

PDB80 414

AGENCY FOR INTERNATIONAL DEVELOPMENT
PROJECT DATA SHEET

1. TRANSACTION CODE A = Add C = Change D = Delete
Amendment Number 1

DOCUMENT CODE 3

COUNTRY/ENTITY Mali

3. PROJECT NUMBER 688-0937

4. BUREAU/OFFICE Africa 6

5. PROJECT TITLE (maximum 40 characters) Village Reforestation

6. PROJECT ASSISTANCE COMPLETION DATE (PACD) MM DD YY 019 | 310 | 91

7. ESTIMATED DATE OF OBLIGATION (Under "B" below, enter 1, 2, 3, or 4)
A. Initial FY 83 B. Quarter C. Final FY 89

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

A. FUNDING SOURCE	FIRST FY <u>83</u>			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total	160		160	1,535	626	2,161
(Grant)	(160)	()	(160)	(1,535)	(626)	(2,161)
(Loan)	()	()	()	()	()	()
Other U.S. 1.						
2.						
Host Country					98	
Other Donor(s)						
TOTALS	160		160	1,535	724	2,419

9. SCHEDULE OF AID FUNDING (\$000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH CODE		D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
(1)SDP	742	X		160		0		160	-0-
(2)DEA	742	X		-0-		2,161		2,161	-0-
(3)									
(4)									
TOTALS				160	-0-	2,161	-0-	2,321	-0-

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each)

11. SECONDARY PURPOSE CODE

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

A. Code

B. Amount

13. PROJECT PURPOSE (maximum 400 characters)

To identify successful and cost-effective methods for achieving reforestation and efficient uses of wood resources at the village level in Mali's Fifth Region.

14. SCHEDULED EVALUATIONS

Interim MM YY MM YY Final MM YY

15. SOURCE/ORIGIN OF GOODS AND SERVICES

000 941 Local Other (Specify) 935 (DEA)

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

To increase LOP funding and add two new components.

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

Douglas Arnold
Douglas Arnold, Controller

17. APPROVED BY

Signature *[Signature]*

Title Acting Mission Director

Date Signed MM DD YY 019 | 01 | 91

18. DATE DOCUMENT RECEIVED BY AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION

MM DD YY

VILLAGE REFORESTATION PROJECT (688-0937)
PROJECT PAPER
AMENDMENT NO. 1

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I. RECOMMENDATION AND SUMMARY

A. Recommendation

The Project Committee has reviewed the implementation status of the Village Reforestation Project and recommends that the present amendment be approved for an amount of \$2.161 million in DFA grant funding. The Committee recommends that the project be extended for three years, through September 30, 1991, and expanded through the addition of two new elements: a land tenure research, data collection and analysis component, and a non-governmental component, to be implemented by CARE.

B. Summary of Project

The project has been active since 1983, supporting the Government of Mali's (GRM) Forest Service in implementing agroforestry and soil and water conservation activities in the cercles of Bandiagara, Djenne and Mopti.

There will be three components under this amendment, each obligated by a separate instrument:

(1) First, the Forest Service will continue implementation of the ongoing project, consisting of technical application and extension services, in Bandiagara and Mopti;

(2) The NGO CARE will implement an agroforestry program in the Djenne cercle. Their activities will complement and eventually become part of the GRM's Djenne test zone of their anti-desertification campaign; and

(3) At the same time, the Mission will implement a land tenure component, possibly through the existing IQC with the University of Wisconsin's Land Tenure Center, to

(a) assess the role of the Mali forest Code and other tenure rules on farmer and community adoption of forestry management practices and agroforestry techniques proposed by the project; and

(b) establish a system for monitoring the social and economic impacts of the projet generally, in terms of income generation, levels of participation, management of natural resources, and other indices.

The new land tenure component is designed to address the recommendations made by the interim and final evaluations of Phase I of the project, particularly in the areas of monitoring, information flow, and administrative improvements.

The precursor to the VRP was authorized in September, 1980 as a \$495 thousand Accelerated Impact Project (AIP). The current project (688-0937) was first authorized in 1983 for \$160 thousand. This amendment will bring LOP funding to \$2.321 million, as reflected below:

	<u>Original</u>	<u>By this amendment</u>	<u>Total</u>
Bilateral Grant to GRM	160	737	897
Land Tenure Activities	--	300	300
NGO Grant	--	1,124	1,124
Total	160	2,161	2,321

II. PROJECT BACKGROUND

A. Description of the Problem

The problem of Mali's land and forest resource deterioration, affecting over 75% of its productive countryside, is serious. More than half of Mali's rural population, distributed in the central and northern parts of the country, suffers from the effects of resource degradation. Reduced crop yields and scarcity of fuelwood are related problems to the environmental degradation experienced throughout the country and particularly in the Fifth Region.

Villagers have to travel longer distances for access to new farmland and to collect firewood, or they have to pay higher wood prices as a result of desertification and resource degradation. The current action program does not offset the ever-increasing rate of exploitation. The drought and population pressures are destroying the forest resources faster than they can regenerate, be replaced or protected.

Unfortunately, the GRM is ill-equipped to deal with the current problems, as the government agency charged with this responsibility, the national forest service, lacks adequate resources and technical structures at the local level where the problems must be addressed.

B. The forestry sector in Mali

In the early administrative history of French West Africa, the forestry services were not principally concerned with forest management in the current sense of the term. Colonial rule involved administration of the colonized areas for the benefit of the European Empires. The French Empire achieved better control of various resources in the Sudan Region when the Dakar-Niger railway was built up, which permitted the exploitation of the entire region "from sand to sea" by first moving along major river axis of the Niger and then the railway to the port. Since the means of transportation (trains and riverboats) in those days (beginning in 1939, used wood-burning energy sources, bountiful forest resources were exploited, followed by the recognized need for conserving these resources. This led to the development of public forest administration.

The Forestry Sector during the colonial era (and in the earliest years of independence), was governed by a system which centralized control of forest resources in accessible areas through taxation and prosecution for forest exploitation aimed at users and offenders. To this end, the colonial administrations appointed generally poorly-trained forest officers in reserved forest areas, and established licenses for various user groups.

The natural resource-oriented programs which did exist were focused on selected species and area-based preservation. The colonial approach to forest administration reflected a strong legalistic orientation, which is reflected today mostly in the national conservation lobby.

The incompatibility of forest administration with existing and future land tenure and land-use systems and the non-existence of extension services led to the creation of a forest service whose primary purpose was more in the area of enforcement than preservation.

Since the independence of Mali, however, especially during the 1970's, a number of structures, activities and orientations have evolved within the National Forest Service. The overall effect of a strong history of forest legislation was painfully felt by the local populations. The national incentive in incorporating forestry activities into economic development was given low priority.

A national forest policy was drawn up. A continual review of the Forest Service in key issues has identified major problems and constraints threatening the well-being of the institution, namely:

- (1) national level agents with a higher level of training outnumber field agents, thus creating a top-heavy bureaucratic administration;
- (2) low level of in-service training and low level of field experience;
- (3) lack of access to adequate funding to support substantial investments coupled with low salaries for personnel;
- (4) lack of program planning for the major operational activities and strategic investments;
- (5) a very general forest policy too large in scope to be attainable given the size of the country and available resources and otherwise undermined by a lack of flexibility in conservation legislation;
- (6) neglect of forestry extension; and
- (7) weak forestry research and circulation of research information.

C. Genesis of the current activity

The Village Reforestation Project (688-0937) was the first of a new generation of participatory forestry projects begun in Mali in the early 1980s. The objective of these projects was to improve the forest resource base. The projects were designed to respond to the widespread regional environmental decline brought about by a series of droughts and the process of desertification.

Prior to this time, the traditional GRM forestry program approach of placing forest police throughout the Sahelian zone had created a gap between the people and appropriate natural resource management. Participatory forestry involving the local population was introduced to reduce this gap and to create an institutional environment conducive to growth of the forestry sector and better management of natural resources. Using small-scale demonstration trial efforts, these projects strove to improve farmer motivation through access to information and forestry resources as well as enhance professionalism among Sahelian foresters. The Village Reforestation Project (VRP) was set up as a pilot effort in the Fifth Region of Mali to test and promote these policy changes.

One lesson learned through the project was that farmers are not eager to plant trees for fuelwood production, and that fuelwood production is not an economically viable enterprise in rural areas. A study conducted on wood pricing in the Fifth Region through the Energy Initiatives in Africa Project (EIA) clearly showed that the current pricing structures for fuelwood do not act as an incentive to cover the costs involved in artificial production. Since the July 1983 evaluation, village woodlots for fuelwood production have been de-emphasized. The village woodlots also failed because the issues of land tenure and benefit distribution were not resolved in advance and were not clear to the participating farmers. The project found that the "fuelwood problem" could only be partially solved as a by-product from other substantive plantations, i.e., agroforestry and polewood production.

Another lesson learned was that emphasis in rural forestry extension should be put on multi-purpose tree planting. Farmers have shown greater interest in the medicinal function of trees and/or fruit tree production than in any other type of tree planting. Farmers have insufficient knowledge about the varieties and values of species and little information concerning maintenance and harvest of forest products. The farmers need training on how to enhance the features of an ecological land unit using agroforestry techniques and the species that adapt themselves to those features.

Central to the extension program is the issue of land and tree tenure which may limit conscious use of conservation practices by local farmers. The recent drought brought about a shift in land utilization in the Fifth Region, creating pressure for land ownership. Custom establishes that planted trees increase the ownership status of land holders. The project extension team has been made aware of the intricacies surrounding land tenure. A case by case approach has been adopted to avoid unnecessary conflicts whether individual or collective interventions were set up. In the case of this project where trees are being planted, the Malian forestry code provides specific guidance, i.e., the fruits of a tree belong to the person who planted and cared for the tree.

Therefore, harvest rights have been given to each participant in the project under the technical guidance of the Forest Service. However, this relationship needs to be turned into an incentive-based system so that more farmers will feel secure in adopting extension activities geared to tree planting at the farm level.

D. Progress to date

Under Phase I, the project produced the magnitude of outputs called for in the logical framework and validated most of the project's assumptions. A number of project activities, such as pole wood production, contour dikes, live fences and woodstoves succeeded very well. Windbreaks, protected fallow-land, and establishment of mini-nurseries were not adopted by farmers for various reasons which can be overcome in this extension phase by policy changes and planning. Villagers are showing more interest and awareness of environmental improvement as many of them are enjoying material benefits. Some technologies are now spreading through informal farmer contact with cooperators and innovators without the direct assistance of the extension agents.

III. PROJECT DESCRIPTION

A. Project Goal and Purpose

The goal of the project, in conformance with the Mission's FY 1990 Country Development Strategy Statement, is "to promote economic growth". The relevant sector goal within the strategy is to "increase rural production, productivity, and incomes".

The purpose, which remains unchanged under this amendment, is "to identify successful and cost-effective processes for achieving reforestation and more efficient use of wood resources at the village level in Mali's Fifth Region."

B. Rationale

The rationale of the VRP is, that with adequate extension and education, individual farmers will become aware of the benefits of purposeful tree planting on their own land and will be willing to bear the costs. A basic assumption of the project is that people will adopt technologies which bring about stable and measurable economic benefits and increased food production. This approach contrasts with other field projects from other donors which use incentives such as "food for work" or direct payment to farmers to undertake reforestation activities. The purpose of the VRP can only be achieved if the project combines the following elements: (1) planting trees in a manner to achieve soil stability and augment fertility; (2) dissemination of fuel conserving woodstoves; and (3) locally managed natural woodlands.

Initially, the VRP was centered in Mopti and Bandiagara cercles of the Fifth Region of Mali, working in a true Sahelian zone with an annual rainfall ranging from 400 to 600 mm. The project started in June, 1981, with a proposed duration of 5 years and a primary goal of rehabilitating the renewable resource base thereby contributing to the well-being of the rural population and to reorient the GRM's efforts to check the current loss of natural vegetative cover and accelerated erosion. Project actions are to include the establishment of tree nurseries in each cercle from which active tree planting would be undertaken with the villagers, i.e., village woodlots, shade trees for schools, private courtyards, streets and market places and also to achieve effective erosion control and soil fertilization and dissemination of living hedges and fruit trees. In addition to the tree nursery infrastructure and the extension, a third component of demonstration and experimentation is to support and enhance the technical feasibility of extension activities and serve as a training model for the farmers.

C. Project Strategy

The scope of the VRP is geographically restricted, working essentially in three cantonnements of the Regional Forest Service of the Fifth Region. However, the project's goal and purpose are seen by the GRM as highly relevant to the current national policy environment. The GRM has recently produced a comprehensive national plan of fighting desertification which strongly recommends a program in line with the project's goal and objectives. The pilot nature of the project addresses a number of objectives which, on a long-term basis, constitute the core of concerns facing the National Forest Service. The information feedback system proposed in the project is essential to address these concerns. The management information system (MIS) should be a mechanism to assess the vast array of field interventions and an effective tool to build up political awareness and commitment. Above all, it will enhance local forestry planning procedures. The proposed field interventions should only be undertaken as practical means to reinforce forestry-agriculture-livestock linkages and as a problem solving device for achieving environmental stability.

1. Objectives

The objectives of the project to date, as reflected in the project documents, are (1) to improve the effectiveness and efficiency of forestry sector institutions in extension and public education; (2) to create and strengthen data bases and information flow; (3) to improve sectorial planning and priority setting capabilities; (4) to develop competence in management and financial systems; and (5) to demonstrate and disseminate agroforestry and water harvesting technologies, both traditional and introduced, aimed at increasing production and conservation. These objectives highlight the numerous weaknesses of the forestry institutions at the regional level, and explain why the project is designed as a pilot activity.

2. Sustainability

The key elements leading to sustainability are the adoption of the technologies by the farmers and their spread effect among them. Within the project zone there are many different ethnic groups involved in rainfed and irrigated agriculture, fishing and livestock production as primary activities. As a secondary activity, fishermen and livestock producers are involved in crop production.

These various groups display uniform agricultural practices and technological levels, which lend themselves to the agroforestry and soil conservation practices the project is promoting. It is expected that changes adopted by one segment of a farming community may induce changes for the remainder, and thus the demonstration effect of the project is of primary importance. This is the rationale on which the project will work to implement forestry and conservation practices using a careful selection of project clients.

There are distinct differences between and within these various ethnic groups in terms of farm size and the level of seasonal labor. Project activities are being adapted to meet the different needs of producers in terms of labor inputs, available resources, land constraints, and production capacity. Past experience of the VRP has shown that the demonstration effect is a valuable approach and is working. For example, with polewood production, live fences and mud stoves, several non project farmers and villagers have adopted the practices.

The adoption of appropriate practices by project participants has been documented in the NRMS country assessment report and the project economic analysis. During the extension phase, the project will continue to work closely with farming communities, using them as demonstrators, and in effect, as extension agents. The project's approach is trying to maximize farmer and villager inputs and at the same time ensure them some measure of control over their natural resources within their traditional territories, which is in line with recently formulated policy of GRM.

Resistance to the adoption of technologies by farmers derives from the way they are being approached and their perception of the usefulness of the technologies being applied. However, the time needed to effectively extend a given technology requires investments and recurrent costs expenditures which must be borne by the Forest Service or related government agencies, or by donors. Project personnel will actively explore means by which to assure that activities introduced under this phase of the project will be extended after AID funding expires, both through seeking alternative sources of funds and through reducing the recurrent costs of ongoing activities.

