A.I.D.'s BILATERAL ASSISTANCE PROGRAM IN FORESTRY AND NATURAL RESOURCES:

A Report to the House Appropriations Committee

Agency for International Development

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I. Introduction

On April 15, 1981, the Administrator of the Agency for International Development, M. Peter McPherson, approved Policy Determination No. 74 (PD-74) which establishes the Agency's position on achieving forestry objectives in a manner consistent with its overall development objectives.

> AID fully recognizes the importance of forestry as a key component of environmental and ecological systems and the overwhelming evidence that "... the accelerating loss of forests and tree cover in developing countries undermines and offsets efforts to improve agricultural production and nutrition, and otherwise to meet the basic human needs of the poor."[1/]

AID recognizes that the long term effectiveness of bilateral assistance requires more than simply calling for the replacement of tree cover. It requires a broader "commitment to altering unsustainable forest resource use patterns."[2/] PD-74 states:

> It should be emphasized that AID's program of assistance in forestry will encompass program and policy options well beyond the narrow bounds of tree planting. Programs that assist developing countries to improve their capacity for making sound forestry and related land and natural resource use decisions normally will be conducive to creating sustainable and productive land use patterns in the long term.[3/]

Statistical data reflecting the magnitude of tree loss which is visible and which can be evaluated in economic or commercial terms are alarming; and figures showing the net reduction in the size of tropical forest coverage provide a strong inducement for action. Nevertheless, the importance of undertaking forestry activities in the overall context of sustainable resource use cannot be overemphasized. This approach was repeatedly expressed during the extensive examination of forestry-related experience which was an important

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1/ PD-74, p. 2, quoting from the FAA of 1961 as amended, Section 103(b). See Annex A for the full text of PD-74.
2/ Ibid., p. 5.
3/ Ibid., p. 6.

basis for formulating Agency policy. Cutting of trees was recognized as only one element of a sequence of problems implied by the terms "deforestation."

Indeed, tree loss is a symptom of a larger set of environmental, energy, and agricultural problems. For example, forest resources not only provide direct products -- food, fuel, and forage -- but also play a critical role in soil stabilization and the maintenance of soil fertility, watersheds, and wildlife habitats. Therefore, the underlying causes of deforestation (the need for fuel, timber, and land for food and fodder), rather than symptoms of the problem (tree loss, erosion, and declining soil fertility), must be understood if appropriate and effective solutions are to be developed.

This report discusses AID's forestry-related activities in this wider context in response to the request of the House Appropriations Committee "that AID prepare a comprehensive report on the efforts it is making in the area of reforestation and related subjects... reflect/ing/ an increased emphasis on reforestation and... involv/ing/ immediate projects for countries where there is a clear and demonstrated problem with reforestation;" the Committee also requested detailed information on "the number of trees planted, total acreage covered, and the location of the trees."[4/] Because the first element of the Committee's request implies a broad interpretation of forestry consistent with that of the Agency, we have incorporated into the report a review of other aspects of AID's forestry-related activities: project design, funding, and implementation; staffing and training; institutional development and cooperation; and research.

4/ House Appropriations Committee Report on the Foreign Assistance and Related Programs Appropriation Bill, 1982, p. 19.

Substantial progress has been made in each of these areas as summarized in a November 1980 report prepared by AID for the Interagency Task Force on Tropical Forests.[5/] During the past year AID has:

-- continued its efforts to translate planned strategies into tangible activities;

-- taken steps to strengthen both AID and host country capabilities in forestry and natural resource management;

-- made steady progress in building collaborative relationships in forestry with other international and host country institutions; and

-- developed new research programs to address some of the key technical questions of reforestation.

This report provides an update on the current status of these and other forestry-related programs supported by AID.

