

PD-AAG-148

UNCLASSIFIED

PROJECT PAPER

NIGER
FORESTRY AND LAND-USE
PLANNING PROJECT
(No. 683-0230)

USAID/NIGER

Agency for International Development

UNCLASSIFIED

DEC 28 1979

ACTION MEMORANDUM FOR THE ASSISTANT ADMINISTRATOR FOR AFRICA

FROM: AFR/DR, ^{JW Koehring} John W. Koehring

SUBJECT: Niger Forestry and Land-Use Planning Project (683-0230)

I. Problem: Your authorization is needed for a grant of Three Million Eight Hundred and Thirty-Nine Thousand Dollars (\$3,839,000) from Section 121 of the Foreign Assistance Act of 1961, as amended, Sahel Development Program (SH), to the Government of Niger (GON), for the subject project.

II. Discussion

A. Project Description

The goal of this project is to assist Niger attain food self-sufficiency and sustained economic growth in the rural areas through long-term efforts to slow down, arrest and hopefully reverse the existing trends of deterioration in Niger's natural resources of soil and vegetative cover. A large step toward this goal will be realized through attainment of the project purpose, which is to establish a functional planning and managerial capability within the Forest and Waters Service of Niger's Ministry of Rural Development, and the preparation of a long-term perspective plan for the rehabilitation, conservation and protection of Niger's soils and natural vegetation.

The above will be accomplished through: (1) The creation and support of a Technical Planning Unit, Bureau Technique Forestier (BTF) within the Forest and Waters Service (EFS), which will provide that service with the basic ability to develop and analyze project proposals and engage in long-term planning and technical monitoring of conservation related projects, provide a data bank on renewable natural resources, and provide technical advice to other services of the GON engaged in project activities which impact on Niger's natural resource base; (2) the establishment of model-sites which will enable the EFS to conduct experimental and test activities which will feed results into the long-term planning component, and provide a management training ground for EFS field personnel; (3) the compilation of a natural resource inventory which will provide technical training in more sophisticated techniques of resource survey and management; and (4) a complementary component targeted at developing an awareness of environmental concern and action requirements among the rural population and officials of corollary government services as well as at reinforcing the management and extension skills of the EFS field personnel at large.

B. Financial Summary

Life-of-project AID financing totals \$3,839,000, of which approximately \$1,675,000 (44%) will be disbursed in local currency. In accordance with AID's OYB and allotment procedures, \$792,000 will be obligated in FY 1980. Budgets for FY 80 and life-of-project are as follows:

	(U.S. \$000s)	
	<u>FY 1980</u>	<u>LOP</u>
1. Technical Assistance	158	1,087
2. Training	25	258
3. Commodities	364	997
4. Other Costs		
Operations/Misc.	100	557
Inflation & Conting.	145	940
5. Total	<u>792</u>	<u>3,839</u>

GON contributions will total \$1,332,000, primarily for salaries and the construction of an office building for the Bureau Technique Forestier (BTF). The Peace Corps will also provide \$131,000 in technical assistance.

C. Summary of Analyses

The economic returns of the project are long-term in nature and difficult to quantify. Niger's renewable natural resources risk being lost if not properly managed. It is anticipated that, through this project, future resource development efforts will be based on more accurate data and long-term planning, which should result in increased levels of output and, hence, increased rates of return. The Technical Planning Unit (BTF) will be headed by a Nigerien of recognized managerial competence and with experience in working with external donors. As the project involves the participation of all sectors of the population, we anticipate that obstacles of a socio-cultural nature to successful project implementation will be minimized. Based on the IEE, the Mission Director has recommended a negative determination. The Project Review has recommended strengthening the Environmental Concerns section of the Project Paper to provide for continuing environmental analyses to be performed during implementation of the long-term plan, a major output of this project.

No issues exist in Niger with respect to U.S. concerns for human rights.

D. Project Implementation

With the exception of one non-competitive Code 935 waiver in the amount of \$265,000 for the procurement of aerial photography services, the request for which is included in the Project Authorization, source and origin of goods and services shall be principally the U.S. and Niger.

The primary implementing agency is the Bureau Technique Forestier-BTF of the Forest and Waters Service (EFS), which is part of the Ministry of Rural Development of Niger.

E. Committee Action, Conditions and Covenants

A Project Review was chaired by AFR/DR/SFWAP, Jonathan McCabe, on December 19, 1979. Modifications to the Project Paper, recommended during Project Committee discussions and confirmed by the Project Review, are currently being made; they may be summarized as follows:

1. Elaboration on the methodology used in the selection of model sites, the purpose of the sites and the participation of adjacent populations;
2. strengthening the section on Implementation by including a flow-chart of activities;
3. expansion of the discussion of environmental concerns to include the provision of continuing environmental analyses;
4. strengthening the emphasis on the value and application of the long-term resource rehabilitation and protection plan;
5. elimination of an unapproved vehicle procurement waiver; elimination of a sole-source waiver for vehicles because Niger's standardization plan makes it unnecessary;
6. with regard to the Statutory Checklist - (a) change the response to the FAA Section 660 question to indicate that funds will not be used to finance police training or other law-enforcement assistance; and (b) change the response to FAA Section 110(a) with respect to host country contribution to indicate "N/A" to Sahel Development Program funds;
7. recalculation of the GON contribution based on local salary levels for Nigerien personnel;
8. addition of a Condition Precedent to first disbursement requiring a GON decree necessary to give the Bureau Technique Forestier-BTF its legal operating status; and
9. increase of life-of-project, AID funding, by \$254,000 (approx. 7%) to \$3,839,000 to account for the inflationary impact resulting from the project implementation period being pushed back from FY 79-82 to FY 80-83 (budget tables are being adjusted accordingly).

F. Responsible Project Officers are:

Michael Huffman, Projects Officer, AFR/DR/SFWAP
Patrick McDuffie, USAID/Niger

III. Congressional Notification

Page 132 of the FY 1980 Congressional Presentation projected an obligation of \$792,000 during this fiscal year; no further notification is required.

IV. Recommendation: That you sign the IEE (Attachment A) indicating your approval of the recommendation for a negative determination; and that you sign the Project Authorization (Attachment B), including a request for a waiver to permit non-competitive, Code 935 procurement in the amount of \$265,000 for aerial photography services and authorizing the Niger Forestry and Land-Use Planning Project with planned obligations up to \$3,839,000 in accordance with procedures described in the Authorization.

Clearances:

DAA/AFR:WHNorth

AFR/DR/SFWAP:JRMcCabe

AFR/DR/ENGR:RPayette (draft)

AFR/DR/SDP:BBoyd (draft)

AFR/SFWA:RLandgren (draft)

AFR/SFWA:JKelly

AFR/DP:JAnderson (draft)

AFR/DR/SFWAP:LOrtega (draft)

AFR/DP:RStacy

DS/ST:DDeely (draft)

AFR/DR/ARD:QBenbow (draft)

SER/COM:RBStader (draft)

GC/AFR:NFrame (draft)

Drafted by: AFR/DR/SFWAP, ^{MH} Huffman:fn:12/28/79:ext. 29339

PROJECT AUTHORIZATION

Name of Country: Niger

Name of Project: Forestry and Land
Use Planning

Number of Project: 683-0230

1. Pursuant to Section 121 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Forestry and Land Use Planning Project for the Government of Niger involving planned obligations of not to exceed \$3,839,000 in grant funds over a four-year period from date of authorization, subject to the availability of funds in accordance with the A.I.D. OYB/allotment process, to help in financing foreign exchange and local currency costs for the project.

2. The project consists of the establishment of a functional planning and managerial capability within the Forest and Waters Service (Eaux et Forêts - EFS) of Niger's Ministry of Rural Development and the preparation of a long-term perspective plan for the rehabilitation, conservation and protection of Niger's soils and natural vegetation.

The project will involve: (1) the creation and support of a Technical Planning Unit (Bureau Technique Forestier - BTF) within the EFS which will provide that service with the basic ability to develop and analyze project proposals, engage in long-term planning and technical monitoring of conservation related projects, provide a data bank on renewable natural resources, and provide technical advice to other services of the GON engaged in project activities which impact on Niger's natural resource base; (2) the establishment of mode-sites which will enable the EFS to conduct experimental and test activities which will feed results into the long-term planning component and provide a management training ground for EFS field personnel; (3) the compilation of a natural resource inventory which will provide basic data to the technical planning unit as well as provide technical training in more sophisticated techniques of resource survey and management; and (4) the development of an awareness of environmental concern and action requirements among the rural population and officials of other government services as well as re-enforcing the management and extension skills of the EFS field personnel at large.

3. The Project Agreement, which may be negotiated and executed by the officer to whom such authority is delegated in accordance with A.I.D. regulations and Delegations of Authority, shall be subject to the following essential terms and covenants and major conditions, together with such other terms and conditions as A.I.D. may deem appropriate.

a. Source and Origin of Goods and Services

Goods and services, except for ocean shipping, financed by A.I.D. under the project shall have their source and origin in the Cooperating Country and in countries included in A.I.D. Geographic Code 941 except as A.I.D. may otherwise agree in writing. Ocean shipping financed by A.I.D. under the project shall, except as A.I.D. may otherwise agree in writing, be financed only on flag vessels of the United States or the Cooperating Country.

b. Conditions Precedent

1. Prior to any disbursement, or the issuance of any commitment under the Project Agreement, the Cooperating Country will designate a GON official who will serve as GON project director and chief of the Bureau Technique Forestier (BTF).

2. Prior to any disbursement, or the issuance of any commitment under the Project Agreement, the Cooperating Country will submit evidence, in form and substance satisfactory to AID, that a separate technical planning unit (Bureau Technique Forestier) has been legally created within the Forest and Waters Service (Eaux et Forets - EFS) of the Ministry of Rural Development.

c. Covenants

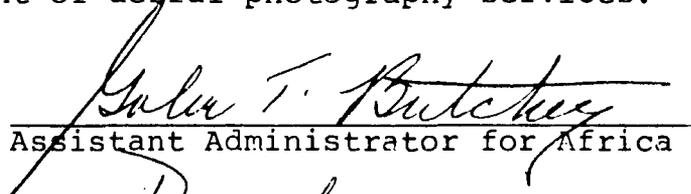
1. The Cooperating Country covenants (a) to provide the initial staff members for the BTF as specified in the project description attached to the Project Agreement within 60 days of execution of the Project Agreement and (b) to provide the remaining staff members within 120 days of execution of the Project Agreement.

2. The Cooperating Country covenants to make available on a timely basis sufficient financial resources to carry out the physical construction requirements of the project and to implement those actions identified in the project description attached to the Project Agreement as responsibilities of the GON.

d. Waivers

Based on the justifications set forth in Appendix F of the Project Paper, I hereby:

1. Approve a nationality waiver from A.I.D. Geographic Code 941 (Selected Free World) to Geographic Code 935 (Free World) for procurement of aerial photography services;
2. Certify that the interests of the U.S. are best served by permitting the procurement of services from free world countries other than the cooperating country and countries included in Code 941;
3. Approve a waiver of competition to allow negotiation with a single source for procurement of aerial photography services.


Assistant Administrator for Africa

Date



Clearances: As shown on Action Memorandum

9/10

AGENCY FOR INTERNATIONAL DEVELOPMENT PROJECT PAPER FACESHEET		1. TRANSACTION CODE <input type="checkbox"/> A ADD <input checked="" type="checkbox"/> C CHANGE <input type="checkbox"/> D DELETE		PP <hr/> 2. DOCUMENT CODE 3
3. COUNTRY/ENTITY NIGER		4. DOCUMENT REVISION NUMBER <input type="checkbox"/>		
5. PROJECT NUMBER (7 digits) <input type="text" value="683-0230"/>	6. BUREAU/OFFICE A. SYMBOL: AFR B. CODE: <input type="text" value="06"/>		7. PROJECT TITLE (Maximum 40 characters) <input type="text" value="Forestry and Land-Use Planning"/>	
8. ESTIMATED FY OF PROJECT COMPLETION FY <input type="text" value="8"/> <input type="text" value="4"/>		9. ESTIMATED DATE OF OBLIGATION A. INITIAL FY <input type="text" value="81"/> B. QUARTER <input type="text" value="2"/> C. FINAL FY <input type="text" value="81"/> (Enter 1, 2, 3, or 4)		

10. ESTIMATED COSTS (\$000 OR EQUIVALENT \$) -						
A. FUNDING SOURCE	FIRST FY			LIFE OF PROJECT		
	B. FX	C. L/C	D. TOTAL	E. FX	F. L/C	G. TOTAL
AID APPROPRIATED TOTAL						
(GRANT)	420	372	792	2,164	1,675	3,839
(LOAN)						
OTHER U.S. 1. Peace Corps	-	-	-	131	-	131
OTHER U.S. 2.						
HOST COUNTRY	-	252	252	-	600	600
OTHER DONOR(S)						
TOTALS	420	624	1,044	2,295	2,275	4,570

11. PROPOSED BUDGET APPROPRIATED FUNDS (\$000)									
A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE		E. 1ST FY <u>80</u>		M. 2ND FY <u>81</u>		K. 3RD FY <u>82</u>	
		C. GRANT	D. LOAN	F. GRANT	G. LOAN	I. GRANT	J. LOAN	L. GRANT	M. LOAN
(1) SH	210 B	090		792		892		1,079	
(2)									
(3)									
(4)									
TOTALS									

A. APPROPRIATION	N. 4TH FY <u>83</u>		O. 5TH FY <u> </u>		LIFE OF PROJECT		12. IN-DEPTH EVALUATION SCHEDULED
	G. GRANT	P. LOAN	R. GRANT	S. LOAN	T. GRANT	U. LOAN	
(1) SH	1,076		-		3,839		<input type="text" value="MM"/> <input type="text" value="YY"/>
(2)							
(3)							
(4)							
TOTALS							

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

1 = NO
 2 = YES

14. ORIGINATING OFFICE CLEARANCE SIGNATURE: <i>Jay R. Johnson</i> TITLE: Mission Director, USAID/Niger		15. DATE DOCUMENT RECEIVED IN AID/W. OR FOR AID/W. DOCUMENTS, DATE OF DISTRIBUTION DATE SIGNED: MM <input type="text" value="03"/> DD <input type="text" value="05"/> YY <input type="text" value="79"/> MM <input type="text" value="06"/> DD <input type="text" value="07"/> YY <input type="text" value="79"/>
--	--	---

112

1/12

TABLE OF CONTENTS

	<u>Page</u>
I. Summary and Recommendations	1
II. Description of the Project	3
A. Project Purpose	3
B. Problem	4
C. Project Strategy	5
D. Beneficiaries	9
E. Relationship to AID Overall Goals	10
F. Principal Elements of the Project	10
1. Technical Planning Unit	11
2. Model Sites	14
3. Natural Resource Inventory	17
4. Training, Information and Extension	19
III. Project Specific Analysis	22
A. Economic Analysis	22
B. Administrative Feasibility	25
C. Technical Feasibility	29
D. Social Soundness Analysis	33
E. Environmental Concerns	38
F. Special Issues	38
IV. The Financial Plan	42
V. The Implementation Plan	56
VI. The Evaluation Plan	60
VII. Conditions and Covenants	63
VIII. Appendices	
A. Model Sites	64
B. Training, Information and Extension	82
C. Initial Environmental Examination	87
D. Relationship to Other AID Projects	93
E. Statutory Checklist	96
F. Waiver Requests	108
G. GON Assistance Request	109
H. Logframe	110
I. PID Review Cable	114
J. 611(e) Determination	115
k. Flowchart of Activities	116

I. Summary and Recommendations:

The goal of this project is to assist Niger attain food self-sufficiency and sustained economic growth in the rural areas through long-term efforts to slow down, arrest and hopefully reverse the existing trends of deterioration in Niger's natural resources of soil and vegetative cover. A large step toward this goal will be realized through attainment of the project purpose which is to establish a functional planning and managerial capability within the Forest and Waters Service (Eaux et Forêts - EFS) of Niger's Ministry of Rural Development and the preparation of a long-term perspective plan for the rehabilitation, conservation and protection of Niger's soils and natural vegetation.

The above will be accomplished through: (1) the creation and support of a Technical Planning Unit (Bureau Technique Forestier - BTF) within the EFS which will provide that service with the basic ability to develop and analyze project proposals, engage in long-term planning and technical monitoring of conservation related projects, provide a data bank on renewable natural resources, and provide technical advice to other services of the GON engaged in project activities which impact on Niger's natural resource base; (2) the establishment of model-sites which will enable the EFS to conduct experimental and test activities which will feed results into the long-term planning component and provide a management training ground for EFS field personnel; (3) the compilation of a natural resource inventory which will provide basic data to the technical planning unit as well as provide technical training in more sophisticated techniques of resource survey and management; and (4) a complimentary component targeted at developing an awareness of environmental concern and action requirements among the rural population and officials of corollary government services as well as reenforcing the management and extension skills of the EFS field personnel at large.

The project is in conformance with and supports (1) the GON's development plans; (2) the CILSS strategy for Forestry and Environment; and (3) the Mission's country development strategy statement.

All of the issues raised at the AID/W PID review were satisfactorily resolved during final project design. The project has been determined to be economically, financially and technically feasible and the GON agencies responsible for project execution, in conjunction with project provided technical assistance, are adequate to provide the necessary administrative capability for project implementation.

The USAID/Niger Mission Director attests that sufficient planning and analysis have been performed to provide a reasonably firm cost estimate to the U.S. Government and that a determination should be made that the requirements of Section 611(a) of the Foreign Assistance Act of 1961, as amended, have been met.

14

The total cost of the project in both foreign exchange, local currency and in-kind contribution totals \$4,570,000. Percentage shares of these project contributions are as follows: USAID 84%; GON 13%; Peace Corps 3%.

The total cost of the AID portion of the project is \$3,585,000 broken down by components as follows:

	(\$'000)
Technical Assistance	1,087
Training	258
Commodities	997
Operational Costs	557
Contingency/Inflation	940
Total	<u>3,839</u>

Approximately \$2,164,000 of the total AID contribution represents foreign exchange costs and \$1,675,000 represents local currency costs. An Initial Environmental Examination has been completed for this project and a negative determination has been recommended.

The ultimate, long-range beneficiaries of this project are the rural people of Niger who are among the poorest in the world. As a consequence, this project conforms with the Congressional Mandate.

In view of the above it is recommended that:

(1) A grant of \$3,839,000 to the Republic of Niger be approved; that 792,000 be authorized during the first year of the project (FY 80); and that the remainder of \$2,705,000 be incrementally funded over the subsequent three years of the project subject to the availability of funds.

(2) That the preference for host country contracting be waived in order to allow AID contracting for technical assistance.

(3) That a waiver from geographic code source 000 to code 935 as well as a waiver from the competitive bidding procurement regulations be authorized to allow the sole-source procurement of aerial photography services from a French para-statal organization with permanent representation in Niamey. Total cost of these services would approximate \$265,000 in four annual work orders of \$66,000 each.

II. Description of the Project

A. Project Purpose

This project is designed to provide assistance to the Government of Niger (GON) to strengthen the planning and managerial capability of the Water and Forest Service (Eaux et Forêts - EFS). Under the authority of the Minister of Rural Development (MDR) this Service is responsible for the conservation, improvement, and rational exploitation of all of Niger's natural resources, and the protection of "nature" generally, including fish and wildlife. More specifically, inputs provided hereunder will be used to help establish a Resources Planning unit within the EFS, a principal task of which will be the preparation of a guidelines working paper (perspective plan) for a twenty-year comprehensive plan for the rehabilitation and protection of Niger's soils, water, natural vegetation and wildlife. This effort is compatible with the agro-sylvo-pastoral (ASP) management model thrust being pursued in Sahelian countries, and with the Club du Sahel/CILSS recognition that forestry and land-use planning is a major regional problem.

Parallel activities planned under this project to further the above objectives are:

- (1) The completion of an inventory of natural resources and the establishment of resources capability and hazard data.
- (2) The initiation of conservation and production model sites for data development and training purposes.
- (3) An analysis of long-range manpower needs and the design of training, orientation, and extension education programs for the EFS. A campaign will be mounted to familiarize non-forest GON officials with project purposes and implementation progress.
- (4) Also with regard to human resource development, a broadly based program of extension services to the benefiting public will be started so as to establish a better understanding of and support for the protection and conservation of natural resources.

In addition to preparing the twenty-year perspective plan, the Resources Planning unit will prepare specific rehabilitation and protection plans, including: evaluation of existing efforts, development of plans for projects to supply forest and range products, and development of resource management and conservation plans. This unit will ultimately be charged with the design and preparation of project proposals intended particularly to attract donor support for projects identified within the purview of the long-range plan.

B. The Problem

Niger's resource base has been subject to the same process of deterioration as have the resource bases of other countries in the Sahel area. Its population has increased five-fold over the past century, causing ever-increasing pressure on its land, water, and natural vegetation. Most of its arable land--only a small percentage of total land area--already is under cultivation. Additional cultivation requirements have forced farmers to till marginal lands northwards toward the desert, and this in turn has forced nomadic herders into even more marginal pasturelands. The demands for firewood (for cooking) have grown with population increases, but the availability of firewood is diminishing, and the distances over which it must be transported are increasing. The shortage of water for humans, animals and plant life is a matter of increasing concern, especially during the years of low rainfall.

Stated simply, the overall problem which this project addresses is that of a population, increasing at an annual rate estimated at 2.7 percent, pressing hard upon already inadequate natural resources which are shrinking at an unknown but discernible rate. Niger has approximately five million people in an area of 1,267,000 square kilometers. (Approximately the combined area of Texas, New Mexico and Arizona). Some three-quarters of the population, however, must wrest its living from the severely limited arable land located mainly in a narrow band across the southern part of the country. Over-grazing, over-farming, and over-cutting of natural vegetation are causing a continuing and perhaps accelerating deterioration of soil, water, and natural vegetation.

The EFS has been unable to cope with this situation. It is allocated only a small percent of the MDR budget: a realistic measure of its lack of power and influence in relation to other branches of the MDR. The lion's share of its own budget is spent for personnel costs. With an inadequate and incomplete data base and a total professional staff of less than 150 people which includes only a handful of top-level managers and an inadequately trained field staff, the EFS struggles to maintain its credibility within the government and vis-a-vis its client public, i.e., most of the population of Niger. In the absence of an overall and forward-looking rational plan of action, the EFS is unable to attract the support of external donors except for scattered production-oriented activities.

Given the above situation, the specific problem which this project addresses is that of strengthening the managerial effectiveness and planning capabilities of the EFS to enable it to command sufficient internal and external resources to more effectively carry out its mandate of conserving Niger's natural resources.

17

C. Project Strategy

This project will constitute a four-year effort to establish-- within the EFS--a nationwide analytical and planning capability to encompass Niger's natural (renewable) resources: soils, water, natural vegetation, and wildlife. By the end of the four-year period, a principal result will be the preparation of a comprehensive and long-range rehabilitation and protection plan. This plan will, in effect, be a guideline working paper to be utilized by the GON in the preparation of its national, five-year plans. These plans, in turn provide the basis for the allocation of GON development resources and the requests for project-specific donor assistance.

Joint U.S.-Nigerien efforts under this project will be concentrated on improving the managerial and planning effectiveness of the EFS. As a first step, the EFS will establish a Technical Planning Unit (Bureau Technique Forestier--BTF) so that it will be able to begin building up a capability for:

- (1) Consistent and rational data collection and analysis; ✓
- (2) Evaluating project proposals, whether generated ✓ internally or externally;
- (3) Integrating the GON's natural resources planning ✓ and management with other GON development efforts;
- (4) Improving its dialogue with and gaining the active ✓ support of the ultimate beneficiaries of the project;

The BTF will be placed under the leadership of an experienced Nigerien forestry official and will incorporate an existing Statistics and Records Section. During the life of the project, personnel of the new unit will total seven Nigerien professionals, plus one long-term U.S. advisor supported by short-term specialists. The unit will be organized as shown in the organization chart in the administrative feasibility section of this paper.

As the space which the EFS currently occupies already is inadequate, office facilities for the new unit will be constructed in a suitable location during the course of the project. By the end of the project period, the BTF will have the offices, drafting room, data storage area, garage, etc., required for efficient operation. These facilities will be separate from, but easily accessible to, EFS headquarters in Niamey.