IV. PROJECT ELEMENTS

A. Bilateral Program (Forest Service)

1. Administration

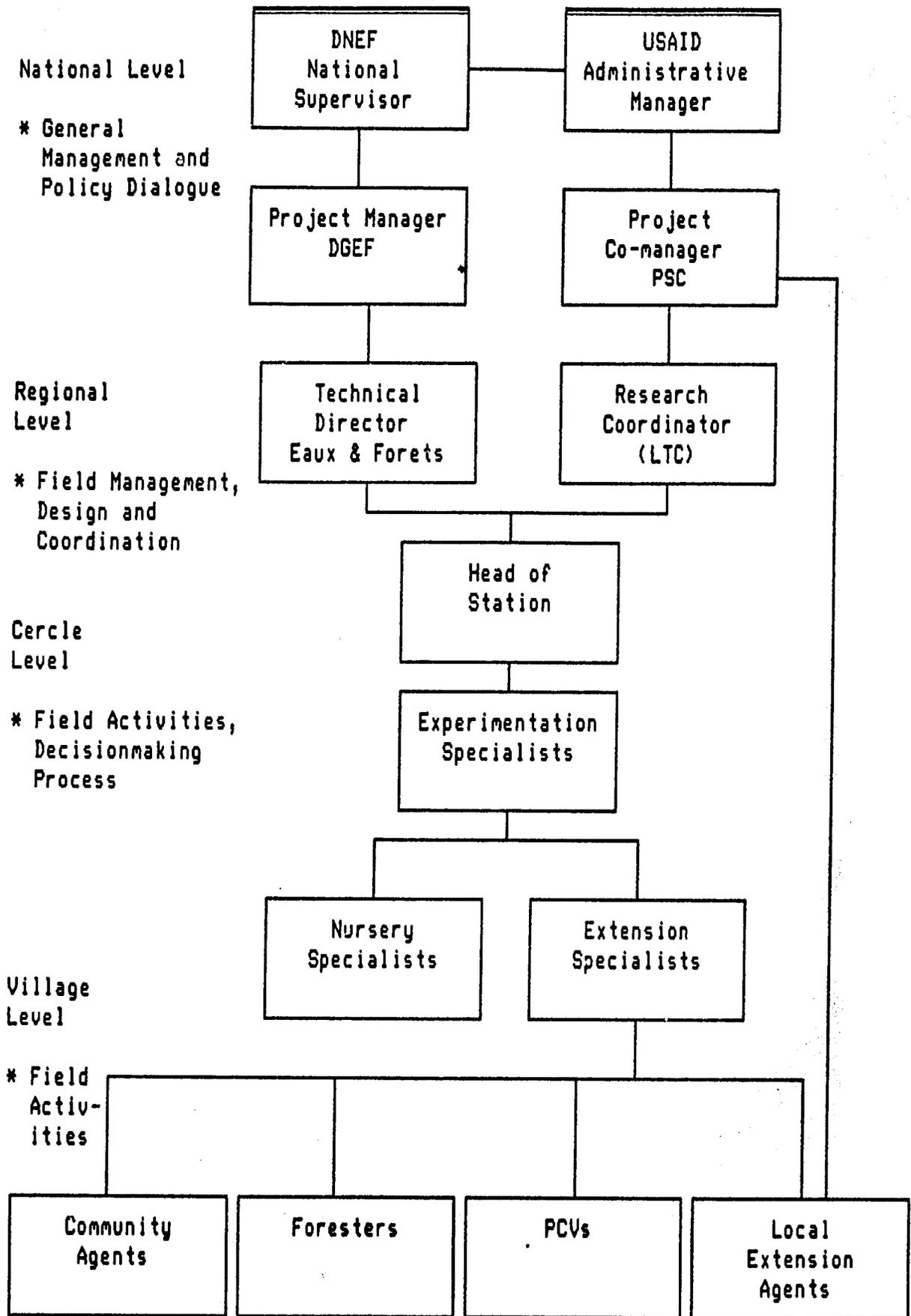
The main implementing institution is the Regional Directorate of the Forest Service. Technical and administrative support will be provided by a Personal Services Contractor (PSC) who will be posted in Mopti on behalf of USAID. The PSC and DREF will work together on the technical direction of the project and administrative management including procurement and financial accounting. Limited but regular supervision will be performed by DREF and USAID to ensure that the project co-managers' mandates are complementary and not conflicting.

The addition of the PSC advisor, coupled with the development of appropriate filing systems and documentation at DREF headquarters, will create the need for office space which will be provided by the grantee. There will be no construction during the extension phase.

It is important to strengthen the regional and cantonement levels of the project to ensure delivery of services to communities and appropriate follow up. The regional level is expected to organize, in conjunction with the stations, a comprehensive work plan and deal with potential administrative and technical constraints identified in the course of activities. Besides the distribution of project inputs to stations, the regional direction will be responsible for design, personnel management, and developing protocols with other organizations in the region. The regional level is also responsible for the identification and implementation of policy studies to strengthen its own decision-making process. Management efficiency will be achieved by providing logistical support, but more importantly by close linkages and follow-up between the regional level and the project clients. The regional supervision must be aware of activities and results at the farm level. This will require regular visits and evaluation at the farm extension agent level.

Although the project is seen as a line activity of DREF, project resources will be strictly used in project areas to support project activities. Training resources may be diverted according to needs to include non-project staff of the Regional Directorate. Some flexibility would be introduced as well whenever potential municipal organizations or PVO's apply for specific actions to be undertaken in their areas.

The project will continue to be administered by the Forest Service, who will have overall responsibility for the Mopti and Bandiagara components. In most respects, there will be few changes between the first phases and the current extension, except for the level of support. AID will provide a field-based PSC coordinator to assist in project administration. Other modifications not previously mentioned are as follows:



(a) Primes

The GRM has introduced a new nationwide policy and regulations on the share of fines to be retained by the field agents. Forestry agents will receive an equal monthly share of the fines according to a fixed lump sum rate for a given level of responsibility. As a result, agents will be entitled to a supplementary payment subject to fluctuations whether they are involved in police or extension. However, this decision does not take account of the individual agent performance and motivation which are far more critical in the case of an extension project. In this event, paying primes to agents could create a double compensation to the agent with little influence on his motivation.

It is USAID policy to discontinue as quickly as possible financing the payment of primes. Primes are a recurrent cost which should be provided by the GRM. USAID will continue the payment of per diem for official travel. Regulations and standards for per diem payments will be authorized in a Project Implementation Letter.

In an attempt to motivate all agents in the project areas, an annual award system is being contemplated based on performance evaluations of project personnel. Regulations and standards for awards will be authorized in a Project Implementation Letter.

(b) Cooperation with Other Organizations

A regional rural forestry extension program is best carried out using local institutions and individuals interested in the integration of forest resources to support their own sustainable planning. Local institutions will be reached through cooperative protocols defining objectives, technical set up and costs of activities to be implemented.

The Regional Directorate of the Forest Service will develop reforestation cooperative protocols with institutions capable of ensuring a minimum level of monitoring and cost-sharing of initial inputs. These endeavors will call for flexibility in terms of location, and type of interventions since little overlap exists between the present project areas and the project areas of other institutions. The scale of the activity (minimum size criteria) should be significant enough to generate some impact on the production of the cooperating institution.

Potential institutions in the Fifth Region include development committees organized for the fight of desertification and Rural Development Organizations (ODR's). Personnel benefits, wells and fences will be provided by the cooperating agency. Regular meetings will be held at the regional level to assess progress and install an information base for the various institutions interested in reforestation. The Djenne test zone should be an example of cooperation in reforestation.

2. Components of the Bilateral Program

There are three main components to the bilateral project: (1) experimentation and research; (2) training and the development of a Management Information System (MIS); and (3) extension and management. The MIS will be part of all activities of extension, research and resource management.

A discussion of each project component follows.

(1) Experimentation and research

The Research and Experimentation component of the project has consisted of a one man experimentation design and follow up at station level. There has not been much impact from the research. The resources, scope and objectives of the research component will remain limited during the extension phase. Activities will include (1) desk studies of data collected by the extension agents in various natural resources aspects, i.e., quality and use related to the socio-economic environment; (2) definition of assessment criteria of objectives (production, protection, and conservation) and measurements in order to set margins of their effectiveness. For instance, in-field tree planting technology should rely on measurements and quick assessments carried out on the traditional agroforestry ranges within the region. Equally, losses and gains in the case of live fences should be monitored as the basis for their extension as well as in the case of natural versus artificial regeneration.

Finally, the experimentation program will include (3) a degree of institutional strengthening by involving the INRZFH at all stages of the research component but more so for data analysis and the diffusion of research findings. This involvement will partially be done at the field level and will require full participation in desk studies.

Research protocols will be established between DREF and the Research Institute.

(2) Training and MIS

Training. Staff resource development will be important in the establishment and support of a strong regional forestry program. Initially, training should allow the regional staff to take full advantage of the Malian experience and rural forestry extension in order to enhance their own programming and planning within a broader view of the policy environment and achievement. Equally beneficial will be some observational tours to other successful conservation programs in the Sahel. This training will include both farmer and agent and develop farmer-to-farmer communication. Formal training will include sessions in agroforestry and soil conservation and the broader cultural basis for extension approaches and processes. At an early stage in the project extension, an assessment of specific training needs will be carried out leading to the development of a training plan.

Training curricula are linked to the type of activities to be developed. Thus, the training plan will essentially accommodate short term training sessions followed up by actual planning of activities to be incorporated into the annual workplan of project stations. No long-term training is provided by the project owing to the funding level. Training will be provided to both field agents and farmers including male and female clients. The following short-term training sessions are planned:

- (a) Soil and Water Conservation (SWC) workshop
(2 person/month, USA, Burkina)

During phase I, the project has developed interest in soil and water conservation activities, particularly in the Dogon Plateau where erosion of productive land has reached dramatic proportions. A handful of agents were casually trained by a visiting consultant to set up contour ridging in a farmer's field.

Given the local concern for soil conservation activities, a seminar was planned to assess projects experience in SWC matters throughout Mali and enroll more project staff and other rural extension agents to teach them conservation techniques and develop a plan of action for the project described in technical papers. Although the seminar was a success, it was carried out in the few months before the PACD and did not have the impact expected. Two more sessions will be planned for the first two years of the project. These will be complemented by a site visit to the OXFAM project in Burkina Faso. Sessions in SWC should reach at least three farmers from each of the twenty villagers to be enrolled in the program and as many agents as possible.

- (b) Agroforestry training (AF)
(2 person/month, KENYA, CESA0)

The purpose of this two-month training session will be a) to develop a dynamic relationship with ICRAF to extend the D&D approach, and b) to strengthen the extension base for AF technologies to farmers. Rural forestry extension projects in the 4th and 5th Regions of Mali have extensive experience in CESA0 Burkina, which is an institution for teaching and evaluating rural extension methodologies adapted to the Sahelian context. ICRAF has outstanding experience in farm improvement using agroforestry techniques in most of the eastern countries of Africa and has shown interest in expanding their activities in West Africa. They use both French and English for teaching. As a principle, training will always reach both female and male farmers and will assist in designing plans for field activities, such as living fences, windbreaks, in-field tree planting, polewood and forage production, and tree resource management. The relationship with ICRAF should reach its peak cycle during the first two years of the project so that results can be evaluated by the third year.

- (c) Stove dissemination and women's role in extension
(3 person/month)

Few NGOs have addressed WID concerns in the developing world. Women will be targetted for continuous training under this extension, and project personnel will carry out an assessment of specific activities which affect women, including stoves, gardening, and fuelwood production. The purpose of this three-month training program over the LOP will be to train trainers and ensure better enrollment of women into project activities.

- (d) Land tenure workshop and the teaching of the Forestry Code
(1 person month)

The purpose of this seminar will be to increase the awareness of field staff and rural institutions about tenure issues in rural extension, while discussing the regulations of the forestry code and its application. Continuous discussions of the forestry code and individual agent experiences will be incorporated by the LTC research unit into its research hypotheses. These discussions may be held on a quarterly basis. In the middle of the second year, a seminar will be held to discuss the findings of the MIS related to tenure study. The Forest Service has the mandate to give a large diffusion of the forestry code and this done best when specific cases of interest to farmers are discussed with them.

- (e) Forestry extension approaches
(1 person month)

In addition to the training on agroforestry extension using D&D approach ICRAF and CESAO will be requested to monitor the strength of the project extension and the information flow of the MIS. The on-the-job training will be addressed to project extension agents to improve their understanding of the farming community and will serve as a basis for evaluation the extension efficiency. Practical concepts should be developed as the project extension base matures.

Tentative Planning of Training Activities
Short term training

Required position	Person month(PM)	Time Frame	Contract	Costs
- SWC	2 PM	02/05/89-02/17 01/10/90-03/24	outside Consultants	\$25,000
- AF	2PM	06/03/89-06/18 03/10/90-03/24	Collaborative agreement CESAO, ICRAF	\$25,000
- Stove dissemination	3PM	01/07/89-01/20 12/07/89-12/17 06/18/90-06/27	Local Firms NGOs	\$ 6,000
- Land Tenure/Forestry Code workshop	1PM	04/04/90-04/13 01/10/91-01/20	LTC, DNEF LTC, DNEF	\$ 3,000
- Extension approaches workshop	1PM 1PM	09/12/89-09/22 09/10/90-09/20	ICRAF CESAO NGOs	\$ 9,000
TOTAL	<u>9PM</u>			<u>\$68,000</u>

Management Information System. The Management Information System (MIS) will involve various stages and different methodologies, all aimed at increasing the information base of the forestry program vis-a-vis the farming systems, and vis-a-vis its own implementation and resource expenditures. The initial data collection will use designed forms and questionnaires, surveys and field measurements. These materials will be developed early in the extension phase of the project and will be improved as experience is gained. Short-term technical assistance will be needed to design the MIS in collaboration with the Forest Service.

Survey protocols and terms of reference will be drafted at the regional headquarters on selected aspects of the farming systems and forestry interventions and results will be computerized at the same level.

Individual clients will be followed from the prediagnostic stage of involvement through to the management of project outputs at the farm level for the purpose of cost estimate (labor, other inputs), product quality, and values and an assessment of incremental benefits. Project activities will be described in the context of precise ecological and socio-economic factors. To the extent possible, tree and land tenure data, provided by the Land Tenure Center, will also be included in the MIS.

The MIS activities will be included in the extension program and agents will be responsible for its implementation. The Technical Director and the PSC co-manager will be responsible for its organization and follow-up. They will benefit from short-term consultations provided by USAID and advice from the national level (DNEF, USAID).

MIS activities will be evaluated and seminars will be held for the dissemination of results. Other technical institutions interested in the development of forestry technologies will be invited. Reporting of the MIS activities will be tied into the project's quarterly reports.

(3) Extension and Management

Major duties of the extension staff will include the identification of farmers needs; the choice of technologies and species and their geographic distribution within the cercle; the approaches to identify and convince farmers; and, the actual implementation of actions. More attention must be given to the planning and monitoring of actions. The planning process of extension should affect, and be affected by, other project components and more importantly by a process of diagnostic and design involving client farmers. The nature and level of production in nurseries will be tied to the capacity of extension delivery and a systematic record of the various needs of farmers.