II. Forestry-related Projects Supported by AID

Currently, AID is supporting 67 bilateral assistance projects in 30 developing countries plus five centrally funded activities which deal exclusively or in part with forestry-related problems. (In some cases, the "forestry component" accounts for only five percent of total project expenditures. In other cases, various types of forestry-related activities (such as training, research, and plantation establishment) are included within the scope of a single project.) Table 1 summarizes budgetary information for each of these projects by region.[6/] Most of the projects are financed from

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5/ "AID's Bilateral Assistance Program in Forestry and Natural Resources: A Report to the Interagency Task Force on Tropical Forests," November 1980.

6/ Annex B disaggregates this information by individual project.

TABLE 1. Summary of AID-supported Forestry-related Projects Authorized as of FY 1981

Region	Before FY 79[a/]	FY 79	FY 80	FY 81	Total
AFRICA					
No. of New Projects	7	12	8	9[b/]	36
Authorization for New Projects (mil. of $)	55.2	64.4	22.8	33.0	175.4
Obligation for All Projects (mil. of $)	26.3	26.2	30.4	45.8	128.7
ASIA					
No. of New Projects	2	4	6	2	14
Authorization for New Projects (mil. of $)	14.8	41.5	116.9	35.0	208.2
Obligation for All Projects (mil. of $)	13.3	23.9	50.4	34.0	121.6
LATIN AMERICA AND THE CARIBBEAN					
No. of New Projects	2	5	4	3	14
Authorization for New Projects (mil. of $)	26.0	34.9	17.5	26.3	104.7
Obligation for All Projects (mil. of $)	24.7	26.2	15.5	17.4	83.8

TABLE 1 (continued)

Region	Before FY 79[a/]	FY 79	FY 80	FY 81	FY 82	To
NEAR EAST						
No. of New Projects	1	-	1	-		
Authorization for New Projects (mil. of $)	22.0	-	10.0	-		3
Obligation for All Projects (mil. of $)	.9	10.4	12.6	3.1		2
WORLDWIDE						
No. of New Projects	-	1	1	3		5
Authorization for New Projects (mil. of $)	-	2.2	3.7	15.3		21
Obligation for All Projects (mil. of $)	-	1.3	1.4	14.3		17
GRAND TOTAL						
No. of New Projects	12	22	20	17[b/]		72
Authorization for New Projects (mil. of $)	118.0	143.0	170.9	109.6		541
Obligation for All Projects (mil. of $)	65.2	88.0	110.3	114.6	71.5	449

a/ Incomplete; denotes the minimum number of new projects and authorization/ obligation levels.

b/ Includes one project authorized but not obligated in FY 1981.

AID's Development Assistance accounts (primarily Section 103 -- Agriculture, Rural Development and Nutrition), although a few projects are financed by the Economic Support Fund.7/

As indicated in Table 1, the number of new forestry-related projects supported by AID has decreased from 22 in FY 1979 to 17 in FY 1981. However, AID obligations to these projects have increased from about $88 million in FY 1979 to about $115 million in FY 1981, a 31 percent increase over the two year period; most of this increased activity has occurred in Africa and Asia. In FY 1981, $46 million was obligated to forestry-related projects in Africa; $34 million in Asia; $17 million in Latin America and the Caribbean; $3 million in the Near East; and $14 million for worldwide activities. Total authorized life-of-project funding for forestry-related projects is currently about $542 million: $176 million in Africa (15 countries); $208 million in Asia (six countries); $105 million in Latin America and the Caribbean (seven countries); $32 million in the Near East (two countries); and $21 million for worldwide activities (three central bureaus).

Annex B reflects the relative importance of various forestry problems in the four regions and how AID has responded to these problems. In Africa, AID's program emphasis is on fuelwood and the energy and agricultural linkages with forestry. In Asia, the project portfolio also emphasizes resource conservation as well as activities that promote wood or food production more directly. Conservation and management of natural resources, including forestry resources, is the dominant emphasis in the Latin America portfolio.

7/ Table 1 does not include forestry-related activities financed with PL 480 resources: these and World Food Program activities are discussed separately. Also, some forestry-related activities are funded under Section 118 (Environment and Natural Resources) and Section 119 (Renewable Energy).

