP total resulted from the analyses carried out in preparing the PID. Expansion of the agroforestry activities beyond the current scale of operation under AOP would not be possible at the original planned level. The PID foresees an increase in its first target group --the planters-- from 200,000 to 450,000 farmers. NPA also contemplates serving two other target groups, as described above. Therefore, additional resources were clearly needed to meet the objectives of the project. PAP 08809 sent on December 28, 1988, outlined justification for the higher funding level and requested LAC concurrence. State 035778 stated that the A/AA for the LAC Bureau approved the increase of the NPA LOP funding level from 25 to 30 million dollars.

2. Selection of Implementing Agencies. Given the key role played by PADP and CARE as Grantees of AOP, the PID made a strong case that using the same approach would increase the chances for project success, and that a disruption in field operations and concomitant development of new field networks by new grantees would seriously limit possible project achievements over a five-year period. It was then recommended that they continue to be responsible for field operations under the NPA within the same geographic area. Research and seed/germplasm improvement will be contracted to appropriate institutions.

3. Other Issues. The PID identified other issues to be addressed at the PP design stage. They related to nursery production; applied research; agricultural and soil conservation measures; project sustainability; and future public sector involvement in the long run.

C. Authority. The Mission submitted a New Project Description in PAP 5806 dated June 30, 1988, and received AID/W concurrence in State 293072 dated September 9, 1988, delegating authority to approve the NPA PID and to authorize the PP. As discussed above, the Mission requested in PAP 08809 dated December 28, 1988, approval to increase the funding level to 30 million dollars. The approval was granted in State 035778, dated February 9, 1988.

III. RECOMMENDATION

That you sign the attached facesheet, thereby approving the PID for the National Program for Agroforestry (521-0217) Project.

Clearance:

ADO :D.Atteberry *DAW*  
ADO :C.Ruybal *CR* 5-12-89  
ADO :J.Harms *JH*  
CONT :S.Brooks *SB* 5/16/89  
D/DIRAF :Herder *H* 5-16-89

*113a*

AGENCY FOR INTERNATIONAL DEVELOPMENT  
PROJECT IDENTIFICATION DOCUMENT  
FACESHEET (PID)

1. TRANSACTION CODE  
A = Add  
C = Change  
D = Delete  
Revision No.

DOCUMENT CODE  
1

2. COUNTRY/ENTITY  
Haiti

4. BUREAU/OFFICE  
Latin America & Caribbean  
A. Symbol LAC B. Code 05

3. PROJECT NUMBER  
521-0217

5. PROJECT TITLE (maximum 40 characters)  
National Program for Agroforestry

6. ESTIMATED FY OF AUTHORIZATION/OBLIGATION/COMPLETION  
A. Initial FY 90  
B. Final FY 95  
C. PACD 95

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

FUNDING SOURCE	LIFE OF PROJECT
A. AID	30,000
B. Other U.S.	1.
	2.
C. Host Country	
D. Other Donor(s)	
<b>TOTAL</b>	<b>30,000</b>

8. PROPOSED BUDGET AID FUNDS (\$000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH CODE		D. 1ST FY 90		E. LIFE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
(1) ARDN	210	160		6,000		30,000	
(2)							
(3)							
(4)							
<b>TOTALS</b>				6,000		30,000	

9. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each)  
066 067 096 878

10. SECONDARY PURPOSE CODE

11. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)  
A. Code BS DEL ENV PVOU PVON TNG  
B. Amount

12. PROJECT PURPOSE (maximum 480 characters)

- To achieve sustainable increases in on-farm productivity and farmer income thru integration of appropriate, sustainable land-use intervention measures into existing farming systems.
- To institutionalize delivery systems and farmer demand for such appropriate land-use interventions.

13. RESOURCES REQUIRED FOR PROJECT DEVELOPMENT

Staff: see page 32

Funds PD&S \$175,000 est.

14. ORIGINATING OFFICE CLEARANCE  
Signature Larry Harms  
Title Chief, Agriculture and Rural Development Office  
Date Signed MM DD YY 05 12 89

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

16. PROJECT DOCUMENT ACTION TAKEN  
S = Suspended CA = Conditionally Approved  
A = Approved DD = Decision Deferred  
D = Disapproved

17. COMMENTS

18. ACTION APPROVED BY  
Signature Gerald Zarr  
Title Director

19. ACTION REFERENCE  
20. ACTION DATE  
MM DD YY 05 22 89

SEP 9 1988

ACT: AID-3 INFO AMB DCM (5)

VZCZCPU0327

OO RUEKPU

DE RUEEC #3072 2520208

ZNR UUUUU ZZH

O 080209Z SEP 88

FM SECSTATE WASHDC

TO AMEMBASSY PORT AU PRINCE IMMEDIATE 3583

BT

UNCLAS STATE 293072

AIDAC

E.O. 12356: N/A

TAGS:

SUBJECT: HAITI NEW PROJECT DESCRIPTION - NATIONAL AGROFORESTRY PROGRAM (NO. 521-0217)

LOC: 269 BLK 156  
08 SEP 88 1344  
CN: 00197  
CHRG: AID  
DIST: AID

*PRC*

1. THE SUBJECT REVIEW WAS HELD ON JULY 26, 1988. MISSION IS COMMENDED FOR RESPONDING SO QUICKLY AND THOROUGHLY TO THE NPD ISSUES PAPER. THE AA/LAC APPROVES THE NPD AND REDELEGATES AUTHORITY TO THE FIELD TO APPROVE THE PROJECT IDENTIFICATION DOCUMENT AND AUTHORIZE THE PROJECT PAPER SUBJECT TO THE FOLLOWING GUIDANCE:

2. S AND T/FENR MIKE BENGÉ NOTED THAT THERE IS PREVIOUS MISSION EXPERIENCE IN ESTABLISHING INFORMATION/DATA BASE SYSTEMS AND RECOMMENDS THAT, DURING THE COURSE OF PROJECT PAPER DEVELOPMENT, THE MISSION CONSULT THE 1966 PAN AMERICAN DEVELOPMENT FOUNDATION (PADF) REPORT TO THE AGROFORESTRY OUTREACH PROGRAM (AOP). THE REPORT CONTAINS AN EVALUATION OF AOP AND RECOMMENDATIONS FOR FOLLOW-ON PROJECTS.

3. DURING PROJECT DESIGN, THE MISSION AGREES TO CONSIDER DEVELOPING A SMALL-SCALE FOREST PRODUCTS MARKETING ENTERPRISE WHICH COULD REDUCE LOCAL DEPENDENCY ON FUELWOOD AND CHARCOAL.

4. THE MISSION WILL CONTINUE TO: (I) INCORPORATE TREE PLANTINGS IN AGRICULTURAL PROJECTS, (II) CONSIDER EXPANDING SITES FOR VEGETATIVE BARRIERS, (III) INOCULATE TREES TO IMPROVE BIOMASS YIELDS, AND (IV) PROVIDE EXTENSION SERVICES TO FARMERS ON TREE MANAGEMENT.

5. APPROVAL OF DOLS. 25,000,000 LOP FOR A FIVE YEAR PROJECT WITH DOLS. 5,000,000 OBLIGATION IN FY 90 IS CONTINGENT ON AVAILABILITY OF FUNDS. PRELIMINARY ALLOCATIONS FOR FY 90 RAISE SERIOUS QUESTIONS WHETHER ANNUAL OBLIGATION OF DOLS. 5,000,000 ARDN FOR THIS PROJECT WILL BE FEASIBLE. THE MISSION SHOULD TAKE THESE PROJECTIONS OF DECREASED FUNDING LEVELS INTO ACCOUNT IN DETERMINING THE FINAL LOP.

6. A COPY OF THE ACTION MEMORANDUM WILL BE FAXED TO THE

DATE REC'D	
USAID ROUTER	
DIR	
D/DIR	
FPS	
EXO	
CONT	
HRO	
ADO	
OPE	
RF	
CF	
ACTION TAKEN:	
DATE:	
BY:	

*Due 9-12-88*

*5*

MISSION. SHULTZ

BT  
#3072

NNNN

UNCLASSIFIED

STATE 293072

G

ACT: AID-3 INFO AMB DCM (5)

ANNEX D2 [ 1989

VZCZCPU0235  
RR RUEHPU  
DS RUEEC #5778 0351558  
ZNR UUUUU ZZR  
R 041554Z FEB 89  
FM SECSTATE WASHDC  
TO AMEMBASSY PORT AU PRINCE 0030  
BT  
UNCLAS STATE 035778

LOC: 037 ELK 182  
04 FEB 89 1610  
UN: 00138  
CHRG: AID  
DIST: AID

AIDAC

E.O. 12356: N/A

TAGS:

SUBJECT: NATIONAL PROGRAM FOR AGROFORESTRY (021-0217)

PLEASED TO REPORT THAT ON JANUARY 30, 1989 THE A/AA FOR THE LAC BUREAU APPROVED THE INCREASE OF THE LIFE OF PROJECT FUNDING LEVEL FROM DOLS. 25 MILLION TO DOLS. 30 MILLION FOR THE SUBJECT PROJECT. A COPY OF THE EXECUTED APPROVAL MEMORANDUM WILL BE FORWARDED TO MISSION.