The final evaluation recommended that extension be decentralized so intensification of activities will be achieved on a fairly representative scale within the cercle. This will require the recruitment of mid-level non-professional agents and a limited number of forestry agents who will be assigned to work with a fixed number of villages and villagers. This decentralization will involve community development agents, foresters, Peace Corps Volunteers and local extension agents. The female agents will be responsible for the stove dissemination component and tree planting associated with women's gardening.

Technologies that were successful during the earlier stages of the project will be extended to more clients. For instance, the live fences technology is of increasing interest to farmers along river banks and areas where water depth is relatively low. The development of this particular resource will be pursued as a key activity in a particular cercle. Each agent will be assigned to extend selected activities in selected villages.

The extension program will establish model farms in each ecological zone identified in project areas. A model farm will be judged on a sustainability basis and will therefore be replicable by others in the same zone.

4. Bilateral Program Activities

Most of the technologies to be extended during the extension phase are already known to the field agents and to some farmers. The technologies will be applied on an intensive basis in project villages taking into account the conditions of each particular site. The scale will be determined through a preliminary identification of project clients which will be achieved in at least twenty villages per cercle. This initial sampling is based on the potential capability of the extension team during Phase I wherein an average of 15 villages were effectively approached. Thus 5 additional new villages will be encouraged to participate with each extension agent expected to work in only three villages on a very intensive basis.

A more thorough identification of project clients and needs will be done using a modified Diagnostic & Design (D & D) approach of the International Center for Research on Agroforestry (ICRAF) adapted to the capability of the extension agent and the willingness of the client and available resources. The approach involves information gathering at an initial stage, followed by an appraisal of site conditions. The actual implementation of appropriate actions takes place to effectively resolve the identified problem. The D&D approach is composed of the following stages in sequential order: (1) Prediagnostic phase resulting in site selection; (2) Diagnostic phase during which a specification of the system is realized using the resources of the farmer and the agent; (3) Technology design; (4) Evaluation and redesign; (5) Planning of activities; and (6) Implementation.

In the case of this project, the prediagnostic phase resulting in the site selection has been largely achieved under Phase I.

The diagnostic and technology design phases will be strengthened at the level of the individual farmers where emphasis will be put on estimating the size of the field and defining the production systems of the farmers before a certain technology or a combination of technologies is extended to them. The D&D approach should enable extension agents to program activities/interventions in a more systematic manner rather than the random establishment of interventions now used. The D&D approach will also help to initiate and strengthen the MIS. Agents involved in the VRP are familiar with the D&D approach although its actual layout has never been thoroughly adopted by them.

Existing resources of the project and the clients were not taken into account during the design and planning of the present project interventions. Indeed the information flows have always been the missing link, thus the planning stage involved very little appraisal of the capacity of both clients and extension agents and little concern for the magnitude of the problem to be solved. As a result some interventions did not bring about the desired outputs. However, it is clear from this scheme that the responsibilities of the extension agent are numerous and that support and monitoring from the field managerial level of the project are essential. Selected interventions to be applied fall into five categories: agroforestry, soil and water conservation, woodlots, improved stove dissemination, and outreach to women.

(1) Agroforestry (AF)

AF interventions include in-field tree planting, using mostly native species known to the farmers, to impact on soil fertility, living fences using exotic species with a faster growth rate and having more than one utility (forage, fuelwood, medicine, mulch) to the farmers; windbreaks using multi-purpose tree species and a mix of exotic and native species.

Along with the on-farm trials, orchard and plantation development will be extended wherever water resources do not constrain their production. Plantations and orchards will use a diversity of species ranging from fruit trees, to polewood species, and gardening plants useful for local diet and market.

These technologies will be applied in combinations, not individually. The Natural Resources Management (NRM) report indicated that the more complex farming systems employing a mix of interventions were generally the most sustainable. Multiple interventions appeal more to the farmer of the Fifth Region facing an increasingly hostile environment. AF interventions will bring the farmers to a more intensive management of natural resources. These opportunities appear to be the best options for the plains farmers with larger field size and directly confronted with the physical environmental stresses of wind, erosion, high insolation (sunlight), and very little opportunity for fallowing the land.

The implementation of AF interventions and monitoring will require close attention to their economic viability and the usefulness of these interventions as extension tools among farmers.

(2) Soil and Water Conservation (SWC)

Depending on the ecological zones in the Fifth Region, various forms of soil erosion can be observed reaching dramatic proportions on the flat plains with formation of dunes, and gully ravine erosion on the Dogon Plateau. Wind is the strongest erosion agent in the deep sandy plains whereas rains cause erosion in the sloping terrain of the Dogon Plateau. Different technologies will be used for each set of erosive degradation as explained below. These technologies will be developed where obvious threat to productive land exists or where land needs to be brought back into production.

Soil and water conservation practices are being implemented by farmers through cultural practices. They are being achieved by the relative density of tree cover in the plains or mechanically by rock lines used to hold back the land during the fallow period or to stop run-off at the base of the foothills. The SWC program will evolve out of these traditional endeavours essentially through training of the farmers to improve these actions along contour lines and through demonstration activities to be on farmers' fields. Organization of these activities will seek participation of individual farmers as well as the entire community facing the same problem. The people must be willing to work on a shift basis since rock gathering can be a deterrent to smaller or individual family units.

A combination of SWC technologies, both biological and mechanical, will be the main strategy emphasis on the Dogon Plateau where erosion is most acute. The SWC technologies will include soil and vegetation restoration activities using rock and earth terraces (diguettes) along contour lines, gully and ravine plugs, vegetative enrichment, palissades, and defer sloping lands from cultivation and grazing. Fallow protection and resting of natural vegetation will be encouraged in areas where farmers are willing to do so. Farmers will need to be assured of the tenure status of these lands and will want to know when they can return to using them.

(3) Management and Harvest of Private and Communal Woodlots

A number of client farmers and villages have established woodlots, some of which contain marketable and useable products. Private owners have started to exploit these pole resources for various purposes (markets, domestic uses) whereas communal woodlots are not exploited. The extension team will assure the private owners that they have the right to continue exploitation on a sustainable basis under exclusive tenure of their resources. In the case of communal woodlots where tenure remains a very sensitive issue, a scheme of alternative options will be proposed to villagers and the choice of the option will be made solely by the villagers. Suggested options are: (a) Trees will be sold to individual farmers at a fixed price based on the product quality, and the proceeds will belong to the community who will decide on its use; (b) any farmer interested in cropping a tree should be ready to replace it by planting and nurturing five seedlings for the community and ten seedlings for himself, and replacement of trees will favour the planting of fruit trees; or (c) trees are kept to enhance the village landscapes and can be exploited only for shade, fruit and seeds sources for everyone.

The Forest Service will provide technical advice and ensure follow-up of the adopted option. Penalties will be proposed for failure to respect the adopted clauses.

(4) Woodstove Dissemination

The final evaluation and the economic analysis concluded that the improved woodstoves are economically viable and that their dissemination is one of the most important aspects of the project. Women who have built stoves continue to maintain them. The evaluation recommended training of trainers in woodstove production. Village trainers can be both women and men and children over 12 years of age.

Schools will be involved in the training program since they are doing mini-nurseries as part of the "ruralization" program. Children involved in the program will participate in stove construction and maintenance in their home villages over a period of 6 months during each school year. Selected participants from the village adult population will be co-responsible with the extension agent in the monitoring of school and village stove dissemination. Past experience suggests that once established, the housewives will ensure their needs and maintenance over time.

The MIS will keep records of training and statistics from participating villages, schools and trainees. Since the stove program brings about quick results, selected villages will be monitored for annual fuelwood savings and reduction of fuelwood gathering efforts by housewives. This level of monitoring will require a strong and very close relationship between the extension agent and the women participants. In this case female extension agents can best carry out the data collection at the village level.

(5) Outreach to women

The February 1988 ICRW report raised some concerns about gender roles in agroforestry and made recommendations as to how women can be associated to the reforestation program in the Fifth Region. This section stressed some of the issues involved and project actions appropriate for women.

The fundamental beneficiary group of the VPR is the productive family unit. In the Project Zone, as elsewhere in Mali, women are essential to and involved in every aspect of agricultural production. Consequently women play a key role in addressing natural resource management programs. In the socio-economic setting of the region women have distinct tasks to contribute to the economic activity of the family. At the village level, women are organized for certain types of domestic activities requiring efforts beyond the capacity of a given household unit. These activities include the processing of fish catches, milking livestock and gathering nuts to produce oil, fencing, well digging and marketing of farm produce. In addition to child care and household responsibilities at the family farm level, women are involved in gardening, orchard maintenance, field manuring, wood harvest and land clearing.

However, the female population faces a number of constraints which impede their active participation in project activities as they are not recognized by men as active partners in development work. Among these constraints are their access to land and available infrastructure and resources to upgrade land quality and production. This is most prominent on the Dogon Plateau where an outright scarcity of land affects even the male population. In the plains and in irrigated areas of the Fifth Region, women experience the same problem, land availability and access is based on the needs of the head of the family which is usually a male. Thus, under circumstances of land scarcity, women are the first to be excluded, which is probably why most of them are involved in small scale gardening plots.

Previous project experience has shown limited formal participation of women even though they are the leading group involved in the dissemination of mudstoves and live fences at the village level. They have been successful in these activities ensuring their proper set-up and their maintenance over time. The sustainability of these activities has been recognized and praised both in the NRM Country Assessment for Mali and in the economic analysis that supports the Project Paper Supplement.

To address these issues, project personnel will undertake the following over the course of the project extension:

(1) The initial socio-economic survey to be carried out will partly focus on improving the understanding of women's activities in the local farming systems. The MIS will disaggregate data by gender and ethnic groups, will identify the most sustainable activities that need support using project inputs, and target specific activities relevant to women.

(2) Within the Regional office of the Forest Service, there are two women extension agents. They have received some extension training by the project. During the extension phase these two agents will receive further training and be given more responsibility within the extension program. They will also be involved in the proposed site visits to Niger, Burkina Faso and within Mali to see and study effective natural resource management implementation activities.

(3) Village women who have been involved in the effective woodstove dissemination program will be given further training and responsibility for extending other appropriate natural resource management interventions which have direct impacts on women, including live fences, gardening, orchards and polewood production.

B. Land Tenure

The Land Tenure component grew gradually out of a realization by project staff that participatory forestry projects are highly dependent upon a healthy relation between villagers and their surroundings, both physical and institutional. The component will address the following issues:

1. Impacts of the Forest Code on tree and forest management

This research will consider how the forest code affects farmer and community management of trees and forests. The research will identify the conditions in which the Code impeded reforestation and the adoption by farmers and communities of the new agroforestry techniques. Research will also identify the circumstances under which formal application of permitting and fining provisions of the code are appropriate (this issue is far from settled), insofar as they deter deforestation. The research will also examine other tenure factors that may affect project activities, including local restrictions to granting recently resident farmers long-term land rights (in effect prohibiting tree planting), and local conventions which might restrict fencing of fields, or require that community livestock have access to stover on fields after harvest.

2. Tree use and forest management practices on individual farms

Research will be carried out that describes the tree use and management practices of representative groups of farmers in the Fifth Region. The information will be collected using a research design incorporating appropriate farm-level research techniques such as established agroforestry diagnosis and design techniques (D&D). The research findings will be used to provide an understanding of farmer decisionmaking in tree use and management, as a basis for tailoring project activities more directly to farmer needs.

3. Local management of natural forests and woodlots

Research will examine issues affecting management of natural communal forests and planted woodlots. Of particular interest is an assessment of the potential for local organizations to participate more fully in forest and woodlot management, perhaps in collaboration with the forest service and with less reliance upon policing activities. This will require an examination of existing or potential local institutional arrangements for making and enforcing rules regulating tree use and management.

4. Monitoring and Evaluation

The research program will establish a system for monitoring responses of participating farmers and communities to project activities. The monitoring program will serve two purposes. First, it will allow for collection of data relevant to the key research issues raised above. Second, it will provide data useful for subsequent USAID and GRM evaluations of the project.

5. Policy Dialogue

In light of the findings, the project will make recommendations to the GRM on amending the Code or adjusting its application in ways that strengthen realization of the Government's management objectives.

C. CARE Grant

The project activities in the Djenne cercle will be implemented by CARE through an operational program grant. CARE has titled their component the "Sustainable Agro-Sylvo-Pastoral Project" which includes agroforestry interventions in the cercle of Koro being funded through CARE's own budget, and the Djenne cercle, funded by the AID Village Reforestation Project. CARE has incorporated into their program the lessons learned from their work in Koro and from the Village Reforestation Project. As a base, CARE will work with the nurseries and former cooperators in Djenne who participated in the first phase of the VRP, but will further expand their activities both geographically and technically. CARE will add micro-catchments and micro-barrages to the woodlots, live fences, mini-nurseries, and orchard development already underway. CARE will work with women and herder cooperatives as another method of extension. The institutional base of the CARE portion of the project will be expanded beyond the Forest Service to include the local development committees and other technical institutions such as ODEM and ORM.

The GRM has launched an anti-desertification campaign which includes in its first phase the implementation of a new approach to natural resource management in seven test zones. Djenne is one of the test zones, thus, CARE's implementation of natural resource interventions will become part of the test zone activities. The GRM test zone concept includes (1) preparation of a provisional land management scheme which can be improved over time; (2) development of short and long term actions; (3) development of research study themes which can be used to resolve conflicts/constraints; and (4) institutional development.

CARE's baseline study will provide recommendations for the land management scheme. The technologies that CARE introduces and the administrative arrangements which it establishes to deliver and monitor the utilization of the technologies will set an example for the Djenne test zone which is representative of the inland delta region.

The CARE activities in Djenne and those of the project in Bandiagara and Mopti will share an important experience base in the design and implementation of field interventions and the development of the MIS through socio-economic surveys to be carried out within their respective areas.

The two project components will develop a training plan which would be expanded to include field agents wherever the training sessions are relevant to their professional skills. Regular exchange of field reports on methodology, achievements and the MIS component will enhance implementation of activities. A protocol will be developed for administrative cooperation and shared between the two components. CARE/Mali will provide the national level (USAID and MEL) with detailed reports on the implementation status of their component on a quarterly basis in English and French. Simultaneous implementation of the two components will permit comparison of the results of their different approaches.

VI. IMPLEMENTATION PLAN

- July 1988 Approval of Project Paper by both USAID and GRM. Project Agreement signed. CARE funds obligated. Recruitment of USAID project co-manager and Technical Director. Initial conditions precedent met. Purchase orders for vehicles, nursery tools and MIS equipment. Local contract (with Malian ONG) for survey of tree density under existing AF systems and fruit trees orchards, regeneration status and distribution around targeted villages - (2 1/2 months). Initial baseline survey begins.
- August Draft job description. Draft log books for villages and farmers clients and for regional technical services for a systematic records of their needs. Draft cooperating protocols. Associate Peace Corps Volunteers. Seminar on project strategy and implementation plan.
- September Install MIS for financial management at Mopti Headquarters and develop cost accounting system. Develop training plan for field agents. First quarterly report.
- October Begin socioeconomic surveys around targeted villages. End of surveys in natural ranges of the project areas and entry of the results into the MIS.
- November Recruitment of local extension workers (LEWs). Training of LEWs based on phase I achievements. Begin identification of project clients. Develop annual plan of activities.