In all cases, however, these activities are designed to alleviate broader development problems as well as forestry problems.[8/] For this reason, the figures in Table 1 and Annex B do not reflect AID's allocation of resources to activities narrowly defined as "tree-planting" or "forestry sector" efforts, which in many projects is relatively minor. Table 2, therefore, presents funding data on AID-supported forestry activities narrowly defined. It also provides information on the specific types of forestry activities being undertaken and on the numbers of trees planted.

AID is supporting 69 forestry-related projects in developing countries[9/] plus five centrally funded activities. The forestry component of these projects totals $132.2 million or 23 percent of total LOP funding. Of this, $34.5 million (or 26 percent of the forestry component) supports tree planting activities. The remainder (74 percent) supports capacity building, including training and education, technical assistance, research, administration, and special studies and analyses.

Table 2 reflects the varied needs and conditions in each region. In Africa, funding for the forestry component of the forestry-related projects is $35.9 million or 19 percent of total project costs. Of this, $6.0 million (or 17 percent) is for tree planting and the balance (83 percent) finances forestry capacity building. In Asia, $47.5 million (or 23 percent of the forestry-related projects) financed only forestry activities. Of this, $16.3

8/ For example, forestry-related projects support agricultural development through watershed management, erosion control, and desertification control; forestry-related projects help meet energy needs through fuelwood and charcoal production.

9/ Only 67 projects were reported in Table 1. The two additional projects in Table 2 are components of projects reported in Table 1. Annex C disaggregates the information in Table 2 by individual project.

TABLE 2. Summary of the Forestry Component of AID-supported Forestry-related Projects Authorized as of FY 1981

Region	Number of Projects	LOP Funding (000 $)	Forestry Component (000 $)	Forestry Component as % of LOP Funding	Tree Planting Component (000 $)	Tree Planting Component as % of Forestry Component (and LOP Funding)	Land Area to be Planted: Supported Predominantly by AID (hectares)	Land Area to be Planted: Supported by both AID and Host Country (hectares)	Land Area to be Planted: Supported Predominantly by Host Country Utilizing AID-supported Manpower (hectares)
AFRICA	38	187,136	35,466	19%	6,088	17% (3%)	4,353	7,970	8,075
ASIA	14	186,540	47,548	25%	16,268	34% (9%)	2,825	65,442	43,197
LATIN AMERICA AND THE CARIBBEAN	14	109,790	43,107	39%	13,709	32% (12%)	14,414	10,647	1,400
NEAR EAST	3	32,750	800	2%	400	50% (1%)	400	-	-
WORLDWIDE	5	41,189	9,165	22%		- (0%)	-	-	-
GRAND TOTAL	74	557,405	136,086	24%	36,466	27% (7%)	21,992	84,059	52,672

Source: Compiled primarily from field missions' responses to AID/Washington request contained in State 311314.

million (34 percent) was allocated to tree planting and the balance to the various forms of forestry capacity building. In Latin America, $38.8 million (or 35 percent of total project funds) supported forestry. Of this, $11.8 million (30 percent) was allocated to tree planting. In the Near East, the forestry component of forestry-related projects was negligible (about two percent of total project funding). The proportion of the forestry component allocated to tree planting in Asia and Latin America was almost twice that in Africa. This may reflect the relatively greater need for capacity building activities in Africa.

Table 2 indicates the total number of hectares that will be planted during the life of all ongoing projects in each region. It disaggregates tree planting activity into three categories: (a) that which is predominantly supported by AID; (b) that which is supported by both AID and the host country; and (c) that which is carried out predominantly by the host country with little AID funding support but which utilizes the capability created or strengthened under AID-supported forestry capacity building activities.

Of the 74 projects, 30 do not have funding specifically allocated to tree planting; however, nearly half of these are closely linked with other activities under which trees will be planted (as in the case of grants to PVOs implementing tree planting activities under PL 480 food aid programs).