BAAER

BT

#5778

NNNN

JR UNCLASSIFIED

STATE 035778

DATE REC'D	
USAID ROUTER	
DIR	
DYDIR	
PPS	
EXO	
CONT	
HRO	
I.DO	
OPE	
RF	
CF	
ACTION TAKEN:	
DATE:	
BY:	

1/30/89

ACT: AID-3 INFO AMB DCM (5)

**ACTION COPY**

MAR 22 1989

LOC: 088 BLK 002  
22 MAR 89 1305  
CN: 00032  
CHRG: AID  
DIST: AID

NYZCZCPU0126  
PP RUEHPU  
DE RUEHC #8412 0810148  
ZNR UUUUU ZZH  
P 220150Z MAR 89  
FM SECSTATE WASHDC  
TO RUEHPU/AMEMBASSY PORT AU PRINCE PRIORITY 5589  
RUEHWN/AMEMBASSY BRIDGETOWN 5692  
BT  
UNCLAS STATE 088412

**OFFICIAL FILE**

AIDAC PORT AU PRINCE FOR R. RUYBAL, BRIDGETOWN FOR RDO/C

E.O. 12356: N/A

TAGS:

SUBJECT: APPROVAL OF NATIONAL PROGRAM FOR AGROFORESTRY PROJECT (521-0217) ENVIRONMENTAL ASSESSMENT

FOR REMS/CAR, A. DEGEORGES

1. LAC CHIEF ENVIRONMENTAL OFFICER HESTER HAS REVIEWED AND HEREBY APPROVES THE ENVIRONMENTAL ASSESSMENT FOR THE NATIONAL PROGRAM FOR AGROFORESTRY DATED MARCH, 1989, WHICH WAS PREPARED BY DR. JIM TALBOT AND THE DESFIL PP DESIGN TEAM. APPROVAL BASED ON CONDITION THAT MISSION WILL PROHIBIT USE OF THE INSECTICIDE, DELTAMETHRIN, UNDER NPA.

2. NPA DETAILS AN IMPORTANT, PROGRESSIVE EFFORT TO PROMOTE SUSTAINABLE, INCREASED PRODUCTION ON FRAGILE HILLSIDES IN HAITI THROUGH THE INTRODUCTION OF SOIL-CONSERVING AND FERTILITY-ENHANCING PERENNIAL CROPS AND CROPPING PATTERNS INTO TRADITIONAL PEASANT FARMING PRACTICES. BUILDING ON THE PIONEERING EFFORTS OF THE AGROFORESTRY OUTREACH PROJECT, NPA WILL PROVIDE AN EXPANDED APPROACH INTEGRATING AGROFORESTRY, SOIL AND WATER CONSERVATION TO IMPROVE PRODUCTIVITY AND

CONTRIBUTE TO LONG-TERM, SUSTAINABLE MANAGEMENT OF NATURAL RESOURCES IN HAITI. INCLUSION OF AN ENVIRONMENTAL EDUCATION COMPONENT IN NPA IS AN IMPORTANT STEP, AND WILL HELP INCREASE APPRECIATION AND IMPROVE PUBLIC AWARENESS AND ACCEPTANCE OF ENVIRONMENTAL STEWARDSHIP PROMOTED AND PRACTICED UNDER NPA. THE EA ALSO OUTLINES A COMPREHENSIVE A APPROACH TO INTEGRATED PEST MANAGEMENT, AND DESCRIBES A PROGRAM FOR THE SAFE AND PROPER USE OF PESTICIDES. WITH THE EXCEPTION OF DELTAMETHRIN, AS DISCUSSED ABOVE, PESTICIDES LISTED IN TABLE 4-1 OF THE EA ARE APPROPRIATE AND APPROVED FOR USE UNDER NPA. THE PROHIBITION OF USE OF DELTAMETHRIN IS IN KEEPING WITH THE GENERAL POLICY OF THE LAC CHIEF ENVIRONMENTAL OFFICER THAT ONLY PESTICIDES REGISTERED BY THE EPA FOR USE IN THE UNITED STATES WITHOUT RESTRICTION ON THE BASIS OF USER HAZARD WILL BE APPROVED FOR USE IN LAC PROJECTS.

DATE REC'D	
USAID ROUTER	
DIR	/
D/DIR	/
FPS	/
FYO	/
CONT	/
KRO	/
ADO	/
OPE	/
RF	/
CF	/
ACTION TAKEN: 27/03/89	
DATE: 27/03/89	
BY: MAN	

MAN 03/27/89

3-28-89  
JW

118

3. MISSION IS COMMENDED ON THE QUALITY AND THOROUGHNESS OF THE EA, AND COMMITMENT TO PIONEERING A SYSTEM OF AGROFORESTRY, SOIL AND WATER CONSERVATION FOR USE UNDER HARSH CONDITIONS FOUND IN FRAGILE, HILLSIDE ENVIRONMENTS OF HAITI.. BAKER

BT  
#8412

NNNN

JR

UNCLASSIFIED

STATE 088412

LS-119