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U.S. FORESTRY AND ECOLOGY
PROGRAM IN THE SAHEL

by

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INTRODUCTION

This paper has been prepared in partial fulfillment of Contract No. AID/afr-C-1453. It describes the Forestry and Ecology Program of the Club of the Sahel, and the U.S. contribution of this important regional effort to arrest and reverse the process of desertification in sub-Sahara Africa.

The credit for the bulk of the current U.S. program lies with the AID field missions. Working in close cooperation with the host country governments, they have formulated projects designed to address the problems of deforestation, firewood shortages, and the general deterioration of the Sahel's natural resource base. The Peace Corps and some private voluntary organizations have also made important contributions to addressing these problems.

My special thanks goes to Fred Weber, who has generously shared with me the knowledge and insights he has gained from 14 years of forestry-related experience in the Sahel. And my warm appreciation goes to Tom Greathouse of the U.S. Forest Service, who will soon become the Africa Bureau's resident forester. They have provided invaluable guidance and assistance to the field missions and AID/Washington in the formulation of the U.S. Program in Ecology and Forestry.

C. Ulinski
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CHAPTER I

THE CLUB FORESTRY AND ECOLOGY PROGRAM

The Sahel is the semiarid zone in West Africa sandwiched between the Sahara desert to the north and the tropical rain forests to the south. As implied by its arabic definition as "border," the Sahel is a marginal area characterized by variable rainfall and periodic drought. From 1968-1974, the life-giving rains failed. Although drought is a historical, climatic phenomenon, this one was distinguished from similar occurrences in the past by the heavy toll in human and animal life. Suffering caused by this natural catastrophe was widely publicized, and the donor community responded generously with emergency relief efforts.

Given the magnitude of the problem, a coordinated, international development effort is required to reduce the region's vulnerability to recurring drought. To this end, the Sahelians (represented by the CILSS)^{1/} and the donor community formed a consortium known as the Club of the Sahel. The objective of the Club is to undertake long-range planning and programming for increasing the region's agricultural productivity while maintaining an ecological balance. To this end, nine working teams were established to design first generation programs. Each team is composed of representatives from the various Sahelian countries and the donor community.

The Forestry and Ecology Working Team met in late 1976 and again in the spring of 1977 to guide, review and approve the draft of the first generation program for Forestry.^{2/} The actual work was undertaken by CILSS with assistance from FAO. This program seeks to address the problems identified during the CILSS/UNSO/FAO meeting on "The Role of Forestry in the Rehabilitation of the Sahel," held in Dakar, Senegal in May 1976:

- Production of fuelwood for local populations. (The major source of fuel in rural areas of the Sahel--wood--is becoming scarce, and the indiscriminate cutting of wood and vegetation to satisfy these fuel requirements has contributed to the process of desertification.);

^{1/}The CILSS (Comite Permanent Interetats de Lutte Contre la Secheresse dans le Sahel) was formed in 1973 for the purpose of mobilizing external financing for development projects. Policy is established by the Heads of State through the Council of Ministers. A growing secretariat, based in Ouagadougou, is responsible for implementing the decisions of the Council. The CILSS is playing a major role in the coordination, design and implementation of programs formulated under the auspices of the Club of the Sahel.

^{2/}See Appendix 1 for the list of participants in the Second (and last) Meeting of the Ecology and Forestry Working Team.

- Protection of existing forests from uncontrollable exploitation and forest fires;
- Management of forests for the purpose of meeting the needs of people;
- Establishment of a range management system. (The lack of a management system in all countries has resulted in a progressive deterioration of the range).^{3/}

The overall objective of the CILSS forestry program is the improved management of natural resources so as to:

- Satisfy needs for cooking and heating;
- Preserve productive land against the encroachment of the desert;
- Enhance soil fertility;
- Conserve and more efficiently utilize fauna and flora, an important traditional source of nutrition.

The first generation program, consisting of four sub-programs, offers a framework for coordinating forestry and resource management activities for the short and medium term. Each sub-program consists of national (and in some cases regional) projects:^{4/}

Subprogram A: Production of wood for fuel and timber. Activities include the establishment of plantations (e.g. large-scale, village-level, greenbelts around urban areas); and improved management of existing forests.

Subprogram B: Integrated agro-sylvo-pastoral operations. (Illustrative activities include windbreaks in agricultural areas; firebreaks; soil conservation measures; range management).

Subprogram C: Wildlife conservation and utilization. These projects provide for the development of management plans for protection of wildlife and the restoration of their natural habitat, as well as production of meat from wild animals for local consumption.

^{3/} Ecology and Environment Team of the CILSS/Club of the Sahel, Note de Synthèse Sur La Stratégie Forestière au Sahel, April 1977.

^{4/} Upon the request of CILSS, each national government submitted its priority forestry-related projects for which it was seeking funding. These projects have been included in the first generation program.

Subprogram D: Education, Training and Research. The purpose of this sub-program is to strengthen local capacity to implement the CILSS Forestry Program. Projects include regional seminars; scholarships for overseas training; reinforcement of existing national educational institutions; the creation of new educational facilities; and a coordinated research program to be conducted under the aegis of the Sahel Institute.

The first generation program only begins to address the needs identified by the Sahelians in May 1976. For example, the projects for wood production only partially satisfy the projected demand for firewood. No calculation has yet been made to determine the total area in the Sahel needing restorative interventions. Such a determination would require a study based upon remote sensing, aerial photography and ground truth surveys. However, the national forestry services have identified areas in their respective countries most in need of immediate assistance, covering an aggregate area of 170,000 hectares. The estimated cost of the first generation program is \$175 million (FY 1976 figures). The cost of the entire program, over a 20 year period, is estimated to amount to \$450 million.

As noted above, the CILSS Ecology and Forestry Program is only a first step toward addressing the natural resource problems in the Sahel. In many ways it is incomplete and inadequate. One explanation is that the initial planning phase was limited to 6 months, in order that the program be ready for presentation to the Second Meeting of the Club of the Sahel (Ottawa, May-June 1977). However, planning and programming are continuous processes and are being undertaken by the Ecology and Forestry Unit of the CILSS. Robert Winterbottom, an American ecologist working in CILSS, has a unique perspective on the CILSS forestry program. In a letter to William Gamon of the Peace Corps, he wrote the following:

Having lived and worked in the Sahel only a relatively short time, I am nonetheless acutely aware of the magnitude of activities in natural resource conservation and management that need to be initiated and supported. In many respects, the CILSS program of \$175 million -- even if fully financed and implemented -- is clearly insufficient to effectively deal with problems of deforestation, overgrazing and loss of vegetative cover, erosion and declining soil fertility, and misuse and overexploitation of forests, pastures, farmland, fisheries and wildlife resources. But the transition from uncontrolled overuse of resources to sustained-yield multiple-use management is a difficult one, and can only be undertaken gradually. This is not to deny that the needs are urgent and basic, and the costs of not doing enough soon enough are incalculable. More importantly, perhaps, the transition must be achieved as a result of Sahelians sensing the need for it and leading the way. The effort will fail if foreign assistance agencies become impatient with the pace of program development, and attempt to take the initiative away from the Sahelians and into expatriot hands.^{5/}

^{5/}Letter from Robert Winterbottom to William Gamon, September 1978.

In October 1977 the Club organized a donor reforestation meeting, held in Paris, France. The purpose of the meeting was to obtain specific, concrete pledges of support from the donor community for the overall program and for specific projects. This meeting was convened in direct response to a request by the Club to give urgent priority to the CILSS reforestation program. Attendees included representatives from Germany, France, Norway, the Netherlands, Switzerland, U.S., International Bank for Reconstruction and Development, FAO, Arab Bank for Economic Development in Africa, and the European Development Fund.

The U.S. delegation included representatives from AID, Peace Corps and U.S. Department of Agriculture (Soil Conservation Service). The U.S. expressed strong support for the work of the Ecology and Forestry Working Team, and expressed an interest to commit substantial financial and technical assistance to achieving the goals of the forestry program. More specifically, AID outlined plans to support bilateral activities in Senegal, Mauritania, Cape Verde, the Gambia, Niger and Upper Volta over the next several years.^{6/} In addition, interest was expressed in a regional soil conservation training program being proposed by the CILSS. Table I summarizes current U.S. commitments to the Club program.

This report comes 1 year after the Paris Reforestation Meeting. It is an account of AID's Forestry and Ecology Program in Sahel West Africa. Some of these activities, such as the CARE Acadia albida project, precede the elaboration of the regional Club/CILSS program but are nevertheless important contributions to the same objectives. Other activities, such as the Upper Volta Forestry Education and Development project, are receiving U.S. support as a direct result of our participation in the Club effort. And yet others, such as the proposed Firewood Study, are U.S. initiatives in response to growing U.S. recognition of the importance of forestry in developing countries. In the aggregate, these projects represent the U.S. contribution to arresting and reversing the process of desertification, and to rehabilitating and enhancing the Sahel's natural resources for the benefit of its inhabitants.

^{6/} See Appendix 2 for the reporting cable on the Donor's Forestry Meeting, sent to all Sahel field missions. This cable describes donor commitments (including U.S.) to the Club Forestry and Ecology Program.

Table I. U.S. Contribution to the Club Ecology and Forestry Program (in \$000)

AID PROJECT	CORRESPONDING CILSS PROJECT	PROJECT START	LOP FUNDING
Mauritania Renewable Resources Management	<ul style="list-style-type: none"> • Mau B 301 - Protection/Management of Forests (portions) • Mau B 302 - Dune Fixation Mederdra and Boutilimit • Mau B 304 - Range Management (portions) 	1978	4,677.7
Senegal Fuelwood Production	<ul style="list-style-type: none"> • Sen A 302 - Greenbelt Around Urban Areas 	1979	3,200
SODESP Livestock Production • Wellpoint Rehabilitation through Reforestation	<ul style="list-style-type: none"> • Sen B 301 - Rehabilitation and Reforestation of Wellpoints in the Sylvo-Pastoral Zone (portions) 	1979	831
Dune Fixation and Protection of the Niayes	<ul style="list-style-type: none"> • Sen B 302 - Dune Fixation and Protection of the Niayes 	1980	3,500
Planting <u>Acacia albida</u> in Farm Fields	<ul style="list-style-type: none"> • Sen B 304 - Planting <u>Acacia albida</u> in Farm Fields 	Undetermined	Undetermined
Upper Volta Forestry Education and Management	<ul style="list-style-type: none"> • UV A 304 - Forestry Management of Dinderesso • UV D 301 - Dinderesso Forestry Training Center 	1979	4,129
Gambia Reforestation	<ul style="list-style-type: none"> • A 301 - Integrated Forestry (portions) Coordinated Effort with Federal Republic of Germany 	1979	1,500

AID PROJECT	CORRESPONDING CILSS PROJECT	PROJECT START	LOP FUNDING
Cape Verde Watershed Management	<ul style="list-style-type: none"> • CVI B 303 - Soil Conservation (Sao Jao Baptista, Grande Sao Martinho, Sao Martinho Pequeno) • CVI B 305 - Soil Conservation (Riberia Saltos, Flamengo and Sao Miguel) • CVI B 306 - Watershed Management (Santa Cruz) 	1979	5,000
Niger Forestry and Land-Use Planning	Not a CILSS Project. U.S. has requested that this be included in 1st Generation Program.	1979	4,000
REGIONAL ACTIVITIES:			
<p>Sahel Regional Aid and Coordination</p> <ul style="list-style-type: none"> • Provision of Full-Time Ecologist to CILSS Forestry and Ecology Unit • Two Months of Consulting Services in 1978 <p>Soil Conservation Training Program</p>	<ul style="list-style-type: none"> • RAF 304 - CILSS Technical Unit (portion) • RAF 304 - CILSS Technical Unit (portion) • D 301 - Soil Conservation Training Program 	<p>1977</p> <p>1978</p> <p>Undetermined</p>	<p>Personal Services Contract with AID</p> <p>Contract with OECD</p> <p>Undetermined</p>

CHAPTER II

THE U.S. FORESTRY AND ECOLOGY PROGRAM

This chapter contains detailed information on a project-by-project basis of the current and proposed AID program in Forestry and Ecology. It also describes some of the activities being carried out by Peace Corps and U.S. private voluntary organizations. This chapter does not, however, pretend to include information on all U.S. supported forestry activities in the Sahel. For example, it does not cover AID-funded projects which have a forestry component to them, such as the Niamey Department Productivity project. And lack of information on the activities of private voluntary organizations (with the exception of the CARE project in Chad) has precluded the author from making more than a passing reference to these efforts.

CARE Acacia albida

Prior to the creation of the Club of the Sahel, the U.S. provided emergency relief and rehabilitation assistance to the drought-stricken countries of sub-Saharan Africa. Some of these activities were implemented by private voluntary organizations (PVO's) with AID funding. A case in point is the Acacia albida project in Chad, implemented by CARE with Peace Corps participation. It is one of the earliest forestry activities supported by AID in the Sahel. A midpoint evaluation was recently completed and submitted to AID,^{7/} and provides some useful information for designing and implementing similar activities in the Sahel.

The purpose of the project is "to establish the Acacia albida tree as a recognized low-cost technology which will produce increased food supply for subsistence farmers, and to establish the concept of cultivating firewood as a domestic crop with concomitant protection of the environment."^{8/} Projected outputs include: the establishment of nurseries; planting trees for increasing soil fertility and providing firewood, windbreaks, and food; and encouraging local farmers to actively participate in project implementation. The results of the evaluation are very encouraging: the project is meeting planting targets as scheduled, with one exception.^{9/} And perhaps equally important

^{7/}Fred Weber and Maryanne Dulansey, Midpoint Evaluation: Chad Reforestation Project, Prepared for CARE, Inc. (Washington, D.C.: Consultants in Development, April 1978).

^{8/}CARE Acacia Albida, Program Description, Grant No. AID/af, -G-1251.

^{9/}The exception is the live fencing component. Weber, Midpoint Evaluation, p. 38.

to the actual number of trees planted and surviving is the apparent enthusiasm, interest and participation of the Chadian forestry agents and local farmers. Twelve Chadian forestry agents have been working full time on the project. Over 3,000 farmers (heads of households) have been contacted and approximately 1,850 have actually participated in the project.