In Africa over 22,000 hectares of trees will be planted either predominantly with AID funds (over 4,000 hectares), under a cost sharing agreement (almost 10,000 hectares), or in association with AID-supported capacity building efforts (about 8,000 hectares). In Asia, almost 3,000 hectares of tree planting will be predominantly supported by AID; about 65,000 hectares will be cost-shared; and 43,000 hectares will be planted by host countries using

improved capabilities supported by AID -- for a total of 111,000 hectares. In Latin America, about 14,000 hectares will be planted using AID funds and almost 11,000 hectares will be cost-shared for a total of over 25,000 hectares. AID-supported tree planting in the Near East covers only 400 hectares. In the aggregate, almost 22,000 hectares of tree planting will be paid for predominantly by AID; 86,000 hectares will be substantially cost-shared; and 52,000 hectares will be planted by host countries through capabilities strengthened by AID for a total of almost 160,000 hectares.

In Africa, more than half of all projects involving tree planting are designed primarily for fuelwood production. The primary objectives of the remaining planting tree projects are about equally divided among erosion control, shelter belts and dune stabilization, and multipurpose activities (local building materials, fodder, agroforestry, cash tree crops). Projects in Asia are heavily focussed on multipurpose plantings combining erosion control, agroforestry, firewood, local construction materials, cash tree crops and other uses. A secondary emphasis is on firewood production, and modest attention is given to erosion conrol as a single purpose activity. Tree planting projects in Latin America concentrate most heavily on erosion control; a secondary emphasis is on fuelwood. Modest emphasis is given to industrial wood products, multipurpose plantings (especially cash tree crops) and local construction materials.

Table 3 indicates the numbers of trees, and numbers of hectares of trees, planted under ongoing AID-supported forestry-related projects by region and country as of September 30, 1981. These estimates are based on recent reports from the field.[10/] Some reports estimated only the number of trees planted;

10/ Reports were in response to an AID/Washington request cabled in State 311314.

TABLE 3. Estimated Tree Planting under Ongoing AID-supported Forestry-related Bilateral Assistance Projects as of FY 81

Region and Country	Number of Hectares Planted	Number of Trees Planted
AFRICA		
Cape Verde	61	-
Gambia	297	297,000
Mauritania	80[a/]	80,000
Senegal	545[a/]	545,000
Tanzania	2,000[a/]	2,000,000
Upper Volta	63	38,000
Actually Reported	421	2,960,000
Estimated	2,625	
Sub-total	3,046	
ASIA		
Indonesia	80	11,962
Nepal	220	300,000
Philippines	120	222,000
Sri Lanka	3,182	7,240,000
Thailand	32	-
Actually Reported	3,602	7,773,962
Estimated	0	
Sub-total	3,602	
LATIN AMERICA AND THE CARIBBEAN		
Central America	93	134,000
Jamaica	735	1,659,000
Panama	5,422[a/]	5,422,000
Peru	328	433,000
Actually Reported	1,156	7,648,000
Estimated	6,578	
Sub-total	7,744	
TOTAL: Actually Reported	5,179	18,381,962
Estimated	8,047	
GRAND TOTAL	13,226	

a/ Estimated, assuming 1,000 trees planted per hectare.

in these cases, the corresponding areas planted have been estimated assuming that 1,000 trees were planted on each hectare, recognizing that the actual number of trees per hectare varies widely from 300-400, to over 2,500, depending upon species and purpose of planting. Thus, over 13,000 hectares have been planted with more than 18.3 million trees under ongoing AID-supported forestry-related projects in 18 countries as of the end of FY 1981. In Africa, an estimated 3,000 hectares have been planted in six countries; in Asia, about 3,600 hectares have been planted in five countries; and in Latin America, an estimated 7,700 hectares have been planted in seven countries.