The following lines of reasoning influenced USAID's strategy for designing this project:

(1) The basic need for an overall framework

Partly as a result of the effects of the 1973/1974 drought, considerable donor interest is being shown in programs for coping with anti-desertification, deterioration of resources, revegetation, etc. These donors, however, cannot contribute rationally towards a common goal until some kind of overall plan has been prepared which will enable maximum coordination and effective use of both Niger's and donors' inputs. A general framework, therefore, has to be established within which basic data may be developed, guidelines formulated, and priorities set in accordance with Niger's urgent need to effectively conserve, protect and manage its natural resources.

(2) Increase GON resource planning capability

The EFS does not intend that this project become a means by which such a basic plan would be produced by outsiders. Rather, it intends to build up its own human resources so that it can take the requisite steps towards a planning and project development capability which can continue beyond the end of project assistance.

The severe drought of 1973/1974 caused, inter alia, an influx of aid offers by external donors to Niger. It soon became clear, however, that the capacity of various GON administrative and technical services was too limited to enable them to take full advantage of the assistance offered. This project, by helping the EFS set up its own planning and project development network, will enable the GON to make fuller use of foreign assistance as well as domestic resources.

(3) Field experience must supplement abstract planning

The ordering of priorities, the setting of project guidelines, the development of new techniques, and the establishment of cost-effectiveness records--all must be based on field experience. Pressures on natural resources continually increase: current use rates and population growth patterns preordain the need for increasing the quantities of food, water, meat, etc. These are very strong incentives urging the GON to develop a more rational approach to resource management. Encouraging examples do exist of actions which can be taken to improve various elements of the country's resource base in line with traditional, social, and economic realities. However, these experiences must be analyzed and developed so that they can be incorporated into a practical, meaningful planning process.

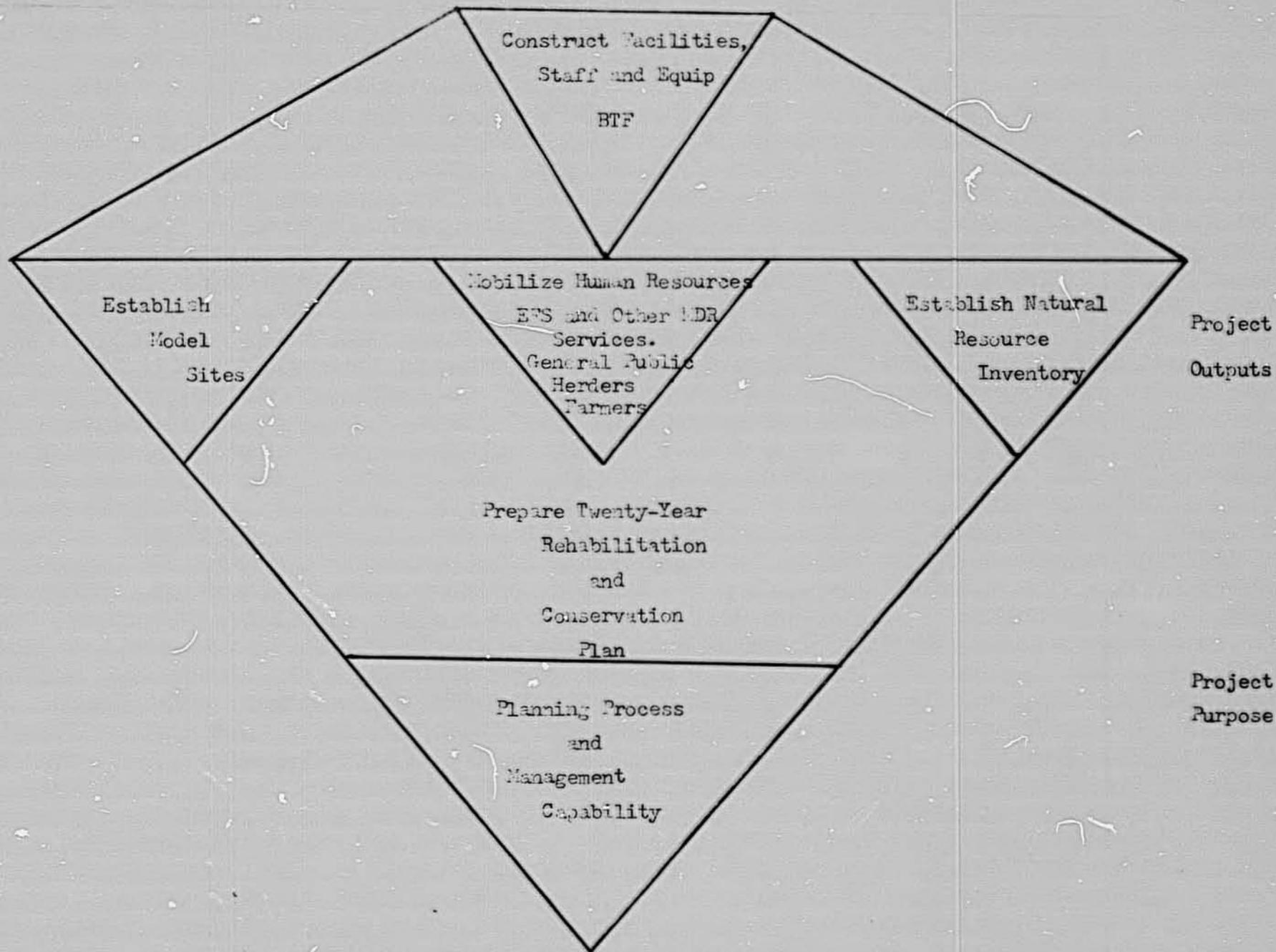
The various output components of this project interrelate as illustrated in the sketch on the following page. Although each component stands on its own, a dynamic and continual feed-back and information exchange process between these elements forms the key concept of project strategy.

(4) Recipient-donor relations and project strategy summary

A basic point will underline the strategies developed for this project; AID is aware that it cannot tell the GON how to manage Niger's natural resources or how to formulate a national plan for that purpose. What it can do is work with the GON in strengthening its own management and planning capacity. Success for this project will depend predominately on timely actions being taken by the Nigeriens in order to correct and reverse a situation which is tantamount to a drawing down of national assets through resource deterioration. In the final analysis, these actions must spring from a wider base than the EFS, but no changes can be effected until a beginning is made. This project is an attempt to overcome the inertia of that first step.

If, as only one result of this project, there is an awakening throughout the MDR, the GON generally, and among the people of Niger, to what is seen as an increasingly dismal picture, this project will have repaid the original investment manyfold.

This project represents one of the first attempts by a Sahelian country to develop an overall resource plan of this scope and magnitude. In view of recurrent severe droughts in this area, a pertinent question is whether or not such an undertaking is of significant value. Past experience in Niger has proved, however, that external investments on scattered, one-shot efforts often end in disappointment, wasted funds, and frustration for donors and recipient alike. Clearly then, some overall guidelines and principles must be established. How best this can be done and how Niger's responsible national planners can develop, manage, and conserve the country's soil, water and natural vegetation more effectively is yet to be proved. The strategy chosen here is to provide adequate inputs (e.g., building facilities, office equipment, maps, aerial photos, satellite imagery, vehicles, tools, nursery materials, human resources development programs) so that host country personnel can establish the most effective means to tackle the awesome and never-ending task of trying to slow down and reverse the existing trend of resource deterioration (i.e., the project goal). The first step of this approach is the establishment of the mechanism (BTF) to conduct planning activities. One of the most urgent tasks for the BTF is to find out what resources exist and to organize that knowledge so that it can form a reasonable basis from which judgments can be made and



priorities can be set. Much of the needed data is available, but is scattered throughout the country and throughout various government offices. At the same time, specific, controlled data-producing units are required for continuing feed-in. These are the model sites, which will serve the data collection aspects of the project, but which also are multi-purpose units for providing in-service training facilities and feedback from the public on experiments and activities which they will encompass.

D. The EFS is a nationwide organization whose services impinge on the majority of rural Nigeriens; i.e., the bulk of Niger's five million people. In this respect, the project is a first step in a chain of actions intended to have an ultimate but direct effect on the whole country and its people, whose well-being and development are inextricably tied to conserving and improving available natural resources, limited though they may be.

More immediate, direct beneficiaries are people living near model sites. In numbers, these will not be significant when measured against the total population, but this is an incidental output.

An interesting aspect of the project will be built into the human resources improvement effort. Because the ultimate beneficiaries are Niger's people as a whole, feedback from the large rural population is an important element in the selection and management of model sites and in the process of gathering information for the resources inventory. But even more important is the input by the rural people into the planning process generally and the completed long-range plan specifically. The EFS field staff will be involved closely in these project elements after the BTF has developed plans for that purpose. As conservation and reforestation activities are expanded from model sites broadly throughout the country, lessons learned will be passed on to and will benefit an increasingly larger group of rural people. However, the ultimate realization of this effect will occur only after the life span of this project.

The project will also have a "spread effect" within the Ministry of Rural Development. The EFS mandate regarding Niger's natural resources inevitably overlaps the activities and plans of the MDR production services in agriculture, livestock, and rural works. As the bottom line is increased production based on a rational use and conservation of resources, the views and concerns of those services must be considered carefully so that they become an integral part of the planning process and the long-range plan itself.

Should this project be successful, this center could become Niger's focal point for coordinating all GON efforts related to the protection or conservation of natural resources, and an environmental data bank and clearing house for all activities affecting soils, water, natural vegetation, and wildlife.

22

E. Relationship to AID Overall Objectives and Sector Goals

Within AID's "new directions" policy, the program in Niger has moved from emergency assistance to medium-term development programs, especially agricultural production and small farmer productivity. The overall program is in close accord with sector analysis strategies developed by CILSS/Club du Sahel. The Forestry and Land Use Planning project fits in with these plans by providing the GON with a mechanism and a framework for resource planning which will help determine the outer boundaries of production and productivity possibilities.

The national goal towards which this project is targeted is food self-sufficiency and sustained economic growth in the rural sector through the wise use of natural resources. All elements of this project have been shaped towards the accomplishment of the project purpose, which in turn is one step towards attainment of the above-noted goal.

F. Principal Elements of the Project

In designing a strategy for the execution of this project, the design team identified four principal streams of effort required. There are both direct and feedback relationships between all of these streams (each one of which could be developed alone) but without any one of which the project purpose would not be fully met. These four streams are the:

- establishment of the technical planning unit, BTF;
- establishment of a natural resource inventory and data base;
- establishment of model sites;
- mobilization of human resources.

The BTF will provide the institutional facility -- through both the hardware aspect of an equipped physical facility, and the software aspect of an established and competent staff. The resource inventory and data base will provide the basic tools and backdrop for planning purposes. The model sites will be both valuable demonstration and experimental assets, and serve as practical training grounds in the art of the possible for natural resource management as well as feed information into the data bank. Human resource development is indispensable because all of the data, practical experimentation, and planning efforts must be translated into an understandable and usable form which will benefit an ever-widening circle of groups, beginning with the BTF staff and extending through other EFS, MDR, and GON personnel and ultimately to Niger's rural majority who live in and derive their livelihood from the rural sector.

1. Technical Planning Unit

The Service des Eaux et Forêts (EFS) was founded in the early 1930's and has been restructured several times since that date. No section was established, however, which would be directly responsible for natural resource management planning. The Ministry of Rural Development (MDR) and the EFS have increasingly perceived the need for such a unit, and have asked for AID's assistance for this purpose.

Planning is not a simple matter of decision makers and experts sitting around a table and producing a document. A data base has first to be pulled together, staff must be gathered and trained in resource planning and management, data sources must be established and a collection system set up. All of these activities must be provided with a focal point, physically and organizationally, which is recognized as such by the whole of the EFS, other MRD services, and planning units generally throughout the government. This combination of factors will help create an environment in which planning can begin--at first on a modest basis, building up to project proposal evaluations, and ultimately to the formulation of a long-range national plan for use in relation to Niger's natural resources management.

This component is the umbrella under which all other components will be subsumed and directed. The proposed unit is the Bureau Technique Forestier (BTF). As a separate unit, the BTF will have an identity and, as it proves its worth, a credibility which will help establish it as a central point of reference for information on Niger's natural renewable resources. In time, other MRD services and other government agencies can draw on its data bank, and profit from its planning capabilities. Establishment of this unit is basic to the purpose of this project.

The project schedule of the BTF will encompass the requirements associated with each sub-component and will include:

- Inventory of natural resources;
- Establishment of resource capability and hazard data;
- Preparation of rehabilitation and protection plan, including:
 - evaluation of existing and past efforts,
 - development of project plans to supply forest and range products,
 - development of resource management and conservation plans;

24

- Selection and implementation of model sites;
- Analyses of long-range manpower needs, followed by the designing of training, orientation and extension education activities;
- Designing a self-evaluation methodology;
- Analyzing long-term costs for managing natural resources programs.

(a) Inputs:

(1) GON:

Additional office space, a drafting room, garage, etc., will be constructed for the new unit by the GON on land presently belonging to the EFS on the outskirts of Niamey. This complex will include space for the Statistics and Records Section, already existing with the EFS organization, and the environmental unit which has never been functional because of budget constraints.

Until this building has been completed and equipped, temporary space and equipment must be leased by the project as soon as the BTF has been formed so that no time will be lost in making this unit operational.

Once the project agreement has been signed the EFS will promptly staff the planning unit. This will proceed in two stages, as follows:

- Initial positions:
- 1 Forest Technician (Director of BTF and Project Director)
 - 1 Forest Technician (Asst. Director)
 - 1 Office Manager
 - 1 Stenographer/Typist
 - Drivers; workers

- Additional staff within 6 months:
- 4 Forest technicians/agents
 - 2 Draftsmen
 - 1 Secretary
 - Drivers, workers, etc., as required

(2) AID:

One long-term US Forest/Arid Land Resource advisory technician will be provided by the project to guide overall project continuity and to assist the BTF with administrative matters.

Upon requests by the Nigerien project director, AID will make U.S. personnel available for short-term assistance in specialties for which the GON is unable to find qualified Nigeriens. Technical services which have been identified by the project design team as probable requirements are:

	Person Months			
	<u>1st Year</u>	<u>2nd Year</u>	<u>3rd Year</u>	<u>4th Year</u>
1 Resource Inventory Specialist	4	4	4	4
1 Model Sites Specialist	1.5	1.5	1.5	1.5
1 Planning Activities Specialist	3	3	3	3
2 Human Resources Development Specialists	4	4	4	2
1 Management Training Specialist	-	2	-	2
	12.5	14.5	14.5	12.5

The Niger Range and Livestock (NRL) project will have a rangeland resource ecologist under the technical assistance contract who will be periodically visiting Niger on short-term consultancies. The information and advice he will give to the NRL project can be shared with the Forestry project. His interests will, in fact, direct him to the Forestry project for information and documentation and a close collaboration is foreseen between the two projects.

(3) Peace Corps:

The Peace Corps will provide two Junior Level Forestry/Resource Management Volunteers to work full time with the BTF staff beginning in the second year.

(b) Outputs:

Outputs will include an operational planning and study unit within the EFS which will provide basic guidance and counsel to the EFS, and the GON in general, on the preservation, protection and improvement of Niger's natural resources. This function will be made possible through the work efforts of the BTF which will have been conducted during the course of the project. These work efforts will include:

- Evaluation of past and present conservation, rehabilitation, and protection of soils, water, and natural resources efforts.
- Based on the above: developing criteria and guidelines for future projects dealing with resource conservation or development (including reforestation, range rehabilitation, fire management).

24

- Recommending specific long-range project options for implementation on all levels. This activity is to be coordinated with CILSS and other international organizations.
- Identifying Niger's immediate and long-term needs for wood, other forest products, and rangeland, as well as possible vegetation reserves for future droughts, and recommending ways to respond to those needs.
- Identifying Niger's immediate and long-term needs for protecting, restoring, rehabilitating, and conserving renewable natural resources and recommending ways to achieve optimal resource use on a sustained yield basis.
- Identifying activities of limited size, scope, and duration that can be implemented and funded by smaller donors and FVOs.
- Providing guidance, direction and supervision in the pilot implementation of such activities.
- Developing an evaluation procedure allowing on-going critical but positive evaluation of the above endeavors.
- Analyzing long-term costs for managing natural resources programs.

2. Model Sites:

This activity encompasses two aspects: model sites and management plans for national forest reserves.

(a) Model Sites: Model sites will be used to determine the specific practices needed to rehabilitate, protect and effectively use Niger's soils, water, natural vegetation and wildlife. This information will prove to be valuable in the preparation of the twenty-year perspective plan. Activities carried out at these sites will also strengthen the planning and managerial capability of the EFS, and serve as ideal on-job training sites for EFS personnel. In addition, the model sites will serve as demonstration sites for people living nearby.

The 16 sites are concentrated in either economically important areas or where adverse effects of resource deterioration are particularly critical. For further explanation of the methodology used in site selection, see Appendix A, p.65. Seven sites will be primarily production sites, and nine will be conservation-oriented.

27
Most sites will contain elements in both categories. A number of the following practices will be planned, established and evaluated for effectiveness in achieving the production as well as conservation objectives.

- Production:
- Firewood production, including a limited amount of poles, stakes, etc.
 - Forage production: grazing, grass cutting, etc.
 - Secondary forest products (food, shelter, materials, medicines).
 - Nursery management
 - Vegetation: soils, runoff studies.
 - Fire management.
- Conservation:
- Planting of Acacia albida in arable soils.
 - Windbreaks
 - Fire control.
 - Revegetation: bushes, trees, grasses, grass-like plants.
 - Sand stabiliation.
 - Stripcropping.
 - Terracing.
 - Channel and gully control.
 - Small dams and retention basins.
 - Contouring.
 - Rainfall harvesting.
 - Micro catchments.
 - Water spreading
 - Overall watershed development.

For those activities that result in production of commodities (firewood, etc.), equity in distribution will be sought; the inputs of surrounding populations will be taken into account. For further explanation of the involvement of surrounding populations, see Appendix A, p.64.

Technical information on the specific production and conservation measures required for efficient management of Niger's natural resources has not yet been fully developed. Model sites are intended to be used as data-producing units to feed information into the central data bank and help fill the gaps.

(b) National Forest Reserves: The establishment of management plans for the 63 national forest reserves (a total of 206,567 hectares) is an important aspect relating to the total model site effort. For example, although forest reserves have come under increasing pressures over the last ten years, a number of sites throughout Niger still contain a considerable amount of indigenous and fairly dense vegetation. Much of it is not now at a productive stage, but these stands of vegetation--trees, bushes, as well as grasses--constitute part of a still existing resource base which should not be neglected.

Before the EFS increases its general conservation and resource protection campaign, it must carry out its own recommendations on its own land. For these reasons, the project includes the development of management plans for a sizeable portion of Niger's forest reserve areas; at least 65 percent. These plans will be developed by the BTF in close collaboration with other EFS personnel, and will include the following components:

Location

- Boundary description, applicable surveys, legal status.

Physical Components

- Analysis and mapping of topography, soil and climate.

Management

- Grazing potential, stocking rates.
- Allowable wood cuts.
- Cutting and grazing plan, regulations.
- Resource improvement plan.
- Surveillance and fire management plan.
- Other improvements.

Communal Relations

- Influence and meaning of reserves to local population.
- Past, present and future benefits to local population.
- Participation of local population in conservation and management efforts, policy making.
- Local revenue sharing.

29

Fiscal, Administrative, and Income

- Projected income.
- Sales, leases, permits.
- Operation, administrative budget.
- Personnel, equipment, etc.

After each management plan has been officially approved by the MDR and reviewed and endorsed by other interested services, it will be presented to local government representatives at the regional (department) and district (arrondissement) levels, as well as to the people living in the surrounding area. Consideration should be given to having it reviewed also by traditional authorities, after which it can become a basic management and information tool for all concerned. Combined with the development of local revenue sharing schemes, these management plans can become focal points of common understanding between local users and GON resource managers. They then form a key element in a successful management and conservation system covering all natural resources located inside these forest reserves, whether they provide wood, grazing, fruit, medication, water, shade, etc.

This would form an excellent beginning towards a more effective use of part of the nation's public domain. Managed on the basis of these simple, effective plans, these reserves could:

- produce more wood and secondary products (including controlled grazing).
- serve as examples: demonstrating how natural resources can be managed more effectively for present as well as future benefits.
- play a major role in showing and convincing farmers and herders that proper resource management pays everywhere, not just on government land.

3. Natural Resource Inventory

Land use planning and forest and range management, is based upon an understanding of the nature, quality, and location of resources. To gain this understanding, an inventory of natural resources must be available that will provide a basis for integrated resource management. Resource information is not now available even for basic data like the number of hectares cultivated each year. Satellite imagery, aerial photography and field observations will be used jointly to determine the extent and conditions of the various resources. Changes in environment and land use also will be monitored.

An initial effort will be to gather, interpret, and evaluate existing resource information. This includes field work and similar sources of information. This initial effort will be accomplished before new information is gathered. The purpose is to avoid a costly and time-consuming duplication of information already available and to furnish a good basis for obtaining new and meaningful resource data.

Once analyzed, the data collected from existing and new sources will be used to produce maps showing ground cover including vegetation, land use, deterioration hazard, general soil conditions, and soil erosion.

Satellite imagery for the years 1972-76 is available through the EROS Center of the U.S. Geological Survey in Sioux Falls, South Dakota. New and better information should be available in the near future. One landsat scene covers an area of about 34,000 Km². Approximately 25 scenes will cover that part of Niger south of the 17th parallel. Not all the scenes will be obtained for the same day, but it will be possible to select a set taken over a period of no more than 10 days. False color mosaics of imagery (not aerial photos) will be obtained for bands 4, 5 and 7 at a scale of 1 : 500,000.

Ground truth collection will be carried out after preliminary analysis of satellite imagery and air photographs. Aerial photography is available for different parts of Niger at different scales, flown mostly during the dry season.

A ground resource survey will be undertaken to correlate imagery with actual ground conditions. Initially, this will be at model site locations, national forests and other ongoing project areas such as AID's Niamey Department Development and Niger Range and Livestock Projects. Other ground truth surveys may be necessary, but this effort should be of a limited scale. GON personnel assigned to this project will work with short-term consultants with regard to imagery and aerial photography interpretations. Eventually they will be responsible for reading changes. At least two interpretations will be made in a year; at the end of the growing season and towards the end of the dry season.

Present land use and trends are of such importance that the project plans to establish a rather innovative and relatively expensive technique. This is to establish permanent aerial transects to define actual land use and vegetative cover status, consisting of about 20 permanent flight lines. Each will be approximately 50 Km in length and will be flown each year at the end of the growing season (October). Photography will be black and white, and color, with a scale of 1 : 25,000 with a 10 percent overlap. A time-sequence comparison of photographs of essentially the same strip of land will within a few years document trends

and form an essential data base. This will enable the resource inventory group to determine actual conditions over a time span and to determine what should be done to reverse undesirable trends. This information will be keyed to newly available landsat data which will improve the quality of extrapolation and its accuracy. Information developed also could be useful for crop forecasting.

"Mapping" units will be identified by field procedures and by photo-interpretative techniques. This includes transects through model sites to record resource-related conditions. Maps will be prepared at a scale of 1 : 200,000 to portray the classification systems.

Once this basic information has been compiled, the first land and resource capability estimates and calculations can be made. When compared to the people's needs of each area in terms of grazing, fuel and other basic resources, it can lead to stress and hazard ratings for individual geographic areas, valleys, regions, or the entire nation.

This, in turn, will allow government services a basic, realistic look at what is happening to the areas' soils, water and vegetation, where the stresses are the greatest, what the nature of the problem is and what options may be available for responding to the most urgent needs.

This resource inventory information will be used also to furnish basic data to projects in agriculture development presently being carried out or planned in Niger.

4. Training, Information and Extension

Only recently have host country conservation agencies and outside donors realized the key role human development efforts play in resource management and protection. This element of the project, which may be the most difficult to implement, has four aspects:

- building up staff capability in the EFS, especially in the new planning unit (BTF), through in-service and some formal training programs;
- familiarizing other Ministry of Rural Development officials with the project's purposes and plan of implementation, including the ultimate benefits which will accrue to the other services (Agriculture, Live-stock, Rural Works) and the role those services can play in the collection and assessment of data and preparation of plans;

32

- the same process of familiarization for other ministries and government units with the project, so that government-wide support can be gained for natural resource conservation and management;
- a campaign to increase public awareness of and sensitivity to Niger's natural resource problems and what they and their government must do to ameliorate such problems.