The experiences in Chad with the CARE project refute some of the widely held myths that developing country government personnel and rural populations invariably lack the knowledge and commitment necessary to plant, nurture and protect trees. The authors contend that this perceived lack of interest, enthusiasm and initiative can be attributed to a lack of resources:

"In this project, as under similar conditions in the Sahel, outside donors sometimes assume at the onset that the host country agents know little, if anything. More often than not this turns out to be false, and becomes a source of embarrassment. The reason for this apparent lack of knowledge is simply that without a project, host country agents do not have the necessary means to apply their knowledge and exercise their skills--no way to get around, no money for labor, no equipment, no tools, no direction for their work. Once the money, equipment, vehicles and the authorization to begin have been obtained, they generally display good, solid attitudes as well as some rather significant know-how, dexterity, initiative, and commitments. They get a job done under often difficult conditions and against rather formidable odds. A failure on the part of outside donors to appreciate this is counterproductive to close and fruitful cooperation between the donor and the host agency.

The same holds true for the "target population." Farmers might be hard pressed to grow enough to eat from one season to the next; the country's resources (and its rains) may be marginal at best to guarantee everyone fulfillment of basic human needs. Existence and "poverty" levels in the project villages may be among the lowest in the world. Yet that does not mean that "the people" do not know how to plant a tree or how to pole some sticks in the ground and lay some thorn branches around them for protection against the goats. Then why aren't they doing it on their own? Because it costs money to raise trees in nurseries and to haul them to the fields. Besides it takes some basic energy for someone to go out, collect sticks and branches and then place them in accordance with specified (common sense) procedures. If people are half-starved, perhaps sick, and it is 120 degrees in the shade, it should not be surprising that they do not undertake these efforts with vigor, confidence in the future and a healthy, basic belief that hard work will pay off in the long run."^{10/}

^{10/} Ibid., p. 42-43.

The logical conclusion is that, all else being equal, forestry activities can succeed if and when the required resources are available.

The evaluation also refutes the belief that highly trained foresters are needed to successfully implement projects. On the contrary, the authors assert that much is already known about forestry at the local level, and that the amount of technical assistance required is minimal:

"Basic activities such as building a fence, filling plastic pots with dirt, planting a tree in a farm field are, by their nature, not so complicated that a great deal of academic, conceptual "learning" is necessary, especially as the "students" know the country, the farmers, and the existing land use practices far better than someone fresh off the plane.

Thus it is somewhat presumptuous to speak of training. It is rather a situation in which all concerned learn together. When extensive outside financing is available, newer, perhaps more expensive material and equipment can be "deployed" in which case the host country personnel face the task of learning how to use them effectively. Introduction of modern nursery and transplanting techniques during the course of this project has been a challenge to the Chadian technicians involved. They observed and learned to use the newly available resources simply by imitating the pilot efforts made by the CARE project technicians. During their frequent visits to the nursery and job sites, they answer questions, talk with people, and encourage them to try new ideas on a small scale and to compare them with older, established methods. This is the "methodology" used to help the local people find out themselves, by experience, what works better and what new procedures can be applied practically in social and cultural context.

Peace Corps volunteers assigned to the project learn alongside their Chadian friends and counterparts to do the job better, faster, more effectively. It is much more a learning-together scene than it is "transfer of technology," technical assistance as believed to be needed by outsiders who are not aware of how much intrinsic know-how already exists in the field."^{11/}

This suggests that private voluntary organizations and Peace Corps can play an important role in assisting local people at the village level to successfully implement forestry-related activities. The possibilities for increased cooperation among AID, PVO's and Peace Corps is discussed in greater detail in another section of this report.

A major recommendation of the evaluation is that emphasis should now be placed on protecting the trees that have been planted until they are 5 years

^{11/} Ibid., pp. 43-44.

old, thereby increasing their chances for survival.^{12/} Economic constraints resulting from Chad's national security problem may prevent the government from providing continued support to this activity after the AID project ends. For this reason, AID might wish to consider providing additional resources to protect these trees.

Based upon the experience gained in Chad, the CARE technicians have prepared a field manual which contains detailed information on planting Acacia albida in farm fields; planting trees for shade; establishing woodlots; and planting live fencing. CARE plans to translate the manual into French. Once available, this could become a valuable field guide in other Sahel countries.

Mauritania Renewable Resources Management

Begun in 1978, the purpose of this project is to assist the Government of Mauritania (GIRM) to develop an integrated program for the management and conservation of its renewable resources. To be carried out over 5 years, the project is designed to generate information on existing natural resources, test specific interventions, and train a cadre of Mauritanian technical and extension personnel. These activities are consistent with the priorities identified by the CILSS, and correspond in part to projects included in the CILSS Reforestation Program (CILSS B 301, B 302 and B 304). Life of project funding is \$4,677,700.^{13/}

The project consists of three major elements. The first is a survey and inventory of the country's natural resources. This baseline data will be collected through a combination of satellite imagery, aerial photography and field observation. Maps and photomosaics will show vegetation, soils, water and terrain features. This information will provide the basis for a long-term resource management plan.

The second major component of the project is a series of pilot interventions to test specific approaches for undertaking resource conservation and rehabilitation. One of the proposed interventions is the management of two forest reserves: Tine Yera and Perimetre de Reboisement. These reserves are in close proximity to Mederdra, the site of a dune stabilization activity to be carried out under this project. Supplies of seedlings will be obtained from the Mederdra nursery. Illustrative activities include:

- A survey of the two reserves;
- Development of a program for reforestation in each reserve;

^{12/} Ibid., pp. 39 and 49.

^{13/} Agency for International Development, Mauritania Renewable Resources Management, Project Paper.

- Recommendations for tree species which will meet local needs for fuelwood and charcoal;
- Planting seedlings of selected varieties;
- A determination of the material and personnel requirements for undertaking a reforestation program;
- Establishing preliminary exploitation rates.

This activity is small-scale, tentative and exploratory. The government agency responsible for reforestation activities (Service for the Protection of Nature) has neither the staff nor the resources necessary for undertaking a large reforestation activity at this time. It is hoped that the experience gained in undertaking this effort will strengthen the Mauritanian capacity to develop and implement a larger reforestation program at some future time.

A second pilot intervention is to stabilize the dunes in Boutilimit and Mederdra, primarily through revegetation. Nurseries will be established in each town. Natural and exotic species will be tested. The nursery will serve as a demonstration center where local people can learn appropriate horticultural and silvicultural practices.

The third intervention is the establishment of two grazing reserves, and includes the following activities:

- Development of water resources;
- Revegetation;
- Establishment of grazing controls; and
- Education of the herders to the necessity of these controls.

The project provides for short and long-term training of Mauritanian personnel. Approximately 40 Mauritanians will be trained in extension methods for resource conservation and management. Nine will be trained in Landsat photo-interpretation, and 2 will undergo long-term training in resource management.

Upper Volta Forestry Education and Development

In February 1978 the U.S. participated in a multi-donor forestry mission in Upper Volta. The mission was organized and chaired by the CILSS, and was attended by representatives of Canada, Germany, Switzerland, Holland, the World Bank, France, UNDP/FAO and the U.S. The Government of Upper Volta (GOUV) presented a portfolio of forestry activities, for which it was seeking funding, to donors for their consideration. The U.S. expressed an interest in supporting two of these activities (UPV D 301: Dinderesso Forestry Training Center; and A 304: Forestry Management at Dinderesso)^{14/} and subsequently fielded a team to design the project.

^{14/} Agency for International Development, Upper Volta Forestry Education

The training project is considered a high priority by the GOUV. It will address a major constraint to the ultimate success of the forestry program in Upper Volta: the lack of trained forestry agents. This project will provide support for the improvement and expansion of the current facility. When completed, the school will be able to accommodate 30 D-level agents per year, as compared to the current enrollment of 10 students per year. In addition, 10 C-level agents will be trained annually and periodic refresher courses will be offered to in-service forestry agents.

The forestry management activity in the neighboring national reserve of Dinderesso is an integral part of the AID project, and has two major objectives. First, it will provide a valuable "outdoor classroom" for the forestry students. And secondly, it will provide a national model for the rational development and exploitation of the country's forestry resources. It is anticipated that the management model developed at Dinderesso could be transferred to other Sahelian countries.

This is a 4-year project. The project paper has recently been submitted to AID/W for review and approval. Implementation is scheduled to begin in FY 1979. Life of project funding is estimated at \$4,129,000 with a proposed first year obligation of \$700,000.

Niger Forestry and Land-Use Planning

This is a 4-year project to assist the Government of Niger (GON) to:

- (1) slow down and reverse the existing trends of resource deterioration and
- (2) to better manage the country's renewable resources (soil, water and natural vegetation).^{15/} A major purpose is to strengthen GON's national planning capabilities. To this end, a planning unit will be established within the Water and Forestry Ministry and will have responsibility for coordinating all efforts aimed at the rehabilitation and protection of the country's natural resources. One of the Unit's first activities will be to collect data and prepare resource inventories. This information will provide the basis for developing a long-term, comprehensive conservation and rehabilitation plan.

The project will also support a variety of small-scale field activities for the purposes of:

- field test potential solutions on a small scale before giving them wider application;
- Verify and demonstrate how specific interventions can help achieve the overall objectives of resource rehabilitation and conservation;

^{15/} Agency for International Development, Forestry and Land-Use Planning, Project Identification Document, Niamey, June 1977; and F.R. Weber, Niger Forestry and Land-Use Planning, Project Design Committee Paper, USAID 626-0216, September 1977.

- Provide practical demonstration and full-scale models for extension education efforts;
- Provide sites for in-service training of government personnel.

This project is not included in the CILSS Forestry Program. The GON requested U.S. assistance for this activity in the spring of 1976, prior to the formulation of the Club Program. In response to the GON request, the U.S. commissioned FAO to undertake a feasibility study and make recommendations for a Forestry and Land-Use Planning project. The project was designed by an AID-sponsored team in June 1978. Implementation is expected to commence during FY '79, pending project approval, with a proposed initial obligation of \$886,000. Life of project funding amounts to \$4 million.

Gambia Reforestation

In view of U.S. and German interest in supporting forestry activities, agreement was reached during the Paris Reforestation meeting that CILSS would organize a joint mission to the Gambia to design a forestry program. Because of scheduling and coordination problems, this joint mission never took place. However, Germany and the U.S. are coordinating their respective efforts and a program is taking shape.^{16/} It consists of the following activities:

1. A complete forest inventory based on aerial photography and ground truth surveys, and the preparation of maps of forest areas. Aerial photography will be provided by AID within the context of another AID-financed project (Gambia Mixed Farming Systems Project). The Germans will undertake forest inventories, including on-ground surveys and yield projections.
2. Species/sites trials to experiment with trees for wood, forage, pulp, timber, soil stabilization and regeneration. (Germany)
3. Protection of existing natural forest lands, primarily through demarcation of forest preserves and construction of firebreaks. (Germany)

^{16/}The Gambia Reforestation PID has been modified to accommodate proposed activities to be supported by the Federal Republic of Germany. Several activities included in the PID have been dropped (research program on exotic species, demarcation and fire protection of Gambia's forest preserves) as they are being financed by Germany. The U.S. is giving serious consideration to supporting the exploitation of mangroves, an activity not originally included in the PID. See Agency for International Development, Reforestation in the Gambia, Project Identification Document, Dakar: June 1977.

4. Planting 125 hectares annually of *Gmelina Arborea*. (U.S.) This is an interim planting activity to enable the Government to address in part the country's firewood needs. It would be premature to commence a full-scale reforestation activity until after the completion of the resource inventory and species/sites trials.
5. Training at forestry schools in other African countries or in Europe. (Germany)
6. Exploitation of mangroves. (U.S.) In the event that an anti-salinity barrage is constructed at Yelitenda, as currently proposed, the impounded water would destroy large areas of mangroves. The GOTG is interested in exploiting these resources which would otherwise be wasted. Current estimates indicate that over one million cubic meters of mangroves are involved. This would produce approximately 670,000 cubic meters of sawn timber, sufficient to supply Gambia's needs for the next 60 years.^{17/}

The proposed German contribution to this program for a 3 year period is DM 3.2 million, or approximately \$1.6 million (2 DM = \$1). German funds will not be available until 1980. The U.S. contribution will be about \$1.5 million, with a proposed FY '79 obligation of \$400,000.

Many opportunities, not covered by the above-mentioned program, deserve consideration by donors. These are identified in a Forestry Study of the Gambia River Basin, undertaken by a UNDP Consultant in March 1978.^{18/} The Conservator of Forests for the Gambia has requested U.S. assistance in undertaking a number of these priority activities:

- A Forest Projects Consumption Survey, to determine the consumption of firewood and timber. (This could be carried out as part of a larger firewood study currently being proposed by the Africa Bureau).
- National Tree Planting Program. The Ministry of Agriculture and Natural Resources prepared a proposal for a National Tree Planting Program which was submitted to the President of the Gambia in August 1977.^{19/} Proposed activities include:

^{17/} Cable from Banjul to Washington, Gambia Reforestation Project, Banjul 759/1 dated May 11, 1978.

^{18/} Pierre Huygen, Development of the Gambian River Basin: A Forestry Study of the Basin, February-March 1978.

^{19/} See Appendix 3 of this report for the text of the proposal.

(a) identification of tree species most suited to each part of the country; (b) provision of planting materials; (c) establishment of central tree-nursery facilities in each region; (d) establishment of village level-nurseries to provide planting stock. These village level activities would begin to address rural needs for wood products, and would have a beneficial impact on agricultural land.

The CILSS has also noted the importance of undertaking research into improved management of existing stands and regeneration of local species to permit a better integration of forestry activities into agriculture, animal husbandry and rural development projects.

Cape Verde Watershed Management

Although not a reforestation activity, this project encompasses several activities included in the CILSS Forestry and Ecology Program: CVI B 303, 305, and 306.^{20/} The Project purpose is to increase agricultural productivity by: (1) increasing and improving the use of underground water supplies and (2) decreasing soil erosion. Implementation will proceed in two phases over a 6 year period. During Phase I activities will focus on the river valleys of Santa Cruz, Saltos, Sao Miguel and Flamengos. During Phase II similar efforts will be extended to Sao Jao Baptista, Grande Sao Martinho et Sao Martinho Pequeno. Project outputs will include:

- Development of a plan for each valley for the management and exploitation of water and soil resources;
- Construction of dry masonry check dams;
- Construction of subterranean, impermeable dams;
- Construction of dikes (water catchment);
- Development of a pilot extension program, to include in-country training of extension workers.