PL 480 programs are important not only because they provide food to food-deficit countries but also because the local currency generated from the sale of the food under Titles I and III loans can be used to finance development activities, including forestry activities. In many cases, these activities are not directly attributable to PL 480. In others, the local currency is earmarked for forestry development through specific loan provisions. Therefore, comprehensive information is not available to indicate how much local currency is allocated by host countries to support forestry-related activities. However, several examples illustrate the importance of PL 480 in supporting forestry activities.

In Morocco, an estimated $25,000,000 of local currency generated from the sale of Title I food aid in FY 1982, and an estimated $50,000,000 in FY 1983, is expected to be used by the government to support forestry-related activities, including the planting of trees on 40,000 hectares of land over a two year period.

In Bolivia, two subproject agreements under Title III will support forestry development activities, including tree planting. Under one activity,

$961,000 of local currency will finance tree nursery establishment and tree planting; a total of 5,080 hectares will be planted with 10,710,000 trees from FY 1980 to FY 1983. Some 1,450 hectares have been planted with 3,320,000 trees as of September 30, 1981. The other activity provides $557,000 of local currency to finance the planting of 2,000 hectares with 4,968,000 trees over a two year period.

The Government of Peru is allocating $590,375 of local currency generated from Title I sales to support forestry activities over a five year period. Bilateral Development Assistance funds ($940,000), Private Voluntary Organization revenues ($60,000), and Title II Food for Work resources ($3,464,000) are complementing this effort. More than 107 million trees will be planted on over 78,000 hectares during the five years.

Food for Work programs and contributions to the Word Food Program (WFP) of the United Nations -- both financed under Title II of PL 480 -- will support a substantial amount of tree planting activity. While comprehensive information is not available to indicate the number of hectares or the number of trees being planted under all Title II food aid programs, Table 4 lists four Food for Work tree planting projects which, together, will finance the planting of over 140,000 hectares of trees over approximately four years.

Table 5 lists nine World Food Program forestry-related projects which the U.S. is supporting under Title II. Even this partial list involves a financial commitment to forestry of more than $60 million. Since the WFP may be providing as much as $200-250 million for ongoing and planned forestry-related projects, and because the U.S. generally provides 20-25 percent of the funding for the WFP, then the U.S. contribution to WFP forestry projects is probably about $40-50 million over approximately four years. Even if WFP tree planting

TABLE 4. A Selective List of Forestry Projects Supported under Title II Food for Work Programs

Country	LOP Funding[a/] (000 U.S. $)	Hectares to be Planted	Trees to be Planted
Upper Volta	633	1,662	1,246,000
Indonesia	1,626	62,340	37,404,000
India		11,239	-
Peru	3,464	78,154	-

a/ Allocated entirely to forestry.

TABLE 5. A Selective List of Forestry-related Projects Supported by the U.S. (Title II) under the World Food Program

Country/Project No.	LOP Funding (000 U.S. $)	Forestry Component (000 U.S. $)
Cape Verde (2249; planned)	6,750	675
Ghana (2075)	12,380	12,380
Ghana (2258)	1,920	1,920
Lesotho (352)	9,684	2,421
Mozambique (2514)	19,311	9,655
Senegal (2236)	6,900	2,277
Somalia (719)	15,107	15,107
India (572)	11,127	11,127
Tunisia (2493)	15,173	7,586
TOTAL	98,352	63,148

activities were only 25 percent as cost effective as AID Food for Work efforts in Peru (as measured by the value of the food) then $40 million of food contributed to WFP would permit 225,000 hectares of tree planting.

Finally, at least a modest amouont of tree planting is associated with Title II, Section 206 emergency food aid. In Cape Verde, for example, $73,500 of Section 206 food aid will support the planting of about 245,000 trees between FY 1980 and FY 1983.

The following examples are illustrative of recent forestry-related activities supported by AID. In Honduras, the government is beginning to staff a new institution which will be responsible for the Natural Resources Management Project. The Request for Technical Proposals to provide technical assistance under the project has been published and a number of responses are expected. In Panama, an important step has been taken to strengthen the technical aspects of the Watershed Management Project through the provision of additional U.S. expertise.