December First approach to clients and identification of their projects and information campaign. Develop cercle-level seed bank. Training of female extensionists on stove construction. Second quarterly reports. Identify soil conservation clients.

January 1989 CESAO seminar. Begin female extension for stove dissemination. Field measurements to be carried out with individual clients. Identify private nurserymen in individual villages.

February Recruit nursery workers and start nursery production. Begin extension planning and campaign. Begin soil conservation works. Begin compost making. Begin digging out and soil amendment

March First cooperative protocols processed. Start private nursery production. Strengthen seed bank. Soil conservation activities continue. Third quarterly reports.

April Review of the actual planning of the reforestation campaign. Seedling production continues. Start well digging minimal program.

May Control seedling quality. Control compost quality. Farmer-to-farmer communication regional round trip. End site preparation.

June Begin outplanting activities. End well-digging program. Begin sale of seedlings. Continue outplanting.

October Review and evaluate seasonal activities.

VII. CONTRACTING AND PROCUREMENT PLAN

A. Procurement Responsibilities

The implementing agency for this project will be the Regional Directorate of the forest service assisted at the field level by a PSC contractor for administrative and technical implementation of the Project. All procurement of goods and services financed by AID under the Project will be the joint responsibility of the administrative apparatus set up at the regional level (see administrative analysis). However, USAID/Bamako will be directly responsible for those categories of equipment or services that can be purchased from the USA as may be specified in Project Implementation Letters. This includes commodities such as the MIS equipment.

The categories of commodities and services required for the implementation of the project are summarized in the Financial Plan. More exact details and specifications will be furnished in procurement documents. It is expected that the majority of equipment will be purchased on an as-needed basis through shelf-item procurement.

CARE will be responsible for all procurement and administrative services under its grant. AID will contract directly for the land tenure portion of the project, either through a buy-in arrangement with the University of Wisconsin's Land Tenure Center, or through an arrangement with a firm or personal services contractors.

B. Source and Origin of Procurement

The source and origin of commodities being purchased for this project will be AID Geographic Code 935, as authorized in AA/AFR memorandum dated April 4, 1988, on implementation of Development Fund for Africa funds.

C. Payment

Payments from AID to the Grantee for local procurement of goods and services will be made by the direct reimbursement method, under which the Grantee will submit vouchers with attached documentation (Invoices, receipts, etc.) to the AID Project Manager, upon whose approval and certification a check will be requested for reimbursement. Such vouchers must be submitted monthly. An advance, which must be approved by the Director and not exceeding one month expenses, may be disbursed by AID to the Grantee and such advance may remain outstanding up to the amount that is required by the Grantee in a subsequent month period.

Effective extension efforts are constrained by a lack of technical supervision between DNEF, DREF and the cantonnement level. Although DNEF has been extensively involved in major policy dialogue and formulation over the last ten years, operations of the Forest Service at the regional and field level have not changed, thus reducing effectiveness of Forest Service programs. There is a perceived lack of motivation of agents to engage in extension programs due to the significant increase in workload without

PROCUREMENT PLAN

GOODS AND SERVICES	AMOUNT	COST PER UNIT	TOTAL COST	SPECIFICATIONS	PROBABLE SOURCES	CONTRACTING MODES	PROCUREMENT RESPONSIBILITIES	WAIVER REQUESTS
Land-cruiser pick up	1	25,000.00	25,000.00	Station wagon	Mali (imported)		USAID/Mali	N/A
Motorcycles	4	1,920.00	7,680.00	Yamaha 100	Mali (imported)		USAID/Mali	N/A
Mobylettes	6	1,150.00	6,900.00	BB RS	Mali (imported)	AID	USAID/Mali	N/A
Seeds	1 T.	2.75/kg	2,750.00	Various species, healthy seeds, known origins	Mali, Burkina- Faso, U.S.A., Europe		USAID/Mali Project co-managers depending on origin	N/A
Pots	350,000	0.03	10,500.00	Plastic, 6 x 18, black, thick, irrigation devices	Mali (imported)		USAID/Mali	N/A
Fertilizers	1.5 T.	1.50/kg	2,250.00	Complex nitrogen and phosphates	Mali (local and imported)	DIRECT	Hopti Project co-managers	N/A
Miscellaneous nursery equipment	2 sets	3,000.00	6,000.00	Hoes, pruners, buckets, soil test sets, trowels, picks, shovels, tapes, knives, gloves, strings, etc.	Mali (local and imported)		Hopti Project co-managers	N/A
IBM compatible computers		9,000.00	9,000.00	Compaq portable, three MB20 1.2 MEMORAM, dust and heat tolerant	U.S.A.	CONTRACT	USAID/Mali	Export lic
Other supplies	1 set	9,000.00	9,000.00	Printer, battery supplies, stabilizer, cover, cables, cleaning necessaries and paper supplies	U.S.A.		USAID/Mali	Export lic
Short-term TA for MIS	3 person/ month	3,000.00	3,000.00	See SOW	REDSO/ bidjan		USAID/Mali	N/A
Short-term TA for training	4 person/ month	2,000.00	8,000.00	See SOW	Mali, U.S.A.		USAID/Mali	N/A

D. Gray Amendment Considerations

The project design committee has carefully considered the options for incorporating minority-owned businesses and Gray Amendment entities into the contracting plan. The two principal grants will be to the GRM and to CARE, although there may be some additional contracts awarded for evaluation or financial reviews in the later years of the project. There will be no subcontracts awarded under the CARE grant.

Under the bilateral grant, the Mission will select a PSC contractor for project administration. The 8(a) set-aside mechanism was ruled out because it was judged that the highly specialized nature of the TA requirements made it unlikely that suitable 8(a) candidate firms could be found. However, in the event that outside evaluation or financial review expertise is required, minority-owned enterprises will be given due consideration.

VII. FINANCIAL TABLES

The following section includes the financial tables for the projects. There are four tables: the summary cost estimate and financial plan, the costing of project inputs/outputs, the projected expenditures by fiscal year, and the methods of implementation and financing.

Audits. The USAID/Mali controller's office will coordinate non-Federal Financial audits through RIG/A/Dakar, which will include compliance of the Host Country with the procurement provisions of the bilateral agreement. Audits will be performed by the end of the first year and before the PACD. Adequate funds have been budgeted to accomplish this purpose.

Financial Analysis
Table 1
Summary Cost Estimate and Financial Plan

ALL COMPONENTS	-----USAID-----			-----GRM-----			Combined Total
	FX	LC	TOTAL	FX	LC	TOTAL	
PROJECT ADMINISTRATION	81	132	213	0	98	98	311
TRAINING	45	37	82	0	0	0	82
COMMODITIES	18	59	77	0	0	0	77
OPERATING COSTS	0	90	90	0	0	0	90
STUDIES	19	10	29	0	0	0	29
LAND TENURE ACTIVITIES	191	82	273	0	0	0	273
CARE MALI	1,124	0	1,124	0	0	0	1,124
EVALUATION	20	12	32	0	0	0	32
PROJECT SUPPORT	0	125	125	0	0	0	125
AUDIT	0	22	22	0	0	0	22
CONTING./INFLATION	37	57	94	0	0	0	94
TOTAL	1,535	626	2,161	0	98	98	2,259

the design, management and implementation of animal husbandry, forestry and hydrobiological research program;

the supervision and coordination of the organizations and the authorities which may be called upon to conduct, in or for Mali, research on animal husbandry, forestry and hydrobiology; and

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Financial Analysis
Table 2
Costing of Project Outputs/Inputs
(\$000)

ALL COMPONENTS	Policy Review	Infra- Structure	AF Extension	SWC	Woodstoves	MIS	Anti- Deserti- fication	Total
PROJECT ADMINISTRATION	53	11	13	36	18	82	0	213
TRAINING	4	0	21	16	12	29	0	82
COMMODITIES	0	9	17	7	17	27	0	77
OPERATING COSTS	10	20	19	19	12	10	0	90
STUDIES	2	0	10	7	4	6	0	29
LAND TENURE	41	0	123	14	27	68	0	273
CARE/MALI	0	0	0	0	0	0	1,124	1,124
EVALUATION	3	0	9	9	4	7	0	32
PROJECT SUPPORT	0	3	22	21	31	23	25	125
AUDIT	0	4	0	0	0	18	0	22
CONTING./INFLATION	0	29	28	9	9	19	0	94
HC CONTRIBUTION	32		31	11	9	15	0	98
TOTAL PROJECT	145	76	293	149	143	304	1,149	2,259

FORESTRY SERVICE STAFFING LEVEL DATED 12/31/86
(from Forestry Service Annual Report 86)

Assignments	TA	IEF	ITF	Field Agents	Hunting Ranchers (Guards)	Fishing Attendants	Total
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Financial Plan
Table 3
Projected Expenditures by Fiscal Year

	Year I	Year II	Year III	Total
TOTAL	840,072	690,530	630,456	2,161,058
1 GRM Grant	297,759	214,885	224,422	737,066
1 Inflation and Contingency	27,069	19,535	20,402	67,006
2 Project Costs	270,690	195,350	204,020	670,060
1 Project Administration	73,500	73,500	73,500	220,500
1 FNPS Co-manager	25,500	25,500	25,500	76,500
2 FNPC Accountant	15,000	15,000	15,000	45,000
3 Project Support Unit	33,000	33,000	33,000	99,000
2 Training	29,750	32,250	19,750	81,750
1 MIS Training	9,750	9,750	9,750	29,250
2 Staff and Farmer Visits	20,000	7,500	0	27,500
3 ST AF & SWC training	0	15,000	10,000	25,000
3 Commodities	86,580	0	0	86,580
1 Vehicles	39,580	0	0	39,580
2 Nursery Tools, Materials	21,500	0	0	21,500
3 Extension Materials	7,500	0	0	7,500
4 System Equipt	18,000	0	0	18,000
4 Operating Costs	65,000	65,000	68,000	198,000
1 Operating Costs	65,000	65,000	68,000	198,000
5 Studies and Surveys	9,700	9,700	9,750	29,150
1 Studies and Surveys	9,700	9,700	9,750	29,150
6 Evaluation and Audit	6,160	14,900	33,020	54,080
1 Evaluation	0	6,900	24,920	31,820
2 Audit	6,160	8,000	8,100	22,260

Financial Plan (continued)

2 Land Tenure Activities	164,703	135,300	0	300,003
1 Inflation and Contingency	14,973	12,300	0	27,273
2 Land Tenure Project Costs	149,730	123,000	0	272,730
1 Land Tenure	149,730	123,000	0	272,730
3 NGO Activities	377,610	340,345	406,034	1,123,989
1 Care OPG	377,610	340,345	406,034	1,123,989

Financial Analysis
Table 4
Methods of Implementation and Financing
(\$000)

<u>ALL COMPONENTS</u>	<u>METHOD OF IMPLEMENTATION</u>	<u>METHODS OF FINANCING</u>	<u>AMOUNT</u>
PROJECT ADMINISTRATION	AID DIRECT IQC	DIRECT PAYMENT	213
	AID PSC	DIRECT PAYMENT	
TRAINING	HC CONTRACT	DIRECT REIMBURSEMENT	
	PIO/P'S	DIRECT PAYMENT	82
	HC CONTRACT	DIRECT REIMBURSEMENT	
COMMODITIES	AID DIRECT	DIRECT PAYMENT	77
	HC PROCUREMENT	DIRECT REIMBURSEMENT	
OPERATING COSTS	HC IMPLEMENTATION	DIRECT REIMBURSEMENT	90
STUDIES	AID DIRECT CONTRACT	DIRECT PAYMENT	29
LAND TENURE ACTIVITIES	COOP. AGREEMENT	DIRECT REIMBURSEMENT	273
CARE MALI	OPG	LOC-TFCS	1,124
EVALUATION	AID DIRECT CONTRACT	DIRECT PAYMENT	32
PROJECT SUPPORT UNIT	AID DIRECT CONTRACT	DIRECT PAYMENT	125
	AID DIRECT	DIRECT PAYMENT	
AUDIT	AID DIRECT CONTRACT	DIRECT PAYMENT	22
CONTING/INFLA			94
TOTAL PROJECT			2,161

A N N E X E S

VIII. ANALYSES

A. Administrative Analysis

1. USAID responsibilities

AID will contract with a PSC project co-manager to be posted in Mopti, who will report directly to the Livestock and Forestry Project Officer in Bamako. The Livestock and Forestry Project Officer will be supported by a senior FSN project manager in Forestry and related-activities. Together they will identify specific implementation problems and examine them using Project Committee competence whenever required. The ADO Project Officer for Livestock and Forestry will arrange for initial commodity procurement and studies listed below in the implementation schedule.

The USAID project co-manager will also be responsible for defining the criteria for the recruitment of local extension workers with the Forest Service. He will jointly determine with the Regional Director who will receive performance pay awards.

AID will provide short-term technical assistance for developing and evaluating a management information system described in section IIID(C).

2. GRM responsibilities

The GRM will appoint a regional-level inter-service committee composed of representatives of ODEM, OMM, OP and the local authority to decide on extent and content of the program activity and evaluate cooperating protocols. The GRM will appoint a new technical director as recommended in the final evaluation. The technical director will be responsible for coordinating the regional-level committee activities and ensure a follow-up of project implementation in the cercles of Mopti and Bandiagara.

The GRM will monitor and assess the quality of the job performed by regional and cercle staff on a regular basis through national level supervision and check on project orientation. It will provide space and room for project staff at the regional level and for seminars to be held in the Region.

3. GRM and USAID responsibilities

Both GRM and USAID will be responsible for drafting the Scope Of Work (SOW) and selection of the project co-manager and short-term consultants, and terms of reference for studies to be carried out. They will also draft and approve job descriptions for the field agents prior to the first disbursement of funds.

4. Regional Director/Co-manager

The Project Director will be the Regional Director of the Forest Service. He will be assisted on equal terms by a full-time project co-manager appointed by USAID. They will be responsible for all the critical aspects of project administration, implementation and delivery of the project inputs to cercle level which include specifically the following:

- (2) to provide self-sufficiency in wood resource without damaging the resource base through careful management of natural forest;
- (3) to foster integration between forest products and other rural land-uses e.g. Agriculture, Livestock through Land Reclamation and soils and water conservation:

Draft initial job descriptions for the project personnel and update them on an annual basis;

Prepare budgets with the working level and finalize them with the supervisory level;

Draft quarterly scopes of work for the Technical Director and ensure follow-up;

Decide on the use of the PCVs in association with the PC;

Recruit LEWs and develop job contracts;

Participate in the development of the accounting system and ensure follow-up and feedback as well as the filing systems;

Prepare and participate in seminars and training sessions;

Propose agents for pay awards;

Ensure quarterly and annual reporting of project financial and technical status;

Have joint signing responsibilities for all project disbursements; and

Implement other recommendations that may come out of the ongoing financial audit.

5. Technical Director

He will replace the Project Director whenever needed. He will be responsible for the technical implementation of project activities and ensure coordination both technical and administrative among project stations and at the regional level in specific terms to be defined by the Regional Director and co-manager. The technical director is responsible for project operations at the field level where he will spend around 50% of his time at the cercle level and will coordinate and collaborate with the CARE and land tenure project activities.