^{20/}CVI B 303: Soil Conservation and Rehabilitation in the river basins of Sao Jao Baptista, Grande Sao Martinho and Sao Martinho Pequeno.

CVI B 305: Soil Conservation and Rehabilitation in the river valleys of Saltos, Flamengos and Sao Miguel.

CVI B 306: Partial Management of the Santa Cruz River Basin.

Life of project funding is estimated to be \$5 million. Project implementation is scheduled to commence in FY '79, with an initial obligation of \$1 million. The project paper has been completed and will be reviewed by AID/W in the near future.^{21/}

During the Paris Reforestation Meeting several donors indicated an interest in supporting forestry activities in Cape Verde. The Belgian Government announced plans to provide a grant of \$5 million to the Government of Cape Verde (GOCV) for integrated forestry activities, to be designed and implemented by the FAO. The U.S. indicated its intent to earmark \$1.2 million for several projects on the CILSS Forestry Program. France and Switzerland already had projects underway, but expressed an interest in expanding these activities. It was agreed in Paris that CILSS would organize a multidonor, multidisciplinary mission for the purpose of designing the Belgian and U.S. projects, and to identify and design future projects.^{22/} This mission was to occur in late 1977. Due to coordination problems, Belgium (FAO) and the U.S. each sent out their own design teams.

Recently, CILSS has resurrected the plan to launch a multidonor mission and has requested the GOCV to prepare the terms of reference. The U.S. will undoubtedly receive an invitation to participate. Several considerations need to be considered in formulating a U.S. response. The U.S., and particularly the Africa Bureau of AID, has expressed strong support for forestry activities in developing countries.^{23/} The importance of forestry-related activities to Cape Verde is well documented in the Agricultural Assessment for Cape Verde.^{24/} This study, which was commissioned by AID, was officially presented to the GOCV in September 1978. Two major problems identified in the assessment include the almost total destruction of the country's vegetation, and the lack of fuel for cooking. According to the study, the potential exists for Cape Verde to produce enough fuelwood to satisfy current needs at current consumption rates. Recommended actions include:

^{21/} Agency for International Development, Watershed Management, Project Paper, Praia, Cape Verde.

^{22/} Club du Sahel, Summary Record of Club du Sahel/CILSS Meeting on Ecology and Reforestation, Sahel CR (77)8 Prov., Paris, France: November 18, 1977, p. 9.

^{23/} Department of State, AIDTO - CIRC. A-364, The Firewood Problem in Africa: Report on the AFR Firewood Conference and Request for Field Views, August 29, 1978.

^{24/} Peter H. Freeman, et al., Cape Verde Assessment of the Agricultural Sector: Preliminary Report (McLean, Va.: General Research Corporation, 1978).

- Development of management/conservation programs for each island.
- Establishment of tree plantations to provide forage and fuelwood.
- Controlled grazing and cutting.^{25/}

However, a serious constraint to U.S. support for forestry activities may be a financial one. The U.S. Congress has stipulated that all Sahel activities must be funded from a single source. In addition, Congress has reduced the Sahel Development Program (SDP) budget by \$15 million for FY '79 (from \$90 million to \$75 million). The budget for FY '80 also promises to be tight. This will place severe limits on possibilities for beginning new activities over the next few years which have not already been approved during the FY '80 Annual Budget Submission exercise.

Other constraints include the small size of the USAID mission in Praia (1 AID representative). Addition of new activities may place a heavy strain on the managerial capabilities of the mission. Similarly, AID should determine if Cape Verde can effectively absorb additional assistance at this time.

Senegal Land Conservation and Revegetation

In November 1976 the USAID mission in Senegal submitted a Land Conservation and Revegetation Project Review Paper to AID/W. The proposed project was a composite of four interventions for which the Government of Senegal (GOS) was seeking donor assistance. These activities are also a part of the CILSS first generation program for Forestry and Ecology:

- CILSS A 302: Greenbelt around urban areas
- CILSS B 301: Rehabilitation and Reforestation of wellpoints in the Sylvo-Pastoral Zone
- CILSS B 302: Dune Fixation and Protection of low-lying agricultural lands on the northern coast of Senegal
- CILSS B 303: Bush Fire Control
- CILSS B 304: Planting Acacia albida in farm fields, and establishment of windbreaks

A project design team traveled to Senegal in November 1977. The team was unable to draft an integrated, comprehensive project paper and returned to Washington with an interim report. Subsequently, USAID/Senegal decided to disaggregate the project and to consider the separate activities either as independent projects or as components of larger, AID-financed projects. Three

^{25/} Ibid., pp. 229, 250.

of the original project elements have been included in the 1980 Annual Budget Submission and are in varying degrees of readiness for Washington approval. They are: CILSS A 302, B 301 and B 302. The mission has also shown an interest in supporting the establishment of A. albida in farm fields (B 304) and plans to either incorporate it into Phase II of the Cereals Production Project, or the Greenbelt/Dune Fixation Projects. One intervention in the original project, bush fire control, has been temporarily dropped from AID consideration.^{26/}

Brief descriptions follow of the three projects furthest along in the design/review/approval process.

Rehabilitation and Reforestation in the Sylvo-Pastoral Zone. This activity is part of the SODESP Livestock Production Project, which addresses the problems of low livestock productivity and deterioration of range resources. The objective is to develop a more productive system for raising livestock consistent with the rehabilitation and sound use of range resources.

Overgrazing and overcutting have contributed to the deterioration of resources within a ten kilometer radius of wellpoints. The consequence has been an increase in wind and water erosion and a decrease in forage supplies. One element of the SODESP project is to provide equipment and operating funds for reforestation around selected wellpoints. More specifically, trees will be planted on 300 hectares surrounding each of four wellpoints for a total of 1200 hectares. Trees will also be planted in the villages of participating herders. Senegalise field technicians will be trained in forestry management.

The benefits of this intervention are numerous. Restoration of vegetative cover will reduce wind and water erosion. Soil fertility will be enhanced in areas where leguminous (nitrogen-fixating) species are planted. And, if properly managed, the trees will be a source of:

- shade
- forage
- fuelwood
- construction materials
- fruit
- medicinal herbs
- gum arabic (a cash crop)

Managerial responsibility for this project will rest with SODESP, but the reforestation component will be implemented by the Ministry for Water and Forests. The total amount of U.S. funding for the reforestation activity will be \$831,000.

This is a FY '79 project. The project paper has been completed and is currently being reviewed by AID/W.^{26a/}

^{26/} Cable from Dakar to Ouagadougou, CILSS - Forestry/Ecology Projects in Senegal, Dakar 6683 dated September 8, 1978.

^{26a/} See Agency for International Development, SODESP Livestock Production, Project Paper, Dakar, Senegal: 1978.

Greenbelt Around Thies-Dakar. The purpose of this project is to support reforestation activities in order to reestablish the vegetative cover and to produce wood for fuel. The following activities will be undertaken.

- Establishment of 2 nurseries
- Production of charcoal from existing forests to be cleared prior to site preparation
- Reforestation and management of 3,000 hectares 26b/

This will be a FY '79 project with life of project funding estimated at \$3.2 million. The mission had originally requested \$1.3 million for the first year obligation. However, this figure has been revised downward to \$500,000 in view of Sahel Development Program budgetary constraints.

The project paper has been completed with the exception of the economic analysis. REDSO/WA will provide an economist to complete this section, at which time the PP will be submitted to AID/W for review and approval.

Dune Fixation and Protection of the Niayes Along the Northern Coast of Senegal. Considered a high priority by the GOS, the purpose of this project is to stabilize encroaching dunes and to protect the low-lying agricultural lands between the dunes. In the past, the GOS has devoted considerable resources to similar interventions, some of these dating back to 1949. This project is part of the GOS "Four Year Plan." It would build upon previous efforts and support dune stabilization efforts on a total of 2,000 hectares in Cap Vert, Thies, and Louaga. In addition, 250 hectares of windbreaks will be constructed.

The project will be managed by the Secretariat of Water and Forests, and will be implemented by the Service for Water and Forests. Life of project funding is estimated at \$3.5 million, with a request of \$1 million for the first year (FY '80).26c/

Soil Conservation Training Program

This project is a regional activity (RAF D 301) and is one of a series of training activities for which CILSS is seeking support. Training in soil conservation techniques was designated a high priority by the Sahelians during a meeting of the Ecology Team in Cape Verde (March 1977). The dossier was presented to donors during the Paris Reforestation meeting (October 1977) at which time both the U.S. and France indicated a strong interest in supporting this activity.27/ The Federal Republic of Germany expressed interest in supporting another component of the training series, the seminar on planting and forestry

26b/ See Agency for International Development, Greenbelt - Fuelwood Production, FY 1980 Annual Budget Submission, Dakar, Senegal: 1978.

26c/ Ibid.

27/ Club du Sahel, Summary Record of Club du Sahel/CILSS Meeting on Ecology and Reforestation, pp. 5-6, 20. Reporting cable on the Club du Sahel Reforesta-

techniques. This seminar was held and successfully completed in early 1978.^{28/}

In response to expressions of interest in the Soil Conservation Seminar, the CILSS commissioned a consultant to draft a more detailed project document.^{29/} This was presented to representatives of AID/W and USDA in the spring of 1978, and was favorably reviewed. The French have agreed to provide 2 experts to participate in the seminar.

The proposed seminar would provide participants with the tools and practical experience for executing soil conservation activities. As currently envisioned, the seminar is broken down into three phases over a 60 week period. During the first phase (5 weeks) the basic concepts will be presented and various techniques will be taught. This will be supplemented with visits to sites in Senegal and Cape Verde. The accent will be on practical, hands-on training.

During the second phase (12 months) the participants will return to their respective jobs, where they will prepare plans for, or execute on-going soil conservation projects. Senior instructors will visit the participants periodically to provide assistance and guidance. During the third and final phase (4 weeks) participants will regather and review, discuss and share their experiences.

Each member country will be invited to send 2 to 3 participants. Participants must be mid- or upper-level technicians who are currently or soon to be responsible for undertaking soil conservation activities. The cost of the training project is estimated at \$369,000. The total amount of external financing requested is \$270,000. The difference will be picked up by the host countries (in the form of participants' salaries) and CILSS (expenses of CILSS personnel).

The seminar is planned to begin in February 1979. This would permit participants to return to their respective countries in time for pre-planting operations. As of this time, AID has not yet decided if it will support this training program. Because advance preparations will take approximately 3 months, CILSS needs a response (negative or affirmative) in order to begin preparations for, or cancel, the seminar. CILSS has sent several messages to Washington requesting information on AID's intention to fund the training program.^{30/}

^{28/} See Appendix 4 for the journal article on the German Seminar.

^{29/} Project Proposal for a Soil Conservation Training Program (Seminar), RAF D 301, Comite Permanent Interetats de Lutte Contre La Secheresse Dans le Sahel (CILSS), Equipe Ecologie et Environnement, May 1978.

^{30/} See Ouaga 3424, dated August 2; Ouaga 3602, dated August 14; Ouaga 3883, dated August 30; and Ouaga 4029, dated September 7.

In reaching a decision, the following reasons favoring an affirmative response should be considered:

- The seminar is an important step toward strengthening Sahelian capacity to achieve Club objectives (a self-sustaining, ecologically sound approach for increasing food production).
- The training program will take place in the Sahel. Participants will visit demonstration sites where erosion and water control efforts have been successfully carried out, and will subsequently undertake interventions in their respective environments.
- The U.S. publicly expressed an interest in supporting this activity during the Donors Reforestation Meeting.
- Based upon the experience gained by the Soil Conservation Service (SCS), the U.S. can make an important contribution to helping the Sahelians improve their soil resources.
- A technical review of the detailed project paper in Washington, D.C. was favorable, and there was considerable support on the part of both AID and USDA technicians.

Several questions need to be addressed, however:

- Can the USDA/SCS provide qualified personnel, who are fluent in French and have some experience in developing countries, to participate in a seminar scheduled to begin on or about February 1, 1979?
- In the event that the training program cannot begin in February, what is the next earliest possible date for the program?

Whatever the final decision, AID owes the CILSS an expeditious response.

Africa Bureau Firewood Study

In June 1978 the Africa Bureau sponsored a workshop on firewood, which was attended by representatives of: AID, World Bank, Department of Energy, Peace Corps, Department of Agriculture, National Academy of Sciences, Africare, VITA, al Dir'Iyyah Institute, Overseas Development Council, U.S. Congress, and foresters from 4 African countries. There was general recognition that firewood, the primary source of fuel in rural areas in many developing countries, is in short supply and is quickly developing into a crisis situation. Beyond this, the U.S. has little information on the nature and extent of this crisis in Africa, or the best means for attacking this problem. The participants at the workshop endorsed the recommendation that the Africa Bureau sponsor a study in up to 6 African countries. The purpose of this study would be to collect basic data necessary to: (1) determine the nature and extent of the firewood crisis; and (2) identify specific projects for possible AID funding that address this crisis. In August, the Assistant Administrator for Africa sent a circular airgram to all field missions conveying the workshop's conclusions and the proposal for the recommended study. She requested the missions to review the

proposal with appropriate host country agencies and submit their comments and responses to Washington. In addition, she encouraged the missions to consider the following actions:

- inclusion of firewood components (e.g. village woodlots) in rural development projects already being prepared;
- support for local experiments with improved wood stoves and charcoal kilns (small grants for this purpose could be made available quickly through the Improved Rural Technology project managed by AFR/RA);
- initiation of talks with officials from forestry and extension services, energy agencies, etc., in order to consider new projects ranging from large-scale firewood plantations near urban areas to national programs in support of village woodlots;
- initiation of discussions with policy-level officials as to steps that local governments might take, with AFR assistance if appropriate, to alleviate the problem or to heighten popular consciousness of the severity of the problem.^{31/}

AID/W has begun to receive responses to the Africa Bureau's Firewood airgram. One notable response is from USAID/N'Djamena, expressing strong interest in preparing a proposal (PID) for a FY '80 village level firewood cultivation project.^{32/} This project would be implemented by CARE and would build upon the experiences gained over the past few years through the Acacia albida project. The mission envisions a \$5 million project with a FY '80 obligation of \$1.5 million.^{33/}

Chad's response raises the important question of availability of funds, and the degree of priority AID/W actually attaches to forestry/firewood projects. The shortage of funds is particularly a problem in the Sahel, in view of the Congressional requirement that all Sahel activities be financed from one source. By sending out the circular airgram, the Africa Bureau is publicizing a policy favoring forestry projects, and is encouraging field missions to devote more time, attention and resources to this sector. The field missions have begun to respond,

^{31/} Department of State, Circular Airgram, The Firewood Problem in Africa: Report on the AFR Firewood Conference and Request for Field Views, AIDTO-CIRC. A-364, August 29, 1978.