The first major emphasis will be on-the-job training for younger Nigerien EFS technicians and foresters to improve their proficiency in resource planning, management, and conservation. Middle and higher-level personnel will receive additional practical and some academic training, either in Niger or out-of-country, as appropriate.

The BTFF will have a staff unit responsible for Training and Extension Education. One of its early actions will be to analyze training requirements for the whole of the EFS, and to examine the capabilities and curriculum content of Niger's institutions which feed people into the EFS system. Ways to improve this aspect of the education system could be to: strengthen the Conservation Section of the University of Niamey; form extension education units; introduce soil and water conservation as a subject area into the education stream. One hypothesis which could be tested is to have the university (or the mid-level technical training center at Kolo) become a focal point for introducing new concepts, underwriting experimentation, and establishing a system of research for experimental fields, reserves, forests, etc., interrelated with the model site efforts.

As part of the on-going activities described in this section, Nigerien personnel working under the direction of the Planning Unit will be trained by their senior advisors so that after two years they can provide planning assistance to the EFS Department chiefs in the field on a regular basis. In this respect, they will continue their role as resource planning technician/specialists at the central office level, but also will be instrumental in gathering field data, search of local records, and conducting technical and market-use oriented research. When in the field, they will act as the Planning Unit's representative and in that capacity will participate in training and extension education activities. At the same time, they will assist the EFS departmental chief in his function as member of the Department Development Committee (COTEDEP) in matters pertaining to resource planning and management.

Familiarization programs for MDR and other GON personnel will be carried out through seminars, visits to model sites, etc. The campaign directed towards the general public may take several forms, especially through the use of mass media techniques which have proved to be successful in other fields in Niger. The BTF will have a major part in this resources awareness campaign, and the BTF staff will be challenged to analyze the problems, recommend options and follow up on imaginative ways to get the message to the several audiences.

The scholarship funds included here are very subject-specific and will apply only to a small number of EFS agents who already are serving in upper or medium-level capacities. The accent here is on specialization in job-related, specific fields such as arid land resource management or planning, soil conservation technology, fire ecology, etc.

34

III. Project Specific Analyses

A. Economic Analysis:

1. Summary and Conclusion

This analysis is designed for a project whose primary outputs relate to building up a planning and managerial capability. The project will provide assistance to the Government of Niger to strengthen the planning capability of the Service des Eaux et Forets, Chasse et Peche (EFS) of the Ministry of Rural Development which is mandated with Niger's natural resources conservation and development.

It is difficult, because of the nature of this project, to quantify the economic benefits achievable by performing cost/benefit analysis. Nevertheless, it is important to point out the considerable indirect benefits to be derived from the present project whose goal is to preserve and extend the country's natural resources base.

Niger has a total area of 1,267,000 KM², of which 315,000 KM² is south of the 300 MM isohyetal line. Bush savanna represents approximately 90% of this last area, or 285,000 KM². With a per capita GNP of about U.S. \$160 in 1976, Niger is one of the poorest countries in the world.

Niger's medium-term development potential lies primarily in the rural sector which provides employment and livelihood to about 90 percent of total population. This population is concentrated along the Nigerian boundary.

Poor soils, unfavorable climatic conditions, landlocked positions, low levels of education and technical ability are some of the constraints that limit agricultural productivity and place a heavy burden on natural resources.

The economic returns of the renewable natural resources are long-term in nature and for that reason are difficult to quantify with the given data. The project itself will generate some of the information required to quantify the benefits to be derived from the adequate management of Niger's renewable natural resources.

The streams of revenue generated by adequate management of the renewable natural resources from the Sahelo-Sudanese zone, fuelwood, forage, secondary and tertiary forest products, would probably be lost through soil erosion if these resources were not so managed. In addition, if erosion occurs and land is lost permanently, the loss would extend beyond the net value of lost fuelwood, forage, etc. to include the costs of resettling dispossessed families, the cost of fighting sand encroachments on villages and roads, the silting of water courses, and other losses.

35
Other benefits will be derived through the increased rate of return accruing to higher quality future projects which will be based on the more accurate data and long-range plans resulting from this project. These more carefully selected projects also should result in higher levels of output.

2. Renewable Resources Base

It is important to recognize the vital role of natural vegetation in maintaining the country's fragile ecological equilibrium and as the most important source of energy in the medium term. The fuelwood consumption currently is estimated at 2.5 million M³ and will be 4.5 million M³ by 1988. This rapidly increasing demand must be met almost entirely from natural forest and bush supplies which in many areas have been completely cut over. The resulting wind erosion and disturbance of the fragile ecological equilibrium has led to the development of desert conditions; i.e., declining soil fertility. This situation has been exacerbated by overfarming and overgrazing in marginal areas of the country.

The official statistics of the value of forest outputs do not adequately reflect the important role which the natural forest savannah and bush play in protecting soil from erosion, and in providing tree fodder, a dry-weather grazing reserve for livestock, and a source of fruit, medicine, fiber etc. - all of which enable the rural population to survive in periods of severe drought.

3. Benefits of the Project

Cost-effectiveness analysis does not apply to this project because of its nature. Benefits could be derived, however, from one or more of the following:

- increased outputs from subsequent projects which use data developed under this project; alternatives;
- the extra investment funds (donors or national funds) attracted by the soundness of and the strengthening of the EFS.

By efficiently managing its natural resources, Niger could not only increase the production of fuelwood, forage and agricultural crops, but more importantly it could work towards solving the environmental problems. Natural vegetation resources have a value in addition to their quantifiable outputs and this value may be realizable only if they are exploited rationally. Forest over-exploitation in drier areas

can result in exhaustion of the resource. Once destroyed, the period of time for regeneration is very long if not irreversible. There are some aspects, theoretically, of soil conservation which could be quantified, such as the increased costs of keeping towns, villages, and roads free of sand in a "desertified" area. Finally, there is the cost of resettling the families dispossessed by the degradation of their environment.

4. Project Alternatives

There are not many alternative ways to reach the objectives set for this project. The 4-year time span of the project could hardly be reduced because it will take at least that long to develop staff resources, gather enough data and information from the model sites and elsewhere, sensitize Niger to the importance of its natural resources and start to work out a long-range land use plan.

One alternative would be to curtail one or more parts of the project. One could reduce the number of the model sites or decrease the scale of the aerial photos, for example. However, the mix of activities proposed here has been carefully structured and is considered the most appropriate.

A more drastic alternative would be to contract out the preparation of the 20-year plan to a consulting firm, but this would deprive the GON of "learning by doing". At best, another consulting firm would have to be hired when the plan needed updating; most likely, the plan would end up on a shelf, there being no GON officials with pride of authorship.

Another alternative would be not to start the project at all. In this case the cost for Niger would be the foregone value of future outputs resulting from careful management of the renewable natural resources. In addition, Niger would have to bear the cost of the irreversible damage to the soil and vegetative environment.

The four million dollars also could be invested in a production type project such as 10,000 hectares of rainfed neem tree plantations, an investment of \$400/ha. In this case, however, the neem tree plantation presents a higher risk (probability of survival), is of limited effect in time (3 crops over 15 years) and would not contribute widely to the conservation of the renewable natural resources of Niger.

37

B. Administrative Feasibility

1. Leadership

Overall project authority will be vested in the Ministry of Rural Development (MRD). The project executor will be the Service des Eaux et Forêts, Chasse et Pêche (EFS), one of the branches (services) of the MRD.

The EFS currently is headed by a professional forester at the A.1 level (Master of Science), who has over 12 years experience in the EFS, approximately half of that time as Director. Top officials within the EFS are those trained in forestry and related subjects. In recent years there has been a gradual shift towards a younger top-level group in the EFS which is apparently bringing about an infusion of new ideas.

The EFS has identified one of its top officials to become project director and to head the planning unit. One important factor in the identification of this officer was his reputation for managerial competence. Another factor in his favor is that he has previously been in charge of a project supported by an external donor. He has worked closely with the design team in the preparation of this project. He has also been selected by the EFS to be project director of a World Bank-financed loan (IDA). These two projects were, in fact designed to be complementary and thus will benefit from one project head.

Discussions by the design team officers with EFS officials at various levels have satisfied USAID/Niger that adequate Nigerien staff can and will be provided for the planning unit to be established through this project.

2. Structure

The EFS was reorganized along new lines in 1965 and the current organization structure was set up in 1973. It is a permanent line organization within the Ministry of Rural Development. Its organizational structure, functions, and staffing are set by basic laws, decrees, and ordinances. Major changes are effected by one of these devices: e.g., the Bureau Technique Forestier will be established by decree before first disbursement. These authorities give the organization its legal operating basis.

The EFS is a relatively small service; it is comprised of about 130 technical personnel, supported by 160-170 forestry guards, game wardens, fisheries and tree nursery personnel, etc. Line authority descends from the Director's office through seven regional (department) Forest Service directors to 31 district (arrondissement) foresters. EFS Niamey headquarters consists currently of four sections under the Director:

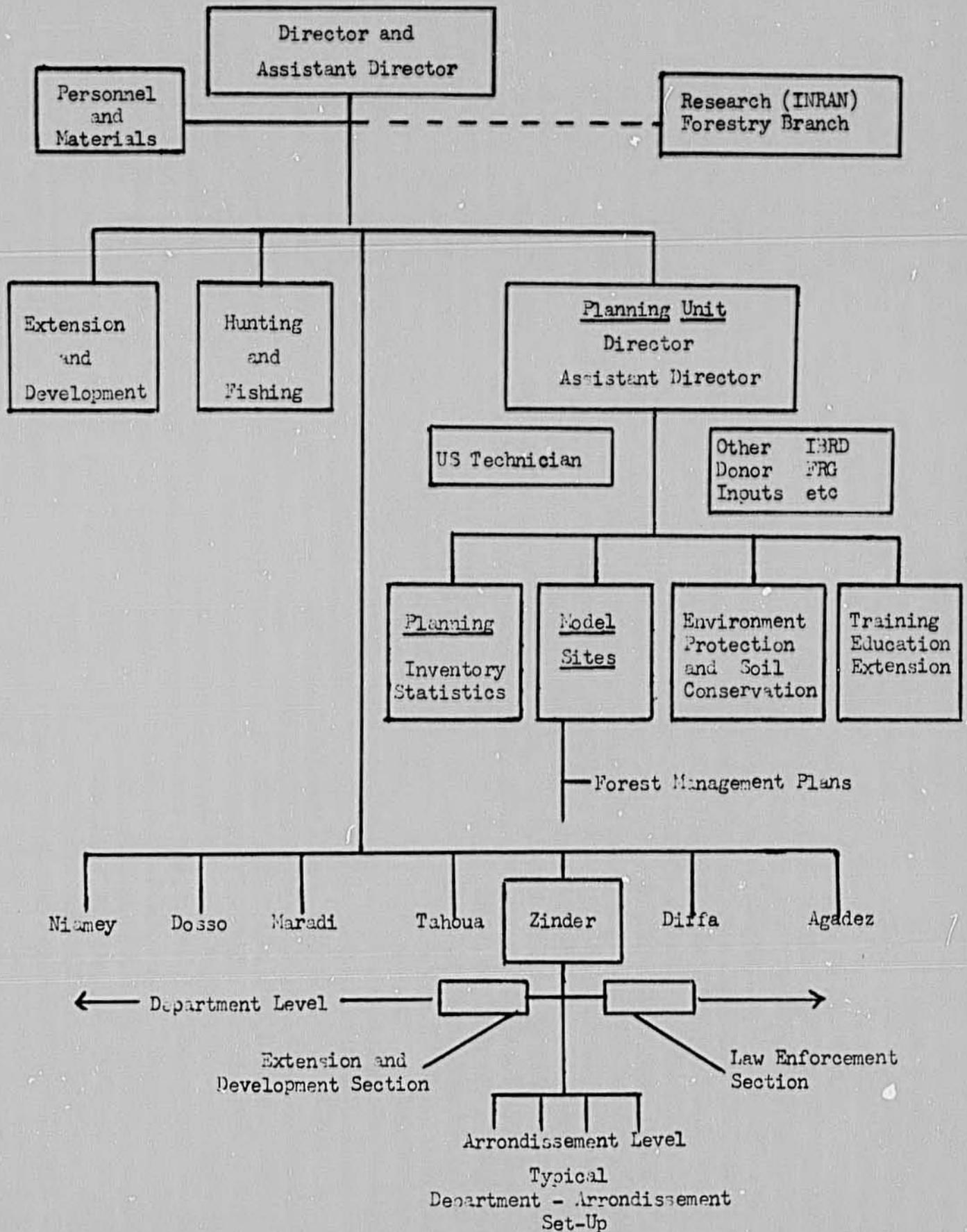
- Statistics and Records (Research, Education, Documentation)
- Extension and Forest Products: Forest Division, Reforestation, Natural Stands, Hunting and Fishing Division
- Personnel and Equipment
- Protection of Nature (Environmental Affairs)

Establishment of the new planning unit will entail certain changes: the Statistical and Environmental units will become a part of the BTF. A functional tie to the National Research System (INRAN) is maintained through the statistical unit, and this tie will be continued. The Environmental unit was never operational because of lack of funds. This function, however, is expected to become an important aspect of the BTF because of the purpose of the new unit. The organizational chart for the EFS, upon establishment of the new planning unit, will be as shown on the following chart.

From the point of view of internal functions, the EFS headquarters (of which the BTF will be a part) is small enough to be a compact management unit. Its present weaknesses stem less from structure or personnel gaps than from a shortage of funds for equipment and materials as simple, for example, as access to duplicating machines and other clerical devices. In the judgment of the project design team and USAID/Niger, the EFS has the basic administrative capacity within which the new unit can be established and supported.

Service des Eaux et Forêts Structure During and After Project

39



10

3. Role and Commitment

The EFS has a very broad statutory responsibility: the conservation, improvement, and rational exploitation of natural resources on a nationwide basis, and the general protection of "nature". An intractable problem with which this service has wrestled is that its mandate is far broader than it can cover with the resources which it has been allocated. To some extent, this shortfall has adversely affected the weight of authority EFS officials are able to evince in Ministry-wide fora. On down the line, the credibility of the individual forest guard is at stake if, for example, he cannot protect the areas under his care without adequate tools or transport. One of the purposes of this project is to give the EFS Director, and through him the MDR, the means to make a strong case concerning resource deterioration and the need to give greater emphasis to conservation programs when GON budgetary resource allocations are made. The EFS project design team and USAID/Niger are convinced that the commitment is there: the means, however, have been lacking because this service has not been able to speak from a position of strength.

4. Resources Available

As has been stated, the pressures to increase agricultural production and livestock to meet basic food requirements has placed primary attention on these sectors and programs for conservation have thus received lesser attention and financing. The growing awareness of what is happening to soils, water, and natural vegetation, however, is beginning to bring this issue to a level of higher concern within the GON.

On the one hand, without material support for travel, fence posts, laborers, etc., even a larger, better trained staff could do little to increase the efforts that need to be given to the collection and analysis of the large amount of data which is required in planning for rational decision making. On the other hand, the limits of what can be done in the near term with sufficient backup support are set by the limitations of the EFS staff resources.

This Project Paper deliberately has not called for large increases in the EFS staff, either at headquarters or for the field service. The effectiveness of EFS has been limited in the past by dearth of materials with which it has had to work more than from the small number of personnel. It would therefore be unrealistic to expect large numbers of people to be added over the life term of this project and project strategy thus concentrates on personnel quality rather than on quantity.

Staff training programs, building and equipping physical plant facilities, and aerial photo map-making are some of the ways this project will bolster EFS's resources and thereby give it an opportunity to demonstrate its potential contributory importance to Niger's development program. The project design team and USAID/Niger believe that by the end of the four-year project span, the EFS will have made its case for greater support from within its ministry.

The number and depth of discussions with Forest Service leaders have convinced the design team and USAID of the sincerity and competence of these officials and of the fact that there is an adequate base on which to begin to build the desired resource planning and management capability.

C. Technical Feasibility

1. Basis for Choosing Recommended Technology/Methodology:

Model sites are needed to determine the specific practices that will be needed to accomplish the project activities. Some of this information is unknown at this time. Adaptive experimentation techniques used will emphasize practical application so that information and practices developed through the model site methodology can be replicated in other sites throughout Niger.

The resource inventory is based on proven techniques utilizing a continuing process of field surveys, aerial photographs, and satellite imagery. The information obtained will be analyzed, interpreted, and synthesized to give statistically sound data that can be expanded for use throughout Niger. The data also will be stored for retrieval and used by personnel of this project, other AID-supported projects in Niger, and by other GON planning units.

The human resource development aspects of the project involve technical staff training, an interdisciplinary component including the Ministry of Rural Development, a scheme to synthesize the results with all appropriate governmental units and a mass awareness, or extension campaign. These techniques will assure that the appropriate planning expertise is provided to the Nigeriens so that the conservation concepts eventually will reach and affect every Nigerien.

2. Considerations Affecting the Choice of Technology/Methodology

Technologies and methodologies followed are discussed under each principal element:

42

(a) Planning Unit

The methodology by which the planning and overall managerial capability of the Forest Service is to be strengthened is learning by doing under minimum advisory guidance. Essentially, this means that AID will support the project by providing funds for various input components and will provide technical advice on the process through which the EFS will develop its own concepts within its own reference points and perceived constraints (social, cultural, political). Only by this method will the principal purpose of this project be attained.

The AID technical advisory input will be effected through a series of internal joint reviews and evaluation steering sessions during which project timing elements, priorities, and critical bottlenecks will be identified, options selected, and courses of action set. Each such session in effect will be a mini-planning exercise. This process will require a continuous input from the other project components (Model Sites, Resources Inventory and Human Resources Development). In this way these project building blocks all will contribute to the planning and management development process.

(b) Model Sites

Methodologies and techniques used in this element will rely heavily on previous experiences of Niger's Forest Service in technical areas such as:

- Tree Planting
- Vegetation Rehabilitation (conservation; production)
- Soil Conservation
- Sand Stabilization
- Agro-sylvo Resource Development (windbreaks, Gao trees, etc.)
- Sylvo-pastoral Experiences (pasture rehabilitation)

Activities which will improve the basic know-how of EFS personnel will include fence building, nursery practices, surface preparation, surveying, mapping, etc. Techniques applied are based on established practices, e.g., as described in the Peace Corps paper, "Reforestation of Arid Lands", which draws on experiences in Niger from as early as 1964. New techniques will be tied to existing methods and will seek economical, technical improvements within the limits of what is practicable for Niger after project inputs have ceased.

Experimental results obtained from model sites will be recorded, analyzed and stored under the direction of the resource inventory component of the project.

Where model site work has resulted in observable physical progress (towards conservation and production goals) these results will be used as demonstrations for field visits, and as examples for public relations purposes. Model sites thus will serve as multi-purpose demonstration grounds: for training EFS personnel, for demonstrating project purposes and activities to government officials from all agencies, and for showing the local population the benefits and effects of practical, economically feasible and culturally acceptable activities that can be accomplished on a given piece of ground. The basic message to be formulated from these uses of model sites is that there is an easily understood way in which resource deterioration can be slowed and reversed.

(c) Resources Inventory

Rather than prescribing esoteric data-gathering and processing techniques, the project draws on modern technology in such a way that it can be easily used by GON personnel. This is not to say that small-scale satellite imagery will not be used. The main thrust, however, is placed on field surveys supported by large-scale aerial photography especially designed for the needs at hand.

Comparisons of a series of aerial photographs taken at the same point in the growth cycle each year will allow -- for the first time -- a periodic inspection of representative strips of Niger's land surfaces. By enabling a comparison to be made between successive years each year's photographs will add to the knowledge of what is happening to soil and natural vegetation. Additional information on land use, crop yields, etc., are some of the benefits accruing from this approach.

Field surveys pertaining to land use and vegetative cover will play a key role. Modern vegetation sampling techniques that rely on botanical knowledge and analysis of field data will be introduced. Although some of these techniques may be new to EFS personnel, the latter already have the basic ability to obtain additional information required to incorporate the data developed with other components of this project.

(d) Training, Information and Extension

A variety of methods will be used to implement this element. Scholarships, for a small number of candidates, will be shaped towards developing managerial skills for higher-level positions within the EFS. In-service and on-the-job training will emphasize vocational, or lower-level managerial skills development. Training objectives will be tied closely to actual, practical skill-level requirements. Training sessions will be of short duration, but will be repeated at frequent intervals. Training for field service personnel

44

will take place as "close to home" as practical and will address only practical activities in familiar settings.

Public relations campaigns directed towards raising the general awareness level concerning conservation and preservation of natural resources will employ a spectrum of activities, including mass media, public advertising, and public education. No one specific "model" will serve all purposes. Based on the experience of other GON services along similar lines, various approaches will be field-tested and evaluated so that the most effective methods can be identified. Some efforts to inform the public on matters pertaining to the general welfare, such as in literacy and public health, have been made. Little of such coverage has been extended to conservation and nature protection efforts, however. An experimental approach with on-going evaluation and redesign is thus provided for in this project.

D. Social Soundness Analysis

1. General

This project is primarily a planning exercise rather than an extension or multiplication of technology and methodologies among a numerous and diverse population. It deals with trained technicians (and technicians-in-training) in search of basic information on available and potential vegetative resources in Niger with the end purpose to draw up a long-term land-use plan that can help insure Niger (and Nigeriens) with a future resource base capable of sustaining a growing economy and an increasing population. Resource planning is a difficult task in a country that is not naturally blessed with an abundance of vegetation and where soil and climatic conditions can work against the establishment and maintenance of a natural vegetative cover. That planning becomes even more difficult when important human factors - expansion of cultivated lands, extension of grazing lands and a more mobile, educated, monied, and ambitious population, increasing in size at a rate faster than at any time in Niger's history - begins to place ever increasing pressures on limited resources. These resources are located first of all in the soil, water, tree stands and herbaceous vegetation cover of Niger's physical landscape. Without an improvement in both the physical environment and in the policy decisions and capacity of the Government of Niger and the general population to conserve and manage these basic natural resources, the ability of Niger to sustain and expand its economy and insure its general domestic well-being in the future will be compromised.

The achievement of the project goal, therefore, depends on recognizing the varied elements that make up the social and political economy of the country (the physical aspects of resource planning have already been described elsewhere). The interplay of man and nature in the Sahel has had a determinant role in bringing about the sort of physical environment that exists today or - without significant change - can be anticipated tomorrow. It is thus necessary to consider the relevant characteristics of the rural population as well as the traditional and national political structures which control the most basic decisions about land-use management including the recognition of obstacles to overcome to increase the involvement of the general Nigerien population in resource management.

2. Sociocultural Feasibility

(a) Social Landscape

A population of approximately 4.5 million sedentary farmers and a mix of nomadic and semi-sedentary herders are scattered across the vegetative zone of Niger. These present-day inhabitants of an environment with an already harsh climate and rude landscape are the human participants in an ecological system that has been successively disrupted over the course of the past several centuries. As

46

such, they are the inheritors of a countryside that has been subject to vegetative degradation resulting from the actions of their predecessors: slash and burn methods of land clearing of the primordial forest for agriculture; shifting patterns of cultivation that have given way to more intensively farmed lands due to the limitation of arable lands and the concentration of an expanding population in competition for those lands; the expansion of livestock herd size in order to maximize social wealth and to insure against periods of want; and the exclusive use of wood for all energy purposes. The above actions were undertaken in good faith by the inhabitants of the day, yet were without the benefit of a long-range perspective and a concern or interest in either the future development prospects of the country, or the domestic well-being of generations yet unborn.

The present-day rural population of Niger has rarely been called upon, by either the traditional chiefdom or by the colonial or independent national governments, to protect, conserve or replenish the vegetative land cover. The former day resources, while not abundant, were certainly not scarce, and seemed to respond adequately to the daily needs of the existing population with an eye on short-term gains and satisfaction of current-day aspirations. As a result, whole mountainsides were denuded to provide building materials for a village; valleys were cleared in order to exploit humid planting areas for the purposes of growing tobacco and cotton; farmlands were pushed further north beyond the zone of regular, annual cultivation in order to take advantage of a particularly propitious series of rainy seasons; and pasture lands were grazed and then grazed again in a continuing effort to maximize animal production. In only scattered instances were individuals or loosely associated farmers or herders moved to instigate measures which were aimed at safeguarding the regenerative capacity of a limited parcel or tract of land from which the farmer or herder derived his livelihood. To cite a few examples: Self-interest motivation led to control of grazing patterns around traditional, privately owned wells; water and soil retention systems have been built along the contours of farms in hilly regions; and an occasional windbreak reflects the importance that some farmers attach to the drying and erosion effects of hot, dry, sand-carrying winds.