The integrated forestry project in Morocco supports training, applied research, and improvement of the management capacity of the Government's Water and Forests Department. The applied research activity will explore the feasibility of reforestation of mountain desert regions with argan, a species unique to Morocco.

The Forestry Education and Development Project in Upper Volta is expanding and improving the training facilities of the country's forestry school and will train 40 graduate technicians per year. The project will also support a substantial reorientation and intensification of the management of the national forest, where the school is located and where on-the-ground technical training will take place. In Niger, through the Forest Land Use Planning Project, AID

is helping to establish a functional planning and managerial capability within the Ministry of Rural Development and to prepare a long-erm perspective plan for the rehabilitation, conservation and protection of the country's soils and natural vegetation. This is being accomplished through: (a) creation of a technical Planning Unit within the Waters and Forest Service; (b) establishment of "model sites" in the major ecological zones in the country for experimental activities; and (c) compilation of a natural resource inventory.

III. Strengthening Forestry Capacity

Table 2 showed that "forestry capacity building" in developing countries constitutes the primary thrust of AID-supported forestry activities. This emphasis is likely to continue. However, this will require substantial technical expertise to design, manage, and backstop the growing portfolio of projects related to forestry development and natural resource management at a time when the federal government is experiencing major personnel reductions. AID will continue to use four complementary approaches to expanding its professional staff capabilities:

1. selective augmentation and training of direct-hire staff;
2. expanded personal service contracts at key posts;
3. the PASA mechanism to provide short-term staff specialists; and
4. additional host country personnel training and public education efforts.

1. Direct-Hire Staff Training and Augmentation. One of the more direct approaches to improving staff capabilities is to train staff already on-board in the new skill areas required. Approximately 50 AID staff personnel participating in the Development Studies Program have received

intensive training on resource issues, including about 15 hours of lectures and symposia on forestry, energy, and natural resource use. While this will not make them "foresters" or "land use planners," they (and other AID project managers) will be more sensitive to the forestry dimensions of energy, agriculture, and rural development problems.

Conferences and workshops involving AID staff provide another means to improve staff capabilities. The Africa Bureau held a conference on energy, forestry and the environment in Nairobi in December 1981, involving over 80 participants and speakers from AID, the Peace Corps, national forestry services, research organizations, FAO, and the private sector. The conference provided an excellent opportunity for an exchange of views and considerable cross-fertilization of ideas. The Asia Bureau is planning a similar regional conference for professional staff in March 1982. That conference will examine the role of development assistance for forestry in Asia and identify opportunities for AID programs in various countries. Representatives from other donor organizations will be invited as well as host country and international experts.

In addition to these fairly major staff development efforts, a number of informal seminars and discussions on forestry have been held in AID/Washington. Some of the more recent sessions included:

-- a report on the research findings of Dr. Peter Felker concerning the growth and productivity of Prosopis varieties;
-- a discussion of soil survey methods for fuelwood plantations;
-- a slide presentation on the development of the National Academy of Science publication on "Firewood Crops";
-- a meeting with representatives of the International Center for Research on Agroforestry (ICRAF), including the new

Director, Dr. Bjorn Lundgren, on the work plans of ICRAF for the coming years; and

-- a discussion of observations made by researchers of the U.S. Forest Service who had recently returned from several Asian countries.

2. Personal Service Contracts (PSCs). The use of personal service contracts to obtain the services of forestry specialists to work closely with AID direct-hire staff in Missions and with host country counterparts helps strengthen staff resources and ensures that new forestry projects are well designed, appropriately funded and adequately managed and supported in the early stages of implementation. The expertise provided under seven PSCs in 1981 in Asia, Latin America, and Africa is expected to be an important supplement to AID direct-hire staff. For the most part they are providing technical advice and judgement to the several Missions in each region or sub-region. Personnel under two of the contracts are working with both a Mission and a developing country regional organization.