^{32/} Cable from N'Djamena to Washington, Response to Firewood Problem, N'Djamena 3663, dated September 18, 1978.

^{33/} Recommendations for a Firewood project in Chad are outlined in Appendix 5.

favorably, and the burden of proof now lies with AID/W to come up with the funds.^{34/}

Other U.S. (non-AID) Forestry and Ecology Activities in the Sahel

U.S. organizations other than AID have been involved in providing support to ecology and forestry-related activities in the Sahel. The Peace Corps, for example, has had a forestry program underway since 1967, and has placed volunteers in Senegal, Gambia, Niger, Chad and Upper Volta. (See Table II.) There is currently a strong interest in Peace Corps to strengthen this program. At the U.N. Conference on Desertification, Ms. Mary King, Deputy Director of ACTION, indicated that Peace Corps would respond favorably to host country requests for volunteers to work in reforestation, arid land management and local community education projects. She reaffirmed this pledge at the Paris Reforestation Meeting and expressed a desire to work closely with the Club to implement the regional Forestry and Ecology Program.^{35/}

The Peace Corps has recently established a new office for Programming and Training Coordination (OPTC) which has responsibility for strengthening existing programs, and identifying and developing new programs. One such effort is to explore and identify possibilities for strengthening Peace Corps participation in conservation activities. Mr. Sam Kunkle, a forester seconded from USDA to OPTC, has prepared a discussion paper for a Peace Corps Sahel Workshop in which he identifies a variety of projects which could be implemented by volunteers. They are:

- To assist in establishing village woodlots and plantations for the purpose of meeting local needs for firewood and construction materials.
- To encourage and promote plantings of A. albida in agricultural and range lands.
- To assist in dune stabilization efforts and the establishment of windbreaks.

^{34/} In responding to N'Djamena's request for AID/W's "candid views" on the availability of funds for a FY '80 firewood project, Washington has encouraged the mission to include a Firewood Project data sheet in the FY '80 CP in the event that funds should become available. See State 253795 dated October 5, 1978.

^{35/} See Appendix 5 for the complete text of Ms. King's statement.

Table II. Current and Potential Peace Corps Projects
in Forestry and Ecology in the Sahel

Volunteers in the Field, Projection, for September 30, 1978. Summary by Sectors of Work in "Conservation"	Country	Possibilities for Participa- tion in On-Going or Proposed AID Projects
1. Forest management, Lumber Production	Senegal - 1	Upper Volta Forestry Educa- tion & Development Mauritania Renewable Resources
2. Reforestation & Community Forestry	Chad - 13 Gambia - 1 Niger - 9 Upper Volta - 3	Senegal Fuelwood Production Gambia Reforestation
3. Forest Inventory, Research, Planning	Senegal - 1	Niger Forestry and Land-Use Planning
4. Energy and Range Management	Niger - 5 Senegal - 2 Upper Volta - 1	
5. Forestry Education, Technical Training	Senegal - 1	Upper Volta Forestry Educa- tion & Development Mauritania Renewable Resources
6. National Parks Development, Wildlife	Niger - 3	
7. Watershed Management, Soil Conservation	None	Cape Verde Watershed Management

Source: ACTION/Peace Corps, Washington, D.C., September 1978.

- To assist in managing government forest reserves for local and national benefit.
- To improve the efficiency of charcoal production by constructing more efficient ovens.^{36/}

There has been considerable informal and formal discussion regarding potential AID-Peace Corps cooperation and collaboration. This should be particularly encouraged in the forestry and ecology sector, where closer working relationships could be mutually advantageous. For example, a major constraint faced by AID is the shortage of trained personnel to implement forestry projects. This can partially be addressed by recruiting and training forestry volunteers. By the same token, a major problem faced by forestry volunteers has been a lack of fundamental material and technical support required to accomplish a job: seedlings, shovels, plastic sacks, vehicles to transport the seedlings from the nursery to the planting site, funds to pay salaries of local workers. Little or no support has been forthcoming from the host country government due to the small operating budget of the national forestry services. AID can provide the financial and technical support. A more concerted effort is needed to identify ways for increasing and strengthening cooperation between the two agencies. Some possibilities for Peace Corps participation in proposed AID projects are included in Table II.

Another source of support has come from the private voluntary organizations (PVO's). CARE, the Catholic Relief Service and Africare among others have been involved in small-scale activities in dune stabilization, village woodlots, firewood plantations, and soil conservation efforts in Niger, Upper Volta, Mauritania, Chad and Senegal. These organizations have the advantage of flexibility and imagination which is often lacking in larger, government-supported activities. And as in the case with Peace Corps, the PVO's work at the village level involving local people in project design and implementation.

A third potential source of support is the U.S. Department of Agriculture which houses both the the U.S. Forest Service and the Soil Conservation Service. AID has already begun to draw upon this resource. For example, the Forest Service has recently agreed to make available to the Africa Bureau a French-speaking forester. And AID is also looking to the Soil Conservation Service to recruit qualified expertise to implement the proposed Soil Conservation Training Program.

In summary, there is potential for developing a strong U.S. program in Forestry and Ecology. This can best be achieved by drawing upon the wide range of resources and expertise in the U.S., specifically through increased cooperation and coordination among AID, Peace Corps, Private Voluntary Organizations and the U.S. Department of Agriculture.

^{36/} See Appendix 7, Some Conservation Project Ideas for the Sahel, for a more detailed description of these proposed projects and the tasks which could be undertaken by the PCV's.

CHAPTER III

CONCLUSIONS AND RECOMMENDATIONS

The majority of this report is an account of the CILSS Regional Forestry and Ecology Program and a project-by-project description of AID's program in the Sahel. In this final section, the rationale for a regional approach will be discussed. The accomplishments and progress toward achieving the ultimate objective of sustained and balanced natural resource management will be addressed; and some of the problems and obstacles faced by CILSS and AID will be identified. The report concludes with a list of recommended actions for strengthening AID's contribution to the Sahel Forestry and Ecology Program.

Why a Regional Program?

The CILSS/Club Program in Forestry and Ecology is regional in the sense that it addresses problems which affect all member states. With few exceptions, the discrete projects embraced by the program are bilateral activities: design, implementation and management will be the responsibility of the donor and host country. Several activities are regional in scope: they will benefit all participating countries, and will be managed by CILSS or another appropriate regional organization. Examples of these regional activities include the series of training programs and the proposed regional resource monitoring project.

Given that the majority of the program consists of bilateral activities, one may well inquire as to the necessity for a regional program. One major justification relates to the fact that, to date, forestry has been assigned a low priority by host country governments and the donor community.^{37/} The major focus of development efforts has been on feeding needy rural and urban populations by providing food and assistance to increase agricultural production. The consequence of this neglect is that the Forestry Services are for the most part poorly organized and lack the trained personnel and material resources necessary to be effective.^{38/} And because the Forestry Services lack these resources, they are unable to formulate projects attractive enough to stimulate donor interest.

A major goal of the CILSS/Club strategy and program is to reverse this trend of neglect, and to focus attention on the key role of forestry in

^{37/} Forestry activities receiving donor support include industrial plantations and logging operations which provide wood for export to industrialized countries. In contrast, there is little support for forestry projects designed to meet local needs for firewood, fuel or construction materials.

^{38/} Ecology and Forestry Working Team, CILSS/Club of the Sahel, Note de Synthèse sur la Stratégie Forestière au Sahel, April 1977, p. 5.

development.^{39/} The Ecology and Forestry Unit of the CILSS has been actively involved in refining the program's strategy; in strengthening project dossiers for the purpose of attracting donor support; coordinating donor efforts for maximum benefit; and seeking external financing for unfunded elements of the program.

Since its inception over 2 years ago the Forestry and Ecology unit has made considerable progress toward meeting these objectives. In May 1977 the Club program was officially presented to and accepted by the Club. Several months later, the CILSS and the Club jointly organized a donor meeting for the exclusive purpose of mobilizing support and financial assistance for the Forestry and Ecology Program. A multidonor mission was held in Ouagadougou in February 1978 to review the Upper Volta forestry portfolio and mobilize external financial assistance. During the mission the U.S. made a commitment to support 2 key activities included in the portfolio. The CILSS is now gearing up to undertake a similar exercise in Cape Verde. These meetings and missions have had the desired effect of focusing the attention of both the host countries and the donor community on the forestry sector, and mobilizing support for forestry activities.

CILSS is also devoting considerable energy to strengthening subprograms C (fauna and flora) and D (training) for which there has been little support or interest. For example, the Forestry and Ecology Unit is:

- Reformulating several wildlife projects with FAO assistance, placing an emphasis on antidesertification and development for local benefit. Upon completion, these will be presented to the Germans, Dutch and Belgians for possible funding;
- Will seek support for wildlife activities from non-governmental organizations such as the World Wildlife Fund and the International Union for the Conservation of Nature.
- Will undertake a concerted effort to obtain donor support for forestry training and education. CILSS has already played a catalytic role in generating U.S. support for the Dinderesso Forestry School in Upper Volta and the Regional Soil Conservation Training Program.

Without the active work of the Ecology and Forestry Unit, these activities would probably continue to be unnoticed and unfunded.

However, CILSS has its share of problems. For example, it has not always been able to effectively carry out its role as coordinator. Communication links have broken down on several occasions, notably in organizing design missions for Cape Verde and the Gambia. This can partially be explained by the number of actors and their geographical dispersion (CILSS in Ouagadougou; Club Secretariat in Paris; 8 Sahelian States; and a multitude of donors separated by oceans and continents).

^{39/} Ibid.

Coupled with the inadequate communication system in the Sahel, coordination becomes a tricky affair at best. A greater degree of awareness and a more concerted effort on the part of all actors to share information would improve the coordination system. The burden cannot rest solely with the CILSS, but must be the responsibility of all.

Since the Ottawa meeting, CILSS has been devoting considerable time and energy to mobilizing financial support for and implementing first generation programs, perhaps at the expense of long-term planning. The CILSS Secretariat is under pressure from the Heads of State/Council of Ministers to obtain financing for first generation projects prior to undertaking additional studies or designing new projects. Studies and planning activities are being viewed by the Sahelians as a "stalling" mechanism, an excuse to postpone project financing and implementation.

Donors, on the other hand, often require detailed planning and project design as a prerequisite to providing financial and technical assistance. They seek assurance that this assistance fits into an overall plan and program directed toward achieving desired objectives.

An approach which could satisfy the needs of both donors and host countries would be to integrate planning activities into projects. This would provide a mechanism for collecting data over an extended period of time without delaying the implementation of discrete interventions. An example is the Niger Forestry and Land-Use Planning Project to be funded by the U.S., which will simultaneously provide support for drafting a long-term resource management plan and implementing small-scale pilot activities.

One potentially important role CILSS can play, perhaps in close cooperation with the Sahel Institute, is that of a clearinghouse for information on forestry-related matters. The U.S. could greatly benefit from learning about the experiences of the national forestry services and other donors (e.g. the French and the Germans) who have long records of experience in the Sahel. Similarly, the knowledge gained in implementing the CARE A. albida project in Chad could be useful in other parts of the Sahel.

AID's Track Record

The first anniversary of the Paris Reforestation Meeting provides an opportunity to measure progress made toward meeting U.S. commitments. On the positive side, the Mauritania Renewable Resources Project has been approved, a project agreement signed with the Government, and a contractor is now being selected to implement the project. Project papers for Cape Verde, Upper Volta and Niger are en route to or awaiting review in Washington. If they survive the rigors of the AID review and approval process, implementation will commence during FY.'79. Design of the Gambia Reforestation Project is slightly behind

schedule, but with some effort a team will be fielded in early 1979. The one major embarrassment to the U.S. is the failure to meet a commitment to support a number of forestry activities in Senegal. The Government of Senegal requested U.S. assistance for these interventions several years ago. These activities were combined to form a larger project for Land Conservation and Revegetation. AID/W has sent out several teams to design this project, indicated support for these activities publicly (Paris, October 1977) but has been unable to come forth in a timely manner with the requested support. The project has recently been disaggregated into its component parts, and project papers are being drafted (or will be drafted) for 3 of the 4 activities. Given the long, sad history behind the evolution and devolution of this project, the U.S. should either fund the projects expeditiously, or inform the GOS that support will not be forthcoming.

With the exception of the proposed Firewood Study, the field missions have taken the initiative in submitting and seeking support for forestry-related activities. One of the major obstacles to timely design and implementation has been due to the lack of a clear policy and the lack of support in AID/W for forestry-related activities. This has been aggravated by the almost total absence of foresters in the technical divisions in AID (and specifically the Africa Bureau). In addition, no qualified AID personnel have been available to assist missions in designing sound projects; or to guide, defend and support these projects during the review and approval process in Washington. The Africa Bureau is in the process of obtaining the services of a full-time forester through an arrangement with the U.S. Forest Service. His arrival will be an important step toward facilitating U.S. support to forestry activities in Africa.

At this time there is no staff person who has responsibility for backstopping the U.S. contribution to the Forestry and Ecology Program. The future of the Sahel Development Program planning team is uncertain, although there has been considerable discussion about moving the team to the Sahel. The composition of the proposed team does not include a position for a forester, and it is unclear as to who would have the responsibility for coordinating, facilitating and supporting U.S. participation in the Forestry and Ecology Sector. In view of the Club's intent to place special emphasis on the Forestry Program over the next year,^{40/} and the growth of the U.S. program, the addition of a forester to the planning team is more than justified. The lack of such an individual could severely handicap U.S. ability to meet its commitments or to respond in a constructive and timely manner to the priorities established by the Club.^{41/}

^{40/}This will be a major agenda item in the upcoming third meeting of the Club, scheduled for November 1979 in Amsterdam.

^{41/}A case in point is the Soil Conservation Training Seminar, in which the U.S. has expressed considerable interest.