(b) Forces of Change

Social, political, and economic influences have created a dynamic of change that the project will have to work with. The redirection of these forces, stated below, will be essential in order to break the worsening crisis of resource depletion.

27

(1) The Sahelian Drought. The period of below normal rainfall that occurred between 1968 and 1973 is perhaps the single most significant phenomenon in the process of the steadily deteriorating environment in Niger. It appears that a number of important trends, social, political and economic, as well as the degradation of the environment, were accelerated by this five to seven year period of want. Human responses, as the tragedy deepened, were multiple, and the disruption of old systems of herding and farming are the result in several instances. The events of the drought seem to have marked both the general population and the Government with a sobering sense of quiet urgency in setting the restoration of the former ecological balance as the underlying priority which sustains all relief, recovery, reconstruction and development efforts.

(2) The Intensification of Agriculture Planting Practices and the Extension of Agricultural Lands

As population density has increased along the southern rim of Niger, good arable land has become more scarce and farmers and herders have been obliged to fall back on the same land year after year. This has provoked soil fertility depletion and resulted in inferior crop yields and unsatisfactory strands of pre-grasses.

Further north, cultivation has spread well above the legislated limit fixed at the 15° latitude. Land has been cleared for farming which cannot support a good crop, save in an exceptional year -- perhaps one in every five. Meanwhile, the vegetative cover has been stripped off the land, and wind and water erosion play havoc with the exposed surfaces. Pastoration has been pushed even further north and traditional migration patterns have been interrupted to the detriment of grasslands which no longer have the opportunity to regenerate themselves.

The inconsiderate exploitation of renewable natural resources tends to carry high social opportunity costs. These social costs, covering various kinds of environmental opportunity costs, have tended to be greater than the private costs facing individual users of resources. From this standpoint, private users benefit at the expense of society as a whole. To the extent that the renewable resources base is regarded as a public good, i.e. use is equally open to all, negative consumption may result from excessive use by individuals or groups among the population.

Where these external effects of resource management exist, new social-political decisions may be called for in order to modify consumption behavior and to minimize the negative welfare effects on society as a whole. Negative external effects underlie suggestions for controlled grazing or strict range conservation measures, in order to limit excessive exploitation of pasturelands, for example, by major livestock producers

(c) Project Social Interventions

In order to implement a master strategy for resource protection and management, a social-political decision has to be made by the Government and by the general population. The plan has to be thought out and put into practice with the participation and concurrence of the farmers and herders, as well as of the Government planners and technical service agents, including the Water and Forest Service.

Extension activities are a major part of the present planning project. One of the activities in the training and extension component of the project will focus on the attitudes of villagers to implement renewable resource protection and management programs. It will attempt to identify at the village level the incentives and development capacity needed to secure the collaboration of the farmers and herders in taking active steps to bring about environmental change and move towards a restoration of the ecosystem balance.

The social implications inherent in the ecology sector are enormous. Without concerted action by the rural population, renewable resources will continue to decline until resources are a scarce and dear commodity beyond the reach of most farmers and herders, and the resource base can deteriorate to such a point that its restoration in any shape will be outside of the scope of practical reality. This project hopes to establish the base work to bring about changes in planning strategies which will influence the availability of the basic resource elements: soil, water, grasses and trees. The project will also hope to set in motion a popular capacity and spirit for self-control over natural resources that has not existed for many decades. If successful, the project will have found ways to bring Government and herders-farmers into closer communication towards mutually desired goals of increasing human welfare and conserving natural resources, and the project will have indicated some mutually acceptable means of achieving those goals.

49

3. Beneficiaries and Potential Opposition

Renewable natural resources play a pivotal role in their potential contribution to such macro-economic variables as income, employment and foreign exchange. Output generated by the natural vegetation ecosystem figures heavily in the present consumption patterns of the subsistence sector as well as of urban, low-income-earning consumers. Natural resource management can therefore profitably contribute to Niger's economy.

As a result of this project, the Ministry of Rural Development will acquire a central data bank of natural resource information and enjoy a planning capability on which it can draw in its consideration of project proposals.

The ultimate beneficiaries of this project are the people of Niger. Misuse and lack of resource management and planning not only have adverse environmental implications, but negatively affect employment opportunities and rural welfare, and preclude a reliable supply of forest products, forage and agricultural produce at reasonable prices to low-income urban households.

Project beneficiaries in the first instance, will include the families who are directly related to the limited model site plantations which will be created across the country. However, this fact should not unduly narrow the eventual scope of project effectiveness. Future plantations, to be planned by the Water and Forest Service, funded by either donors or GON investment funds, and implemented with the assistance of the local population, will be organized in terms of the social interventions that have been worked out in the course of this project. Other geographic areas will benefit from the technical, logistical and, above all, social questions which will have been addressed and hopefully resolved in the course of this project.

Opposition to the project is unforeseen, and if it does arise, is not expected to be direct. No one is threatened by planning basic natural resources, least of all, if all sectors of the population are drawn into that planning process - one of the objectives of this project. Conceivably, some indirect opposition may spring from other sectors of the administration who may argue that resource planning by the Water and Forests Service is taking precedence over the production services.

The long-term strategy for basic resource planning in Niger is the integration of farmers, herders and urban dwellers into a multi-purpose, essentially agricultural economy that conserves resources for future generations while it generates better living standards for everyone. The development of a 20-year perspective plan is the first step in that strategy. Given a workable plan, specific projects can then be implemented, with confidence, in the execution of that strategy.

50

E. Environmental Concerns

An Initial Environmental Examination was prepared for this project which recommends a negative determination. This conclusion is based on the overall nature and purpose of the project which addresses problems of basic resource deterioration and will attempt to provide the first planning steps and pilot activities required to curtail these adverse trends in the natural environment.

The project concentrates on planning activities rather than physical efforts such as earth-moving, channel changing, etc., although on some model sites, areas will be temporarily fenced off and some minor earth work will be carried out (terracing, benching, catchment construction, etc.). However, a continual environmental analysis will be performed during the implementation of the long-term resource rehabilitation plan that is a major output of this project.

The proposed planning process will attempt to recognize, evaluate and resolve questions of long-term versus short-term needs, protection versus production, and the resulting alternative choices bearing on future commitment of resources and efforts within social, traditional and cultural value systems presently in existence.

The EFS is well aware that any resource management activity must have the full understanding and cooperation of the local population. Planning activities under this project will assess potential adverse impacts of a social and cultural nature which could possibly arise from long-term operational activities which may be engendered as a result of this project.

F. Special Issues

1. Correlation with Other AID Projects

Activities of this project will relate to a number of other on-going or planned AID projects in several ways:

- a. providing data on status of natural resource base;
- b. training and upgrading of GON personnel;
- c. developing methods and techniques of more rational land use;
- d. general, public awareness campaign in resource conservation and protection;
- e. drawing on information and experience gained through the implementation of these projects.

5
Details of how this project relates to and interfaces with the others are further described in Appendix D. Affected are:

- Niger Cereals Project
- Niger Range and Livestock
- Niamey Department Rural Development
- Human Resources Development
- Tapis Vert (OPG)
- University of Arizona Planning Activities in the Zinder Department

2. Other Donors' Cooperation

Since 1963, a number of donors have addressed general conservation and restoration efforts in Niger. Some of the more notable projects were:

- France: terracing, windbreaks, small dams in the Maggia valley; gum arabic rehabilitation and management of natural stands in the east;
- UNDP: integrated rural development in the Dallol Maori, including a relatively large *acacia albida* (Gao tree) component;
- AID: forestry project, 1964 - 1969

An important and continued contribution has been made by the U.S. Peace Corps. Beginning in 1963, volunteers have worked with the Nigerien Forest Service. Park management, fisheries, and range management volunteers subsequently were added. Most PCV foresters and range managers have recent B.S. degrees from U.S. colleges. Their activities have included village woodlots, nursery management, *acacia albida* plantings, forest management, gum products, etc.

Efforts of various private and voluntary organizations (PVOs) also have made substantial contributions, especially since the 1973/1974 drought. Among U.S. PVOs were:

- Church World Service: date palm protection, river bank stabilization;
- CARE: reforestation, dune stabilization;
- Catholic Relief Services: Tapis Vert, and others.

52

A number of third country PVOs also made significant inputs throughout Niger, especially in watershed development, water retention, marshland development, etc.

Current conservation and rehabilitation efforts include two West German projects (Ouallam and Baderguichiri) with extensive terracing, and a localized extension education component.

Village woodlot efforts are being carried out with Canadian assistance.

Despite these widely spread efforts, relatively few of Niger's ecology/environment projects submitted for financing through GILSS have found much external donor enthusiasm. Several donors indicated at the Club's October 1977 Paris meeting that they are awaiting the development of an overall strategy and plan in the conservation and rehabilitation field.

One exception to this wait-and-see attitude is an IBRD project (IDA \$4.5 million loan) which was approved and signed in July 1978. This project, drawing from an early AID PRP developed in 1977 with technical assistance from the FAO, identifies certain specific forestry activities that are to be carried out in the near future.

More specifically, the IDA loan will finance a pilot and technical assistance project which will assist GON efforts to prevent further environmental disruption caused by destruction of natural forest cover, and to improve fuelwood and building pole supplies, especially for urban areas. The project would establish 400 hectares of irrigated tree plantations and 700 hectares of non-irrigated plantations. In addition, research and training are planned in regard to woodlot production.

This project is production-oriented and does not duplicate the AID supported Forestry and Land Use Project described in this paper. Discussions between IBRD officials and AID project design officers in Washington resulted in agreement that there is no overlap. In fact, the IBRD indicated that its project would not have been initiated unless it could have been somewhat assured that it would be complemented by the AID project.

The project design team and EFS officials also discussed the correlation between the IBRD and AID projects. The team concurred with the EFS view that the IBRD project is an integral part of their general activities which are supported by AID's Forestry and Land Use Planning Project. The EFS sees the IBRD inputs as being concentrated on specific pilot activities in areas to be determined by the EFS, and anticipates that experience gained from those efforts will provide important data which can be included in the long-term perspective plan

53
which will be produced by the AID project. The more general studies and activities of the IBRD project concerning rural social conditions affecting tree planting; technical training of forest service agents; providing inputs from short-term livestock consultants; etc. are secondary to the basic pilot production thrust of that project. The framework within which the EFS plans to manage inputs from AID and the IBRD is depicted by the organization chart in the Administrative Feasibility section of this paper.

3. Integrated Resource Management

One of the problems technical services in the francophone African countries are facing is their lack of interdisciplinary cooperation and coordination. In the case of the GON Ministry of Rural Development, each Service (agriculture, livestock, forestry, and rural engineering) has its own field of technical competence. Yet, each of these disciplines must draw from the same natural resource base (soil, water, vegetation) to meet the challenges of development and rational management of the country's resources. In the past these Services have been preoccupied with and have confined themselves to their own technical field. Nigerien administrators and technicians have only recently developed an awareness for the need to compare notes and cooperate across the administrative lines dividing the different disciplines.

This project provides an ideal opportunity for the technical service, i.e., the EFS, which has the mandated responsibility of overall natural resource management to take a leading role as coordinator and innovator of a new integrated resource management concept that is better able to meet the special needs and challenges posed by Niger's fragile physical environment.

The critical issue is at what level a general resources planning effort should begin. This question was raised during the PID review. The Project Paper design team analyzed the various factors and conditions together with GON officials in Niamey, as well as in the field, and agreed that for Niger, especially in view of the legal and administrative considerations, the proposed BTF can only be placed within the Forest and Waters Service. This conclusion is endorsed by the USAID/Niger Mission, the IBRD and, obviously, the GON.

4. Value of the "Plan"

The GON and external donors agree that Niger has resource degradation problems, but are unsure how best to solve them. Existing data with respect to the nature and condition of the country's natural resources is incomplete and inadequate as a foundation for well-conceived projects to ameliorate the resource situation. External donors have expressed hesitancy to commit additional funds until the situation is better identified and understood.

Since the "plan" will be based on not only data from the resource inventory and experiments at model sites and forest reserves, but on also inputs from agencies throughout the GON and rural populations, its final form will meet with maximum endorsement.

Although no attempt is made at this time to identify the final composition of the "plan", it will be comprehensive in nature and structured to address - in addition to the basic inventory of natural resources - necessary requirements for conservation, regeneration, controlled disposition of products, emergency procedures and responses directed toward environmental preservation. An acceptable "plan" will form the basis for new or amended policy determinations by the GON as well as the further enactment of laws and decrees necessary to effectively carry out government determinations as articulated through such a "plan". It will provide a definitive basis for requesting donor assistance as well as inspire confidence on the part of the donor community in responding to the development needs of the country.

IV. The Financial Plan

A. Financial Return

Inasmuch as this project concentrates on institutional development and planning, the benefit/cost equation is difficult to directly apply. The potential value of this project lies in the probability of increasing the outputs from subsequent development activities which will have been selected more carefully at the project proposal stage. This improved selection process will have been made possible because of an upgraded body of data and better planning staff skills.

The money saved by correctly allocating capital among the various projects proposed by the host country or donors is a direct but unquantifiable benefit of this project. Several donors have indicated that they would not be interested in providing assistance for projects within the purview of the EFS until that service prepares a comprehensive long-range conservation and rehabilitation plan. Additional assistance which would result from the success of this project could thus be considered as a direct benefit to the country as a whole.

85
B. Cost Scheduling

Actions under four major components are required for the execution of this planning project: the establishment of (1) the technical planning unit; (2) a natural resource inventory; (3) a data base from model sites; and (4) human resources development.

These four streams of actions and their respective input costs are detailed in the tables at the end of this section. Cost effective analysis does not lend itself to this project given the difficulty of determining a unit of output for the four activities mentioned above.

C. Impact of the Project on the EFS Budget

The total 1978 operating budget for the Ministry of Rural Development was 1.5 billion FCFA (approximately \$6.5 million). Within this, the EFS operating budget for 1978 totaled 169 million FCFA (approximately \$753 thousand), an increase of 44 percent over the 1976 budget in current money. General budget allocations for the forestry service are equivalent to less than one percent of the GON's total general budget and approximately eleven percent of the Ministry's budget. The EFS operating budget over the past four years has been augmented by contributions of \$755 thousand in project funds from the national investment fund (FNI). If the EFS is to carry out its task of managing the renewable natural resources of the country, there is a clear need for a stronger organization and greater financial support. One of the assumptions of this project is that by improving the capability of the EFS it will be allocated a future level of financial resources which will more adequately allow it to perform its mandated tasks.

While there will certainly be some AID reviewers who will question providing support to a service which receives relatively less attention by its own government, the answer must clearly be faced that a development program is devised to bring about change - not only in the physical sense but more importantly in the attitudes of the people ultimately responsible for future planning and resource allocation. These are hard facts of life in the milieu of the underdeveloped world which must be recognized and dealt with if the proclaimed goals of the program are to be met.

The EFS operating budget has grown each year since 1976 as follows:

1976	-	117.1 million FCFA
1977	-	147.4 million FCFA
1978	-	169.5 million FCFA
1979	-	200.0 million FCFA (estimated)

56

Approximately eighty percent of the EFS operating budget is devoted to personnel costs with the remainder divided between office and vehicle operations and maintenance, material, housing indemnities and maintenance of the game park road network.

Although the AID contribution to this project almost matches the total EFS operating budget, it could theoretically be said that the project will have served its purpose and could be entirely terminated at the end of project life with no recurrent costs whatsoever. Realistically however, it is desirable that the BTF would continue in its role established by the project. Therefore, if the project interventions are going to have an impact continuing beyond the termination of AID inputs, those activities in the ongoing functioning of the BTF, model-sites and nurseries should be continued. The operational costs related to these activities during the life of project (exclusive of personnel) amount to approximately \$147,000 annually. However, the level of these activities during the course of project implementation is directly related to the production of a comprehensive, long-term perspective plan. The level of activities at the nurseries and model sites could therefore be expected to reduce significantly upon completion of the project. On-going activities could therefore be maintained at a recurrent cost of an estimated \$100,000, i.e., an 11% increase over the estimated operating budget of the EFS for 1979. Given the expected increases in GON revenues from uranium exportation over the next few years such a cost increase should be able to be easily absorbed by the GON general budget.

A more important consideration will be the level of financial requirements for projects which will be identified by this planning project. Although the GON has shown its determination to mobilize domestic resources to the fullest extent possible, its relatively low GNP - even with future uranium receipts - will require a high proportion of external assistance over at least the next decade if the totality of Niger's development aspirations across all sectors is to be met.

D. Conclusion

The proposed project is a non-revenue producing, technical assistance effort concerned with a planning process and the firm establishment of an institutional base for planning and management within the EFS. Project costs are similar to pre-investment costs - the return on which can be realized only at some point in the future and will be dependent upon events and actions which are beyond the scope of this project.

E. Host-Country Contribution

The GON is providing funds for the construction, operations and maintenance of the technical planning unit's office facilities, the land for the model sites and the operations and maintenance of all project vehicles. In addition, and more importantly the GON

57

will be providing 59 man-years of mid and high level technical personnel. This compares with 8.6 man-years provided by AID and 6 man-years provided by the Peace Corps.

Costing of Project Outputs
(\$ '000)

52

	<u>BFT</u>	<u>RI</u>	<u>MS</u>	<u>TIE</u>	<u>TOTAL</u>
<u>AID</u>					
<u>Personnel:</u>	646	168	63	210	1,087
Long Term (4 p/y)	(520)	-	-	-	(520)
Short Term (54 p/m)	(126)	(168)	(63)	(210)	(567)
<u>Training:</u>	100	-0-	-0-	158	258
Long-Term (US)	(60)	-	-	-	(60)
Long-Term (TC)	(40)	-	-	-	(40)
In-Country	-	-	-	(80)	(80)
Extension	-	-	-	(78)	(78)
<u>Commodities:</u>	191	338	362	106	997
Vehicles	(84)	-	(140)	(86)	(310)
Equip/Supplies	(107)	(20)	(82)	(20)	(229)
Satellite Imagery	-	(53)	-	-	(53)
Aerial Photo	-	(265)	-	-	(265)
Tree Seedlings	-	-	(140)	-	(140)
<u>Other:</u>	516	244	584	153	1,497
Opn's/Misc	(160)	(60)	(337)	-	(557)
Inflation/Contingency	(356)	(184)	(247)	(153)	(940)
<u>TOTAL AID</u>	<u>1,453</u>	<u>750</u>	<u>1,009</u>	<u>627</u>	<u>3,839</u>
<u>GON</u>					
<u>Personnel</u>	<u>350</u>	<u>12</u>	<u>200</u>	<u>38</u>	<u>600</u>
Personnel	(68)	(12)	(12)	(12)	(104)
Construction	(170)	-	-	-	(170)
Vehicle Opn's	(23)	-	(37)	(23)	(83)
Labor/Misc.	(78)	-	(130)	-	(208)
Inflation	(11)	-	(21)	(3)	(35)
<u>UNACE CORPS</u>	<u>131</u>	<u>-0-</u>	<u>-0-</u>	<u>-0-</u>	<u>131</u>
Personnel (6 p/y)	(108)	-	-	-	(108)
Inflation	(23)	-	-	-	(23)
<u>PROJECT TOTAL</u>	<u>1,934</u>	<u>762</u>	<u>1,209</u>	<u>665</u>	<u>4,570</u>

BFT: (Technical Planning Unit)

RI: (Resource Inventory)

MS: (Model Sites)

TIE: (Training, Information and Extension)

Summary of Cost Estimate and Financial Plan--AID Inputs
(\$ '000)

	FY80		FY81		FY82		FY83		TOTAL	
	FX	LC	FX	LC	FX	LC	FX	LC	FX	LC
<u>Personnel:</u>	<u>138</u>	<u>20</u>	<u>298</u>	<u>20</u>	<u>332</u>	<u>20</u>	<u>239</u>	<u>20</u>	<u>1,007</u>	<u>80</u>
Long Term (4 p/y)	(55)	(20)	(130)	(20)	(145)	(20)	(110)	(20)	(440)	(80)
Short Term (54 p/m)	(83)	-	(168)	-	(187)	-	(129)	-	(567)	-
<u>Training:</u>	<u>-0-</u>	<u>25</u>	<u>-0-</u>	<u>44</u>	<u>30</u>	<u>66</u>	<u>30</u>	<u>63</u>	<u>60</u>	<u>198</u>
Long Term US (48 p/m)	-	-	-	-	(30)	-	(30)	-	(60)	-
Long Term TC (48 p/m)	-	-	-	-	-	(20)	-	(20)	-	(40)
In-Country	-	(10)	-	(23)	-	(24)	-	(23)	-	(80)
Public Awareness/Extension	-	(15)	-	(21)	-	(22)	-	(20)	-	(78)
<u>Commodities:</u>	<u>212</u>	<u>152</u>	<u>79</u>	<u>114</u>	<u>38</u>	<u>126</u>	<u>165</u>	<u>111</u>	<u>494</u>	<u>503</u>
Vehicles	(127)	-	(28)	-	-	-	(155)	-	(310)	-
Equipment/Supplies	(75)	(50)	(33)	(13)	(28)	(25)	-	(10)	(136)	(98)
Satellite Imagery	(10)	-	(18)	-	(10)	-	(10)	-	(48)	-
Aerial Photos	-	(67)	-	(66)	-	(66)	-	(66)	-	(265)
Tree Seedlings	-	(35)	-	(35)	-	(35)	-	(35)	-	(140)
<u>Other:</u>	<u>-0-</u>	<u>100</u>	<u>-0-</u>	<u>140</u>	<u>-0-</u>	<u>193</u>	<u>-0-</u>	<u>124</u>	<u>-0-</u>	<u>557</u>
Operations/Misc.	-	(100)	-	(140)	-	(193)	-	(124)	-	(557)
<u>Sub-Total</u>	<u>350</u>	<u>297</u>	<u>377</u>	<u>318</u>	<u>400</u>	<u>405</u>	<u>434</u>	<u>318</u>	<u>1,561</u>	<u>1,338</u>
Contingency (10%)	35	30	38	32	40	41	43	32	156	135
Inflation	35	45	79	48	132	61	201	48	447	202
(FX = 10% compounded)										
(LC = 15% straight)										
<u>GRAND TOTAL</u>	<u>420</u>	<u>372</u>	<u>494</u>	<u>398</u>	<u>572</u>	<u>507</u>	<u>678</u>	<u>398</u>	<u>2,164</u>	<u>1,675</u>
	<u>(792)</u>		<u>(892)</u>		<u>(1079)</u>		<u>(1,076)</u>		<u>(3,839)</u>	

47-

Detailed Budget Breakdown (\$ 000)

FY80		FY81		FY82		FY83		TOTAL	
FX	LC	FX	LC	FX	LC	FX	LC	FX	LC

PLANNING UNIT

GON

Personnel:

Project Dir. (4 p/y)	4	4	4	4	16
Asst. Project Dir. (4 p/y)	3	3	3	3	12
Technician (4 p/y)	3	3	3	3	12
Admin. Officer (4 p/y)	2	2	2	2	8
Clerical (8 p/y)	1	1	1	1	4
Draftsman (8 p/y)	2	2	2	2	8
Chauffeurs, etc. (16 p/y)	2	2	2	2	8

Physical Plant:

Construction	143				143
Landscaping/Excavation	27				27

Other

Vehicle Opn's/Maintenance		8	8	7	23
Building Rental (12 months)	12				12
Labor	13	12	12	13	50
Office Utilities (electricity, water, telephone)	4	4	4	4	16

<u>Sub-Total Planning Unit (GON)</u>	<u>-0-</u>	<u>216</u>	<u>-0-</u>	<u>41</u>	<u>-0-</u>	<u>41</u>	<u>-0-</u>	<u>41</u>	<u>-0-</u>	<u>339</u>
--------------------------------------	------------	------------	------------	-----------	------------	-----------	------------	-----------	------------	------------

PEACE CORPS

Personnel

Forestry/Resource Mgmt Volunteers (6 p/y)	<u>-0-</u>	<u>-0-</u>	<u>36</u>	<u>-0-</u>	<u>36</u>	<u>-0-</u>	<u>36</u>	<u>-0-</u>	<u>108</u>	<u>-0-</u>
--	------------	------------	-----------	------------	-----------	------------	-----------	------------	------------	------------

-48-

60

61

<u>AID</u>	FY80		FY81		FY82		FY83		TOTAL	
	FX	LC	FX	LC	FX	LC	FX	LC	FX	LC
<u>Personnel:</u>										
Forestry Resource Technician (4 p/y)	55	20	130	20	145	20	110	20	440	80
Forestry Planning Consultant (12 p/m)	28		28		39		31		126	
<u>Training:</u>										
Long Term U.S. Academic (4 p/y)					30		30		60	
Long Term Third Country Academic (4 p/y)						20		20		40
<u>Commodities:</u>										
<u>(Office Furniture)</u>										
Desk (7 x \$400)		2								2
Large tables (3 x \$200)		1								1
Small tables (10 x \$100)		1								1
File cabinets (8 x \$100)		1								1
Drafting tables (3 x \$400)		1								1
Chairs (12 x \$150)		2								2
Drafting machines (3 x \$200)		1								1
Typewriters, manual (4 x \$500)		2								2
Typewriter, electric (1 x \$2,000)		2								2
Photocopier (1 x \$5,000)		5								5
Shelving		1								1
Lab and work benches		2								2
Refrigerator		1								1
<u>(Operations Equip/Supplies)</u>										
Survey/drafting equipment	14								18	
Vegetation/soil analysis equipment	7				4				7	
Hand tools/materials	10	19			10	11			20	20
Office supplies/materials		5		5		5		5		20
<u>(Vehicles)</u>										
3/4 ton, 4-wheel pickup (2 x \$14,000)			14				14		28	
4-wheel station wagon (4 x \$14,000)	28						28		56	

-64-

	FY 80		FY 81		FY 82		FY 83		TOTAL	
	FX	LC	FX	LC	FX	LC	FX	LC	FX	LC
<u>Other</u>										
Travel Funds (in-country/International		15		20		25		20		80
Studies, Surveys, Temp. Personnel		19		10		11		10		40
Special Project Funds				10		20		10		40
<u>Sub-Total Planning Unit (AID)</u>	<u>142</u>	<u>80</u>	<u>172</u>	<u>65</u>	<u>228</u>	<u>112</u>	<u>213</u>	<u>85</u>	<u>755</u>	<u>342</u>

RESOURCE INVENTORY

GON

Personnel

 Technician (4 p/y)

	<u>-0-</u>	<u>3</u>	<u>-0-</u>	<u>3</u>	<u>-0-</u>	<u>3</u>	<u>-0-</u>	<u>3</u>	<u>-0-</u>	<u>12</u>
--	------------	----------	------------	----------	------------	----------	------------	----------	------------	-----------

AID

Personnel

 Resource Inventory
 Consultant (16 p/m)

	<u>17</u>	<u>53</u>	<u>56</u>	<u>42</u>	<u>168</u>
--	-----------	-----------	-----------	-----------	------------

Commodities

 Aerial Photography: 20 single line
 strips, 50 km. each (1:25,000).