6. Cercle Level

Major duties of the cercle level include the actual implementation of the extension program as well as the definition of its extent over time and space. They will be specifically responsible for the following tasks, with assistance and guidance from the technical director, project director and co-manager:

D. TECHNICAL ANALYSIS

The project is essentially a technical extension scheme of forestry interventions which has evolved since 1981. Until the mid-term evaluation of 1983, the principal activity was the establishment of village woodlots of no more than one to one and a half hectares per village. At that time very few other rural forestry interventions, such as windbreaks, farm

Preparation of work plans and budgets;

Promotion of project objectives with local leaders and development committees;

Identification of villages and clients;

Keeping adequate administrative and financial documentation and records;

Prepare quarterly reports;

Maintain implementation tracking and monitoring systems;

Establishment of a cercle-level seedbank;

Nursery production;

Stove construction training;

Field measurement for the MIS;

Recruitment of nursery workers;

Supervision of reforestation and soil conservation works;

Proposal of technologies to clients; and

Resolution of tree tenure issues with clients.

7. Cooperators

They will be responsible for land use decision and management schedule. Their specific tasks will include site preparation and actual implementation of outplanting and conservation activities. Cooperators will buy or produce the amount of seedlings they need. Cooperators with partial or dubious land ownership will not be eligible for the extension support.

B. Economic Analysis - Summary

The detailed economic analysis (see Annex I) addressed the economic and financial returns of reforestation and conservation activities, including soil conservation and wood conservation interventions associated with the Village Reforestation Project (VRP, USAID 688-0937.9). The interventions analyzed were:

Contour ridges

Fuelwood and polewood production

Protection of in-field Acacia albida trees

Live fences

Mini nurseries; and

Improved mud woodstoves and portable ceramic stoves.

The analytical results presented must be interpreted with caution. The problem is rooted in an almost universal lack of documented information on the benefits of natural resource management interventions such as contour ridges, live fences, windbreaks, Acacia albida and others. One major purpose of the project extension is to provide the information required and thus be able to obtain much greater precision in the analytical results.

The results of the analyses show that most of the interventions should, under normal rainfall conditions, be financially attractive to the farmers, even when a relatively high discount rate is used (20 percent in real terms). All soil conservation interventions analyzed (windbreaks, live fences, Acacia albida) except contour ridges had positive net present values (NPV's). The contour ridges intervention had a negative NPV because of its required heavy investment of time. The contour ridges intervention is a special case, however, because farmers have no choice but to do it or lose their land altogether.

The financially most attractive intervention by far appears to be the private woodlots for pole, not fuelwood, production. The market for poles in the project region is very strong based on the pole prices in Mopti and the prices received for poles by woodlot owners. The majority of woodlot owners practice integrated and intensive management of their polewood plantations. Growth and yields are typically very high (some as high as 40 m³ per hectare per year), and far exceed the yields required in order to break even on the investments of farmers's time and money.

Mini nurseries, although at first glance an attractive alternative of the inefficient central nurseries, are not financially feasible. This result was obtained even with the most reduced level of equipment and tools possible. The constraining factor is the low government fixed price for seedlings. Because mini nurseries would have to abide by government prices for competitive reasons, they would not be able to recover production costs.

The improved woodstove program is already a considerable success in many villages in the project area. The level of dissemination has been estimated to already be 10 to 15 percent. The stove is efficient and well accepted by the users. The study estimated that the project could reach an average of 480 households per month based on a formula of project trained stove builders and a demonstration effect (project trained stove builders train others, etc.). Given this dissemination target, a total of 14,037 m³ of wood will be saved over the three-year period.

Fuelwood production is a by-product of pole production. The present state of the building pole market can offer very attractive returns to the farmer who establishes and intensively manages a pole production woodlot on part of his farmland. Returns will diminish for poorer sites and longer rotations.

In field protection of Acacia albida natural regeneration requires very little input and offers increased future crop yields. The return from planting is less interesting because of the investment in money and time required.

Live fences are financially interesting, not only because the crops are well protected against livestock damage, but also because they substitute for both labor and material required every year to build and maintain dead fences. Most importantly, live fences may generate income from by-products such as small poles, fuelwood, fodder and may have some nitrogen fixing effect. There is also a wind break effect which may surpass that of an actual windbreak intervention due to the close spacing and interweaving of branches which forms a more solid barrier than a single row of widely spaced trees used as a windbreak.

All interventions are not applicable to all sites and judgment must be used in choosing which interventions will be used for which site. For example, under present pricing conditions, mini-nurseries are not financially attractive, but they might be applicable in situations where free or near free labor is available, such as school nurseries.

The improved woodstove intervention has been a success, both financially to the user (time and money saved), and economically to society as seen in the savings to the environment. This intervention may have reached the point where it may spread on its own without further project inputs.

Recommendations:

(1) Continue to emphasize contour ridges in the Bandiagara cercle as this intervention is probably the least costly and perhaps the only option to retain any production potential at all.

(2) Combined cropping, live fencing, pole production, fruit trees, Acacia albida protection, etc. as now carried out in the Mopti Circle should be encouraged in multiple locations of similar site conditions in the region.

(3) Much tighter supervision must be done by both AID and the Forest Service to ensure that data will be gathered for the MIS. This is especially important as this project is the first on-farm forestry project in the Sahel and is combining local interventions and lessons learned from other projects.

(4) Live fence intervention should be two meter spacing with intertwined branches and managed for production of small poles. This is more financially interesting than close spaced, direct seeded fences, not managed for poles.

(5) The budget for the extension phase should include the provision of at least one computer and training of key Forest Service personnel in spreadsheet and data base analyses.

(6) The budget for the extension phase should include provision for travel and per diem to other projects in other countries (Majjia Valley and Forest Land Use Planning (FLUP) project in Niger, OXFAM contour ridges project in Burkina Faso, etc.) for key farmers and extension agents.

Sustainability. The Forest Service does not currently have sufficient resources to fully support an extension program at the national or regional level. Only 5.3 percent of the overall national budget is allocated for agriculture and rural development. Of these funds, only 16 percent (or .8 percent of the national budget) is allocated to the Forest Service.

In May 1986, the Energy Initiatives for Africa (EIA) Project performed a study on Malian Forestry Sector Recurrent Costs. One aspect of this study was to examine the Forestry Fund which is derived from fines and other levies. The study showed clearly that the Forestry Fund, as it is currently managed and distributed, is unable to cover costs of operation and maintenance, and may be insufficient to sustain strategic investments.

Without donor support, and assuming that there is no increase in the Forest Service's national budget, it should be possible to continue forestry extension activities. To do this will require a willingness on the part of the Forest Service to reallocate existing resources, particularly the Forestry Fund, making a greater share available at the regional level. Another option will be to encourage other ODR's and Ministries to support forestry and conservation extension through their own programs and budgets.

In an attempt to reduce recurrent costs incurred by the Regional Forestry extension service, the design of the project's extension phase deliberately reduces the size of the motor pool as well as the payment of monthly "primes". The reduction in the magnitude of "after-project" costs should allow the GRM to continue what has begun to yield promising results. At the regional level, the institutionalization of a revolving fund to ensure individual transport to forestry agents should be strengthened and secured over time. In the long run, such local initiative could be enlarged to include the reallocation of all forestry derived income within the region for direct reinvestment and greater internal control over its use.

Long term sustainability of forestry extension efforts can only be achieved through a dual impact with regional structures and procedures of the Forest Service coupled with greater adoption of forestry technologies by villagers. The technical and extension personnel necessary for a viable forestry extension program are already employed by the Forest Service. Some demonstrated technologies are being spread from farmer to farmer and do not require further technical or extension assistance. Some seedling costs are being borne by the recipient farmers. Therefore, the support costs necessary to maintain a viable forestry extension pilot activity should not be excessive.

A sustainable regional forestry program ideally would be supported equally by other regional development institutions with a common concern for natural resource management. During the extension phase, the project should demonstrate the feasibility of regional level organization coordination to identify and implement integrated and replicable activities on a significant scale.

Other Observations. The USAID/Mali Program Economist made some further observations on the economic viability of the proposed project. His comments, and the responses by the members of the design team, are included as Annexes I and J of the Project Paper.

C. INSTITUTIONAL ANALYSIS

1. Summary

The purpose of this analysis is to identify institutional constraints and weaknesses, and to develop appropriate recommendations to solve them in the light of the existing institutional framework. Subjects with particular influence on the effectiveness and efficiency of the project implementation process are:

Policy changes at both National and Regional levels;

Coordination of research and development activities;

Monitoring and management flexibility; and

Forestry support to rural activities and conservation development.

The Malian round table of the forestry sector, held in November 1983, spelled out benchmarks and recommendations for building up and strengthening a National Policy Statement. In particular, it has been recommended that:

The existing Forestry Code be reviewed and improved and better taught to local populations;

Collectors of forest products be organized into cooperatives and associations at village-level or zonally;

Forestry land be defined in accordance with other land user rights and thus integrating forestry activities into rural development programs;

Management of natural forests be considered as priority (rather than large-scale tree planting);

Training quality be improved and quantities matched to needs; and

Planting process be emphasized.

While it is generally assumed that DNEF has the potential to address effectively the major issues of the project and implement its activities, it is nevertheless recognized that administration, management, and planning support must be provided to help assure overall project success.

The current Village Reforestation Project has resulted in increased participation and involvement of the Regional Water and Forest Service in rural development activities. The final evaluation, the NRM's assessment and the Project economic analysis all strongly recommend that this involvement and participation continue.

Further, DREF extension efforts and attitudes have been positively affected by Project activities, and these efforts should continue. The Project is providing information and a methodology to implement, monitor and evaluate natural resource management activities which can contribute to institutional change and policy dialogue at the National level.

Concerning the adoption of the recommendations of the mid-term evaluation and the degree to which those recommendations had been implemented, the evaluation noted that all but five of the recommendations were followed up by the Forest Service; and thus, in formal terms, the project was a success. In formulating specific recommendations for alleviating the identified constraints and improving project performance, the evaluation went on to state that the leadership for the project must be particularly enthusiastic.

Effective extension efforts are constrained by a lack of technical supervision between DNEF, DREF and the cantonnement level. Although DNEF has been extensively involved in major policy dialogue and formulation over the last ten years, operations of the Forest Service at the regional and field level have not changed, thus reducing effectiveness of Forest Service programs. There is a perceived lack of motivation of agents to engage in extension programs due to the significant increase in workload without financial compensation or professional incentives.

2. Institutional Strengthening Objectives

DNEF was reorganized into Divisions in 1980 to respond effectively to specific management needs. Although the new structure covers the whole range of mandated tasks, it has proven somewhat unwieldy and thus unable to fully implement current policies. Planning, implementation and project follow-up capabilities remain low, thus stressing the need for institutional strengthening. The project will support a more integrated approach of forestry intervention.

Projects working with DNEF are facing the problem of "prise en charge" of recurrent costs for putting in place a functional extension service.

Extension agencies do not exist at a grass-root level if they are not created in the implementation process of a donor supported project, their duration and effectiveness are usually linked to the life of the project.

The project will put an emphasis on institutionalization of extension services, From the National level all the way down to cantonnement level. There is no technical publication providing information and education in the field, the only available approach being meetings with local people when foresters find themselves involved in a specific project. Unfortunately many of the extension agents do not speak the local languages. This project will seek ways to lower these communication barriers, through recruitment of local extension workers.

A strong tendency to maintain and support police activities exists among staff at all levels given the dramatic losses of forest cover and trends towards over-exploitation. This is the case in areas where forest cover has nearly vanished or is being drastically depleted. Nethertheless, the return gained from police activities are not sufficient enough to cover the costs of natural replacement, and foresters tend to ignore the need for protecting regions that are characterized by lack of transport and low access. The effect is a concentration of police activities around bigger settlements and classified forests. In areas where there is no donor-supported project, police activities are the only duties extensively performed by foresters, all other activities playing a secondary role. The project will help to reduce police activities by focussing on management and extention aspects. It is generally agreed upon that police activities are more suitable for protecting and maintaining wildlife resources rather than for promoting forest conservation and repressing over-exploitation.

The evaluation team tried to assess whether or not the prohibition on fining for forestry agents working under the VRP should be maintained during an extension phase since a principal objective of the project was conversion of the forestry agents from "police officers" to "extension agents". No definite judgment was made since the evidence tended to be unconvincing and because non-project staff working at the same station were free to carry out police activities. The concept of "no police" proposed for the project area

3. Current Institutional Capacity

A. Forest Service (DNEF)

It is assumed that a great number of projects have been housed by the Forest Service with parallel foreign administration and that some experience has been gained from the implementation of those projects in terms of administrative and financial management. However, information to assess the degree of success or failure is not available.

Another concern usually stressed is the lack of adequate project support and follow-up by DNEF. The project will adhere to a new orientation by DNEF to provide better support and follow-up. The perceived institutional constraint on the project is the limited availability of qualified managerial staff (A and C grades) in the Fifth Region.

The nature and impact of local administration on the day-to-day management in the Fifth Region should not be overlooked. It is believed that activities such as outplanting, village forest management, and regulatory aspects such as land and tree tenure and land use systems could be better managed by local administration and by developing public participation. Local administration has historically been in charge of the public involvement. Supporting this structure will be essential in areas of the Fifth Region. Experience today with reference to the VRP has shown a lack of concern of some of those administrative structures particularly at the arrondissement level. The VRP will assist in developing information systems which involve local development committees to stimulate their awareness of the critical environmental problems and the importance of their participation to help resolve them.

B. Institut National de Recherche Zootechnique Forestière et Hydrobiologique (INRZFH)

The National Institute for Animal Husbandry, Forestry and Hydrobiologic Research (INRZFH) is one of the four Directions Nationales of the Ministry of Natural Resources and Livestock, the others being: Elevage, the Forest Service, and Génie Rural. Although the fusion occurred quite recently between the livestock and forestry sectors, resulting in the creation of the INRZFH, individual research interests in each sector had been considered for some time. This individuality is still reflected in the current structure and organization of INRZFH to the extent that linkages and research coordination are barely defined within and between the major development sectors and INRZFH. INRZFH does not have the capacity to absorb research objectives and is considered as a research task force whose mission and objectives, as stated in the Assessment of Agricultural Research Resources in the Sahel (Vol. III National Report: Mali) are the following:

the design, management and implementation of animal husbandry, forestry and hydrobiological research program;

the supervision and coordination of the organizations and the authorities which may be called upon to conduct, in or for Mali, research on animal husbandry, forestry and hydrobiology; and

the building, conservation and productive use of national scientific assets within its area of specialization.

Much more than the Forest Service, INRZFH stands like an administrative body in search of itself with limited resources, expending human resources and little progress in the field and research experience with virtually no planning. The forestry components of INRZFH amalgamate various forestry and hydrobiology research and experimentation programs under the administration of one Division called "Division de Recherche Forestière et Hydrobiologique."

Current research programs have evolved from forestry development issues but it appears that there is little research coordination between DNEF and INRZFH. As a rule, there is a clear-cut demarcation between forestry development and research. The actual performance of INRZFH is closely related to the newness of the agency, the inadequacy of its structure, the lack of donor support for off-station programs, and its inability to embark on major forestry projects. The project will provide an opportunity for field research programs and INRZFH's participation.