A foreseeable obstacle to timely implementation of the U.S. program is the lack of qualified personnel to manage the program, or provide short-term services to field missions. For example, there will be a need for experts to manage and implement the various projects currently in AID's portfolio, including the proposed Firewood Study. A concerted effort is therefore in order to begin the process of identifying qualified, French-speaking U.S. forestry and environmental experts, who preferably have previous experience in Africa. One potential source would be ex-Peace Corps volunteers who have served in Francophone West Africa.

Recommendations

Policy

- Articulate AID (Africa Bureau) policy for forestry activities. Define criteria and guidelines for U.S. support for forestry and ecology projects.
- Determine implications of Sahel Development Program funding constraint for support of firewood and forestry projects. (This is currently an issue with the proposed Chad Firewood Project and possibly with U.S. participation in a multidonor mission to design a forestry program in Cape Verde. Also as a result of the budgetary cuts, the proposed first year obligation for the Senegal Greenbelt project has been decreased from \$1.3 million to \$.5 million.

Staffing

- Add staff person to Sahel Development Program team who will have sole responsibility for coordinating, facilitating and supporting U.S. assistance and participation in the Forestry and Ecology Sector.
- Identify sources of forestry and environmental expertise in the private sector from which AID can draw for project design, implementation and evaluation.

Coordination

- Identify mechanisms for increasing cooperation and coordination among government and non-governmental organizations involved in forestry and ecology-related activities in the Sahel (e.g. AID, Peace Corps, Private Voluntary Organizations, U.S. Department of Agriculture).
- Make a greater effort to share information on AID Sahel activities and intentions with CILSS, the Club and other donors (when appropriate). An example would be to coordinate with CILSS on the proposed Firewood Study if a CILSS member country is involved.

Projects

- Inform CILSS of U.S. intentions regarding the Soil Conservation Training Program. Consider the possibility of postponing commencement of the program for six months to allow greater coordination and preparation by AID, France and the CILSS.
- Inform CILSS of U.S. intent regarding participation in the multidonor mission to Cape Verde to design a forestry program.
- Review and approve project papers for Niger, Upper Volta, Cape Verde and Senegal.
- Complete the Senegal Greenbelt Project and submit to AID/W for review and approval.
- Field a design team to design the Gambia Reforestation Project. Consider possibility of including support for village-level plantations in proposed project.
- Consider providing additional support to CARE Acacia albida project to ensure trees will be protected for five years after planting.

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UNCLAS STATE 075097

AIDAC

E.O. 11652: N/A

TAGS:

SUBJECT: CLUB DU SAHEL REFORESTATION MEETING

*FOLLOWING IS A REPEAT OF STATE 261969

QUOTE

R 021535Z NOV 77

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1. SUBJECT MEETING CHAIRED BY CILSS SUCCESSFULLY CONCLUDED TWO DAYS OF DISCUSSION ENDING OCTOBER 13 AT OECD IN PARIS.

2. PARTICIPANTS INCLUDED FRANCE, GERMANY, HOLLAND, SWITZERLAND, EEC, U.S., IBRD, BADEA, FAO AND CLUB SECRETARIAT. BELGIUM WAS REPRESENTED BY FAO. CHAIRMAN WAS YAYA IDRISSE, DIRECTOR OF PROGRAMS FOR CILSS WHO ALSO REPRESENTED NATIONAL FORESTRY SERVICES.

3. U.S. DELEGATION INCLUDED MARY KING, DEPUTY DIRECTOR OF ACTION, MEL DAVIS, ADMINISTRATOR, USDA CONSERVATION SERVICE AND DIRECTOR, AFR/SFWA.

4. AGENDA PROPOSED AND AGREED UPON FOR THE MEETING INCLUDED:

A. REVIEW OF THE REFORESTATION PROGRAM PREPARED BY THE WORKING GROUP. PRESENTATION OF ADDITIONAL DATA COMPLETED SINCE THE CLUB MEETING IN OTTAWA.

B. INDICATIONS BY DONORS OF THEIR INTEREST IN THE OVERALL PROGRAM OR FOR CERTAIN ELEMENTS.

C. PRESENTATION OF IDEAS FOR THE IMPLEMENTATION AND MANAGEMENT OF THE PROGRAM (BOTH REGIONAL AND NATIONAL PROJECTS).

D. CRITERIA FOR THE SELECTION OF PROJECTS. PROCESS OF PROJECT START UP MEASURES NECESSARY FOR ASSURING THE COHERENCE BETWEEN PROJECTS.

E. IDENTIFICATION OF ADDITIONAL INFORMATION AND ANALYSIS NECESSARY FOR THE FINALIZATION OF PROJECTS.

F. AGREEMENT ON THE METHODS, WORK CALENDAR AND COMPOSITION OF JOINT TEAMS FOR THE FINALIZATION OF PROJECTS

5. WHILE DETAILED REPORT WILL BE DISTRIBUTED BY THE CLUB, THE FOLLOWING ARE MAJOR CONCLUSIONS, COMMITMENTS AND PLANNING AGREEMENTS BY SAHELIAN COUNTRIES. ALSO BEING POUCHED SEPARATELY ARE STATEMENTS BY ACTION DEPUTY DIRECTOR KING AND SFWA DIRECTOR SHEAR.

- CAPE VERDE ISLANDS

A. PRESENT COMMITMENTS

-- FRANCE: SAN NICOLAO - LAND USE AND WATERSHED MANAGEMENT.

-- FAO: JOINT FAO/BELGIAN MISSION IS PLANNED FOR NOVEMBER 15 - DECEMBER 15 TO DESIGN ACTIVITIES OF DOLS. 5 MILLION (5 YEARS) COMMITTED BY BELGIUM PLUS DOLS. 1.3 MILLION OF FOOD TO BE GIVEN BY WFP.

-- SWITZERLAND: HAS TWO ONGOING PROJECTS FOR SMALL DAMS (400,000 SWISS FRANCS) AND DUNE FIXATION (500,000 SWISS FRANCS). IS READY TO UNDERTAKE NEW PROSPECTION FOR ACTION.

AID: IS PROGRAMMING DOLS. 500,000 IN FY 78 FOR WATERSHED MANAGEMENT ON SANTIAGO, AND PROPOSING DOLS. 700,000 IN FY 79 FOR CONTINUATION OF THIS ACTIVITY AND INITIATION OF A SOILS CONSERVATION PROGRAM ON SANTIAGO.

B. DECISION

AID, BELGIUM AND SWITZERLAND ARE READY TO JOIN IN FAO MISSION. FRANCE WILL PUT EXPERT ON SOIL CONSERVATION AT DISPOSAL OF MISSION. DETAILS OF JOINT MISSION AGREED UPON WITH U.S. SOIL CONSERVATION SERVICE. MEMORANDA OF UNDERSTANDING BEING POUCHED.

- GAMBIA

A. COMMITMENTS

-- AID: HAS COMPLETED PROJECT DESIGN FOR SOIL AND WATER CONSERVATION MANAGEMENT PROJECT, AS WELL AS COMPREHENSIVE ANALYSIS OF NATURAL RESOURCES. AID EXPECTS TO OBLIGATE DOLS. 1,377,000 FOR FY 78 AND INCREMENT OF DOLS. 500,000 FOR COMPLETION OF PROJECT IN FY 79. AID ALSO PLANS TO OBLIGATE DOLS. 400,000 IN FY 79 TO BEGIN REFORESTATION ACTIVITY.

-- GERMANY: IS INTERESTED IN FINANCING THE AFFORESTATION PROJECT (GAMBIA A: 331: DOLS. 739,000).

-- U.K.: MAY BE INTERESTED IN PARTICIPATING IN JOINT ACTION.

-- PEACE CORPS INTERESTED IN HAVING REP ON JOINT MISSION.

B. DECISION

-- U.S. TO SEND ITS DOCUMENTATION TO CILSS AND GERMANY. AFTER REVIEW, GERMANY AND US WILL CONSIDER POSSIBILITY OF MOUNTING JOINT MISSION TO ASSURE BOTH PROGRAMS ARE COMPLEMENTARY.

- UPPER VOLTA

A. COMMITMENTS

-- FRANCE: SUPPORT TO FOUR REFORESTATION CENTERS: 2,500,000 FRENCH FRANCS SUPPORT TO RESEARCH CELL IN OUAGADOUGOU (CENTRE TECHNIQUE FORESTIER TROPICAL).

-- WORLD BANK: IS PLANNING COMMITMENT OF DOLS. 5 MILLION OVER NEXT FOUR TO FIVE YEARS FOR AFFORESTATION PROJECTS: 3,500 HECTARES IN OUAG-DOUGOU, 1,000 HECTARES IN B230

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DIOLASSO AND REINFORCEMENT OF NATIONAL FORESTRY SERVICE AS WELL AS TRAINING OF FORESTRY STAFF. IS PLANNING MISSION IN SECOND SEMESTER 1978.

-- GERMANY: HAS COMMITTED DOLS. 3 MILLION UP TO 1980 FOR AFFORESTATION (AROUND OUAGADOUGOU) AND FOREST CENTER IN DORI.

-- SWITZERLAND: HAS STARTED VILLAGE PLANTATIONS AROUND
-- AID: INTERESTED IN PRINCIPLE IN PARTICIPATING. HAS DOLS. 700,000 PROGRAMMED FOR 1979. PREPARED PARTICIPATE TENTATIVELY IN PROJECT IDENTIFICATION.

-- PEACE CORPS: IS OFFERING ITS OFFICERS FOR VILLAGE PLANTATIONS.

B. DECISION

THE CILSS WILL EXAMINE THE POSSIBILITY OF A JOINT MULTI-DONOR MISSION. COUNTRIES INTERESTED IN PARTICIPATING ARE UNITED STATES, GERMANY (ESPECIALLY INTERESTED IN SPECIFIC SUBJECT OF TRAINING IN FORESTRY SCHOOL OF DINDERESSO). FRANCE WILLING TO PUT ITS EXPERIENCE AT DISPOSAL OF MISSION.

ALL DONORS STRESS IMPORTANCE OF REINFORCING NATIONAL FORESTRY SERVICE.

- MALI

A. COMMITMENTS

-- FRANCE: IS PLANNING COMMITMENT OF 3 MILLION FRANCS FOR 1977 AND SIMILAR AMOUNT FOR 1978 FOR FIREWOOD PRODUCTION NEAR BAMAKO. SUPPORTING RESEARCH FOR RANGE MANAGEMENT.

-- WORLD BANK: IS PLANNING COMMITMENTS OF DOLS. 4 MILLION FOR NEXT 4 TO 5 YEARS FOR AFFORESTATION AND FIREWOOD PRODUCTION (BAMAKO, MOPTI--IRRIGATED EXPERIMENT--AND SEGOU.) IS CONSIDERING VILLAGE PLANTATIONS AND FOREST NURSERIES AROUND BAMAKO (SEVERAL HUNDRED THOUSAND DOLLARS). IS INTEGRATING FOREST COMPONENT IN LIVESTOCK PROJECT.

-- AID: IS UNDERTAKING PROGRAM FOR IMPROVEMENT OF LIVESTOCK AND RANGE MANAGEMENT WHICH COULD BE EXTENDED NEXT YEAR. AN EXTENSIVE LAND USE ASSESSMENT STUDY HAS BEEN REQUESTED FOR ALL OF MALI SOUTH OF MOPTI.

-- SWITZERLAND: 3 PROJECTS UNDER WAY IN SIKASSO AREA (HYDRAULICS, HEALTH AND STORAGE). WOULD LIKE TO INCLUDE FOREST COMPONENT (FOREST MANAGEMENT).

-- BADEA: IS FINANCING DOLS. 15 MILLION IN SELINGUE DAM. IS PARTICIPATING IN MALI/SUB PROJECT WITH WORLD BANK. MAY BE INTERESTED IN SELINGUE FOREST COMPONENT (MALI A 304 DOLS. 5,250,000). CANADA HAS MADE VERY COMPLETE DOSSIER ON THIS PROJECT AND IS PREPARED PROVIDE TECHNICAL ASSISTANCE.

B. DECISION

VIEW EXPRESSED THAT PROSPECTING MISSION MIGHT BE USEFUL. FRANCE INDICATED ITS WILLINGNESS TO PARTICIPATE WITH ONE EXPERT. PEACE CORPS ALSO INTERESTED JOINING MISSION.

- MAURITANIA

A. COMMITMENTS

-- AID: EXPECTS TO OBLIGATE DOLS. 1 MILLION IN FY 78 FOR RENEWABLE RESOURCE MANAGEMENT PROJECT. IN FY 79 AID WILL PROPOSE DOLS. 1.3 MILLION FOR CONTINUATION OF THIS ACTIVITY, AS WELL AS DOLS. 2 MILLION FOR RURAL LAND RECLAMATION. AID RENEWABLE RESOURCE MANAGEMENT PROJECT INCLUDES PROJECTS B 301 TO B 304 ON CILSS FORESTRY/ ANTI-DESERTIFICATION PROGRAM LIST. STILL LEAVES SOME GAP IN FINANCING OF CILSS PROJECTS.

- NIGER

A. COMMITMENTS

-- FRANCE: HAS JUST FINISHED QUOTE CEINTURE VERTE UNQUOTE NIAHEY PROJECT (830,000 FRENCH FRANCS). HAS LEFT EQUIPMENT TO NATIONAL SERVICE. IS FINANCING FOREST PALM TREES MANAGEMENT AND EXPLOITATION IN DALLOU MAORI (N. A303) 850,000 FRENCH FRANCS FOR FIRST QUOTE TRANCHE UNQUOTE. WILL NOT BE ABLE TO CONTINUE FINANCING. HOPES WORLD BANK WILL FOLLOW UP.

-- WORLD BANK: IS PLANNING COMMITMENT OF DOLS. 3 MILLION FOR 3 YEARS: STRENGTHENING OF NATIONAL FORESTRY SERVICE AND IRRIGATED AND RAIN-FED PLANTATIONS. IS INTERESTED IN PROJECT ON DUNE FIXATION. MAY BE INTERESTED IN INTEGRATED RURAL DEVELOPMENT PROJECT IN DOSSO.

-- GERMANY: HAS DOLS. 800,000 FOR NEXT TWO YEARS FOR INTEGRATED RURAL DEVELOPMENT PROJECTS IN DOSSO AREA (FOREST COMPONENT). COULD BE FOLLOWED UP BY SECOND PHASE OF DOLS. 1.4 MILLION.