3. Participating Agency Service Agreements (PASAs). PASAs with the U.S. Forest Service help complement Agency personnel capabilities, and the Peace Corps PASA will play a role in developing host country counterpart capabilities at the project level.

The Forest Service PASAs are coordinated under the Forest Support Program (FSP) which was established to provide a close working relationship between AID and the professional forestry and natural resource community. The FSP allows AID to tap the forestry expertise of universities and other organizations. It also provides a small, but readily accessible, source of

technical expertise within AID's own staff. It consists of seven professional forestry and natural resource specialists who have overseas development experience with FAO, AID, the Peace Corps, or other organizations. They are available to provide technical assistance to the field or to arrange for other consultants as needed. Experts under the PSCs in Costa Rica (ROCAP), Kenya (REDSO/EA), and USAID/Indonesia work as close associates with the specialists provided under the FSP.

In addition to providing technical services, the FSP:

-- helps to identify local qualified staff for AID or cooperative AID/Peace Corps forestry projects overseas as well as qualified institutions for participation in AID forestry projects;

-- helps to locate specialized consultants for short-term technical assistance and for project identification, design, evaluation, and review in such specific areas as watershed management, forest economics, remote sensing, agroforestry, plantation establishment, entomology, soils, and biometrics; more than 600 persons with skills in these and other areas have already been identified; and

-- provides general forestry information to AID and the Peace Corps and facilitates the exchange of information among natural resources personnel.

4. Host Country Training and Public Education. Nearly all forestry projects include a training element. In Latin America, however, training courses to upgrade professional skills in host countries and public education efforts to increase general forestry awareness have been given a special emphasis. A $150,000 grant to CATIE will support the development of a

watershed management training program. This will require qualified technical assistance, and so far, 800 resumes have been scrutinized -- with the help of the FSP. It is expected that this training program will significantly alleviate the manpower constraint in watershed management throughout the Caribbean Basin.

An AID grant to a private foundation in Ecuador will finance the development of public education films on environmental problems in that country; this illustrates another approach to training. These films will be used to inform the general public of the adverse impacts of various factors (including population growth) on the natural resource base. They will draw upon the analytical information collected under an earlier environmental analysis project with the same foundation, also sponsored by AID. While such efforts may not directly affect any particular forestry project, they will help to make the forestry-related work of AID and the host country more effective in the long run.

These four approaches to strengthening AID's professional forestry capacity are supplemented by formal collaborative relationships. Structured programs of cooperation in the area of forestry have been established with the Peace Corps, the Food and Agriculture Organization, and the CDA (Cooperation for Development in Africa) group of donors.

1. The Peace Corps. Although funded in tandem with the Forestry Support Program, the Peace Corps/AID collaborative effort is designed to achieve different objectives. Rather than providing experienced technical expertise to complement AID's own staff, the Peace Corps activity is intended to develop better-qualified forestry volunteers and host-country counterparts, particularly in countries where AID and the Peace Corps are already imple-

menting joint programs. The Peace Corps has carried out a series of 25 country needs analyses as a basis for country programming. Training materials have been developed for two countries in which expanded forestry programs are planned; 20 volunteers have been trained with these materials to work on forestry projects in Ecuador and 11 more have been trained for Paraguay. In-country workshop training materials (which will enhance skills for host country counterparts as well as PCVs) will be developed in the coming year. In addition, regional forestry workshops involving the Peace Corps, AID, and host country participants have been held in Costa Rica (June 1981) and the Philippines (December 1981).