 Once per year (October)

 Prints (Standard 9x9 contact):

 -Black/White (60% overlap.

 22 photos/strip)

 -Infrared (10% overlap.

 11 photos/strip)

 -Color (10% overlap.

 11 photos/strip)

	<u>60</u>	<u>60</u>	<u>60</u>	<u>60</u>	<u>240</u>
	<u>6</u>	<u>6</u>	<u>7</u>	<u>6</u>	<u>25</u>

	FY 80		FY 81		FY 82		FY 83		TOTAL	
	FX	LC	FX	LC	FX	LC	FX	LC	FX	LC
Satellite Imagery:										
-25 scenes, false color mosaic (1:500,000) bands 4,5 & 7. Two sets per yr. (April/Oct):25 scenes x2x4 yrs. x \$100 = \$20,000.	5		5		5		5		20	
-Upgrading/Interpreting-200 scenes X \$100 = \$20,000.	5		5		5		5		20	
-Special Orders/Image Enhancement			5		5				10	
-Diaz (transparent positive) band 7 (1:100,000) 50 scenes x \$60.			3						3	
-Diaz printer/supplies	5	5							5	5
Small hand tools/supplies/equipment	3	3			3	2			5	5
Other										
Operations:										
-Ground truthing, field checks, land-use surveys, etc.		5		5		5		5		20
--Interpretation, map and mosaic preparation, photo lab work.		5		5		5		5		20
-Reports: contract typing, printing, distribution.		5		5		5		5		20
Sub-Total Resource Inventory (AID):	<u>35</u>	<u>89</u>	<u>71</u>	<u>81</u>	<u>73</u>	<u>84</u>	<u>52</u>	<u>81</u>	<u>231</u>	<u>335</u>

-51-

MODEL SITES:

GON

Personnel

Technician (4 p/y)	3		3		3		3		12	
--------------------	---	--	---	--	---	--	---	--	----	--

	FY 80		FY 81		FY 82		FY 83		TOTAL	
	FX	LC								
<u>Other</u>										
Vehicle Opn's/Maintenance				12		12		13		37
Labor		27		48		43		12		130
<u>Sub-Total Model Sites (GON)</u>	<u>-0-</u>	<u>30</u>	<u>-0-</u>	<u>63</u>	<u>-0-</u>	<u>58</u>	<u>-0-</u>	<u>45</u>	<u>-0-</u>	<u>179</u>

AID

<u>Personnel</u>										
Model Sites Consultant (6 p/m)	17		15		16		16		64	
<u>Commodities</u>										
<u>Vehicles</u>										
-4-wheel drive pick-up (10 x \$14,000)	56		14				70		140	
<u>Fencing</u>										
-Barbed wire: (1,320' roll x 350 rolls x \$60)	10		11						21	
-Sheepfence: (330' roll x 75 rolls x \$60)	2		2						4	
-Metal fence posts: (6,500 x \$6)	15		20		5				40	
Survey Equipment	5								5	
Soil & Vegetation Testing Kits	3								3	
Equipment/Supplies	1	2	2	1	2				2	6
Tree Seedlings		25	35		45		35			140
<u>Other</u>										
Nursery Establishment (4 x \$6,000)	19		5							24
Nursery Operations (\$11,000 x 4 nurseries x 4 yrs)	34		44		54		44			176
Erosion Control Pilot Activities: (Terracing, benching, rehabilitation)	12		28		33		8			81

-52-

	FY 80		FY 81		FY 82		FY 83		TOTAL	
	FX	LC	FX	LC	FX	LC	FX	LC	FX	LC
Model Site Observation, Trials, Studies. (10 sites x 4 yrs x \$1,000. 6 sites x 2 yrs x \$1,000)		10		18		18		16		52
Office Expenses		1		1		1		1		4
<u>Sub-Total Model Sites (AID)</u>	<u>109</u>	<u>103</u>	<u>62</u>	<u>123</u>	<u>22</u>	<u>153</u>	<u>86</u>	<u>104</u>	<u>279</u>	<u>483</u>

TRAINING, INFORMATION AND EXTENSION

GON

<u>Personnel</u> Technician (4 p/y)		3		3		3		3		12
<u>Other</u> Vehicle Opn's/Maintenance				7		8		8		23
<u>Sub-Total Human Resource Development (GON)</u>	<u>-0-</u>	<u>3</u>	<u>-0-</u>	<u>10</u>	<u>-0-</u>	<u>11</u>	<u>-0-</u>	<u>11</u>	<u>-0-</u>	<u>35</u>

AID

<u>Personnel</u> Extension Education Specialists (14 p/m)	21		50		55		21		147
Management Training Specialist (6 p/m)			22		22		19		63

	FY 80		FY 81		FY 82		FY 83		TOTAL	
	FX	LC	FX	LC	FX	LC	FX	LC	FX	LC
<u>Commodities</u>										
Stake-rack truck for personnel transport (2 x \$25,000)	25						25		50	
Audio/visual mobile education unit (2 x \$18,000)	18						18		36	
Education materials		4		5		6		5		20
<u>Other</u>										
In-Service Training										
-Transportation		4		15		16		15		50
-Food/lodging		4		8		10		8		30
Public Awareness Extension										
-Material Development (slides, tapes, displays, printing, photo, typing services)		8		9		10		9		36
-Field Presentation Operations				7		8		7		22
-Mass Media Campaigns (radio clubs, educational TV, adult literacy/post literacy programs)		5		5		6		4		20
<u>Sub-Total Training, Information & Extension</u>										
<u>(AID)</u>	<u>64</u>	<u>25</u>	<u>72</u>	<u>49</u>	<u>77</u>	<u>56</u>	<u>83</u>	<u>48</u>	<u>296</u>	<u>178</u>

-54-

	FY80		FY81		FY82		FY83		TOTAL	
	FX	LC	FX	LC	FX	LC	FX	LC	FX	LC
<u>Project Sub-Total (AID)</u>	350	297	377	318	400	405	434	318	1,561	1,338
Contingency (10% FX plus LC)	35	30	38	32	40	41	43	32	156	135
Inflation (FX = 10% compounded LC = 15% straight)	35	45	79	48	132	61	201	48	47	202
<u>GRAND TOTAL (AID)</u>	<u>420</u>	<u>372</u>	<u>494</u>	<u>398</u>	<u>572</u>	<u>507</u>	<u>678</u>	<u>398</u>	<u>2,164</u>	<u>1,675</u>
<u>Project Sub-Total (GON)</u>		252		117		113		83		565
Inflation (15% straight. Excludes salaries)				14		13		8		35
<u>GRAND TOTAL (GON)</u>	<u>-0-</u>	<u>252</u>	<u>-0-</u>	<u>131</u>	<u>-0-</u>	<u>126</u>	<u>-0-</u>	<u>91</u>	<u>-0-</u>	<u>600</u>
<u>Project Sub-Total (Peace Corps)</u>			36		36		36		108	
Inflation (10% compounded)			4		7		12		23	
<u>GRAND TOTAL (PEACE CORPS)</u>	<u>-0-</u>	<u>-0-</u>	<u>40</u>	<u>-0-</u>	<u>43</u>	<u>-0-</u>	<u>48</u>	<u>-0-</u>	<u>131</u>	<u>-0-</u>
<u>GRAND TOTAL PROJECT</u>	<u>420</u>	<u>624</u>	<u>534</u>	<u>529</u>	<u>615</u>	<u>633</u>	<u>726</u>	<u>489</u>	<u>2,295</u>	<u>2,275</u>

V. Implementation Plan

A. Activity Schedule

The following calendar charts the illustrative first year's operation, giving emphasis to those initial actions required to get the project underway. The second, third and fourth years will continue with operational activities on a sequential/seasonal basis. One of the prime objectives of the first year's action plan will be to establish a detailed implementation schedule for these subsequent years. The activity list also identified action responsibility. For a detailed presentation of life-of-project activities, see Appendix K, p.116.

- First 90 Days:
- Grant Agreement signed. (GON, USAID/N)
 - Appoint Project Director. (GON)
 - Pass Decree establishing the Technical Planning Unit. (GON)
 - Rent temporary office space. (GON)
 - Bring in initial, short-term project consultant (GON, USAID/N, AID/W)
 - Prepare PIO/T for long-term project technical services and begin recruitment. (GON, USAID/N, AID/W)
 - Prepare and process PIO/C's for U.S. source project vehicles and fencing (USAID/N, AID/W)
 - Order basic local commodities - vehicles, office furniture, supplies. (GON)
 - Assign basic GON staff to planning unit. (GON)
 - Prepare first year work plan, including schedules, TOR's for short-term consultant's. (GON, project consultant).
 - Request detailed plans and specifications for building construction. (GON)
 - Prepare contract for aerial photography and order satellite imagery. (GON, USAID/N, AID/W)

- 69
- Second 90 Days:
- Arrival of short-term specialists and preparation of detailed plans for the model sites, resource inventory and human resource development components. (GON, USAID/N, AID/W)
 - Prepare and process PIO/C's for remaining U.S. source project equipment. (USAID/N, AID/W)
 - Issue IFB and award contract for building construction. (GON)
 - Introductory in-service training of EFS Field personnel. (GON, Project staff)
 - Begin physical development of model sites - revegetation, erosion control. (GON)
 - Fly aerial photo transects. (GON)
 - Begin physical development of project nurseries. (GON)
 - Arrival of long-term U.S. technician. (USAID/N, AID/W)
 - Complete staffing of GON personnel to BTF.

- Third 90 Days:
- Aerial photos and satellite imagery received by BTF. (GON, USAID/N)
 - Resource Inventory specialist returns for second trip and assists in interpretation and recording of resource data from photos, imagery, and other collected data. (GON, USAID/N)
 - Conduct vegetation and land-use ground truthing surveys of satellite imagery. (GON, Project staff)
 - Arrival of short-term Forest Management advisor and initiation of work plan for forest management development component. (GON, USAID/N, AID/W)

- Human Resource Development advisors returns and assist in refinement and implementation of public awareness and extension education efforts in conjunction with other services. (GON, USAID/N, AID/W)

Fourth 90 Days: - Process first field details for forest management plan (GON, Project Staff)

- Begin data processing and map making regarding land-use, erosion hazard, vegetation types, etc. (GON, Project Staff)
- Arrival of PCV project assistants.
- Develop preliminary guidelines/criteria for forestry/conservation component of rural development projects. (GON, Project Staff)
- First in-depth project evaluation meeting.
- Refine continuous LOP operational plan for project components and develop detailed work plan for following twelve months.

B. Procurement

1. Technical Services

The difficulties which the GON would encounter in attempting to recruit U.S. technicians would unnecessarily sacrifice efficiency and speed in project implementation with no countervailing benefit. It is therefore recommended that personnel be recruited by AID/W following the preparation of a PIO/T by USAID/Niger. Restrictions on Personal Service Contracting rule out the use of that preferred vehicle and will therefore require the issuance of an IFB to interested contractors.

2. Commodities

(a) Source and Origin

The authorized source and origin for commodities financed by AID under this project is geographic code 941 (including the host-country). A specific waiver request is attached to this project paper which would authorize non-competitive procurement from a geographic code 935 source for the aerial photography component of the project. \

(b) Shelf-Item Procurements

A shelf-item procurement will be conducted in accordance with AID Handbook 15, Sections 11.B.3 and 11.B.4. Shelf items of geographic code 899 origin are eligible for financing provided the total cost of these purchases does not exceed ten percent of the total local costs financed by AID, or \$10,000, whichever is higher, and the unit price of goods procured as shelf items does not exceed \$2,500.

(c) Method of Procurement

(1) Foreign Exchange:

U.S. Source commodities fall into three groups:

- Vehicles (\$310,000). USAID/Niger projects have standardized on International Harvester vehicles. No waiver is therefore required.

- Satellite Imagery (\$48,000). Will be purchased under PIO/C directly from the EROS center of the U.S. Geological Survey at Sioux Falls, South Dakota.

- Miscellaneous Equipment and Supplies (\$136,000). Primarily fencing supplies, survey equipment and hand tools. Assistance will be requested of SER/COM under a mission issued PIO/C.

(2) Local Cost:

As reflected in the itemized budget breakdown the supplies and equipment category (\$98,000) represents non-major purchases which are exempt from IFB requirements. They will be purchased by project management in accordance with the normal commercial practices observed by the GON. The cost of tree seedlings (\$140,000) represents the cost of plastic pots, transport, labor, etc., incurred by the EFS in raising and distributing these seedlings. The aerial photography component will be contracted directly with a locally based, code 935 firm on the basis of non-competitive procurement. A waiver request is attached.

VI. The Evaluation Plan

A. Strategy

The nature and purpose of this project dictates that the evaluation strategy be tied to specific project activities related to the four components described in the Project Description.

"Milestone" planning and review meetings are envisaged on a regular basis, as shown in the Implementation Plan section. Prior to these meetings, the TDY planning specialist, together with the BTF project director will document progress towards outputs, observing and recording evidence of when and to what extent outputs defined in the project have been reached. Thus the status of overall project purpose achievement may be quantified.

Additional accent will be placed on measuring the efficiency, effectiveness, and significance of project actions. Certain conclusions and recommendations can thus be reached during the exercise which can be incorporated into the subsequent project actions. The following points are of importance:

Efficiency: Focuses on the quality of in-house management capabilities.

Effectiveness: As smoothly as the BTF may perform, its ultimate effectiveness will depend upon the establishment of adequate channels of communication with administrators on higher levels (the Ministry) as well as meaningful relations with other GON agencies.

Significance: Depends on two factors -

(a) the successful acquisition of pertinent, simple-to-understand, baseline data on the state and trends of natural resources;

(b) the ability of BTF and EFS to relate the basic points to others, GON officials as well as the people of Niger. This is essentially a promotional effort. The product that is to be marketed is an awareness of resource deterioration. The essential point is to convince Nigeriens to look more into the future, not merely to focus on the present need for products from the soil and forests.

13

B. Base Line Data

Base line data at beginning-of-project status can be stated simply: there is now no central unit upon which the EFS can build a resource planning/managerial capability. This project establishes such a unit, and in this respect, the project starts from a zero base line. Hence, progress will be the more easily observable.

In a larger sense, the establishment of base line data - on Niger's natural resources - is one of the principal reasons for the project. Increased availability of this type of information, therefore, forms a basic measure of project success and can be readily evaluated.

C. Provisions for the Periodic Collection of Data

Vegetation studies, field and aerial observation of permanently established transects as well as interpretation of multi-temporal satellite imagery are provided as integral parts of project activities and described under the Resource Inventory section of the Project Description.

It will be more difficult to assess the impact of extension education efforts. Here, periodic scanning of newspaper (le Sahel) articles, radio programs, vigor with which the "Tree Planting Week" (Sahel Vert) is carried out can provide an indirect measure of how much conservation awareness has been raised across Niger. During the preliminary phases of evaluation procedures, the baseline level of these activities should be established.

D. Provision for Evaluation and Review

The project Grant Agreement will prescribe periodic evaluations at logical stages of project implementation. Estimated timing is reflected in the Implementation Plan.

E. Post-Project Evaluation

Using the same basic methodology as during the project's life, a final impact assessment will be conducted to determine to what extent the logical framework indicators have been met and to what extent the project outputs will likely be utilized by the GON and its production services in forward planning for the ongoing development program.

74

F. Conduct of Evaluations

Because this project emphasizes the strengthening of planning and managerial competence of the EFS, inputs include repeated TDY visits by U.S. specialists in arid land resource planning. It is logical, therefore, to use this resource to assist in the AID evaluation requirements. Their status as short-term consultants should maintain their credibility as objective observers while at the same time take advantage of their experience with the project.

VII. Conditions and Covenants

A. Conditions Precedent

1. Prior to any disbursement, or the issuance of any commitment under the Project Agreement, the Cooperating Country will designate a GON official who will serve as GON project director and chief of the Bureau Technique Forestier (BTF).

2. Prior to any disbursement, or the issuance of any commitment under the Project Agreement, the Cooperating Country will submit evidence in form and substance satisfactory to AID, that a separate technical planning unit (Bureau Technique Forestier) has been legally created within the Forest and Waters Service (Eaux et Forets - EFS) of the Ministry of Rural Development.

B. Covenants

1. The Cooperating Country covenants (a) to provide the initial staff members for the BTF as specified in the project description attached to the Project Agreement within 60 days of execution of the Project Agreement and (b) to provide the remaining staff members within 120 days of execution of the Project Agreement.

2. The Cooperating Country covenants to make available on a timely basis sufficient financial resources to carry out the physical construction requirements of the project and to implement those actions identified in the project description attached to the Project Agreement as responsibilities of the GON.

Appendix A

Description and Location of Model Sites

Appendix 4 Model Sites

The following table shows the location of model sites by Departments, time planned for establishment and anticipated practices to be installed. Information on the management plans for forest reserves is also shown.

The practices are subdivided as follows:

Production

Conservation - vegetative

Conservation - mechanical

The ones now planned for establishment have been determined by preliminary investigations of the sites. It is likely that additional or fewer practices will be applied after more detailed studies of a particular area.

Once specific conservation or production techniques have become established at the various sites, they will provide valuable demonstrative guidance serving as examples on how soil, water and vegetation resources can be effectively and rationally utilized on a wider basis.

The exact location of a model site will be within 50 km. from the town which indicates its general location. A framework of technical criteria will be explained to the surrounding rural population and representatives of various governmental agencies located in the field. The CODEAR, local development committee, having representation from traditional society, will be used as a forum. The surrounding population, through its representatives on the CODEAR level will be informed of the government's intention to choose a specific site. Ideas on needs and participation of the local population will be solicited. Several villages will probably show interest in having the model site located near them. Project management will then negotiate with local representatives and ultimately decide which of the individual locations will be chosen.

Methodology Used In Model Site Selection

Model site locations cover all but one of Niger's ecologic zones. Sites are concentrated either in economically important areas or where adverse effects of resource deterioration are particularly critical. Major resource stress occurs in an area of rainfall between 400 and 700 mm mean annual precipitation. In this belt resource conservation methods and techniques are most urgently needed. Two of the locations are outside this belt. Their selection is based on demographic principals: both contain important segments of Niger's population.

Ecological Zone Importance - Relevancy of Model Sites

The table on the following page lists the nine major ecologic zones of Niger, assigns an "importance index" to each and shows that the number of model sites assigned to a particular zone directly corresponds to this "importance index".

Column (1) summarizes the surface areas of each ecologic zone.

Column (2) indicates the relative importance of the agricultural natural resources found in the respective zones on a scale of 1 to 10.

Column (3) weighs the importance of each zone in terms of the population living there. (1=few inhabitants; 10=large rural population)

Column (4) is the product of columns (1), (2) and (3) and thus gives an "index" to each zone based on its agricultural and population importance.

Column (5) shows the number of model sites chosen for each zone. The higher the "index" (column 4) for each zone, the more model sites should be located there.