MAY BE INTERESTED IN FINANCING QUOTE ACACIA ALBIDA UNQUOTE PLANTATIONS IN N. B225 PROJECT ON CILSS LIST.

-- BADEA: IS STUDYING LIVESTOCK AND PASTURE DEVELOPMENT PROJECT WITH ABU DHABI FUND IN TANQUA/AGADEZ AREA. FORESTRY COMPONENT MIGHT BE POSSIBLE. HAS ASKED CILSS SECRETARIAT TO ADVISE ON THIS.

-- AID: PLANS TO OBLIGATE DOLS. 800,000 IN FY 79 FOR NIGER FORESTRY AND LAND-USE PLANNING PROJECT (INVENTORY OF NATURAL RESOURCES, PLANNING CELL IN FORESTRY SERVICE,

PILOT DEMONSTRATION PROJECTS), PENDING AID/W PROJECT APPROVAL. WILL PROVIDE STUDY TO CILSS AS SOON AS COMPLETED.

-- SWITZERLAND: INTERESTED IN POSSIBLE ACTIONS IN LIPTAKO-GOURMA AREA.

B. DECISION

SOME PARTICIPANTS INDICATED THAT FURTHER ASSISTANCE WOULD BE CONDITIONAL ON STRENGTHENING OF NATIONAL FORESTRY SERVICE. IF AID PROJECT SUCCEEDS, THIS CONDITION WILL BE FILLED.

NO MISSION FOR THE MOMENT. WILL AWAIT RESULT OF WORLD BANK AND AID PROJECTS.

- SENEGAL

A. COMMITMENTS

-- GERMANY: HAS COMMITTED DOLS. 2 MILLION UP TO 1978 AND WILL MOST LIKELY FOLLOW UP. COULD BE INTERESTED IN WILDLIFE PROJECTS.

-- AID: IS PLANNING TO SUPPORT INTEGRATED RESOURCE MANAGEMENT PROJECT WHICH INCLUDES A 302, B301 AND 304, AND

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COMPONENT OF B 303 ON CILSS FORESTRY ANTI-DESERTIFICATION PROGRAM LIST. IN FY 78 AID EXPECTS TO OBLIGATE DOLS. 1 MILLION FOR THIS ACTIVITY, AND IS PROPOSING INCREMENT OF DOLS. 1.5 MILLION FOR FY 79.

-- SWITZERLAND: WILL SUPPORT FORESTRY SCHOOL OF ZIQUINCHOR.

B. DECISION

QUOTE PROSPECTIVE MISSION UNQUOTE COULD BE ENVISAGED FOR SECONDU PHASE PROJECTS. FRANCE, AID, PEACE CORPS WOULD BE INTERESTED IN PARTICIPATING, POSSIBLY GERMANY. CILSS WILL EXAMINE THIS POSSIBILITY.

- CHAD

A. COMMITMENTS

-- WORLD BANK: IS NEGOTIATING PROJECT OF FOREST MANAGEMENT NEAR NDJAMEHA (CHAD A 301) AND 3 NURSERIES (CHAD B 301) AND PALM FOREST TREE MANAGEMENT (CHAD A 302).

-- FRANCE: IS FINANCING INTEGRATED PROJECT IN SOUTH CHAD: ACACIA-ALBIDA (400,000 FRENCH FRANCS). WILL FINANCE ANOTHER TRANCHE UP TO 1979. FED FOLLOW-UP IS BEING EXAMINED.

-- BADEA: IS INTERESTED IN INCLUDING FOREST COMPONENT IN RURAL DEVELOPMENT PROJECT; (POLDERS) BEING CO-FINANCED WITH WORLD BANK.

-- AID: WOULD BE PREPARED TO STUDY FORESTRY ELEMENT OF INTEGRATED RURAL DEVELOPMENT ACTIVITIES.

B. DECISION

NO FINAL DECISION MADE ON JOINT MISSIONS. CILSS TO DISCUSS WITH GOC AND WILL ADVISE.

REGIONAL PROJECTS

-- SWITZERLAND, USAID AND BELGIUM WILL SUPPORT STRENGTHENING FORESTRY/ANTI-DESERTIFICATION COORDINATION UNIT AT CILSS BY FINANCING OF EXPERTS. U.S. CONTRIBUTION IS AN ECOLOGIST.

-- REGARDING TRAINING AND SCHOLARSHIPS, GERMANY WILL FINANCE SEMINAR ON FORESTRY TECHNIQUES SCHEDULED FOR FEBRUARY 1978. U.S. AND FRANCE INDICATED INTEREST IN FINANCING SOIL CONSERVATION SEMINAR, FOR WHICH USDA WOULD PROVIDE EXPERTS.

6. COMMENT:

REVIEW OF WORK OF ECOLOGY AND FORESTRY GROUP BY DONORS MARKED A SIGNIFICANT NEW PHASE OF CLUB DU SAHEL PLANNING AND RESOURCE MOBILIZATION.

CONCERTED PROJECT ACTION AGREED UPON ON COUNTRY BY COUNTRY BASIS AND JOINT PLANNING MISSIONS CURRENTLY ENVISAGED WILL HELP ASSURE CLOSE COLLABORATION ON PROJECT DESIGN BY INTERESTED DONORS.

U.S. DELEGATION WAS ALSO ENCOURAGED BY EMPHASIS PLACED ON PROGRAMS RELATED TO BROADER ECOLOGICAL CONSIDERATION THAN FORESTRY ALONE. IT GENERALLY AGREED THAT NEXT PHASE OF PROGRAM MUST FOCUS MORE ON INTEGRATED RESOURCE MANAGEMENT AND TRAINING AT VILLAGE LEVEL.

STRONG PARTICIPATION BY PRESIDENT OF ARAB BANK FOR AFRICAN DEVELOPMENT AND INVOLVEMENT IN NUMBER OF CLUB ACTIVITIES PRESENTED AT CONFERENCE WAS EXTREMELY ENCOURAGING TO DONORS SINCE IT MARKED VERY TANGIBLE CONTRIBUTION FROM OPEC STATES.

PARTICIPATION OF PEACE CORPS AND U.S. SOIL CONSERVATION SERVICE WAS ESPECIALLY NOTED AND WELCOMED BY OTHER DONORS. VANCE UNQUOTE VANCE

Mr. D. SHEAR.

Republic of The Gambia

Ref: C/GAM/LRP/77

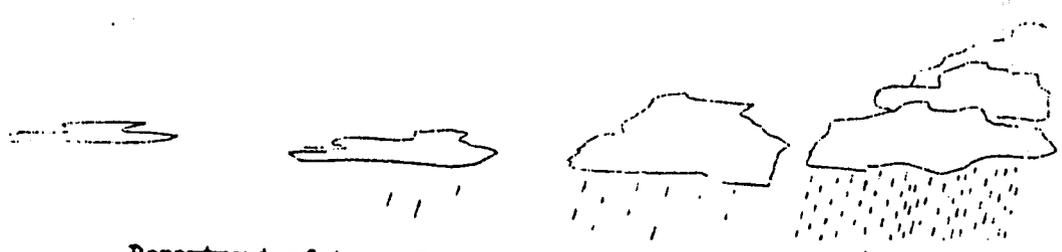
Limited distribution.

The Gambia:
The Need for a
National Tree Planting
Programme

A Report prepared for:

The President's Office,
Marina Parade,
Banjul.

Ministry of Agriculture
and Natural Resources,
The Quadrangle,
Banjul.



Department of Agriculture,
Yundum Experimental Station,
Western Division,
The Gambia.

August 1977.



REPUBLIC OF THE GAMBIA

Ref: C/GAM/LRP/77

Limited distribution.

Department of Agriculture,
Yundum Experimental Station,
Western Division.

August 1977

The Gambia:

The Need for a National Tree
Planting Programme

"the one and only sound foundation to
agricultural and related development is
an ecological one"

The Ecological Balance:

The fragile ecology of the semi-arid region of the Sahel, including The Gambia, has been thrown out of balance by land-use practices which have caused progressive destruction of vegetation cover leading to adverse climatic change.

Loss of Vegetation:

The change in vegetation and land-use in The Gambia over a 21 - year period from 1946 to 1968 is detailed in the report C/GAM/LRP/75, re-issued June 1977, attached to this paper.

With reference to page 1 of that report,

Forest has dropped from 28% to 3.4%

Woodland has been reduced from 31% to 4.6%

Thorn/'bush' has risen from 7% to 31%

'Scrub' land has increased from virtually nil to 19%

Cropping with natural fallow has fallen from 17% to 5.5%

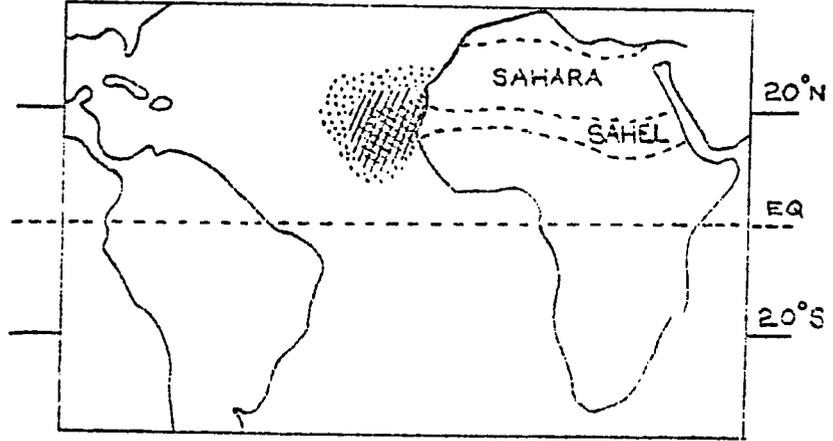
Virtually continuous annual cropping has risen from nil to 17%

The vegetation cover situation will have undoubtedly deteriorated further during the recent low-rainfall years.

Dust Fall-out Data:

Each year increasing quantities of African topsoil fallout over the Atlantic.

A map of dust recorded by ships at sea based on data collected before 1942 is shown below.



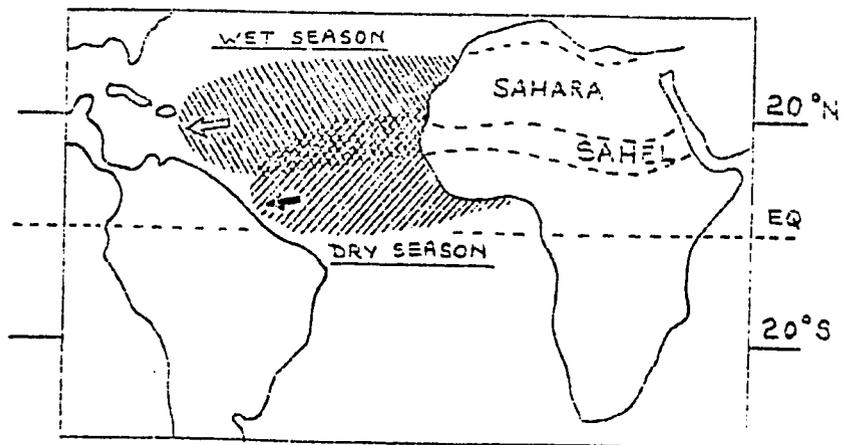
Dustfall over the Atlantic prior to 1942.

More recent dust fallout data has been obtained from the Nimbus weather satellite and from the geosyn-chronous satellite SMS 1.

African topsoil fallout density recorded in Barbados, West Indies, was as follows;

	<u>1966</u>	<u>1967/68</u>	<u>1972</u>	<u>1973</u>
micrograms per cubic metre	6	8	15	24

The map relating to the above data, showing a greatly increased distribution zone, is given below.



Dustfall distribution 1966 to 1973

This last dry season, dust-laden winds continued blowing across The Gambia long after the usual February to April period. Ground-level dust was particularly heavy in mid-June, and high-altitude dust was still observed pouring out across the Atlantic as late as 17.7.77.

Rainfall Change:

A major change in the ecological balance throughout the Sahel occurred in 1968.

The average annual rainfall recorded at Yundum from 1946 to 1967 was 51.66 inches, but from 1968 to 1976 the rainfall has been very erratic and the average over the last 9 years dropped to 37.04 inches per year. July 1977 rainfall was only 5.46 inches compared with the 1949-66 average of 12.50 inches for that month.

The Severity of the Problem.

Increased dust in the Sahel region reduces rainfall by suppressing rain-cloud formation and retarding the normal northward progress of the summer monsoon systems.

Groundnut production figures over the years cannot be used in any way as an indicator of how well or how badly the whole ecological complex is being managed, because the groundnut crop only requires 20-25 inches of well distributed rain.

Where vegetation cover is continually reduced, resulting in increased dust levels and lower/unreliable rainfall, streams dry up and the water-table is lowered beyond the tree-root zone with eventual dramatic results. The latter occurred in Northern Senegal, where, between 1970-74, the loss of gum tree population, *Acacia Senegal* verck, ranged from 20% to 80%.

The Gambia is more fortunate than neighbouring Sahelian countries, in that it lies close to a major river and has a relatively high water table throughout, which considerably facilitates any proposed tree-planting programme.

National Tree Planting Programme.

The following is proposed;

- (1) Bush-fire control legislation be brought into effect as from October 1977.
- (2) A Planning Committee be set up without delay to consider the following:
 - (a) the types of trees most suited to each part of the country, according to the detailed 'soil associations' given in the M.O.L., Land Resource Study 22.
 - (b) the obtaining of sufficient planting material to support a National Tree Planting programme, with the first years planting scheduled for next year.
 - (c) the establishment of central tree-nursery facilities in each Division.
 - (d) the establishment of simple tree-raising nurseries at village level to provide planting stock for compounds, roadsides, shelter belts, and field boundaries.