The last ten years have given opportunities to the Forest Service to organize and participate in seminars and workshops on various development aspects at the national level. Travel studies have been carried out at the field level with the effect of enhancing in-service training.

In face of inadequacy of the Forestry Fund to finance regional investments, there is a growing tendency by the Ministry to balkanize donor assistance to the forestry sector and for Natural Resource Management concerns.

C. Cooperation with other Organizations

Institutional coordination in the areas of legislative control and production is of a paramount interest to donors and recipient institutions working in the Fifth Region. Existing legislation and production programs are either isolated from others or incomplete in their design, displaying a weak integration in terms of rational natural resources management. For instance, the substantive dam program in the Dogon Plateau does not include wood production and conservation practices beyond dry season food production. The same observation is true for ODEM's attempts to manage forage production for animal feed and the development of grazing units, which could be improved along with multipurpose tree species production adapted to the local conditions.

FORESTRY SERVICE STAFFING LEVEL DATED 12/31/86
(from Forestry Service Annual Report 86)

Assignments	TA	IEF	ITF	Field Agents	Hunting Ranchers (Guards)	Fishing Attendants	Total
Nat. Direction		33	7	2			42
Reg. Direction Kayes		10	34	9			53
District Bamako		3	10	18			31
Reg. Direction Koulikoro	2	16	54	16			88
Reg. Direction Sikasso		12	39	18			89
Reg. Direction Segou	3	14	48	21	1		87
Reg. Direction Mopti		14	56	25			95
Reg. Direction Tombouctou		14	21	11			46
Reg. Direction Gao		9	29	14			52
RDO OAPF	4	9	13	2			28
" OPNBB		3	13	11	21		48
" OPM		5	8	4		16	33
" OARS		4	6	1			11
Projet UICN	5		1				6
" ADRBM	4	4	4				12
" CFPF	3	3	4		1		11
Training		3	4	3			10
Secondment		33	13	2			48
Leave of absence		4	364				4
Total	21	193	351	157	23	16	774

TA : Technical Assistant
 IEF : Forestry Engineer
 ITF : Forestry Works Engineer
 OAPF : Opération Aménagement des Productions Forestières
 OPNBB : Opération Parc National de la Boucle du Baoulé
 OPM : Opération Pêche Mopti
 OARS : Opération Aménagement et Reboisement Sikasso
 UICN : Projet Union International pour la Conservation de la Nature
 ADREM : Action de Déboisement de la Retenue du Barrage de Manantali
 CFPF : Centre de Formation Pratique Forestière

Any institution working in the natural resource sector will have a large scope for integrating its action plans with that of the Regional Forest Service. These institutions include ODEM, OPM, ORM, OMM, SDA, and the various NGOs working in the Fifth Region, some of which have a strong extension experience with farmers or enough resources to support the reforestation programs. All of them will be initially informed of the action program and individually approached to develop a cooperative protocol as an instrument for cooperation and integration of activities.

3. Functions Analysis

A. Extension activities

Forestry extension activities are relatively new. DNEF has control only over seedling production in nurseries and to a lesser extent over outplanting in village woodlot and public areas. Most donor-supported projects emphasize extension activities. For DNEF, the justification for an extension emphasis was essentially to meet local fuelwood energy demands, while a central orientation was taken to improve relationships between foresters and villagers. The relatively new extension emphasis of DNEF began at a conceptual level to reinforce education efforts through "Sahel Vert" a radio program and publication, using the major local languages and French, designed to provide information on Forestry Code restrictions and to reduce the hazards of bush fires.

Top political levels are currently putting an emphasis on banning bush fires throughout the country. DNEF has been seeking ways to participate in rural activities conceived by other major agencies involved in agricultural and livestock production to insure better program integration. The idea was to create a forestry component in all major projects in response to ecological degradation and, simultaneously, to present a better representation of the Forest Service. Activities undertaken were seedling production and outplanting and the lay-out of firebreaks. These activities were doomed to failure because of weak financial support, non-availability of incentives to agents being seconded to those projects, and the administrative burden put on them.

DNEF took action to consolidate the administrative efficiency of the cantonnement level through the provision of nurseries, forest offices and transport. DNEF is also attempting to enroll youth and women's organizations in order to more closely tie them to the current political framework.

Extension services are limited to the production of forest species which will be planted in classical forestry landscapes and apart from individual tree planting in family courtyards and along roads. There has been a general slowness on the part of the local population to adopt these activities. Species chosen are mostly limited to exotic, fast growing species including the preferred Azadirachta indica (or neem).

Extension activities are not yet institutionalized either at national level or a regional level. Initiatives are usually introduced and supported through foreign assistance. Regional planning is virtually non-existent or not yet mature enough to allow for the design of extension activities to address the needs of the population and identify priorities. Agents embark on both police and extension activities to the extent that individual initiatives of agents may or may not emphasize educational aspects to sustain protection. Extension activities are mostly linked to reforestation issues, whereas soil conservation measures are still regarded as a farming issue. There is no solid training program on techniques to support field extension activities.

B. Data Collection and Analysis

Data and analysis is virtually non-existent due solely to the assumption that forest research is mandated to INRZFH or to any project in need of gathering information on rural and natural systems. Nonetheless, the technical divisions at DNEF, as well as the regional structures, are always in need of information to sustain the design and implementation processes of the various projects. The need of appropriate field data collection and processing to insure a feedback in policy dialogue, changes in strategies of current projects, and for better understanding of natural systems is not generally felt. The lack of a divisional organization to collect data, or to process available data, is strongly linked to the absence of a specific planning division.

Although there is great awareness in official circles concerning environmental distresses and the need for short and long-range planning, the underlying data base to best orientate Government and population actions is missing. Environmental impact assessments were not carried out to counteract the side-effects of major development schemes.

C. Planning activities

The strongest internal element of planning within DNEF remains the Forestry Fund. It is made up of an allocation of 100% of forest receipts and 75% of fines given to the Forest Service for investments in operating costs, equipment and salaries for support staff. The Forestry Fund traditionally supports those ODRs not externally funded, regional expenditures, and the technical divisions at DNEF, but does not make provision for recurrent costs of projects.

D. Policy Dialogue

The Project will not focus on policy dialogue. However, when policy constraints affect the identification and adoption of cost-effective processes for achieving reforestation, they will be discussed with the GRM. The Project will attempt to obtain data to support the policy issues. Some potential areas for policy dialogue and reform which might improve Project performance are:

- (1) Police versus extension role of Forestry agents
 - (a) current fining system;
 - (b) appropriate training to facilitate role transition;
 - (c) legislative mandates.
- (2) Incentive systems for forestry personnel:
 - (a) motivation aspects for fines versus performance awards;
- (3) Wood pricing policies:
 - (a) based on natural stand sales and may not therefore be adequate for farm woodlots with purchased input costs;
 - (b) permit cost structure;
- (4) Land Tenure Issues:
 - (a) appropriate changes in text of code to facilitate popular forestry and extension role of agents;
 - (b) land, usufructuary and tree ownership rights.
 - (c) privately run tree nurseries and sale price for seedlings;
 - (d) commercialization of improved cookstoves;
 - (e) guarantee of benefits to investors (e.g. tree tenure).
- (5) National Forestry Fund (FF):
 - (a) recurrent cost of forestry interventions;
 - (b) alternative national funding mechanisms.

The Project will develop close contacts with other donors substantially involved in the Forest Sector and will favor direct dialogue with DNEF to elucidate key issues, especially those issues regarding sectorial planning.

E. Sectorial Planning

The Development Plan with target priorities established by the Malian Forestry Sector can be summarized as follows:

- (1) to expand the forest resource base through large-scale plantations of fast-growing species;

- (2) to provide self-sufficiency in wood resource without damaging the resource base through careful management of natural forest;
- (3) to foster integration between forest products and other rural land-uses e.g. Agriculture, Livestock through Land Reclamation and soils and water conservation;
- (4) to conserve the environment through the control or the banning of bush fires;
- (5) to develop wildlife resources for amenity values and as a source of protein supply;
- (6) to achieve sustainable exploitation of fisheries;
- (7) to improve social know-how and awareness of natural resources exploitation and conservation.

F. Decentralization of Planning Structures

The breakthrough of Forestry in the economic life of the country depends on the presence and efficiency of its related structures in the field. Presence is related to the strength and spread of cantonement structures; efficiency, on the other hand, is related to approaches within cantonement. The Project will introduce the concept of problem-solving within identified areas of interventions and a set of activities that would best respond to the needs of the areas. Decentralization of planning structures through demonstration, although restrictive in the first place in terms of area coverage, will have the best potential for assisting future generations of foresters in defining what should be done, while helping future generations of farmers to decide on what should be accepted.

The Project will lead to the assessment of past and future administration of cantonement intervention and development vis-à-vis linkages of local participation. The more salient advantages of decentralization are the feedback process and the building of action categories designed for specific purposes but stimulating the overall rural conservation and traditional economies. Extension services are the main weakness of the Forest Service and would be best developed through the installation and institutionalization of decentralized structures. The biggest disadvantage would be the increasing need of follow-up and increasing recurrent costs for which the GRM would be expected to make the provision to address after the Project Assistance Completion Date.

Several recommendations result from this approach. First, an appraisal of distribution of functions between Project Headquarters and extension services should be consistently done and reviewed during Project life. Second, the extension services should be provided with annual workplans and a thorough planning procedure, during which the linkages between extension and on-site research should be clarified. The priorities of activities should be determined by their probable chances of avoiding failure and by the opinions of farmers involved towards them.

D. TECHNICAL ANALYSIS

The project is essentially a technical extension scheme of forestry interventions which has evolved since 1981. Until the mid-term evaluation of 1983, the principal activity was the establishment of village woodlots of no more than one to one and a half hectares per village. At that time very few other rural forestry interventions, such as windbreaks, farm field and boundary plantings, live fences, hedges and fruit trees, were tested.

Except for a few scattered fruit tree orchards, most notably in the Dogon Plateau, and the widespread traditional agroforestry systems, tree planting did not exist in the Fifth Region. In addition to the de-emphasis of woodlots, diversification of activities was the most prominent recommendation of the mid-term evaluation. Diversification of tree plantings meant, de facto, that seedling production in central nurseries should be varied. There was an overreliance on "neem" because the availability of its seeds and relative ease to grow it in nurseries enabled the Forest Service to easily match any targeted production levels. Diversification of activities was achieved in nurseries, and also in actions undertaken within the same village or with the same farmers, thus spreading the risks of failure and the margins for production. The diversification trials in nurseries involved exotic species as well as indigenous ones in the following ratio: 50% exotic, 30% indigenous and 20% fruit trees in each individual cercle.

Several sociological surveys indicated that a higher proportion of fruit trees than forest tree species would be of interest to farmers. Given the increasing demand for tree planting in the Fifth Region through political lobby, and considering distances between the villages and the central nurseries, it was also recommended that mini-nurseries be established at farm level or village level. However, it was obvious that nursery decentralization could not be efficiently achieved unless many farmers were involved in tree planting.

Seedlings were distributed free of charge, and in most cases, transported to the planting sites at no cost to the beneficiary. The project has been striving to introduce a policy of sales as the number of people planting trees increases. To this end, a number of prerequisites were to be established, such as reducing the burden of tree tending by a careful species selection, and maximizing the rate of survival through an optimal planting date and sufficient soil and site preparation. This would allow farmers to have a sense of the benefits and the necessary costs.

The widespread political enforcement of communal tree planting was followed by a national policy for the sale of seedlings. However, planned schemes of tree planting supported by the project were allowed to distribute seedlings free of charge. It appears that seedling sales have not generated sufficient resources to cover recurrent costs of production nor have they achieved significant progress toward the ultimate aim of having farmers produce their own seedlings, thus relieving the costs and time spent by the foresters. The threefold aim of seedling sales, i.e., reduced recurrent costs, shift in production from the Forest Service to the farmers, and incentive to protect an investment, should be pursued during the extension phase. New client farmers will still be approached with a limited number of free seedlings to encourage their participation in the project.

Other activities not necessarily involving tree planting, such as protection of fallow lands and soil conservation, have been tried in project areas. While the farmers have not yet enjoyed the benefits of protected fallow lands due to fear of losing property rights over the land, this particular activity is likely to make a breakthrough in areas where there is enough natural regeneration occurring. In the Dogon Plateau, soil conservation would be built on traditional endeavours of farmers to stop water erosion. Where physical soil conservation activities will be developed, such as micro catchments for run-off water harvesting, biological conservation involving tree planting will be associated to stabilize and maximize outputs.

There has been very little result from the on-station testing and demonstration plots. Therefore, the extension phase should concentrate on direct demonstration on individual farmers' fields.

IX. EVALUATION PLAN

Due to the shortness of the Project cycle, a final evaluation will be planned six months before the Project Assistance Completion Date of September 30, 1991. This external final evaluation will seek technical assistance through the S&T centrally funded NRM's project. Local expertise in and/or outside the Forest Service may also be included. The Scope of Work (SOW) will generally deal with evaluating the progress made toward achieving the goal and specifically the usefulness of the MIS and the decentralization as newly introduced activities. An in-house mid-term evaluation will also be needed for the sake of reorientation and strengthening of project implementation status.

A. Mid-Term Evaluation

The mid-term evaluation will essentially assess the adequateness of the Logical Framework vis-à-vis the MIS, the decentralization and the intensification program. A performance evaluation of project personnel will also be included in the SOW. Along with the technical and administrative assessment of project activities and achievements, a financial review will be carried out at the same time.

B. Final Evaluation

The final evaluation assess progress made towards goal and purpose accomplishment. Emphasis will be put on key aspects such as the following:

- (a) impact of studies carried out;
- (b) impact of the training program;
- (c) a survey of the public opinion about the Forest Service agents' performance;
- (d) impact of the nurseries both central and private as well as the cercle-level seedbank;
- (e) a survey of the principal institutions and farmers who embarked on reforestation activities;

- (f) resolution of land and tree tenure issues;
- (g) women's participation;
- (h) market development of forest products;
- (i) use of the forest agents and their role in forestry extension;
- (j) usefulness of the MIS in planning procedures and its future;
- (k) institutionalization of incentives for both agents and project clients;
- (l) assess the potential of the Forest Service to continue project interventions after USAID funding ends;
- (m) compare the Djenne and Mopti/Bandiagara portions of the project vis-a-vis cost effectiveness of input delivery, farmer adoption rate, sustainability of interventions and administrative systems; and
- (n) assess acceptance and use of increased planting of multi-purpose tree species on-farm.

The final evaluation will be carried out by a five-person team (forester, economist, MIS expert, sociologist and administrator).

In addition to these evaluations, the Project staff in Mopti will be responsible for developing a critical annual assessment of project activities at the field level. Based on the evaluations and annual assessments, recommendations will be made to the national level to amend and improve annual work plan and for conflict resolution.

C. Evaluations to Date

The project has been evaluated twice: there was a mid-term evaluation in 1983 and a final one in 1987. The final evaluation found that, although physical project targets had been attained, project leadership in Mopti did not provide the necessary follow up and support to the field needed to foster positive implementation. The evaluation recommended a change of personnel for three positions. One of these personnel changes has been made; however, the project committee has decided to proceed with the extension and attempt to strengthen the administration component by provision of a PSC technical and administrative advisor who will serve as co-manager.