2. The Food and Agriculture Organization (FAO). AID's Africa Bureau, in particular, is working collaboratively with FAO. Two agreements have been signed to facilitate AID utilization of FAO expertise in forestry and other disciplines. The first provides a grant through the CILSS (the Sahelian country group) and the Club du Sahel (the parallel donor group) which has already funded a forester for one-year to assess the forestry situation in the Sahel and to identify potential second generation efforts which donors might support. Since the CILSS mechanism covers only the Sahel, a second grant is designed to be responsive to requests for assistance from the rest of sub-Saharan Africa. In addition, an unsolicited proposal from FAO was used by the Africa Bureau as a means for alerting Missions to the capabilities of FAO and for sensitizing them to FAO's interests in strengthening cooperative relationships.

3. The Cooperation for Development in Africa (CDA) Group. The members of the CDA Group (the United Kingdom, Belgium, Canada, France, Germany, and the

U.S.) have agreed to collaborate more closely to encourage African governments to undertake expanded national programs in reforestation and fuelwood supply. Members have also agreed to begin a joint programming process in five countries: Senegal, Malawi, Somalia, Burundi, and Upper Volta. The U.S. has emphasized the importance of generating joint in-country reviews to: (a) quantify reforestation and fuelwood supply needs, including the implied land requirements; and (b) inventory both African and donor efforts in terms of their effectiveness in providing the main components required for successful national programs. The CDA Group considers it important that African governments review their fuelwood needs before identifying additional projects for donor support.

Of the projects listed in Tables 1 and 2, 16 involve some degree of forestry research. Many of these research efforts are applied, or will be applied, to problems in the locations in which they are to be carried out. About $9.5 million has been allocated to finance these research initiatives; total project funding in which these research activities are included exceeds $180 million (See Annex D). Funds allocated to forestry research are more than twice as great in Asia and Latin America ($3.3 million and $2.7 million, respectively) as in Africa ($1.6 million); in the Near East, forestry research is negligible. The objectives of these research activities vary. The African research emphasis is on energy needs, while in Latin America, natural resource management and forestry development are dominant. The Asian research programs (and forestry programs in general) are less specialized; they include agroforestry, watershed management, resource conservation, and energy.

In addition to these applied research components of larger projects, regional bureaus are sponsoring other types of forestry-related research as follows:

1. Africa. Five ongoing research projects in this region address both technical and socio-economic issues associated with forestry programs:

-- a micro-catchment research project in Upper Volta will assist in establishing newly-planted seedlings in an arid, degraded environment; the first year of tests was promising;

-- potential constraints and incentives in local administrative structures, especially in relation to land and tree tenure (Upper Volta and Niger), will be identified;

-- the success and failure of "forestry funds" in providing sustained sources of revenue for forestry programs will be examined;

-- the economics of village level woodlots are being empirically examined in Mali;

-- a manual for small scale nursery development by semi-professionals is being developed;

-- a methodology for assessing the importance of natural vegetation to local people in quantitative, economic terms is being done with the assistance of S&T/Energy; and

-- a systematic assessment of the potential role of agroforestry in Sahelian food production systems is another technically oriented research project. The National Academy of Sciences will look at (a) selection of appropriate species for field trees, living fences, windbreaks, shelter belts, and compound plantings; (b) selection of better-adapted crops to the local environment; and (c) questions of species compatibility within agroforestry systems.

2. Asia. The Asia Bureau is currently assessing forestry research priorities in relationship to key problems and institutional capacities. Forestry sector assessment teams are planned this year to visit several Asian countries to address this issue. In India, plans are being made to support two biomass research centers that will have direct links with the state's social forestry programs.

3. Latin America. Support to the CATIE program of species trials for fuelwood in the Central American region is continuing. The national environmental and natural resource profiling efforts in Peru, Ecuador, Panama, Honduras and the Dominican Republic have also shown gratifying resuls. In the Dominican Republic, the Environmental Profile now regularly apears in local newspapers. The first printing of 200 copies in Spanish has long been been sold out, and orders for the next edition already exceed the number in circulation. In Ecuador and Honduras, the profiles have generated similarly high levels of interest. As indicated above, the Ecuador profile will provide material for a broad public education effort now being undertaken by the Fundacion Natura.