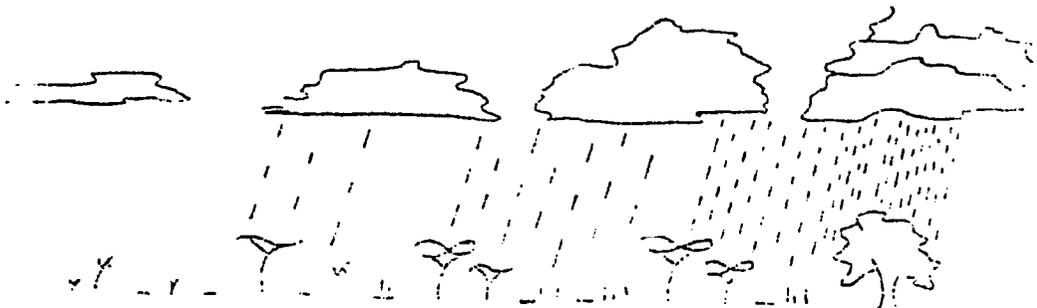
- (e) the basic irrigation facilities that must be provided to support village-level planting during low-rainfall seasons.
- (f) the funds required to support this programme, phased over an initial 5 - year period.
- (g) the management and extension staff required to support this programme.

R.D. Mann A.I.Agr.S., M.I.Biol.
 Agricultural Officer
 Christian Council of The Gambia.

References:

'African Environment Special Report 1', International African Institute, 1975.
 Bates, W.H., 'Mechanisation of Tropical Crops', 1957.
 'Drought in Africa', report of the 1973 Symposium, Centre for African Studies, London.
 'Guide lines for a National Tree Planting Programme', Forest Development Officer, Yundum, July 1974.
 Hydromet, Banjul, Rainfall Statistics, 1946-1977.
 Maher, C., 'Soil Conservation', World Crops, Vol 26, No 5, 1974.
 'Management and Conservation of Vegetation in Africa', Bulletin No. 41, Commonwealth Agricultural Bureau, 1951.
 Mann, R.D., 'The Gambia: Land and Vegetation Degradation Survey; - The Need for Land Reclamation by Comprehensive Ecological Methods', Yundum, 1977.
 Ministry of Overseas Development, Land Resource Study 22, 'The agricultural development of The Gambia: an agricultural, environmental and socioeconomic analysis', 1976.
 Ministry of Overseas Development, Land Resource Study No. 6. 'An Assessment of the Possibilities of Oil Palm Cultivation in Western Division, The Gambia', 1969.
 'More Water for Arid Lands', National Academy of Sciences, Washington, D.C. 1974.
 Phillips, J., 'Agriculture and Ecology in Africa', 1959.
 'Senegal Faces Drought', Ministry of Rural Development and Hydraulics' Dahra, Senegal, November 1974.
 Smith, R.J., 'Tree Crops', New York, 1950.
 Rholto Douglas, J., Hart, R.A. de J., 'Forest Farming', 1976.
 'Tree Planting Practices in African Savannas', F.A.O., Rome, 1974.
 'UNASYLVA', F.A.O. International Forestry Journal, Vol. 28 No. 114, 1976.
 'Underexploited Tropical Plants with Promising Economic Value', National Academy of Sciences, Washington. D.C., 1975.

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Help For Sahel

For years West Germany has contributed significantly to the efforts to stop the spread of desertification in the Sahel Zone. West Germany's contributions were made within the framework of its technical cooperation with Third World countries in the areas of forestry, veterinary medicine and agriculture, and through humanitarian measures.

Because of renewed indications of famine in parts of the Sahel region, an event sponsored by the Food and Agriculture Development Centre (ZEL) of the German Foundation for International Development in Upper Volta was of special interest. In cooperation with the CILSS (Comité Permanent Interetates de Lutte contre la Sécheresse dans le Sahel) a continuing education seminar was held from

January 19 to February 5, 1978. 24 leading officials of the ministries for forestry, national parks and agriculture of the Sahel states participated in the seminar. By means of excursions and an intensive course, the officials were familiarized with new techniques for the combined use of forest, pasture and agriculture areas in the arid regions. The new techniques, which were developed partially within the framework of a forestry project in German technical cooperation with Upper Volta, demonstrate the possibilities for restoring the destroyed eco-systems of the region.

Source: Development + Cooperation, Geimar Foundation for International Development, March 1978, p. 28.

Recommendations for a Firewood Project in Chad

Following receipt of N'Djamena's cable expressing interest in designing a firewood activity,^{1/} the Chad projects included in the CILSS Ecology and Forestry Program were reviewed with Mr. Fred Weber.^{2/} According to Mr. Weber, one project deserving attention is CILSS/CHAD A 301: "Mise en defense, aménagement et exploitation d'un massif forestier dans la region de N'Djamena." This would involve the management, exploitation and expansion of government forest reserves south of N'Djamena for fuelwood production.

Building upon the field mission's ideas for a firewood project, Weber suggested providing support to establishing and/or expanding existing village woodlots south of N'Djamena between the Chari and Logone rivers. The planting activities could be supplemented with conservation education geared toward local populations, and a variety of protection-type activities (e.g. fencing, wind-breaks). This could be implemented by CARE as a follow-on to the Acacia albida project. A change in emphasis would be required from planting A. albida in farm fields to planting trees for fuelwood (e.g. local species such as Acacia seyal, and exotic species such as Neem and Eucalyptus). Only a small percentage of the current CARE project is devoted to the production of firewood.

However, a follow-on project might also include resources to protect the A. albida planted during the initial project, as recommended in the Midpoint Evaluation.^{3/}

^{1/}Cable from N'Djamena to Washington, D.C., Response to Firewood Problem, N'Djamena 3663, dated September 18, 1978.

^{2/}Mr. Weber has worked with the CILSS Forestry and Ecology Unit, in Ouagadougou, and is familiar with the CILSS Program. He also conducted the field work for the Midpoint Evaluation of the CARE Acacia albida project.

^{3/}Weber and Dulansy, Midpoint Evaluation: Chad Reforestation, pp. 39, 49.

CLUB DU SAHEL
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ANNEXE/ANNEX D

Statement by

Mary E. King

Deputy Director, ACTION (Peace Corps)

October 12, 1977

Club des Amis du Sahel

OECD

Paris, France

Last month, at the U.N. Desertification Conference in Nairobi, the United States delegation made an offering to consider requests for up to 1,000 Peace Corps volunteers to be placed at host country request in reforestation, arid land management and local community education in anti-desertification efforts. Today we repeat that pledge and want to emphasize our desire to work closely with CILSS and the Club.

Under the new Carter Administration, the Peace Corps will retain its village approach, placing specifically trained volunteers in remote rural areas. This Administration places great emphasis on meeting basic human needs of the poorest citizens both at home and abroad. Peace Corps Volunteers demonstrate in a most personal way, through individual service, our commitment to the people of the world. Volunteers often know what works and what does not, at the village level where it frequently matters most. They are trained to strive for solutions to local problems of survival which are practical, manageable, technically and culturally appropriate, and which support the goal of village self-reliance. These solutions are often quite simple and inexpensive. Most importantly, Peace Corps Volunteers are trained not only in the specifics of the tasks they will perform but are also schooled in local languages and local customs to enable them to live and work closely with the villagers they serve.

On October 4 of this month, President Carter (whose mother, a registered nurse, served as a Peace Corps Volunteer in India) spoke to the African heads of State at the United Nations in New York. On that occasion, he emphasized his commitment to the contribution Peace Corps is making and mentioned that we now have approximately 2,000 volunteers in 23 countries in Africa South of the Sahara. We would like to affirm that commitment and also would add that we are an independent agency reporting directly to the President.

Our purpose today is to join you as a "donor" of people rather than of money. We are not alone in the placement of volunteers; other volunteer sending organizations stand ready to provide this unique form of assistance. We offer the design teams which will leave this Conference our support in planning for the use of volunteers. Based on our experience of 15 years of work in the Sahel at the village level, we look forward to joining other volunteer placement agencies in providing volunteers (at minimum cost to host countries) who are willing to make long term commitments to working with the Sahelian people.

We are ready to proceed, within the limits of our strengths and weaknesses. In order for this resource to be utilized, we would need the following:

a. The mission teams leaving this meeting would need to directly discuss the use of volunteers with host country nationals. Assessment would need to be made of the role of volunteers, minimum levels of competence for volunteers and specific training needs. The goals and objectives for various projects would need to be examined in light of the functions required; the tasks to be performed; and the mix of expert technicians, programming back-up staff and volunteers needed to support volunteers' long term commitments.

b. The mission teams would need to establish relationships with various volunteer-sending organizations in country, in the Sahel, to define tasks, roles and training needs.

c. There would need to be recognition that volunteer-sending organizations may have their own criteria for participation. For example, the Peace Corps would not want to place volunteers in projects when the main objectives are to produce firewood for urban populations, knowing that urban settlements do not, after all, represent more than 15% of the total Sahelian population. On the other hand, Peace Corps would want to emphasize programs that have the important element of villagers' motivation involved (what has been called "animation"), particularly those programs which address and involve women, children and the elderly in addition to men.

Some Conservation ^{1/} Project Ideas

for the Sahel - A Discussion Paper (August 1978)
Office of Programming and Training Coordination, PC/V

1. INTRODUCTION

1.1. Background

Throughout the Sahel Zone, natural resources are unmanaged, over-used or even destroyed as people try to make a living from the land. The problems are well-known and easily observed. Land erodes, decreasing its productivity. In some cases sand dunes blow on to farmlands, roads or houses. Water shortage - the most basic problem - can be closely linked to the erosion, since rain has less chance to infiltrate into the ground on eroded lands. As trees are destroyed, the search for fuelwood consumes a growing proportion of people's time. Over-grazing can lead to animal starvation.

Yet there are some conservation actions which can reduce these problems. In recent years, Peace Corps Volunteers have taken part in a number of conservation projects in the Sahel. Projects have included well construction, fuelwood afforestation, dune stabilization and tree planting for villages. Some of these projects have been successful, some not.

What types of PC conservation projects have had the best results? If there are opportunities to expand PC actions in the conservation field, what are the main restraints to overcome? This brief paper looks at the topic of conservation and summarizes some ideas for

^{1/} Note that the word "conservation" (as used in this paper) means managing or developing land or natural resources for continued use while protecting the resources.

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possible conservation projects, drawn from the Sahel Zone, to use as a basis for a discussion on the subject at the October, 1978 workshop. These ideas are not "models" or blueprints; nonetheless, many of these basic ideas can be modified and used in a variety of places. The principles of controlling sand dunes for example, are much the same in all parts of the world, although adjustments are necessary to accommodate local conditions, species and materials. On the other hand, some ideas are restricted to a certain ecological setting.

The purpose of the material presented in this "discussion paper" also is to bring out other ideas or improve on those ideas given here.

The conservation ideas presented here are intended to be in tune with the "basic human needs" concept. Water and food production are enhanced, jobs are created, or life is improved through conservation projects although the results may be a few years away in projects such as fuelwood plantations.

1.2. Skill Levels and Technical Support

The specific skills needed for most conservation projects can be given to someone in a course of 1-2 months.^{1/} Where possible, it is most logical to use PCVs who have previous university training or experience in conservation-related disciplines, especially since the supply of possible candidates in the field of biology, conservation and forestry is abundant (for example, there are about 1000 B.S. foresters now unemployed in the U.S.). Whether persons with

^{1/} Assuming volunteers with some biological background interest and to be assigned to a clearly defined, limited set of tasks (e.g., carry out afforestation; survey forest areas)

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prior conservation training or "BA generalists" are used, specific skill training is still essential.

A BS forester has finished a "summer camp" at the university, which is "field" training for 6-8 weeks in forest surveying, road surveys, mapping, etc. These students also are likely to have 1-2 summers' forestry experience behind them. Evidence of interest in extension-type work would be an important selection criterion for any candidate. For the biologists or others, it would be best to specify a preference for 2-3 summers of varied and practical job experience. ¶ Ten or even 5 years ago, many developing countries had no trained people in the conservation field. Today this situation is quite different, and frequently a country will have qualified foresters or other technicians, but without funds to carry out their work. This greatly affects the attitude of forestry agencies toward offers of volunteers with, as opposed to without some essential support. Volunteers today also will more likely work in conjunction with some very qualified nationals.

Technical backstopping has been a very common problem for PCVs. There may be situations as well where a few higher skilled volunteers can make possible the programming of a group of skill-trained volunteers, (e.g., a PCV engineer could "backstop" 10 PCVs who are skill-trained in well construction). From a purely economic viewpoint, if for no other reason, Peace Corps needs to carefully explore the concept of teams of volunteers. The individuals could be housed separately, even in separate villages, and still function as team members in terms of sharing vehicles, equipment, and training sessions.

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Liaison with other technical organizations (FAO, etc.) may be part of the answer to this problem. Possibly mid-service training of PCVs would help. This latter point has too often been neglected in recent years.

Attaching a volunteer to a larger project (with FAO, AID or otherwise) enables senior expert's techniques to reach a wider segment of the population, especially since experts rarely give enough time to the village-level extension aspects. Also a volunteer can help fill the gap between the high-level specialists on one hand, and community people on the other.

1.3 Support and Liaison

Most conservation work has certain distinct characteristics -- remote locations, larger distances and a seasonal nature (trees must be planted when it rains, etc.) and other factors. Perhaps for these reasons, there seems to be a common thread in successful conservation projects, namely that the PCV has some material support, albeit minor in some cases.

Nurseries, some shovels, plastic sacks, materials to make a well and other supplies are essential, as is some sort of transport, at least at the time to haul trees to the field.

Peace Corps conservation projects have cooperated with AID, FAO, CARE, CRS or other organizations, to attain some support for the volunteers. It will be important to review the present opportunities for cooperation in the Sahel and to specify the level of support required.

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The budgets of the Sahelian forestry departments are very limited. Field workers often have no means of transportation, materials, laborers, or an operating budget to carry out their work, and obviously very little can be accomplished. This is a common problem.

Some Peace Corps Directors in the Sahel have indicated that the problem of expanding volunteer numbers in conservation projects hinges largely on the availability of supportive funds.

2. IDEAS FOR PROJECTS

This section lists a number of possible project ideas. The ideas mainly are taken from examples of Peace Corps experiences, from information found in CILSS project proposals and from an analysis of CILSS projects in March 1978 by OPTC.

Below are five basic technical ideas for projects, given in simple terms, while recognizing that some PCDs or APCDs have considerable experience in conservation programming. The tasks for PCVs are described with the assumption that the volunteers will function essentially as employees of the ministry concerned, working in close liaison with host country personnel.

Although the ideas are presented separately, in many projects two or more ideas are frequently combined in order to reach the desired goal.

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2.1. Village Woodlots and Plantations

(a) Typical problem. Villagers (meaning groups of rural people in general) haul fuelwood long distances by hand or cart. Construction wood is very scarce.