1. Mid-Term Evaluation: Recommendations and Follow-Up

The mid-term evaluation made a number of recommendations, as follows:

1. Recommendation. The first progress review in July, 1983, recommended adjusting project planning procedures so that the Malian forestry personnel would perceive the desired quality of the project's outputs. A systematic method of recording farmers' needs, providing the required services and monitoring, coupled with an information system, was to be adopted at field level.

Status. This recommendation was adopted by the design team and will be carried out by the land tenure components, the CARE grant and the bilateral project. The PSC project coordinator will design and monitor the program with the help of Mission staff.

2. Recommendation. The decisionmaking process was criticized because its para-military, top-down nature did not permit the working level to be significantly involved in the planning and organization of field operations.

Status. In order to build up an efficient and flexible administrative structure capable of addressing oversight and control aspects, the GRM assigned a Technical Director (Adjoint Technique) to the project to work closely with the field personnel.

3. Recommendation. The evaluation also recommended that the Mission appoint a short-term technical assistant.

Status. Even though these two positions were filled, the expected changes in the technical aspects of the project did not occur, due to administrative problems.

4. Recommendation. The evaluation recommended that a cost accounting system and a management information system be developed to allow economic and financial analyses as well as to improve the technical efficiency of the various project components.

Status. The information system and cost accounting system have not yet been established. The whole accounting system was moved from DNEF/Bamako to DREF/Mopti, lessening the stress on organizational procedures. This had a positive impact on the delivery system of the project, though its current adequacy has been questioned in the final evaluation.

5. Recommendation. An emphasis on training of both field agents and beneficiaries was considered necessary.

Status. Several training sessions were held, including a seminar on soil and water conservation. It was well received by both DNEF and MNRL because it was technically sound and brought both farmers and technicians together to apply various techniques for ravine and erosion control in a field setting.

6. Recommendation. The evaluation recommended free distribution of seedlings as an incentive to encourage farmers to plant trees because farmers did not traditionally plant trees in the Fifth Region, and the introduction of tree planting by the project presented them with both a risk and a burden.

Status. Seedlings were consequently distributed free of charge to the farmers.

7. Recommendation. To increase the reliability and the results of the VRP as a "pilot project," the evaluation recommended the expansion of activities to a third ecological zone, Djenne.

Status. Although this recommendation was not implemented during the first phase due to a lack of funds, the current amendment will extend project activities to Djenne under the CARE component.

Finally, the evaluation recommended the de-emphasis of village woodlot establishment and the strengthening of the woodstoves dissemination component. The evaluation helped agents see the need for flexibility in programming field operations by taking into account the receptivity of villagers for intended program actions. However, the mid-term evaluation failed to identify the constraints experienced by the extension team at the village level. The bottleneck at the field level was the impossibility of a three person extension team being able to effectively extend a range of seven technologies in an average of fifteen villages at the same time. Thus, there was no adequate basis for determining the appropriate size and quality of field operations.

2. Final Evaluation: Recommendations and Follow-Up

The end of project evaluation was designed to determine whether or not a three-year project extension was warranted. The objectives of the evaluation were:

- (1) to assess the progress made toward attaining the project purpose and measure actual versus planned progress;
- (2) to determine the utility of the adopted recommendations from the 1983 mid-term evaluation and the degree to which those recommendations have been implemented;
- (3) to analyze the major constraints (institutional, managerial, technical, sociological) that hinder project implementation and effectiveness;
- (4) to formulate specific recommendations for alleviating the identified constraints and improving project performance; and
- (5) to assess the feasibility of a three-year extension phase and propose any modification in project structure, orientation, or implementation.

In assessing the progress made toward attaining the project purpose against the Objectively Verifiable Indicators set out in the logframe of the PP, the project was deemed a success. In general, it had achieved the magnitude of outputs set out as the target and the conditions indicating purpose achievement were obtained. However, the evaluation noted the logframe set very modest targets for "magnitude of outputs" and "end of project status conditions" in comparison to actual text of the PP.

The evaluation concluded that (1) managerial constraints were by far the most significant ones, and (2) that the technical aspects of implementation were essentially mastered.

Concerning the adoption of the recommendations of the mid-term evaluation and the degree to which those recommendations had been implemented, the evaluation noted that all but five of the recommendations were followed up by the Forest Service; and thus, in formal terms, the project was a success. In formulating specific recommendations for alleviating the identified constraints and improving project performance, the evaluation went on to state that the leadership for the project must be particularly enthusiastic, energetic and inspiring.

The evaluation made the following specific recommendations:

- (1) An important recommendation of the 1983 evaluation reiterated in the final evaluation was the necessity to establish a simple yet adequate system of collecting and reporting financial information which would enhance the performance of village level reforestation activities. A review by the Sahel Regional Financial Management Project indicated the need for a cost accounting system and described the requirements for its establishment at the project headquarters. Several recommendations were made to improve the existing situation, including an emphasis on the training of the project accountant and the assignment to the project of a more qualified accountant to improve implementation of the system.
- (2) The evaluation recommended that the training program be strengthened significantly, with regard to frequency, content and practicality. Also the training program should be enlarged to include villagers as well as extension agents. An effective training program for extension agents will be even more necessary if a decentralization policy is pursued.
- (3) To expand the coverage of the forestry extension service, it was strongly suggested that an effective collaboration with other extension organizations should be established.
- (4) With regard to recurrent cost implications of the project, the evaluation said there was no visible way that these could ever be assumed by the GRM once donor funding ceased, but further stated this was apparently the case with most donor-financed projects in Mali. It said a step in the right direction had been taken when the decision was made to charge for seedlings, and that the funds should be used in the region where they were generated. However, due to the relatively small amount of funds involved and the fungibility of the funds, no recommendation was made to address this.
- (5) The evaluation team judged that the VRP had a modest effect in improving the lot of women in the project area, mostly as the result of the beneficial effects of the improved woodstove program. Otherwise, there was very little effect on women's status.
- (6) The primes issue was seen as a disincentive within the project. The rationale for paying primes to the personnel was to compensate for the loss of income because agents would not be leveling fines and also to stimulate efficiency of those agents most responsive to project needs. It appears, however, that primes served only as a salary component, being an automatic monthly payment to all project personnel.

The evaluation team tried to assess whether or not the prohibition on fining for forestry agents working under the VRP should be maintained during an extension phase since a principal objective of the project was conversion of the forestry agents from "police officers" to "extension agents". No definite judgment was made since the evidence tended to be unconvincing and because non-project staff working at the same station were free to carry out police activities. The concept of "no police" proposed for the project area did not have full support from the decision-makers of the Forest Service and may not have it over the extension phase.

Any significant increase in the extension responsibilities of the forestry agents would automatically lead to reduced police activities and better relationships between villagers and agents. The effectiveness of the extension effort of a forestry agent will be reduced if he devotes a portion of his time to police activities. Changing the approach of the agents is difficult when the monetary incentives are much greater for the police activities than those gained through extension work. Some sort of balance is needed in the scope of work of the agent so that at least 75 percent of his time is devoted to extension. The condition precedent of not using project vehicles and other resources to carry out police activities should be strongly reiterated. The incentive issue should be resolved with the recent GRM decision to have all agents share equally in the fines collected.

ANNEX E

Project Title and number: Village Reformation
600-1037

PROJECT DESIGN SUMMARY
AGRICULTURAL REFORMS

Life of Project:
Fiscal FY 82 to FY 85
Total US Funding: \$1.1M
Date Prepared: 25 Aug 85

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>Program or Sector Goals</p> <p>Program Goals To promote economic growth in Haiti.</p> <p>Sector Goals To increase rural production, productivity, and incomes.</p>	<p>Measures of Goal Achievement</p> <p>Increase in per capita Gross Domestic Product.</p> <p>Increase in rural contribution to GDP, rural production per capita, and real wages of rural inhabitants.</p>	<p>Means of Verification</p> <p>National income surveys, World Bank reports, National income and product accounts, IMF statistics.</p>	<p>Important Assumptions</p> <p>Assumptions for Achieving Goals</p> <p>No ecological constraints of unforeseen production.</p>
<p>Project Purpose</p> <p>To identify, assess, and coordinate a process for achieving reforestation and use efficient use of land resources in the Village de la Vallée du Fort region.</p>	<p>EDPs</p> <p>Re-forestation processes developed and tested. Cost analyses and effects assessment techniques. Model farms de alca and Mityopy. Local farmers obtain increased yields under normal rainfall. Private nurseries produce 5% of seedlings used. Forestry agents de alca out of their time to a mission. Other institutions assist in seed.</p>	<p>Means of Verification</p> <p>Project records, project reports, evaluations, audits. Economic analyses, evaluation of decentralization status. Results from the MIO, DREF reports and Forestry Fund accounts.</p>	<p>Important Assumptions</p> <p>Assumptions for Achieving Purpose</p> <p>DRM adopts suggested forestry policies. Ministry of Livestock continues to support and improve management and administration of the Regional Forest Service. Qualified and motivated personnel are assigned to the project. Private nurseries are profitable. Adequate seedbanks are available.</p>
<p>Outputs</p> <p>Re-plant of DREF collection training program. Model farms de alca and Mityopy. Forestry agents established. Seed and water conservation program established. Forests de alca and Mityopy program implemented.</p>	<p>Magnitude of Outputs</p> <p>Forestry policy improved. 10 model farms de alca and Mityopy. 1000 hectares reforested. 10 private and school nurseries established. 50 farms established. 100 forestry agents and 100 farmers trained on a forest techniques.</p>	<p>Means of Verification</p> <p>On-site inspections, project MIO reports, evaluations and audits, client interviews, training records.</p>	<p>Important Assumptions</p> <p>Assumptions for Achieving Outputs</p> <p>Land and tree tenure issues are able to be resolved by project. A transition agency cooperative protocols are researched, appropriate and effective technical packages are developed. Improved woodstoves are accepted by rural women.</p>
<p>Inputs</p> <p>Project administration Training Commodities Operating Costs Studies Evaluation Costs CAFE Grant Land Tenure Studies Other</p>	<p>Indicator Targets</p> <p>250,000 80,000 37,000 90,000 29,000 20,000 1,124,000 300,000 241,000</p>	<p>Means of Verification</p> <p>AID Financing documents MIO reports Project Implementation Orders AID Training Documents Project Evaluations</p>	<p>Important Assumptions</p> <p>Assumptions for Providing Inputs</p> <p>Funds provided in a timely manner.</p>

Best Available Document

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ANNEX I

*LVSH/Forestry File Copy.
Please return to M. Thakile*

MEMORANDUM

From: PROG/ECON/JElliott

June 7, 1988

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14 JUIN 1988

Bamako, le _____ 198

N° MEE/CAB

Mama / Lust

ADO

*Le Ministre de l'Environnement
et de l'Elevage*

à M ONSIEUR LE DIRECTEUR DE L'US-AID EN REPUBLIQUE
DU MALI

BANAKO

Objet : Projet 625-0937 - Reboisement
Villageois à Mopti, Bandiagara et
Djénné.

Monsieur le Directeur,

c. 6/14/88

Conformément aux recommandations de l'évaluation de la première phase du projet en objet, je vous saurais gré des démarches que voudriez bien faire entreprendre en vue d'obtenir le principe du financement, par votre organisme, de la poursuite du projet pour une durée de trois ans. Le démarrage de la deuxième phase est prévue pour le 30 Septembre 1988.

Par ailleurs, je propose qu'une équipe légère conjointe Direction Nationale des Zaux et Forêts - US-AID finalise le document de base de la prolongation du projet.

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

BUE DATE	
ACTION	<i>ADO</i>
INFO	
D.R	<input checked="" type="checkbox"/>
D/DIR	<input checked="" type="checkbox"/>
PRUG	<input checked="" type="checkbox"/>
DE	
MGT	
CONT	<input checked="" type="checkbox"/>
ADO	
GUD	
JAO/DIR	
JAO/SSO	
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DISP	
C&R	
CHRON	<input checked="" type="checkbox"/>
RF	

P/LE MINISTRE ET P.O
LE DIRECTEUR DE CABINET



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ANNEX G

5C(2) - PROJECT CHECKLIST

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

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

A. GENERAL CRITERIA FOR PROJECT

1. FY 1988 Continuing Resolution Sec. 523; FAA Sec. 634A. If money is sought to obligated for an activity not previously justified to Congress, or for an amount in excess of amount previously justified to Congress, has Congress been properly notified?
2. FAA Sec. 611(a)(1). Prior to an obligation in excess of \$500,000, will there be (a) engineering, financial or other plans necessary to carry out the assistance, and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?
3. FAA Sec. 611(a)(2). If legislative action is required within recipient country, what is the basis for a reasonable expectation that such action will be completed in time to permit orderly accomplishment of the purpose of the assistance?

Under the terms of the legislation for the Development Fund for Africa, Congress will be notified through the regular consultation process.

N/A.

N/A.

4. FAA Sec. 611(b); FY 1988 Continuing Resolution Sec. 501. If project is for water or water-related land resource construction, have benefits and costs been computed to the extent practicable in accordance with the principles, standards, and procedures established pursuant to the Water Resources Planning Act (42 U.S.C. 1962, et seq.)? (See A.I.D. Handbook 3 for guidelines.) N/A.
5. FAA Sec. 611(e). If project is capital assistance (e.g., construction), and total U.S. assistance for it will exceed \$1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability to maintain and utilize the project effectively? N/A.
6. FAA Sec. 209. Is project susceptible to execution as part of regional or multilateral project? If so, why is project not so executed? Information and conclusion whether assistance will encourage regional development programs. No.
7. FAA Sec. 601(a). Information and conclusions on whether projects will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions. (a) No; (b) yes, through improved private woodlot management; (c) no; (d) it will reduce the role of the State in woodland management; (e) it will assist in developing improved agricultural techniques; (f) no.
8. FAA Sec. 601(b). Information and conclusions on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise). The principal grantee is a US nongovernmental organization.
9. FAA Secs. 612(b), 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized in lieu of dollars. This will be done to the extent possible during project implementation.

10. FAA Sec. 612(d). Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release? No.
11. FY 1988 Continuing Resolution Sec. 521. If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity? The project will produce no crops for export.
12. FY 1988 Continuing Resolution Sec. 553. Will the assistance (except for programs in Caribbean Basin Initiative countries under U.S. Tariff Schedule "Section 807," which allows reduced tariffs on articles assembled abroad from U.S.-made components) be used directly to procure feasibility studies, prefeasibility studies, or project profiles of potential investment in, or to assist the establishment of facilities specifically designed for, the manufacture for export to the United States or to third country markets in direct competition with U.S. exports, of textiles, apparel, footwear, handbags, flat goods (such as wallets or coin purses worn on the person), work gloves or leather wearing apparel? No.
13. FAA Sec. 119(q)(4)-(6). Will the assistance (a) support training and education efforts which improve the capacity of recipient countries to prevent loss of biological diversity; (b) be provided under a long-term agreement in which the recipient country agrees to protect ecosystems or other wildlife habitats; (c) support efforts to identify and survey ecosystems in recipient countries worthy of protection; or (d) by any direct or indirect means significantly degrade national parks or similar protected areas or introduce exotic plants or animals into such areas? (a) this is a natural resource management project; (b) no; (c) yes, under the land tenure study component; (d) exactly the opposite: the project will promote rational use of forest areas.