78

Ecological Zone Importance - Relevancy of Model Sites

<u>ZONE</u>	<u>DESCRIPTION</u>	(1) <u>AREA</u> (000's KM ²)	(2) <u>X ECONOMIC</u> <u>IMPORTANCE</u>	(3) <u>X POPULATION</u> - <u>IMPORTANCE</u>	(4) <u>INDEX</u> (X10 ²)	(5) <u>NUMBER</u> <u>OF SITES</u>
A	Watercourses	10	9	5	4.5	1
B	Woodlands *	8	2	1	0.2	0
C	Tree Savanna **	11	4	3	1.3	0
D	Shrub Savanna	59	6	7	24.8	5
E	Derived Steppe	139	5	3	20.8	4
F	Hills	30	7	7	14.7	3
G	Grass Steppe	100	3	2	6.0	2
H	Arid Mts.	175	2	1	3.5	1
I	Sand/Desert	<u>750</u>	0	1	0.0	<u>0</u>
	TOTAL	1,280				16

* minimum resource degradation

** covered by Forest Reserves

Department	Model Site Locations				Management Plans for Forest Reserves		Production										Practices										Conservation									
	First 2 Years		Second 2 Years		No.	Hectares	Firewood Production	Secondary Forest Products	Nursery Management	Forage Production	Vegetative Analysis	Fire Management	Gum	A. Albida Plantings	Windbreaks	Live Fences	Revegetation	Sand Stabilization	Stripcropping	Contouring	Rainfall Harvesting	Micro-catchments	Terracing	Drop Structures	Small Dams & Retention Basins	Water Spreading	Overall Watershed Development									
	Pro-duction	Conser-vation	Pro-duction	Conser-vation																																
Niamey 3 model sites	Guessel-bodi						X	X		X	X	X					X						X				X									
	Tillaberi			Niamey	5	60,615		X			X				X	X	X			X						X										
Dosso 3 model sites	Tanda						X	X		X	X						X	X	X	X						X	X									
	Loga			Doutchi	4	17,206		X	X		X			X	X	X		X	X	X	X	X	X	X	X	X	X									
Tahoua 3 model sites	Madaoua								X	X		X					X		X			X					X									
	Keita			Bouza	7	11,424		X		X	X			X	X	X	X		X			X				X	X									
Maradi 3 model sites	Aguie								X		X			X	X	X						X				X	X									
	Tessaoua			Madar-ounfa	14	22,300		X			X			X	X	X		X	X	X	X	X				X	X									
Zinder 2 model sites	Matameye				20	22,617		X		X	X			X	X	X		X	X	X	X	X	X	X		X	X									
				Tanout				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X									
Diffa 1 model site				Maine	12	71,255		X		X	X	X	X	X	X	X	X				X					X										
Agadez 1 model site				Erhazer	1	1,050		X	X	X	X	X	X	X	X	X			X	X	X	X	X	X	X	X										
16 Total (No.)					63	206,567																														

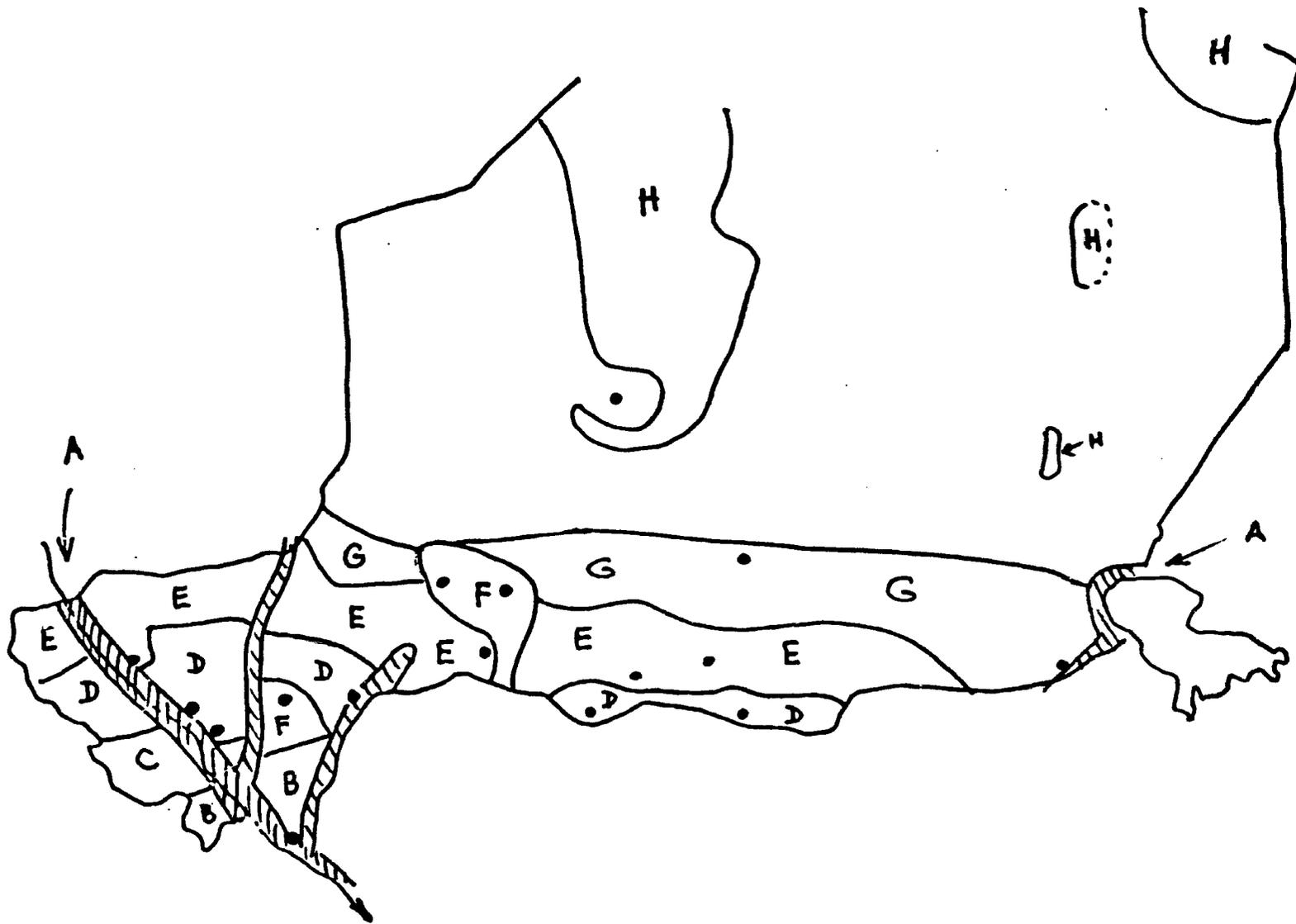
Location of Model Sites

Production Oriented:

P ₁	Guesselbodi Forest Reserve	Forest Products
P ₂	Tanda Forest Reserve	Forest Products
P ₃	Madaoua vicinity	Gum and Revegetation
P ₄	Maggia Valley	Communal Forestry Management
P ₅	Maradi vicinity	Nurseries
P ₆	Tanout	Trees, Forage
P ₇	Maine vicinity	Gum Revegetation

Conservation Oriented:

C ₁	Tillabery	Windbreaks, Shelterbelts
C ₂	Niamey	Greenbelt
C ₃	Loga	Soil Conservation
C ₄	Doutch	Acacia Albida
C ₅	Keita	Dune Stabilization
C ₆	Madarounfa	Acacia Albida
C ₇	Tessaoua	Windbreak, Shelter Belt
C ₈	Mataheye	Restoration
C ₉	Erhazer	Vegetation Rehabilitation



• MODEL SITE LOCATIONS
 B, G = ECOLOGIC ZONES

Summary of Model Site Location
and Activity Description

Department	First Two Years		Second Two Years	
	Production	Conservation	Production	Conservation
Matamey	Forest Reserve (Guesselbodi)	Greenbelt (Tillaberi)		Greenbelt (Niamey)
Dosso	Forest Reserve (Tanda)	Watershed Devel. (Loga)		Gao Trees (Dogondoutchi)
Madaoua	Re-vegetation (Madaoua)	Dune Stabilis. (Keita)	Communal Forest Mgmt. (Bouza-Maggia)	
Maradi	Nursery Devel. (Guidan Roumji & Aguié)	Windbreak System (Tessaoua)		Gao Trees (Madarounfa)
Zinder		Revegetation (Matameye)	Village Woodlots (Tanout)	
Diffa			Gum Arabic (Maine-Soroa)	
Agadez		Village Reserves (Erhazer)		

Activity Description (tentative)

Guesselbodi: In this forest reserve 430 ha are already planted, exclusively with host country funds and staff. Model site efforts suggested by EFS are:

- artificial regeneration
- some natural regeneration
- training site for Kolo school of forestry and ag agents

83
Note: Overall grazing pressures here are not too great. Water is lacking and has to be trucked in from Niamey once a week for guard personnel. Note that the village of Kolo will become the center for the Niamey Arrondissement. This forest reserve is the nearest to it.

Tillaberi: Some past efforts to establish a green belt. An urban zoning plan exists that sets aside a "green zone" around the expanded town. This will become a reserve area. Model site activities will cover:

- runoff control (some drains exist in the area that could cause possible problems to development)
- tree planting (proper species selection, planting techniques), limited rainfall is a problem (mean annual only 450 cm)
- vegetation and rehabilitation studies, 25 ha/year.

Niamey: Greenbelt efforts began in 1964 and have continued since. Additional inputs are planned. 50 ha/year are desired. This model site should concentrate on management and staff training practices:

- proper preparation for planting/production activities include:
 - site surveys, legal
 - existing soils and topography
 - species selection, planting plan
 - nursery management
 - crew management
 - production control
 - project cost accounting

Gaya: Forest Reserve of Tanda. Several years of reforestation (production) activities. This is the most productive area of Niger in regard to soils and rainfall. In recent years EFS has several capital intensive planting efforts using heavy equipment over large surfaces. Success has been uneven and maintenance and follow-through efforts proved expensive. Now the Forest Service has stopped its expansion activities first to assess the present situation and then take slower, but more carefully designed steps to improve the stands. Some additional artificial regeneration is still planned, but emphasis will be placed on local species like Nere, Kaya and Baobab, all appreciated by local people. Presently a Peace Corps Forestry Volunteer is taking inventory of the existing situation and it is based on this information that the EFS would like to undertake a "model site" effort here in order to develop rational and balanced stand improvement and re-planting efforts. Model site activities will also include fire

84

management and intercropping (temporary use of the cleared soil by farmers - peanuts, cowpeas, etc.) which at the same time will suppress competition of weeds and bushes to the newly seeded or planted trees.

Loga: Accent on soil conservation, run-off control. Topography here is rather hilly and numerous gullies as well as sheet erosion has reduced the available farm land greatly over the last ten years. Various erosion control and re-vegetation activities are planned. An important aspect here is rehabilitation of grass (range) land, especially in areas that are unsuited for crop producing.

DogonDoutchi: Continuation of efforts to introduce Gao trees in farm fields will be coupled with other soil-fertility improvements (windbreaks, contour treatment).

Madaoua: Previous, intermittent efforts to re-introduce Acacia Senegal (gum) will be combined here with more general re-habilitation and conservation efforts. A Senegal can be used here as valuable pioneer species (at the same time producing some direct revenues while general efforts are aimed at restoring vegetative cover (also for grazing)).

Tessaoua: Major components here are windbreaks (to protect farm fields) as well as shelterbelts near the town, which in recent years has been plagued by more frequent and heavier dust storms than before. Soils are generally light and the sand is quite fine. A mini "dust bowl" situation seems to be developing that EFS is trying to combat by introducing blocks or strips of vegetation (trees, bushes as well as grasses) in such a way that their presence is compatible with relatively intense pressure on all available farm land.

Tanout: An extremely dry site where much of the vegetation around town has almost completely disappeared. First efforts consist of establishing a small "frontier" nursery concentrating on local, adapted species and blocking out limited surface areas of land where access will be controlled. There is a good possibility of restoring vegetative cover in these areas including the re-introduction of trees and bushes, but practical and appropriate methods first must be developed for areas in this kind of a dry and hot environment.

Diffa: Site of recent, rather extensive project efforts (FAC funded) to identify, protect and maintain young natural stands of gum trees. Fires, set by herders to force resprouting of bunch grasses during the dry season (a traditional technique which actually works) are one of the biggest hazards to young trees and bushes and the major emphasis here will be placed on extension and public awareness efforts to reduce the number of fires. EFS has in the past

worked with traditional leaders of these herders and believes that a "model site" effort is a good investment in order to bring about better understanding and cooperation of the local people.

Agadez: Erhazer valley. Within 60 to 120 km of Agadez, this valley has been especially hard hit by the effects of the recent drought. Some encouraging results have been achieved (mainly by PVOs) in water retention, runoff control as well as re-establishing some vegetation. EFS would like to make use of these first, positive results and continue general experimentation and technique development along these lines: channel control, water-spreading, re-vegetation and other "anti-desertification" activities. This, in a way, will be the most challenging site in which to get anything positive done due to its harsh climate, depleted (or blown-away) soils, heavy grazing and firewood pressure, etc.

Additional Descriptive Details of Model Site Activities - Production Practices

Firewood Production

Firewood and charcoal for cooking and similar uses is scarce in many parts of Niger. This is especially true in the more urban areas. Firewood and charcoal are valuable economic crops. The indiscriminate cutting of trees and shrubs for firewood with little or no re-establishment of these woody plant species has left the ground bare in many areas. This has substantially increased the rate of soil erosion. Village woodlots and larger scale plantings may thus serve a double purpose as soil builders and conservators as well as producers of additional income from the sale of firewood and charcoal.

Ideally, woodlots could be planted on the less productive soils. This land use of woodland on marginal or sub-marginal agricultural lands and crops on the better agricultural lands can result in a conservation oriented land use pattern. The proper management and/or re-establishment of this resource is desperately needed.

Secondary Forest Products

Firewood is the primary wood product that is needed in Niger. Secondary products can also be obtained from some of the trees used for firewood or may even have a special value over and above their value for firewood. This varies from place to place depending on local priorities, needs and habits.

There are recognized native plant species that have value for materials used to weave mats, construction, utensils, wood carvings and fencing; and can produce food, tanning material, flavoring, dyeing substances, oil for soap, shade, oil, cosmetics, medicine, shea nuts and gum arabic.

96

Nursery Management

Plant nurseries will be needed to provide the plant materials needed for project activities. This will involve proper site selection at a central location with facilities for watering. The decisions concerning the nurseries will also involve type of plants to be grown, propagation techniques, production methods, delivery dates and record keeping.

In addition, the nurseries will provide a facility for plant materials activities. This concerns the collection of native and exotic plants that have the potential for conservation uses. After collection and planting, they will be evaluated and compared for the needed conservation use. Propagation and management techniques will also be determined at this time. The next step is to increase the most promising plants in order to provide enough material for field plantings. The final step is to evaluate the field plantings and to select the superior plant species.

Vegetative Analysis for Rangeland

Grazing influences differ according to vegetation, soils, topography and climate. Range management in Niger must recognize that grazing influences differ among soils and vegetation communities in an area. An initial step in reducing the complexity of these factors is to identify management units which are homogeneous enough to apply similar management techniques.

Within a specific precipitation zone, topographic position, slope, and soil factors combine to create a range site. Range sites are groups of conditions that represent similar forage production and/or differences in management requirements for proper land use. It is at the range site level that the manager can correlate treatment and results and thus make sense from otherwise unrelated data and experiences. Aerial photography will be used as an aid in identification and delineation of the range sites at appropriate model locations.

The condition of the existing range and its potential for forage production can be determined by observation, comparison and more detailed studies. Plant species composition and successional trends are important factors in this analysis.

In addition to the influences of overgrazing on individual plants, there are general influences to the soil and plant community. The greatest influence of overgrazing is the reduction in vegetative cover and increased soil erosion from wind and water.

Similar techniques can also be used on woodland.

87

Forage Production

This includes both grasses and woody browse plants. The quantity of forage produced, the season it is produced and dependability of the production will be the first considerations. All of these factors are extremely variable in Niger depending upon grazing pressures and rainfall.

The animal requirement (10,800 lbs. of forage per year for each 1,000 lbs. of live animal weight) should be met with about half of the herbage and browse production. At least half of the production should be left to maintain plant vigor and provide for ground cover. Drought can also cause plants to lose vigor and full production cannot be expected for one or more growing seasons. Consideration will also be given to forage quality for meeting the animals nutritional needs.

In general, forage production work will be directed at providing maximum livestock production, yet maintaining or improving watershed stability. A specific task will involve forage preference differences of cattle, sheep and goats; selection of most suitable forage species; and methods to re-establish or increase these desirable forage species.

Fire Management

Firebreaks are often needed to protect nurseries, woodlots, forested areas and similar locations from uncontrolled fires. Fire does, however, have some important positive uses. In Arid zones, fires are used to burn off old grass in order to stimulate new growth. Even more important is the use of fire to control unwanted trees and shrubs. Finally, fire is used as the traditional method of clearing land for planting.

Fire management will involve the proper use of fire to control and bring about the positive uses explained above. Uncontrolled fire can bring about adverse effects and this is far too often the case. Proper firebreak construction and maintenance, backfires and time of burning are all fire management techniques to provide fire protection, control undesirable vegetation and to increase forage production.

Conservation Practices (Vegetative)

Gao Tree Plantings

The Gao Tree (*Acacia albida*) has been recognized as a useful conservation plant for many years. Until recently it was able to regenerate naturally because the seeds were eaten by and passed from the bodies of animals. Land and grazing pressures have now increased

to the point that young trees are being destroyed by browsing animals and indiscriminate cultivation. However, nursery techniques have recently been developed that allow one easily and effectively to raise good healthy seedlings.

Millet, sorghum and other crops grow better under Gao trees because of fertility added by bird droppings and waste from animals seeking shade, lower soil temperatures due to shading effects and possible nitrogen fixation. This tree is dormant and loses all or most of its leaves during the crop growing season. All of these factors make it especially adapted for use in crop producing areas.

Its conservation values are in the reduction of wind erosion and improvement of soil conditions (as explained above). These trees can also be planted on the contour at a relatively close interval with wider spacings between rows to promote contour farming. The reintroduction of this tree into crop producing areas is a practical and effective conservation practice.

Windbreaks

The well drained, coarse textured soils of Niger are especially susceptible to wind erosion. Windbreaks on plantings of closely spaced woody vegetation is obviously needed to reduce the soil erosion effects of wind. In addition, windbreaks can reduce the abrasive and adverse effects of sand-blasting on plants and thereby increase crop production.

Plants will also be used that have valuable by-products to make the use of windbreaks more acceptable to the average farmer. These by-products are edible fruit, poles, firewood and forage. This multiple approach to windbreak design should increase the application of this very important conservation practice.

Live Fences

This practice can be used to confine, exclude, or direct the movement of livestock. It is more applicable than manufactured fencing material which is costly and difficult for the farmer to establish and maintain. In addition, live fences have conservation values similar to windbreaks.

Farmers and herders generally would like to use more live fencing but lack the planting material and technical know-how for establishment and management. At least 5 plant species are already known to be adapted for this use but others will also be tried.

Revegetation

This practice involves the reestablishment of vegetation for conservation purposes. As planning is done, there will be areas needing revegetation to prevent soil erosion and reduce adverse environmental effects. These areas are often unusable for intensive agriculture due to poor soils or soil misuse. However it is possible that certain species are adapted to the site. Very often the major reason for no vegetation is a lack of seeds in that particular area; i.e., native trees are not producing seed. Another reason for lack of vegetation is poor soil conditions that prevent seed germination or plant growth from seed.

Another consideration is to stress the use of native rather than exotic plant species. Native plants are naturally adapted to the area and have special uses such as for survival, food and medicine. Many exotic or non-native plants usually require special management and do not have special uses. In addition to the difficulty of establishment and management, there is a possibility that undesirable species could invade areas where they are not wanted.

Sand Stabilization

Shifting and blowing sand causes great damage to farmlands, buildings, installations and roads. Entire villages and towns can be threatened by shifting dunes.

Protection against moving sand involves prevention of initial sand movement and/or methods to cause the sand to settle. In eroding areas it is first necessary to stop the sand movement. This can be done by erecting a windbreak in the form of a fence barrier or hedge. Vegetation can then be established after the fence or hedge has reduced sand movement. Native grasses, herbs and vines are established first. Finally, nursery grown trees can be planted. This gradual revegetation sequence builds the soil and improves growing conditions that help nature to reestablish vegetation in the area. This technique already has been used successfully to revegetate moving sand dunes at several locations in Niger.

Stripcropping

Alternate strips of crops and fallow or uncultivated land are used to some extent for controlling erosion. Strips used to control wind erosion are situated as nearly as possible at right angles to the prevailing wind. The use of contour stripcropping is designed primarily to reduce water erosion.

Conservation Practices (Mechanical)

Terracing

Terracing can provide more effective utilization of Niger's scarce water resources. Terraces can divide watersheds for controlled water movement and provide for storage and slow release to outlet channels or the recharge of groundwater tables.

Level terraces will be built on the contour to store all of the water which runs off from the contributing area and retain it within the terrace trench. These are long, thin storage reservoirs which allow water to seep into the groundwater basins.

Graded terraces will be built slightly off the contour to cause a gentle gradient along the trench. The water will eventually be outletted into waterways or storage basins.

Vegetation or rock lined waterways may also be needed to safely convey the water to a suitable outlet. Another alternative is to hold the water collected from the terrace system and slowly release it through a pipe drain to a safe outlet area. This latter alternative eliminates the need for a waterway.

Drop Structures

Drop structures will be used to control, i.e., slow down, the flow of water in gullies and stream channels. They will be spaced to control the grade and water run-off velocity, and hence control erosion between structures. They also allow some of the water to be stored in the channel or underground.

The areas where they will be installed are generally inaccessible to heavy equipment and for bringing in construction materials. Therefore, these small drop structures will be made of rock, rubble or brush. Rock rubble structures will be built by merely taking and piling rocks in the channels. If necessary, the rocks will be held in place by a wire mesh or piling materials.

Brush dams or drop structures will be built by driving two parallel rows of posts across the channel, stretching a wire mesh along the posts and filling the slot in between with brush.

Contouring

A universal practice in the tillage of cropland is to plant and cultivate parallel to field boundaries. When this is done, there are, inevitably, areas where the cultivation furrows will run up and

91
down the slope. This forms collection channels for rainwater where high water velocities and erosion occurs. Therefore, a major conservation practice is to perform all planting and cultivation parallel to field contours. This creates a level channel which holds the water in place or conveys it to a safe outlet at low velocities. In some cases a vegetated waterway is needed to safely convey the water to a suitable outlet. Contouring also reduces the adverse effects of wind erosion.

Contouring can also be combined with steepcropping. This is a technique wherein alternate strips of the field are planted with different crops, i.e., peanuts, millet, and the third strip fallow or combinations of the above. In this way, there are no large areas barren of protective vegetative cover. Hence, there is less apt to be erosion on any one strip.

Contouring can also be used in some instances to help control runoff on rangeland and woodland. Small furrows can be placed on the contour. These furrows form miniature terraces that hold the water into place until it seeps into the soil. It is important that such furrows be on the contour or otherwise they become drainage channels which may cause rather than prevent erosion. The effectiveness is increased if small dikes are made across the furrows at intervals. The furrows then become small basins.

Rainfall Harvesting

In the dry areas of Niger, the land is relatively flat and the soils are sandy. Along streams and watercourses it is usually very difficult to make a diversion channel to carry water from the source to the site. Gravity flows cannot be utilized very often. Sedimentation from eroding areas is also a problem and large amounts of sediment are in the water during peak water flows.

There is, however, quite a potential for surface water development of smaller watersheds and local supply sources. One recognized technique for harvesting rainwater involves grading and shaping to collect overland flow, conveying the water by ditches and drains to a sediment basin and storage area.

Microcatchments

Microcatchments are being used in various parts of the world with success. This water catching method involves forming a small basin around each tree that is planted. The number that can be used per land area depends on soil conditions, rainfall and type of plant species planted.

22

Small Dams and Retention Basins

Small retention basins along stream channels can trap and store water and silt during high flows and release the water at a safe rate. This technique will maximize the use of Niger's water resources.

For retention basins to be successful, they will have a main outlet to control flow rates and conduct the discharge to a safe outlet. The combination of inflow, outflow, and storage will keep the water flow within controllable limits.

Emergency spillways will be provided for large storm events. Drop-inlets are one type to use. This is a vertical stand pipe connected to a horizontal discharge pipe. When the water reaches the lip of the vertical stand pipe, it drops into the horizontal pipe and flows out through the outlet channel. The emergency spillway type is designed to carry water around the structure and back into the stream channel with a minimum of damage.

Water Spreading

In Niger, the limited rainfall usually falls during short, intense storms. The water swiftly drains away into washes and gullies and is lost to the region.

Water spreading is a practice of deliberately diverting the flood waters from their natural courses and spreading them over adjacent flood plains or detaining them on valley floors. The wet flood plains or valley floors can then be used to grow forage or crops.

Simple water spreading systems will be utilized. This system will consist of a small earth dam across a minor water course. The next step is the conveyance dikes or ditches which transport the water from the diversion point to the crop growing areas. Spreading dikes may be needed at the end of the conveyance system. Water spreading systems will be carefully designed to withstand flood waters.

Overall Watershed Development

This will serve as a model for general watershed development in Niger. It will involve a small watershed with relatively simple and minimal cost practices. The practices to be installed will be selected from those that appear in this annex.

93

In addition, the following studies will be undertaken to acquire basic data related to watershed management:

- Rainfall - runoff
- Floods
- Vegetation influence
- Conservation practice influence
- Production practice influence

Appendix B

I. Forest Service

A. Scholarships

(1) Beginning year 2 (B level/third country)

- General Resource Management (2)
- Soil Conservation (1)

(2) Beginning year 3 (A level/US)

- B.S. or M.S. (2) in management/planning in arid land resources

B. In-Service Training

The roving team will carry out two extensive and continuous trips per year so that at the end of the third year virtually all EFS field agents will have been oriented on carrying out extension education efforts on a wide basis.

(1) Department Level

One management/project planning session in one of the departments (on rotational basis) for departmental chiefs (and their staffs) every six months.

Field training sessions will be a mix of project planning and implementation exercises, model site or other visits, sessions on public as well as other GON agencies conservation awareness and general public relations requirements.

(2) District Level

Assemble district chiefs at department and conduct management/technical workshops (10 days each) twice per year. Training will cover:

- basic decision making, workplanning, crew management/organization, logistics, accounting reporting
- new techniques and materials
- field trips to project or model sites
- extension awareness methods
- in-service sensitivity (to help change police-law enforcement mentality to service-management outlook)
- training lower level EFS personnel (see (3) below)

(3) D Level

In each arrondissement, provide guidance, basic equipment (visual aids, demonstration, etc.), and financial assistance (travel, subsistence). District chief will conduct bi-monthly training/skills upgrading sessions covering:

- basic P.R., sensitivity, extension
- crew handling, work planning
- technical information and feedback
- past months/future months work-planning
- model site planning/training

(4) Seminars, Site Visits to Other Sahel Countries

The project cost estimate contains a certain amount of funds for travel and subsistence for BTF personnel to visit other Sahelian resource management efforts as well as attending seminars, such as those sponsored by CILSS, etc.