(b) Typical project goals:

- to teach villagers (possibly more than one village for a PCV, several in one or more areas for an entire project) methods of afforestation and forest management, in some cases including the nursery aspects
- to educate the villagers to the value and need of a village woodlot and the need to protect this natural resource
- to help villagers develop a forest management cooperative or scheme for managing the woodlot for sustained yields.

(c) Principal objectives/Outputs of the project:

- provision of fuelwood, construction poles (normally quick-growing species are sought such as neem, cassia, gmelina, eucalyptus, etc.)
- in cases, provision of cut fodder (leaves, grass, etc.)
- related benefits may include: honey production, medicinal plants, reduction of wind damage (by tree windbreaks), trees for shade.

(d) Summary of PCV tasks:

- work with villagers et al to establish forestry scheme, possibly a cooperative, for the village forestry
- help villagers select plantation sites (this may be in a few villages); sites often 1/2 to 1 ha; help stake and survey sites, mark holes, other survey tasks
- instruct in the procedures of planting
- help organize planting crews
- arrange for tools, provision of transport for seedlings, other administrative details
- establish a nursery (if a local, village-level nursery must be established) and train nursery staff, including site location, well construction, fencing, soil/site preparation work (composting, etc.), planting, seed testing, watering and other work as described in Weber/PC book "Afforestation in Arid Zones"
- (if a regional forestry service nursery is used) handle the liaison and logistics to assure dependability of the regional forestry nursery of proper tree species in the rainy season, to overcome administrative bottlenecks

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- work with villagers to develop protection schemes for the plantations
- assist villagers in developing "marketing" (i.e., cooperative use) for the wood to be produced.
- educate locals on the value of plantations and environmental protection

(e) Related tasks:

Growing or grafting fruit trees, dune stabilization (local small-scale), put in village or school shade trees, plant special trees for farmers (e.g. palms for mats), carry out applied experiments on tree species, assist farmers with windbreaks, "live fences", other actions, honey production, medicinal plants.

(f) Recruits and training

A BS forester with interest in extension and some past field forestry-type experience would be preferable or a BA biologist + some experience would be suitable. If these were not available BA generalists of any type with prior forestry type experience or farm experience could be used by extending the skill training period.

The technical and extension training (presumably in-country) would be about 6 weeks minimum (assuming 1/2 + BS foresters, remainder BA biologists would be typical fill). The trainee would learn to carry out the tasks listed under (d) above and be able to identify plants, soil groups and other ecological features of the country of assignment. Training would need access to a nursery, village or other forests, surveying equipment and transport for field excursions.

(g) Support needed

Periodic transport for trees (truck, either project or rental), nursery fencing (if local nursery), nursery well supplies including hand pump. If a regional nursery and PCVs service many villages, dependable transport for the volunteer in terms of an available truck, motorbike or some other form of wheels may be only way realistically the PCV can assist many scattered villages, especially given the seasonal nature of the work (when it rains, trees must go in). Dependable public (or perhaps any) transport to remote villages is not available in some cases.

Typical equipment needs:

- survey instruments (level, compass, tape), auger
- fencing

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- well equipment (cement, labor for digging, other) and pump (if there's to be a nursery)
- wood or other supplies to build nursery shed (if needed)
- transport for trees in season (project truck or truck rental)
- transport for volunteer (if necessary, depends on individual case, but often will be needed)
- tools for afforestation (to lend to laborers)

2.2. Acacia albida ("agro-forestry" example in conjunction with AID or other agency)

(a) Typical problem. Millet and peanut fields yield poor crops due to depletion, low fertility of the soil.

(b) Typical project goals

- to assist farmers in planting Acacia albida trees by establishing nurseries for the acacias and distributing these at token cost to the farmers, which improves field productivity.
- to evaluate the effects of the acacia use in the fields and assist AID or other agency in developing better methods of propagation and use of these trees
- carry out extension work to educate farmers to the value of using the acacias.

(c) Principal outputs/objectives of the project

- better crop yields result when Acacia albida, a leguminous tree, planted in fields of millet and peanuts in certain parts of the Sahel (the tree improves the soil fertility adding N, P, K, Mg and Ca, organic matter and improves soil moisture retention).
- fodder from the trees or pods may be used in season of feed shortage

Summary of PCV tasks

This project would be in conjunction with one of the proposed or on-going projects funded by AID, CARE, FAO or others. The volunteers could do various tasks, including:

- meeting with farmers or farmer groups to arrange for planting the trees, extension work
- instruction in tree planting, and protection and management
- nursery establishment (including site, selection, planting, fencing, other aspects (if a local nursery)

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- assist the more senior experts (FAO, AID, etc.) in collecting information to improve techniques of using Acacia albida.

- carry out technical and administrative work, if operating a larger regional nursery, such as planning, watering, transport of plants, etc.

- assist in extension training courses for farmers and in education or conservation

(e) Related tasks:

- essentially same as in 2.1. (e), but probably with more effort placed on some experiments and trials, since much remains to be learned about the use of Acacia albida

(f) Recruits and Training

Very similar to 2.1. (f). If no foresters or biologists, BA generalists may be trained, extending training.

(g) Support needed

- arrangements for transport of trees and the PCV

- equipment very similar to 2.1 (g)

- PC has experience with the PC/AID activity in Acacia albida in Niger and with a PC/CARE example in Chad (using AID backing also).

2.3. Dune Afforestation and Windbreak Establishment

(a) Typical problem: Blowing sand can cover houses, roads and farm fields, causing damage and taking fields out of production. Wind blowing causes erosion and reduces crop yields, can cover irrigation ditches with sand.

(b) Typical Project Goals

- to organize local communities or groups of farmers to stabilize dunes and plant trees or other vegetation on the dunes for continued control of the sand and protection of arable lands

- to help farmers plant windbreaks

(c) Principal objectives/outputs of projects

- protect farm fields, villages from sand and wind

- take useless sand dunes and establish tree or shrub growth or useless sand dunes which later could be managed for fuelwood.

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(c) Principal outputs, continued

- increase crop and animal yields by reducing wind effects
- windbreaks can eventually be managed (thinned periodically) and yield fuelwood

(d) Summary of PCV tasks:

The extension aspects and forestry technical tasks are basically similar to the tasks described under 2.1. (d) but in addition the PCV would collect palm leaves, branches or other dry materials for installation of the small "fences" (or palisades) used to halt the blowing of the sand. The trees or shrubs are planted between a checkerboard of these "fences". The "fences" last long enough for the vegetation to take hold, usually two seasons.

The installation of the windbreaks requires more extension work with individual farmers.

(e) Related tasks:

There is generally a void of good, solid technical information on wind break techniques in developing countries. The PCV can provide a real service by helping with applied experiments in the topic of windbreak use.

(f) Recruits and training

Essentially the same as 2.1. (f)

(g) Support needed

Very similar to 2.1. (g)

(h) PC experience and other examples

The Peace Corps project in Keita (Niger) has been working on this project for about 4 years with success.

Across North Africa, in Iran, Sudan, Libya, Somalia and other countries, dune stabilization projects have technically been successful. Financially however, the work requires support. Usually any profits from dune afforestation are small and long-term. Dune work, therefore, is justified where something of value must be protected (e.g., an irrigated field).

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2.4. Managing Forest Reserves ^{1/}

(a) Typical problems:

Wood for fuel and other needs is scarce in the Sahel yet government forest reserves are not managed for optimum yield of charcoal, firewood or other wood.

Many of these forest areas are understocked and under-used throughout the Sahel.

(b) Typical Project Goals:

- to establish management of existing forest reserve areas, to allow harvest of wood, re-stocking with good species, thinning, fire management and other measures
- concurrently to establish marketing procedures for the wood, local nursery establishment, training for forest technicians, possibly charcoal production (and marketing) and other measures
- with the forestry agency, to set up the institutional arrangements needed to carry out this forest management

(c) Principal objectives/outputs of the project

Managing existing "forest reserves" (government land) could produce more additional wood and quicker than afforestation schemes on bare lands. In other words, these lands could potentially produce far more wood, with some routine forest management.

(d) Summary of PCV tasks

A first stage would be to survey the forest boundaries, carry out sociological surveys (on wood use, wood needs etc., in the area), determine the forest productivity (how much growth, etc.) PCVs could carry out this first stage. Other projects would follow.

First stage work could include the following tasks:

- resurvey forest boundaries

^{1/} This idea based on discussions with Fred Weber regarding his AID proposal work for Mauritania.

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- carry out sociological surveys (attitudes of what people want for wood supply, how they would cooperate in a management scheme, would they work in a cooperative for planting, harvesting, etc)
- carry out vegetative, soil and other ecological surveys to determine wood production rate of the forest and other values, such as wildlife food supplies.
- make utilization and marketing studies (eg. how much wood normally would go into charcoal, tools used, etc.)
- based on the above, a first management plan could be put together, which would cover cutting systems, sales arrangements, how to improve the forests, what public awareness campaign will be needed, etc., including economic data

(e) Followup to the first stage activity:

Activity of the type described above would be the first step of a longer-range project intended to lead to more productive use of these forests by:

- nursery/tree planting work
- forest (silvicultural) improvements (thinnings, etc.)
- systematic cutting (which can produce not only wood but jobs)
- organizing (with government agency) to reduce grazing pressure on the forest
- public relations campaigns to get local population to cooperate on the management objectives
- fire management
- improving charcoal production techniques

(f) Recruits and Training

BS foresters and BA generalists mixed (half and half) would make a good combination for this technical/sociological type of work, working in teams. Skill training would need to be intensive to cover the items in (d) but the job would be challenging and varied.

(g) Support needed

Transport and survey equipment would be the main material support; however, PCVs also should work with more senior experts, given the technical level expected of the "forester and sociologist" team.

Plans of this type have been reviewed with AID by Fred Weber and the idea is thought to be technically viable across the Sahel.

Chad has a similar project under consideration by World Bank.

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2.5. Other Possibilities

The four examples above give some ideas with some details. Below are notes on some other possible project ideas in the conservation field.

(a) Wells

PCVs have worked successfully in wells activities. Techniques, tasks, and equipment needs are described in the Peace Corps "Wells Manual," 1975, published from the West African conference of 1974, Togo. There are hand-dug, drilled or driven wells. (Note: a summary of AID activities in wells will be available at the workshop.

(b) Runoff harvesting Wells can have dropping water tables as land erodes, causing more rain to run off and less to soak in. One way to counter this problem somewhat is to catch the wasted runoff ("runoff harvesting"). This technique demands construction of long, slightly-sloped diversion ditches, to catch the runoff and direct it into a dug pond. The pond water can last for several weeks and provide added stock water. In some countries where ground water is either deep or saline, runoff harvesting is widely practiced. The techniques are simple. PCV generalists could be trained for the work. Support: a few survey tools plus ways to hire laborers.

(c) Roads Often roads in hilly areas erode (wash out) in rain storms because no drainage has been installed. Many dirt roads can be drained easily by putting in simple cross drains of rock. Spacing and design must follow a few rules. PCVs could help supervise laborers and train people in this maintenance work in areas where appropriate.

(d) Charcoal Where charcoal production is primitive, efficiency will be low. Peace Corps has had at least one reportedly successful project for constructing more efficient ovens (eg. Senegal).

BIBLIOGRAPHY

- Agency for International Development. Dune Fixation and Protection of the Niayes along the Northern Coast of Senegal. FY 1980 Annual Budget Submission. Dakar, Senegal: 1978.
- _____. Airgram. The Firewood Problem in Africa: Report on the AFR Firewood Conference and Request for Field Views. AIDTO-Circ. A-364, August 29, 1978.
- _____. Greenbelt - Fuelwood Production. FY 1980 Annual Budget Submission. Dakar, Senegal: 1978.
- _____. Mauritania Renewable Resources Management. Project Paper. Washington, D.C.: 1978.
- _____. Senegal Integrated Resources Management: Interim Report. Dakar, Senegal: 1978.
- _____. SODESP Livestock Production. Project Paper. Dakar, Senegal: 1978.
- _____. Upper Volta Forestry Education and Development. Project Identification Document. Ouagadougou, Upper Volta: March 1978.
- _____. Watershed Management. Project Paper. Praia, Cape Verde: 1978.
- _____. Forestry and Land-Use Planning. Project Identification Document. Niamey, Niger: June 1977.
- _____. Reforestation in the Gambia. Project Identification Document. Dakar, Senegal: June 1977.
- _____. Senegal Land Conservation and Revegetation. Project Review Paper. Dakar, Senegal: 1977.
- Club du Sahel. Summary Record of Club du Sahel/CILSS Meeting on Ecology and Reforestation. Sahel CR (77)8 Prov. Paris, France: OECD, 1977.
- Equipe Ecologie et Environnement. Project Proposal for a Soil Conservation Training Program (Seminar). RAF D 301. Ouagadougou, Upper Volta: Comite Permanent Interetats de Lutte Contre la Secheresse dans le Sahel, May 1978.
- _____. CILSS/Club of the Sahel. Note de Synthese Sur la Strategie Forestiere au Sahel. Ouagadougou, Upper Volta: Comite Permanent Interetats de Lutte Contre la Secheresse dans le Sahel: 1977.
- Felker, Peter. State of the Art: Acacia Albida as a Complementary Permanent Intercrop with Annual Crops. Prepared under contract for the Agency for International Development. Riverside, California: University of California, 1978.

- Freeman, Peter H.; Green, Victor E.; Hickock, Robert B.; Moran, Emilio F.; and Whitaker, Morris D. Cape Verde Assessment of the Agricultural Sector: Preliminary Report. Virginia: General Research Corporation, 1978.
- Huygen, Pierre. Development of the Gambian River Basin: A Forestry Study of the Basin. February-March 1978.
- Weber, Fred; and Dulansey, Maryanne. Midpoint Evaluation: Chad Reforestation Project. Prepared for CARE, Inc. Washington, D.C.: Consultants in Development, April 1978.
- Weber, Fred R. Club du Sahel: Environment, Ecology, Forestry, Conservation. Meeting Report. Paris, France: 1977.
- _____. Economic and Ecologic Criteria: Proposed Club des Amis du Sahel Forestry/Anti-desertification Program. May 1977.
- _____. Niger Forestry and Land-Use Planning. Project Design Committee Paper. USAID 626-0216. Niamey, Niger: September 1977.