C. General Extension Education Conservation Awareness

In addition to (and partially included in) "in-service training" activities, special sessions, workshops or seminars will be held for all EFS personnel on levels A to C to acquaint them with methodologies and equipment available aimed at a broad-based and long-range public awareness campaign.

A roving team (joint U.S.-Nigerien) will visit most of the department and some of the arrondissement offices to brief, train and guide EFS personnel in starting and carrying out a general public relations effort "selling" conservation, protection and rational use of Niger's natural resources.

II. Other Ministries/Services

Aim:

(1) To provide facts and deepen understanding of present and future ecologic realities and the urgent, basic needs for a long range commitment toward the conservation, protection and restoration of all of the nation's renewable natural resources.

(2) To develop the necessary support for the EFS to better and more thoroughly carry out its statutory responsibility for the protection of Niger's natural resources.

A. Ministry of Rural Development

(1) Conduct periodic technical, informative and educational program sessions for senior staff of Agriculture, Livestock, Credit and Cooperative, and Rural Engineering Services as well as faculty of the rural development technical training school (IPDR/Kolo) and the University of Niamey.

A one day session every two months would be envisaged covering various subjects:

- Update of inventory data
- Progress report of work and experiences at model sites
- Educational presentations (including slides, demonstrations, policy/planning discussions, etc.)
- Comments on on-going and proposed project ideas/ experience in production and general development schemes and efforts over the entire rural development sector and their relationship to environmental protection and conservation.

(2) Provide departmental offices of EFS with data, suggestions, methodologies to more effectively "sell" conservation to other services at the department level.

(3) Promote need for EFS to gain more responsibility for the review of proposed projects of other Rural Development services in order to assess the projects' possible impact on the natural resources.

(4) Provide on regular basis:

- resource inventory and use data, including trends;
- recommendations, policy guidelines and project criteria pertaining to rural development projects/ programs as they relate to environmental protection
- technical and advisory services in fields of resource development and conservation.

B. Admin/Political Branches of Government

(1) Assure visits (at least once each 6 months) of upper level EFS personnel with all of Niger's prefects and most sous-prefects and their senior staff.

97

(2) Inform and discuss with local administrators legal aspects of resource protection and management. Brief them on "resource status and conditions" in their particular area. Write-up and document "good" as well as "bad" sample cases in their area.

(3) Explain, solicit need for their full support of GON's need and desire for "rational" use of the few natural resources that are available.

(4) Press for strict enforcement of protection laws when drastic and irresponsible abuses by individuals for personal profit (as opposed to basic need for survival) have occurred.

III. General Public

Aim: to raise basic consciousness level of as many Nigeriens as possible on a nationwide basis: farmers, herders, children, women.

- (1) Mass Media:
 - (a) Regular newspaper and periodical contributions explaining and selling the urgency of conservation.
 - (b) Special conservation and educational radio broadcasts in local languages, including field interviews, reporting of local events, etc.
- (2) Establish and maintain direct contact with representatives of youth organizations, cooperative farm organizations, women's groups and other special purpose groups.
- (3) Conservation Campaign Visits: Two "Cinebus" units (such as is in use in Senegal) will continuously travel a circuit of villages and herder encampments presenting programs of local language material, slide shows, etc. Include samples, demonstrations, give simple instructions, hand out plastic pots, seeds (in limited quantities). Follow up during next visit.
- (4) Education: Assist the Radio Club, Adult Literacy and Primary Education services of the Ministry of Education prepare material for use in their on-going programs which emphasize conservation themes.

(5) General Awareness Efforts:

- (a) Set up permanent "Resource Conservation" exhibit at the National Museum.
- (b) Organize field trips to model sites for village and groups school (elementary and vocational).
- (c) Encourage all prefectures and sub-prefectures to have a "conservation corner" in their courtyards (local trees and bushes, grass model demonstration plots, etc.)

Appendix C

INITIAL ENVIRONMENTAL EXAMINATION

Project Location: Niger

Project Title: Forestry and Land-Use Planning 683-0230

Funding: FY 79-82

LOP: \$3,585,000

MODIFICATIONS 12/27/79

IEE Prepared by: Herbert N. Miller

Funding: FY 80-83

LOP: \$3,839,000

Date:

Environmental Action Recommended:

It is recommended that a negative determination be made and no further environmental action is required.



Concurrence: Jay P. Johnson
Director
USAID/Niger

Date: 6-5-79

~~Assistant Administrator's Decision:~~

Approve:



Date:

12/31/79

Disapprove:

Date:

Examination of Nature, Scope and Magnitude of Environmental Impacts

A. Description of Project

1. Environmental Setting

The national territory of Niger is located at 12-23° N latitude, although project activities will focus primarily on the pastoral zone (12-16° N) and the cultivated zone (12-14° N). These zones are of dry and subhumid tropical climates where rainfall totals 200-400 mm and 400-800 mm respectively although only a very small area on the southern fringe of Niger has a mean annual rainfall over 800 mm. The summer rainy season is from June to October with maximum rainfall in August. Rainfall decreases both in quantity and in regularity as one moves northward.

Landforms

In the cultivated zone where the human population is concentrated there is a succession of basins and low laterite plateaus with sandy deposits over limestone and sandstone layers. Average elevation is 300 m; ranging from 200-500 m. Slopes generally are less than 10%.

Soils

Roughly 20% of Niger's total land is more or less arable, although large areas of this land are marginal for farming and have been cleared and cultivated only in recent years. The subhumid zone is dominated by ferruginous soils (alfisols) with some shallow soils of alluvial and colluvial origin (entisols), often over layers of cemented laterite (plinthite). The ferruginous soils are characterized by kaolinitic clays, low CEC, moderate base saturation and stable aggregate structure; principal limitations on use are shallow depth, droughtiness, and erodibility of fertile surface horizons. The drier zones are dominated by arid brown soils (aridisols). These soils are characterized by non-kaolinitic cracking clays with higher CEC, high base saturation and poor structure (loose, light, sandy). Agricultural use is limited by aridity and susceptibility to erosion and compaction.

Vegetation

The southern zone is open woodland and sudan savanna type with principal genera being Adansonia, Sclerocaraya, Combretum, and Terminalia. The more northern zone is thorn shrub and grass steppe sahel savanna type, with principal genera being Acacia, Comiphora, Balanites, Aristida, Cenchrus, and Schoenfeldia.

Land Use

In the pastoral zone: There is extensive grazing of cattle, sheep, goats, camels and donkeys. In the cultivated zone: the crops are millet, sorghum, cowpeas, peanuts, with some cotton, corn and rice.

Woodlands and pasture are subjected to over-cutting, over-grazing and clearing for cultivation. Cultivated land is subject to irregular but intense, concentrated rainfall and erosion.

Socio-economic Characteristics

Niger has approximately 5 million people with an annual increase of 2.7 percent. 90% of the population is rural, divided between nomadic (15%) and sedentary farmers (75%). Only 4 cities have a population greater than 25,000. Over 43% of the population is under 15 years of age. Average per capita income was \$156 in 1977. There are five major ethnic groups: Hausa (45%); Djerma/Songhai (21%); Fulani (14%); Tuareg (11%); and Beri-Beri (8%). The remaining one percent is composed of Arab, Tubu and Gourmantché.

2. Project Proposal

This project will assist the GON's Forest and Water Service (EFS) begin to address the long-term problem of natural resource deterioration and the need to develop a comprehensive approach to rational land-use and resource conservation. The project is divided into four major components as follows:

(1) The over-all, umbrella component is the establishment of a technical planning unit (Bureau Technique Forestier - BTF) within the EFS which, by the end of the project, will have prepared a long-term, comprehensive perspective plan for the protection and rehabilitation of Niger's natural vegetative resources. At the end of the project, the BTF will function as the primary unit within the EFS for continued research, experimentation and planning, as well as for the development of specific project actions and proposals which may be identified as a result of the long-term perspective plan;

(2) The compilation of a natural resource inventory including maps of ground cover, land capability and resource stress, drawing upon both existing and project initiated reports and studies. This activity is an indispensable element in the preparation of the perspective plan as well as for the establishment of baseline data which can be updated and used for future project planning and assessment of development progress;

102

(3) The establishment of 16 model sites ranging in size from 5 to 50 hectares which will serve as areas for training in practical resource management, experimental and technical research sites, and demonstration sites. The data and information produced by work on these sites will also provide inputs into the perspective plan;

(4) A broad program of local training aimed at the entire staff of the EFS and a complementary sensitization effort which will target high and mid-level staff members of other GON services as well as the rural population at large on resource management issues and problems.

The above four components will strengthen the technical, managerial and institutional capability of Niger for dealing with current problems of resource over-use and environmental deterioration.

Although the essence of this project focuses on environmental considerations and carries substantial implications for a positive and significant environmental impact in the future, this impact would only be the result of physical activities which may be subsequently undertaken by projects identified and developed as a result of the long-term perspective plan which this project will produce, rather than as a direct result of this project.

As such impacts can only be assessed after investigation of the subsequent project proposals, they are outside the scope of this activity. It is thus recommended that a negative determination be made for this project.

B. Identification and Evaluation of Environmental Impacts

Impact Areas and Sub-Areas

a. LAND USE

- 1. Changing the character of the land through:
 - a. Increasing the population..... N
 - b. Extracting natural resources N
 - c. Land clearing L
 - d. Changing soil character N
- 2. Altering natural defenses N
- 3. Foreclosing important uses N
- 4. Jeopardizing man or his works N

b. WATER QUALITY

- 1. Physical state of water N
- 2. Chemical and biological states N
- 3. Ecological balance N

c. ATMOSPHERIC

- 1. Air additives N
- 2. Air pollution N
- 3. Noise pollution N

d. NATURAL RESOURCES

- 1. Diversion, altered use of water N
- 2. Irreversible, inefficient commitments N

LEGEND

- N - No environmental impact
- L - Little environmental impact
- M - Moderate environmental impact
- H - High environmental impact
- U - Unknown environmental impact

104

e. CULTURAL

- 1. Altering physical symbols N
- 2. Dilution of cultural traditions N

f. SOCIOECONOMIC

- 1. Changes in economic/employment patterns N
- 2. Changes in population N
- 3. Changes in cultural patterns N

g. HEALTH

- 1. Changing a natural environment N
- 2. Eliminating an ecosystem element N

h. GENERAL

- 1. International impacts N
- 2. Controversial impacts N
- 3. Larger program impacts N
- 4. Other factors N

Relationship of Forestry and Land-Use Planning Project to AID Projects
and Other Related Activities

1. Niger Cereals Project (683-0201)

This project assists the GON improve its capability to design efficient cereal production techniques, and improve extension/demonstration services that will respond to farmers and their needs. The ultimate goal is to achieve self-sufficiency in food production and an improvement in the social and economic status of the low-income farmers.

Project implementation started in 1975 with cereals research, seed multiplication, training and support of credit and cooperative and agriculture extension activities. By the end of 1977 crop season, 5,000 demonstrations were conducted in 2,500 villages. Technical support and training also were provided to 400 cooperatives and almost 2,000 cooperative officers.

A second phase of five years is planned to continue this program. This will involve a logistic system for cooperative and credit organizations, establishment of a National Seed Service, continued research in improved millet, sorghum, peanut and cowpea seed, additional Seed Multiplication Centers and Foundation Seed Farms, system of extension on cereal production, and utilization of laterite soils for cereal production.

The Niger Cereals Project recognizes that development activities in food production technologies must also be concerned with techniques in soil conservation practices such as windbreaks, land-use management and erosion control. The Forestry and Land Use Planning project can fill this technology gap in the food production projects. An example is on the Maradi Seed Multiplication Center, which needs conservation practices to prevent soil erosion and forestry practices for wood production. The application of these practices through methods developed by the Forestry and Land Use Planning Project would combine the food production and conservation aspects of farming. The result would show how intensive food production is possible over long periods of time if good conservation and land use methods are applied.

2. Niger Range and Livestock

This project provides GON with a comprehensive range management and livestock program, Phase I was started in 1977 and is directed at a 4.5 million hectare area delineated by the towns of Agadez - Aderbissinat - Gadabjui - Abalak - Ingal.

Livestock is one of the principal economic resources of Niger and is a key to achieving regional food self-sufficiency and self-sustaining economic growth. The major constraint to maximizing this resource is a scarcity of feed and water, which results in over-grazing, land misuse, low production, and subsequent low income to the herder. The solution appears to be good range management with controlled grazing to keep livestock numbers in balance with available feed and water. This project addresses the need to institute systems of range management in order to protect and restore the grazing resources of the pastoral zone for animal production.

The project director has expressed a need for information on woody species, re-establishment of trees around mares and watercourses, and a source of useful tree and shrub seedlings. There is also a need for land use planning, and solutions to range and livestock problems encountered when farming is expanded into the pastoral areas. The Forestry Project can assist the Livestock and Agriculture Services specifically address these problems.

3. Niamey Department Rural Development

This project is one of the several department specific agriculture production projects being carried out by various donors at the village level. In addition to the introduction of improved agriculture technology the project also attempts to address problems of better land use and soil conservation. The project covers the three arrondissements of Niamey, Filingue and Ouallam, where declining soil fertility is considered a major problem. Six hundred villages with a rural population of 350,000 people will ultimately be involved. To date 83 villages are participating in the program.

The three-year program (Phase I) will develop the local structures for extension, demonstration and cooperative services. Field studies will also be conducted to obtain information for formulation of a more comprehensive long-range program. This latter activity will be undertaken in the 1980-1984 period.

This project is small in scope in relation to Niger's total land use and conservation needs. However, there is an excellent opportunity for the Forest and Land Use Project to take advantage of the organizational structure established in Niamey Department for the conduct of experimental actions at the village level.

107

4. Human Resource Development.

A Project Paper has been prepared and will be forwarded to AID/Washington for action. The project involves a program for training and education of a rural development cadre. The objective is to help the GON formulate a comprehensive program to address one of the major constraints on rural development caused by a lack of qualified managers and technicians.

The project plan is to enlarge the capacity of the Practical Institute for Rural Development (IPDR), at Kolo, within the next few years. This institution provides the majority of mid-level personnel who will receive their secondary academic training and technical training prior to joining the EFS.

The Forestry project will be able to provide assistance to Kolo in the preparation of its forestry and environment curriculum as well as provide practical training for Forestry students at the project's model sites.

5. Tapis Vert

This project is a small OPG with Catholic Relief Service and the University of Dayton. Initial efforts are to assess potential agricultural resources and determine their best use in a small area in Northern Niamey Department. The next phase involves soil erosion control, water catchments, tree plantations, fish ponds, poultry production, irrigation and social problems.

If successful, this project will generate information which can be used in the Forestry Project on a broader basis.

6. University of Arizona Planning Activities in the Department of Zinder

Initial efforts have been to publish a fact book on the human, biological, and physical conditions in the Zinder area, as of December 1977. This fact book is to serve the needs of the GON planning organization. Additional sources of data are a village survey of rural Zinder, study of market behavior, and the status of the artisans in the work force.

Information developed from this project can be used to supplement the Forestry Project, which is broader in scope.

Appendix E

Statutory Checklist

A. GENERAL CRITERIA FOR COUNTRY

- 1. FAA Sec. 116. Can it be demonstrated that contemplated assistance will directly benefit the needy? If not, has the Department of State determined that this government has engaged in consistent pattern of gross violations of internationally recognized human rights? Project is a planning activity which will ultimately benefit the majority rural population. There is no evidence to suggest that the Nigerien Government has violated internationally recognized human rights on a consistent basis.

- 2. FAA Sec. 481. Has it been determined that the government of recipient country has failed to take adequate steps to prevent narcotics drugs and other controller substances (as defined by the Comprehensive Drug Abuse Prevention and Control Act of 1970) produced or processed, in whole or in part, in such country, or transported through such country, from being sold illegally within the jurisdiction of such country to U.S. Government personnel or their dependents, or from entering the U.S. unlawfully? No

- 3. FAA Sec. 620(a). Does recipient country furnish assistance to Cuba or fail to take appropriate steps to prevent ships or aircraft under its flag from carrying cargoes to or from Cuba? No

- 4. FAA Sec. 620(b). If assistance is to a government, has the Secretary of State determined that it is not controlled by the international Communist movement? Yes

- 5. FAA Sec. 620(c). If assistance is to government, is the government liable as debtor or unconditional guarantor on any debt to a U.S. citizen for goods or services furnished or ordered where (a) such citizen has exhausted available legal remedies and (b) debt is not denied or contested by such government? No

109

- 6. FAA Sec. 620(e) (1). If assistance is to a government, has it (including government agencies or subdivisions) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities? No

- 7. FAA Sec. 620(f); App. Sec. 108. Is recipient country a Communist country? Will assistance be provided to the Democratic Republic of Vietnam (North Vietnam), South Vietnam, Cambodia or Laos? No

- 8. FAA Sec. 620(i). Is recipient country in any way involved in (a) subversion of, or military aggression against, the United States or any country receiving U.S. assistance, or (b) the planning of such subversion or aggression? No

- 9. FAA Sec 620(j). Has the country permitted, or failed to take adequate measures to prevent, the damage or destruction, by mob action, of U.S. property? No

- 10. FAA Sec. 620(l). If the country has failed to institute the investment guaranty program for the specific risks of expropriation, inconvertibility or confiscation, has the AID Administrator within the past year considered denying assistance to such government for this reason? The investment guaranty program exists for all three categories. There are no outstanding disputes.

- 11. FAA Sec. 620(o); Fishermen's Protective Act, Sec. 5. If country has seized, or imposed any penalty or sanction against, any U.S. fishing activities in international waters, N/A
 - a. has any deduction required by Fishermen's Protective Act been made?
 - b. has complete denial of assistance been considered by AID Administrator?

110

12. FAA Sec. 620(q); App. Sec. 504. (a) Is the government of the recipient country in default on interest or principal of any AID loan to the country? (b) Is country in default exceeding one year on interest or principal on U.S. loan under program for which App. Act appropriates funds, unless debt was earlier disputed, or appropriate steps taken to cure default? **No**
13. FAA Sec. 620(s). "If contemplated assistance is development loan (including Alliance loan) or security supporting assistance, has the Administrator taken into account the percentage of the country's budget which is for military expenditures, the amount of foreign exchange spent on military equipment and the amount spent for the purchase of sophisticated weapons systems?" **N/A: Project is a development assistance grant.**
14. FAA Sec. 620(t). Has the country served diplomatic relations with the United States? If so, have they been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption? **No.**
15. FAA Sec. 620(u). What is the payment status of the country's U.N. obligations? If the country is in arrears, were such arrearages taken into account by the AID Administrator in determining the current AID Operation Year Budget? **The Government of Niger is not in arrears.**
16. FAA Sec. 620A. Has the country granted sanctuary from prosecution to any individual or group which has committed an act of international terrorism? **No.**
17. FAA Sec. 666. Does the country object, on basis of race, religion, national origin or sex, to the presence of any officer or employee of the U.S. there to carry out economic development program under FAA? **No.**
18. FAA Sec. 669. Has the country delivered or received nuclear reprocessing or enrichment equipment, materials or technology, without specified arrangements on safeguards, etc.? **No**

19. FAA Sec. 901. Has the country denied its citizens the right or opportunity to emigrate?

No

B. FUNDING CRITERIA FOR COUNTRY

1. Development Assistance Country Criteria

a. FAA Sec. 102(c), (d). Have criteria been established, and taken into account, to assess commitment and progress of country in effectively involving the poor in development, on such indexes as:
(1) small-farm labor intensive agriculture,
(2) reduced infant mortality, (3) population growth, (4) equality of income distribution, and
(5) unemployment.

USAID Mission in Niger reports annually on 102(d) criteria.

b. FAA Sec. 201(b)(5), (7) & (8); Sec. 208; 211(a)(4), (7). Describe extent to which country is:

This criteria described in detail in USAID/Niger's Country Development Strategy Statement for 1981.

- (1) Making appropriate efforts to increase food production and improve means for food storage and distribution.
- (2) Creating a favorable climate for foreign and domestic private enterprise and investment.
- (3) Increasing the public's role in the developmental process.
- (4) (a) Allocating available budgetary resources to development.

(b) Diverting such resources for unnecessary military expenditure and intervention in affairs of other free and independent nations.
- (5) Making economic, social, and political reforms such as tax collection improvements and changes in land tenure arrangements, and making progress toward respect for the rule of law, freedom of expression and of the press, and recognizing the importance of individual freedom, initiative, and private enterprise.

112

(6) Otherwise responding to the vital economic, political, and social concerns of its people, and demonstrating a clear determination to take effective self-help measures.

c. FAA Sec. 201(b), 211(a). Is the country among the 20 countries in which development assistance loans may be made in this fiscal year, or among the 40 in which development assistance grants (other than for self-help projects) may be made? **Yes**

d. FAA Sec. 115. Will country be furnished, in same fiscal year, either security supporting assistance, or Middle East peace funds? If so, is assistance for population programs, humanitarian aid through international organizations, or regional programs? **No**

B. GENERAL CRITERIA FOR PROJECT

1. App. Unnumbered; PAA Sec. 653(b)
 (a) Describe how Committees on Appropriations of Senate and House have been or will be notified concerning the project; **By Congressional Presentation and Congressional Notifications when appropriate.**
 (b) is assistance within (Operational Year Budget) country or international organization allocation reported to Congress (or not more than \$1 million over that figure plus 10%)? **Yes**
2. FAA Sec. 611(a)(1). Prior to obligation in excess of \$100,000, will there be (a) engineering, financial, and other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the U.S. of the assistance? **(a) Yes**
(b) Yes
3. FAA Sec. 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of the assistance? **When GON is assured of AID financing it must officially establish by decree a new section within the Forest and Waters Service. No delay in the required action is anticipated**

113

4. FAA Sec. 611(b); App. Sec. 101. If for water or water-related land resource construction, has project met the standards and criteria as per Memorandum of the President dated Sept. 5, 1973 (replaces Memorandum of May 15, 1962; see Fed. Register, Vol 38, No. 174, Part III, Sept. 10, 1973)? N/A
5. FAA Sec. 611(e). If project is capital assistance (e.g., construction), and all U.S. assistance for it will exceed \$1 million, has Mission Director certified the country's capability effectively to maintain and utilize the project? Yes. A 611(e) certification is attached to this project paper.
6. FAA Sec. 209, 619. Is project susceptible of execution as part of regional or multilateral project? If so, why is project not so executed? Information and conclusion whether assistance will encourage regional developments programs. If assistance is for newly independent country, is it furnished through multilateral organizations or plans to the maximum extent appropriate? Project is not susceptible of regional execution. Project is related closely to IBRD Forestry Project approved May 1978.
7. FAA Sec. 601(a); (and Sec. 201(f) for development loans). Information and conclusions whether project will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions. N/A
8. FAA Sec. 601(b). Information and conclusion on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise). N/A

114

9. FAA Sec. 612(b); Sec. 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized to meet the cost of contractual and other services.
10. FAA Sec. 612(d). Does the U.S. own excess foreign currency and, if so, what arrangements have been made for its release?

GON will pay construction costs and personnel costs for Nigeriens associated with project. GON budgetary constraints dictate need to use appropriated dollars for local currency costs. U.S. owned local currency not applicable.

There are no U.S. owned foreign currencies in Niger.

C. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria
a. FAA Sec. 102(c); Sec. III; Sec. 281a.

Extent to which activity will (a) effectively involve the poor in development, by extending access to economy at local level, increasing labor-intensive production, spreading investment out from cities to small towns and rural areas; and (b) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and otherwise encourage democratic private and local governmental institutions?

(a) labor intensive methods will be used on Model Sites;
(b) local people will be encouraged through Human Resources Development aspect of project to participate in nation-wide awareness effort aimed at natural resource conservation and rehabilitation. No effect on cooperatives.

- b. FAA Sec. 103. 103A, 104, 105, 106, 107.

Is assistance being made available: (103) for agriculture, rural development or nutrition; if so, extent to which activity is specifically designed to increase productivity and income of rural poor; (103A) if for agricultural research, is full account taken of needs of small farmers;

As planning/management improvement effort, project does not address specifically the productivity or income of rural poor, but long-term impact is intended to bring about more efficient use of natural resources -- which affects 95% of Nigerien population, most of whom are small farmers or herders.

- c. FAA Sec. 110(a); Sec. 208(e). Is the recipient country willing to contribute funds to the project, and in what manner has or will it provide assurances that it will provide at least 25% of the costs of the program, project, or activity with

N/A

115
respect to which the assistance is to be furnished (or has the latter cost-sharing requirement been waived for a "relatively least-developed" country)?

d. FAA Sec. 110(b). Will grant capital assistance be disbursed for project over more than 3 years? If so, has justification satisfactory to Congress been made, and efforts for other financing?

No. Grant capital assistance will not be disbursed over more than 3 years.

e. FAA Sec. 207; Sec. 113. Extent to which assistance reflects appropriate emphasis on; (1) encouraging development of democratic, economic, political, and social institutions; (2) self-help in meeting the country's food needs; (3) improving availability of trained worker-power in the country; (4) programs designed to meet the country's health needs; (b) other important areas of economic, political, and social development, including industry; free labor unions, cooperatives, and Voluntary Agencies; transportation and communication; planning and public administration; urban development, and modernization of existing laws; or (6) integrating women into the recipient country's national economy.

(1) Project encourages nationwide involvement in awareness campaign on status to natural resources base, and feed-in of views preparatory to GON planning efforts.
(2) Project purpose directed towards rational food self-sufficiency goal;
(3) improvement of EFS personnel is one objective; also spin-off through use of local labor will improve worker skills relating to small conservation/rehabilitation activities;
(5) natural resource planning improvement is a major objective.

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

Project responds to GON recognition of need to slow and reverse natural resource deterioration and is designed to help build planning and management capability with least amount of injection of outside views. Plans will be developed by Nigeriens. Government-wide and public-wide participation campaign will be mounted.

g. FAA Sec. 201(b) (2)-(4) and - (8); Sec. 201(e); Sec 211(a)(1)-(3) and - (8).

Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities and self-sustaining economic growth; or of educational or other institutions directed toward social progress? Is it related to and consistent with other development activities, and will it contribute to realizable long-range objectives? And does project paper provide information and conclusion on an activity's economic and technical soundness?

Project is a keystone effort in approach to natural renewable resource management. Relates to all rural development. Relates to all rural development projects through establishment of resource data base. Economic and Technical Soundness sections are included in PP.

h. FAA Sec. 201(b)(6); Sec. 211(a) (5), (6).

Information and conclusion on possible effects of the assistance on U.S. economy, with special reference to areas of substantial labor surplus, and extent to which U.S. commodities and assistance are furnished in a manner consistent with improving or safeguarding the U.S. balance-of-payments position.

No impact on labor surplus areas of U.S. Except for locally purchased shelf items such as simple tools, office supplies and POL, commodities will be procured in U.S. to maximum extent possible. U.S. contractors will be used for technical services.

2. Development Assistance Project Criteria (Loans only).

N/A

3. Project Criteria Solely for Security Supporting Assistance.

N/A

4. Additional Criteria for Alliance for Progress.

N/A

C. STANDARD ITEM CHECKLIST

1. Procurement

a. FAA Sec. 602. Are there arrangements to permit U.S. small business to participate equitably in the furnishing of goods and services financed?

Yes. Through AID's normal procurement practices.

b. FAA Sec. 604(a). Will all commodity procurement financed be from the U.S. except as otherwise determined by the President or under delegation from him?

Yes

- 117
- c. FAA Sec. 604(d). If the cooperating country discriminates against U.S. marine insurance companies, will agreement require that marine insurance be placed in the U.S. on commodities financed? N/A. Niger does not discriminate against U.S. marine insurance.
- d. FAA Sec. 604(e). If offshore procurement of agricultural commodity or product is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity? N/A
- e. FAA Sec. 608(a). Will U.S. Government excess personal property be utilized wherever practicable in lieu of the procurement of new items? Yes
- f. MMA Sec. 901(b). (a) Compliance with requirement that at least 50 per centum of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U.S.-flag commercial vessels to the extent that such vessels are available at fair and reasonable rates. Yes
- g. FAA Sec. 621. If technical assistance is financed, will such assistance be furnished to the fullest extent practicable as goods and professional and other services from private enterprise on a contract basis? If the facilities of other Federal agencies will be utilized, are they particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs? AID regulations on provision of technical assistance will be enforced.
- h. International Air Transport. Fair Competitive Practices Act, 1974. If air transportation of persons or property is financed on grant basis, will provision be made that U.S.-flag carriers will be utilized to the extent such service is available? Yes

118

2. Construction

a. FAA Sec. 601(d). If a capital (e.g., construction) project, are engineering and professional services of U.S. firms and their affiliates to be used to the maximum extent consistent with the national interest?

Construction component will be a project contribution of the GON.

b. FAA Sec. 611(c). If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable?

GON funds will be used; GON will handle contracting arrangements according to its standard procedures.

c. FAA Sec. 620(k). If for construction of productive enterprise, will aggregate value of assistance to be furnished by the U.S. not exceed \$100 million?

N/A

3. Other Restrictions

a. FAA Sec. 201(d). If development loan, is interest rate at least 2% per annum during grace period and at least 3% per annum thereafter?

N/A

b. FAA Sec. 301(d). If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights.

N/A

c. FAA Sec. 620(h). Do arrangement preclude promoting or assisting the foreign aid projects or activities of Communist-Bloc countries, contrary to the best interests of the U.S.?

Yes

d. FAA Sec. 636(i). Is financing not permitted to be used, without waiver, for purchase, long-term lease, or exchange of motor vehicle manufactured outside the U.S. or guaranty of such transaction?

Yes

e. Will arrangements preclude use of financing:

- 119
- (1) FAA Sec. 114. To pay for performance of abortions or to motivate or coerce persons to practice abortions? **Yes**
- (2) FAA Sec. 620(g). To compensate owners for expropriated nationalized property? **Yes**
- (3) FAA Sec. 660. To finance police training or other law enforcement assistance, except for narcotics programs? **Yes**
- (4) FAA Sec. 662. For CIA activities? **Yes**
- (5) App. Sec 103. To pay pensions, etc., for military personnel? **Yes**
- (6) App. Sec. 106. To pay U.N. assessments? **Yes**
- (7) App. Sec. 107. To carry out provisions of FAA Section 209(d) and 251(h)? (transfer to multilateral organization for lending). **Yes**
- (8) App. Sec. 501. To be used for publicity or propaganda purposes within U.S. not authorized by Congress? **Yes**

120

Request for Source/Origin and Sole-Source Procurement Waiver - Aerial Photography

Problem: To provide annual aerial photography services over the life of project.

Discussion: The resource inventory component of the project requires aerial photography and interpretation services each year during the four year life-span of the project. The design of the activity requires that this service be provided at the exact same time each year i.e., end of harvest in October, and that the service be performed over the exact same area. This is to provide comparative data on land-use and environmental changes over time. It is obvious that only one company should perform this work in order to provide continuity and consistency in the delivered product. As the annual work plan is relatively limited it is also necessary to select a company which will be able to provide the service without excessive mobilization costs. The French National Geographic Institute (IGN) has regularly provided aerial photography, interpretation and mapping services throughout West Africa for many years. It has a permanent office established in Niamey and can easily schedule and mobilize its extensive equipment availabilities which operate in West Africa on a permanent basis. The combination of IGN's experience in West Africa, its ability to schedule a relatively minor work requirement without excessive mobilization efforts and cost, the presence of its permanent office in Niamey which will provide constant backstop services and readily available consultation, and its assured availability to perform services over the life of project, make IGN the logical choice of contractor to perform the required aerial photography services for this project.

Recommendation: That a waiver of both the competitive bidding requirement and the source/origin requirement be issued to authorize the sole-source procurement of aerial photography services from a geographic code 935 organization (Institut Geographique National - IGN). This contract would call for an annual work requirement costing approximately \$66,000 for each of four years or a total contract cost of approximately \$265,000.

20 NOV. 1978

REPUBLIQUE DU NIGER

Niamey, le 107

MINISTRE DES AFFAIRES ETRANGERES
ET DE LA COOPERATION

LE MINISTRE DES AFFAIRES ETRANGERES
ET DE LA COOPERATION a.1

DIRECTION DES AFFAIRES POLITIQUES
ET DE LA COOPERATION INTERNATIONALE

Rec'd
NOV 20 1978

N°...../MAE/C/DAPCI,

09529

Monsieur le Directeur de l'USAID
B.P 201

NIAMEY

Action: PROG/HM
Info: DIR
A/DIR

Monsieur le Directeur,

Me référant à notre lettre n°03952/MAE/C/DAPCI du 20 Mai 1978, dans laquelle se trouvent les observations formulées par le Ministre du Développement Rural, sur l'Avant-Projet d'Etude et de Planification de l'Utilisation des Sols et Forêts, j'ai l'honneur de vous informer que les Autorités Nigériennes Compétentes souhaitent vivement que le Projet "Planification de l'Utilisation des Sols et Forêts" soit financé par l'USAID, et qu'une requête en bonne et due forme vous sera introduite par le Département Compétent.

Veuillez agréer, Monsieur le Directeur, l'expression de ma parfaite considération.

Moussa Sala
Le Chef de Bataillon
MOUSSA SALA

LOGICAL FRAMEWORK

SECTOR GOAL	MEASURES OF GOAL ACHIEVEMENT	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Food self-sufficiency and sustained economic growth in the rural sector</p> <p><u>Project Goal:</u> To arrest and reverse the existing trends in deterioration of Niger's soil and vegetative resources,</p>	<ul style="list-style-type: none"> - Increased crop and livestock production with consequent improved nutrition and health. - Decrease in annual loss of cultivable surface area - Increase in density of vegetative cover - either natural or introduced. Includes forest, bush, rangeland and agriculture land. 	<ul style="list-style-type: none"> - Government surveys and statistics - Field surveys, vegetation transects, aerial photography - Satellite imagery. 	<ul style="list-style-type: none"> - Arresting present trends in resource deterioration will assist Niger meet its goal of food self-sufficiency. - The GON and donors will pursue serious efforts to implement program actions recommended by the Forestry Service - Adequate capital and human resources will be made available. - Project activities will have been successful in encouraging full participation by the rural population in environmental actions.
PROJECT PURPOSE	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p><u>Purpose:</u> Establish a planning and managerial capability within Niger's Forestry Service; produce a long-term perspective plan for the rehabilitation and protection of Niger's soil and vegetative resources; and increase the awareness of Niger's rural population and government service personnel on the need for resource conservation actions.</p>	<ul style="list-style-type: none"> - Technical Planning Unit staffed and functioning in permanent facilities. - Improved project proposals presented to donor community. - Long-term perspective plan prepared and submitted to GON. - Significant increase in budgetary resources allocated to the Forestry Service. 	<ul style="list-style-type: none"> - Visual observation - Examination and analysis of project documentation - Final project evaluation - Gon budgetary plans 	<ul style="list-style-type: none"> - Basic acquired data and experience gained through Model Sites and Forest Management practices will be sufficient to allow synthesis into a valid perspective plan - Plan will be accepted by GON as a basis for action - Human resources component will be effective in persuading local populations to actively support conservation and rehabilitation efforts.

OUTPUTS	MAGNITUDE OF OUTPUTS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<u>1. Technical Planning Unit</u>	<ul style="list-style-type: none"> - One fully staffed and equipped unit (6 high and mid-level technicians) operating out of own physical facilities 	<ul style="list-style-type: none"> - Visual observation - Project and GON reports and records 	<ul style="list-style-type: none"> - GON able to provide qualified personnel for Technical Planning Unit - AID able to recruit qualified, effective personnel for long-term and consultant positions
<u>2. Natural Resource Inventory</u> <u>A. Field Surveys</u> <u>B. Aerial Photography</u> <u>C. Satellite Imagery</u> <u>D. Maps made</u> <u>E. Documentation</u>	<ul style="list-style-type: none"> - 1 per model site per year - 20 lines x 50 kms per year - Southern portion Niger - twice per year - Vegetation, land use (to be determined) - As required 	<ul style="list-style-type: none"> - Field Trips 	<ul style="list-style-type: none"> - Basic Data can be acquired in sufficient quantity and quality to prepare valid planning documentation. - Annual AID funding increments will be furnished according to plan and inputs can be provided on a timely basis.
<u>3. Model Sites</u> <u>A. Production</u> <u>B. Conservation</u> <u>C. Forest Management</u>	<ul style="list-style-type: none"> - 7 in four years - 9 in four years - Minimum of 15 countrywide 		

OUTPUTS	MAGNITUDE OF OUTPUTS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<u>4. Human Resource Development</u> <u>A. Forestry Service</u>	<ul style="list-style-type: none"> - 2 Long-term US academic (4 p/y) - 2 Long-term third country academic (4 p/y) - In service training for EFS field personnel (12 training sessions) - On-the-job training for Technical Planning Unit personnel - Forestry and conservation technical curriculum development for use at IPDR/Kolo 		
<u>B. Other GON Services and Agencies</u>	<ul style="list-style-type: none"> - One-day seminars (18) - Publication/distribution of reports and data - Briefing visits with Provincial Governors and District Chiefs 		
<u>C. General Public</u>	<ul style="list-style-type: none"> - Mass media: local radio broadcasts, etc. - Extension/Public Relations efforts through cooperatives, youth organizations etc. - Traveling village extension/information team 		

125

INPUTS	IMPLEMENTATION TARGET	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>1. <u>Personnel</u></p> <p>a. GON</p> <p>e. AID</p> <p>c. Peace Corps</p> <p><u>Training</u></p> <p>Academic</p> <p>e. In-Country/Extension</p> <p>3. <u>Commodities</u></p> <p>4. <u>Construction</u></p> <p>c. <u>Land</u></p> <p>b. <u>Other</u></p>	<ul style="list-style-type: none"> - 59 person years high, mid and low-level full time personnel - 4 person years long-term - 4 person years short-term - 6 person years long-term volunteer service - Long-term scholarship (US and third country) - Operational costs, technical advice - Vehicles (18 all-terrain passenger, 2 all-terrain 5 ton trucks) - Tree seedlings - Fencing - Small handtools/survey equipment - Office equipment, supplies, furnishings - Satellite imagery/aerial photography - Office building for Technical Planning Unit (GON contribution) - Hectarage for 16 model sites throughout the country (GON contribution). - Labor, miscellaneous local costs and operations per financial plan. 	<ul style="list-style-type: none"> - Project records 	

UNCLASSIFIED
Department of State

TELEGRAM

PAGE 01 STATE #38018
ORIGIN ALT-28

0602 -114-

STATE #38018

INFO OCT-01 AF-18 EG-00 IGA-02 /041 R

DRAFTED BY AFR/SFWA:RHANDLER:CR
APPROVED BY AA/AFR:GTBUTCHER
AFR/SFWA:DSHEAR
AFR/DP:WSTATE-DS/OST:WPARHAM(DPT)
AFR/DR/SDP:DDIBBLE
AFR/DR:CHUSICK
AFR/SFWA:AGHACARTHUR
AFR/DR/AGR:DFERGUCON
AFR/SFWA:GVEVANS
AFR/SFWA/SDP:AROLLINS
DESIRED DISTRIBUTION

4L ACTION AFR 15 CHRON 2 7 8 INFO VA 1G PPG 11A AATA PIA 1 DA OST

003616 140522Z 713

P R 132042Z FEB 78
FM SECSTATE WASHDC
TO AMEMBASSY MIAMEY PRIORITY
INFO AMEMBASSY ABIDJAN
AMEMBASSY PARIS
AMEMBASSY OUAGADOUGOU

UNCLAS STATE #38018

AIDAC

E.O. 11652: N/A

TAGS:

SUBJECT: NIGER FORESTRY AND LAND-USE PLANNING PID
(683-0228)

1. COMMITTEE REVIEW OF FY 1979 PID HELD JANUARY 27, 1978 RECOMMENDED THAT THE PID BE APPROVED AND THAT PROJECT DESIGN TAKE NOTE OF THE FOLLOWING CONSIDERATIONS:
2. THE COMMITTEE RECOMMENDED THAT THE PROJECT BE A LONGER-TERM ACTIVITY, ENCOMPASSING THE FIRST TWO PHASES (4 YEARS) INTO AN INITIAL PROJECT AS OUTLINED. AN EVALUATION OF THE INITIAL PHASE WOULD PRECEDE COMMITMENT TO A FINAL PHASE. THIS WILL NECESSITATE A REWORKING OF THE BUDGET, PROJECT INPUTS AND OUTPUTS. THIS WOULD ALSO PERMIT A REDUCTION IN THE SIZE OF IMPLEMENTATION TEAM TO A MORE MODEST LEVEL. WHILE AN OVERALL POLICY PLAN AND STRATEGY FOR THE DEVELOPMENT AND MANAGEMENT OF NATIONAL RESOURCES IS REQUIRED, SITE SPECIFIC PLANNING IS A DYNAMIC PROCESS WHICH CANNOT BE ACCOMPLISHED IN A TWO-YEAR PERIOD AND MAY REQUIRE TECHNICAL ASSISTANCE OVER A LONGER TIMEFRAME.
3. THE COMMITTEE RECOMMENDS THE ADDITION OF AN ARID LAND ECOLOGIST/RESOURCE MANAGEMENT TECHNICIAN TO THE DESIGN AND PROJECT IMPLEMENTATION TEAMS. THE COMMITTEE ALSO RECOMMENDED THAT THE RDO ALSO CONSIDER USE OF INDIVIDUAL(S) FROM THE UNIVERSITY OF ARIZONA AS MEMBER(S) OF THE DESIGN TEAM. THE UNIVERSITY OF ARIZONA, A RECIPIENT OF A 211 (D) GRANT, HAS BEEN DEVELOPING, WITH THE MINISTRY OF PLANNING OF NIGEP, A BROAD ARID-LANDS STRATEGY FOR NATURAL RESOURCES PLANNING AND MANAGEMENT. ARIZONA PRESENTLY HAS ACTIVITIES UNDERWAY IN NIGER, WHICH SHOULD COMPLEMENT AID'S PROJECT DESIGN IN THIS AREA.
4. THE COMMITTEE RECOMMENDS THAT THE DESIGN TEAM EXAMINE AND PROPOSE THE BEST-LOCATION WITHIN THE GON ADMINISTRATIVE STRUCTURE FOR THE PROPOSED PLANNING/COORDINATION UNIT GIVEN THE FACT THAT PROJECT OBJECTIVES CURRENTLY EXTEND BEYOND THE CURRENT MANDATE OF THE WATER AND FORESTRY

SERVICE. THE COMMITTEE NOTES THAT THE PRODUCTION RELATED AGENCIES OFTEN COMPETE FOR THE SAME LIMITED FINANCIAL AND PERSONNEL RESOURCES AND OFTEN WILL BE RESPONSIBLE FOR PLANNING AND CARRYING OUT NECESSARY SOIL, WATER AND REVEGETATION, CONSERVATION AND MANAGEMENT ACTIVITIES. SHOULD IT REMAIN WITHIN THE WATER AND FORESTRY SERVICES, THE COORDINATING MECHANISM WITHIN THE GON FOR THE RESOLUTION OF POLICY AND LAND USE ISSUES SHOULD BE CLEARLY IDENTIFIED IN THE PROJECT DESIGN.

5. COMMITTEE NOTED PROBLEM OF SENSITIZING PEOPLE TO THE IMPORTANCE OF ECOLOGICAL EFFORTS SUCH AS THIS PROJECT ADDRESSES. RDO, IS THEREFORE, REQUESTED TO EXPLORE THE POSSIBILITIES OF INCLUDING SUPPORT FOR MEDIA OR OTHER CAMPAIGNS TO EXPAND NATIONAL CONSCIOUSNESS CONCERNING ACTIVITIES TO ALLEVIATE DESERTIFICATION AS IT RELATES TO NIGER'S OVERALL DEVELOPMENTAL EFFORTS.

6. COMMITTEE REQUESTS RDO SUBMIT INITIAL ENVIRONMENTAL EXAMINATION AS SOON AS FEASIBLE AND BEFORE SUBMISSION OF PROJECT PAPER. MISSION ALSO REQUIRED TO MEET ALL 611 REQUIREMENTS. VANCE

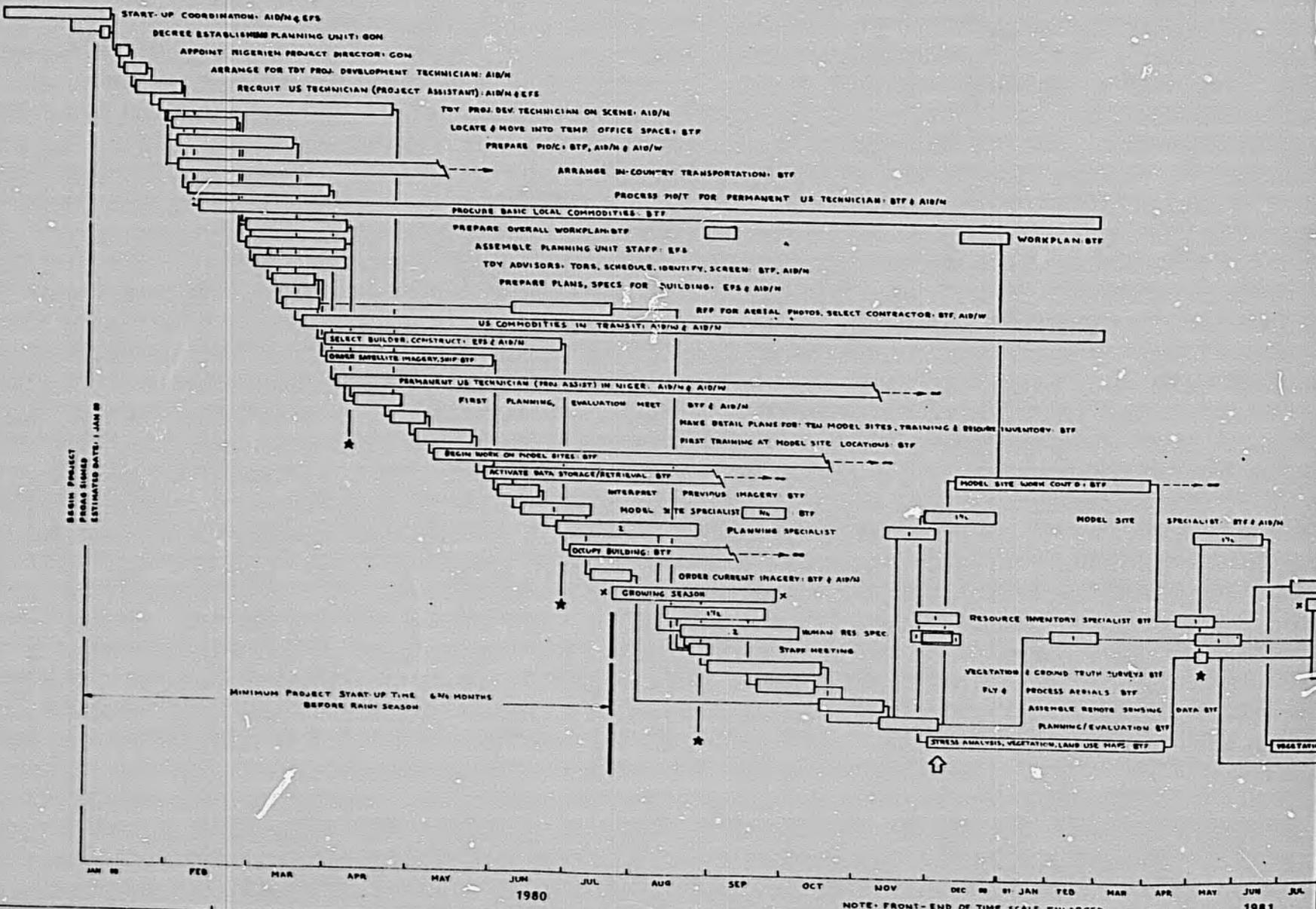
UNCLASSIFIED

Certification of Section
611(e) of the FAA of 1961
as amended

Based on a thorough review of the Forestry and Land-Use Planning Project by qualified technicians, the Government of Niger's past fulfillment of its obligations under the bilateral assistance program and its commitment and support to this project provide adequate assurance that the GON has and will provide the necessary financial and human resources required to execute and maintain the Forestry and Land-Use Project.



Jay P. Johnson
Mission Director
USAID/Niger



U.S. AIR FORCE FOR