14. FAA 121(d). If a Sahel project, has a determination been made that the host government has an adequate system for accounting for and controlling receipt and expenditure of project funds (either dollars or local currency generated therefrom)? A 121(d) certification has been submitted.
15. FY 1988 Continuing Resolution If assistance is to be made to a United States PVO (other than a cooperative development organization), does it obtain at least 20 percent of its total annual funding for international activities from sources other than the United States Government? Yes.
16. FY 1988 Continuing Resolution Sec. 514. If funds are being obligated under an appropriation account to which they were not appropriated, has prior approval of the Appropriations Committees of Congress been obtained? N/A.
17. FY Continuing Resolution Sec. 515. If deob/reob authority is sought to be exercised in the provision of assistance, are the funds being obligated for the same general purpose, and for countries within the same general region as originally obligated, and have the Appropriations Committees of both Houses of Congress been properly notified? N/A.
18. FY Continuing Resolution Sec. 541. If assistance is being made available to a PVO, has that organization provided upon timely request any document, file, or record necessary to the auditing requirements of A.I.D., and is the PVO registered with A.I.D.? Yes.

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

- a. FY 1988 Continuing Resolution Sec. 558 (as interpreted by conference report). If assistance is for agricultural development activities (specifically, any testing or breeding feasibility study, variety improvement or introduction, consultancy, publication, conference, or training), are such activities (a) specifically and principally designed to increase agricultural exports by the host country to a country other than the United States, where the export would lead to direct competition in that third country with exports of a similar commodity grown or produced in the United States, and can the activities reasonably be expected to cause substantial injury to U.S. exporters of a similar agricultural commodity; or (b) in support of research that is intended primarily to benefit U.S. producers?

(a) no; (b) no.

- b. FAA Secs. 102(b), 111, 113, 281(a). Describe extent to which activity will (a) effectively involve the poor in development by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, dispersing investment from cities to small towns and rural areas, and

The primary project beneficiaries are poor farmers. The project is designed to increase their control over their means of production and to improve their incomes, the ultimate result of which will be a reduction in rural-to-urban migration

insuring wide participation of the poor in the benefits of development on a sustained basis, using appropriate U.S. institutions; (b) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward a better life, and otherwise encourage democratic private and local governmental institutions; (c) support the self-help efforts of developing countries; (d) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (e) utilize and encourage regional cooperation by developing countries.

(b) the project will promote farmer decision-making and farmer groups; (c)n/a; (d) women's participation will be actively encouraged ; (e) n/a.

c. FAA Secs. 103, 103A, 104, 105, 106, 120-21. Does the project fit the criteria for the source of funds (functional account) being used?

Yes.

d. FAA Sec. 107. Is emphasis placed on use of appropriate technology (relatively smaller, cost-saving, labor-using technologies that are generally most appropriate for the small farms, small businesses, and small incomes of the poor)?

Yes (village woodlots and hedgerows).

e. FAA Secs. 110, 124(d). Will the recipient country provide at least 25 percent of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or is the latter cost-sharing requirement being waived for a "relatively least developed" country)?

Yes, although this is not required.

f. FAA Sec. 128(b). If the activity attempts to increase the institutional capabilities of private organizations or the government of the country, or if it attempts to stimulate scientific and technological research, has it been designed and will it be monitored to ensure that the ultimate beneficiaries are the poor majority?

Yes.

- g. FAA Sec. 201(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civil education and training in skills required for effective participation in governmental processes essential to self-government. The bilateral portion of the project is entirely implemented by host country nationals.
- h. FY 1988 Continuing Resolution Sec. 538. Are any of the funds to be used for the performance of abortions as a method of family planning or to motivate or coerce any person to practice abortions? no.
- Are any of the funds to be used to pay for the performance of involuntary sterilization as a method of family planning or to coerce or provide any financial incentive to any person to undergo sterilizations? no.
- Are any of the funds to be used to pay for any biomedical research which relates, in whole or in part, to methods of, or the performance of, abortions or involuntary sterilization as a means of family planning? no.
- i. FY 1988 Continuing Resolution. Is the assistance being made available to any organization or program which has been determined to support or participate in the management of a program of coercive abortion or involuntary sterilization? no.
- If assistance is from the population functional account, are any of the funds to be made available to voluntary family planning projects which do not offer, either directly or through referral to or information about access to, a broad range of family planning methods and services? n/a.

- j. FAA Sec. 601(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?
- k. FY 1988 Continuing Resolution. What portion of the funds will be available only for activities of economically and socially disadvantaged enterprises, historically black colleges and universities, colleges and universities having a student body in which more than 20 percent of the students are Hispanic Americans, and private and voluntary organizations which are controlled by individuals who are black Americans, Hispanic Americans, or Native Americans, or who are economically or socially disadvantaged (including women)?
- l. FAA Sec. 118(c). Does the assistance comply with the environmental procedures set forth in A.I.D. Regulation 16? Does the assistance place a high priority on conservation and sustainable management of tropical forests? Specifically, does the assistance, to the fullest extent feasible: (a) stress the importance of conserving and sustainably managing forest resources; (b) support activities which offer employment and income alternatives to those who otherwise would cause destruction and loss of forests, and help countries identify and implement alternatives to colonizing forested areas; (c) support training programs, educational efforts, and the establishment or strengthening of institutions to improve forest management; (d) help end destructive slash-and-burn agriculture by supporting stable and productive farming practices; (e) help conserve forests which have not yet been degraded by helping to increase production on lands already cleared

Effort will be made to comply with Gray amendment.

Yes. An IEE has been prepared and approved.

(a) yes, through improved soil conservation measures. (b) n/a; (c) n/a; (d) yes; (e) yes.

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

(f) yes; (g) yes;
(h) yes; (i) yes;
(j) yes; (j) yes.

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

(a) yes; (b) yes.

- n. FAA Sec. 118(c)(14). Will assistance be used for (a) the procurement or use of logging equipment, unless an environmental assessment indicates that all timber harvesting operations involved will be conducted in an environmentally sound manner and that the proposed activity will produce positive economic benefits and sustainable forest management systems; or (b) actions which will significantly degrade national parks or similar protected areas which contain tropical forests, or introduce exotic plants or animals into such areas? (a) no. (b) no.
- o. FAA Sec. 118(c)(15). Will assistance be used for (a) activities which would result in the conversion of forest lands to the rearing of livestock; (b) the construction, upgrading, or maintenance of roads (including temporary haul roads for logging or other extractive industries) which pass through relatively undegraded forest lands; (c) the colonization of forest lands; or (d) the construction of dams or other water control structures which flood relatively undegraded forest lands, unless with respect to each such activity an environmental assessment indicates that the activity will contribute significantly and directly to improving the livelihood of the rural poor and will be conducted in an environmentally sound manner which supports sustainable development? (A) no. (B) no. (C) no. (D) no.
- p. FY 1988 Continuing Resolution. If assistance will come from the Sub-Saharan Africa DA account, is it (a) to be used to help the poor majority in Sub-Saharan Africa through a process of long-term development and economic growth that is equitable, participatory, environmentally sustainable, and self-reliant; (b) being provided in (a) yes. (b) yes.

accordance with the policies contained in section 102 of the FAA; (c) being provided, when consistent with the objectives of such assistance, through African, United States and other PVOs that have demonstrated effectiveness in the promotion of local grassroots activities on behalf of long-term development in Sub-Saharan Africa; (d) being used to help overcome shorter-term constraints to long-term development, to promote reform of sectoral economic policies, to support the critical sector priorities of agricultural production and natural resources, health, voluntary family planning services, education, and income generating opportunities, to bring about appropriate sectoral restructuring of the Sub-Saharan African economies, to support reform in public administration and finances and to establish a favorable environment for individual enterprise and self-sustaining development, and to take into account, in assisted policy reforms, the need to protect vulnerable groups; (e) being used to increase agricultural production in ways that protect and restore the natural resource base, especially food production, to maintain and improve basic transportation and communication networks, to maintain and restore the natural resource base in ways that increase agricultural production, to improve health conditions with special emphasis on meeting the health needs of mothers and children, including the establishment of self-sustaining primary health care systems that give priority to preventive care, to provide increased access to voluntary family planning services, to improve basic literacy and mathematics especially to those outside the formal educational system, and to improve primary education, and to develop income-generating opportunities for the unemployed and underemployed in urban and rural areas?

(c) yes. (d)
yes. (e) yes.

ACTION: AID 5 INFO: AMB-DCM ECON

ANNEX H

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CHRG: AID
DIST: AID

Annex H *ADD*

AIDAC, ABIDJAN FOR REDSO/WCA (J.GOODSON)

T.O. 12355: N/A

SUBJECT: VILLAGE RECRESTATION PROJECT IEE (698-2937)

REF: BAMAKO 24682

1. RFETEL SATISFIES INFORMATION REQUEST FOR SUBJECT IEE.
2. RUFARM ENVIRONMENTAL OFFICER APPROVES NEGATIVE DETERMINATION
3. AFR/EC HAS CLEARED THIS CABLE. WHITEREAD

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UNCLASSIFIED STATE 261404

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PROJECT NO: 698-0210
DATE OF COMPLETION OF PROJECT: 1988-08-10

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Best Available Document

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69

MEMORANDUM

June 7, 1988

From: PROG/ECON/JElliott *gc*

To: ADO/Mana Diakite and Distribution

Subject: Village Reforestation PP First Amendment for a Three Year Extension -- Comments on the Economic and Financial Analysis

References:

USAID/Mali, "Village Reforestation Project (688-0937) Amendment" No.1, May 1988.

Christopherson, K. A., and G. E. Karch, "Financial and Economic Analyses of Reforestation, Soil Conservation and Improved Woodstove Activities, Village Reforestation Project, April 1988.

CARE-Mali, "Multi-year Project Proposal -- Sustainable Agro-Sylvo-Pastoral Systems for Djenne Circle", March, 1988.

1. The financial and economic analysis of this project, although well presented in the PP, is not very convincing. The data about the effects of interventions to be promoted by the project are very weak, but this is not the main problem with the analysis. The "no interventions" baseline case assumptions are questionable, and it is impossible to follow the economic and financial analysis all the way through, because the authors did not include tables showing the buildup of the benefit streams for any of their cases.
2. Without knowing more about the land tenure and land scarcity situation in the project region (i.e., extent to which fallow has shortened or disappeared or is in the process of disappearing), it is not possible to say how realistic the authors' baseline, "no interventions" case for the financial analysis (p. 16 - 17) is. However, this baseline case does not seem very plausible. With soil fertility declining as posited at 6 percent a year as a piece of land remains in continuous cultivation, it would seem that land would be taken out of fallow, worked for a few years, and then returned to fallow, in a realistic baseline case. The paper posits that the typical farmer works one hectare of land for twelve years, with the same amount of labor input each year, while composite crop yield (of millet and niebe) from the hectare declines from 564 kg/ha, at the beginning, to 174 kg/ha at the end of the twelve years. If most farmers in the area were doing this, then average yields in the region in an average rainfall year would be closer to 400 kgs per hectare than 600. Are they?
3. It would seem probable that well before the twelfth year, the average farmer would invest some additional labor to start working new land or land which had been in fallow. If this is so, the baseline "no interventions" case chosen by the authors makes the farmers' situation without interventions look worse than it really is, and probably biases upward the estimates of profitability of interventions with fairly long gestation periods, such as windbreaks and acacia albida, relative to contour ridging (contour dikes?) and live fences.

4. The authors' choice of their baseline case may help explain the rather peculiar results for the contour ridging and windbreaks investments (p. 23), namely, that the yield increases, relative to "no interventions" yields, required to make them financially viable, are far above what is regarded as realistically possible. It is hard to understand how an intervention, contour ridging, which is apparently already practiced by knowledgeable farmers in the area, should have a negative NPV, unless there is something wrong with the financial analysis. (To what extent is the contour ridging observed the result of promotion of this technique by the project in earlier years?)

5. It is strange that neither the economic analysis paper by Karch and Christophersen, nor the PP, nor the socio/economic background piece, has any discussion about what is known about length of fallow in the project intervention area, (unless I somehow overlooked sections dealing with this). After the number of years the project has functioned, one would think something is known about changes in length of fallow in the area.

6. It is hard to understand why, if the NPV of windbreaks and contour ridging taken separately is negative in the financial analysis, the best combined interventions package is found to be one which includes windbreaks and contour ridging.

7. The choice of 5 % as the discount rate for the economic analysis would seem to be too low, even though both costs and benefit streams are in constant price terms. To my knowledge, economic analysis of other projects by the Mission uses a discount rate of at least 10 %. (For example, 12.5 % was used for the livestock PP). Given farmers' probable risk-averseness, it may make sense to use a rate of discount in the financial analysis higher than that used for the economic analysis. However, while it may be reasonable to choose 20 % as the analysts did for the financial analysis, 5 % seems too low for the economic analysis.

8. One would expect the economic analysis to include costs and benefits not supported by or accruing to the individual farmers undertaking the interventions. An economic analysis generally differs from a financial analysis in this way, and in correcting for price distortions, i.e., "shadow-pricing" certain costs and benefits, not just in using a different rate of discount.

9. A project analysis normally would compare all the expected benefits with all the costs, including the project costs financed by the donor, to calculate an overall benefit-to-cost ratio. The present analysis did not do this.

10. In analyzing the recurrent cost issue, the question arises, for how many years and on what scale should this promotional activity be carried on, assuming that it is economically viable, before maximum impact is achieved (i.e., all the villagers have become aware enough of all the benefits to adopt all of the yield raising or sustaining, soil and water conserving and land saving measures?) At that point, it would seem, no further promotional activity would be required, and

recurrent costs requirements could safely be assumed to drop to zero. Perhaps more to the point, how many farm families are going to be reached and influenced, directly and indirectly, by the project during the life of the project, relative to the total population in the region? The logical framework mentions training in agroforestry for about 100 farmers, establishment of 10 model farmers per agricultural station, receipt of live fences material by 60 farmers, establishment of contour diking and ravine control by 25 new farmers each year, visits by 20 farmers to other farmers to see appropriate AF and SWC activities, etc. Does all of this take the region very far along the innovations-adoption curve? (And will enough people be adopting enough innovations to generate economic benefits whose NPV will at least equal \$1.875 million, the amount of additional project assistance proposed)?

11. The magnitude of the tasks which it is projected the MIS system will accomplish using project personnel principally engaged in persuading villagers of the advisability of the various reforestation and conservation measures, seems to me to be very ambitious, perhaps unrealistically so.

12. The logical framework should specify the kind of national income survey data that will in fact be generated over the period specific to the region, by what agency (DNSI? DNA?) and whether it will be accessed in published or unpublished form.

PROG/ECON/O6/O7/88

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UNCLAS SECTION 21 OF 03 STATE 281710

AIDAC ATTN: JIM ELLIOT AND MANA DIAKITE USAID MALI,

P.O. 12356: N/A

TACS:
SUBJECT: FINANCIAL AND ECONOMIC ANALYSIS OF VILLAGE
REFORESTATION PROJECT PERFORMED BY EIA

AIDAC CONT. ABIDJAN FOR REDSO/WCA, J. GOODSON

REF: BAMAHO 04436

FOLLOWING ARE THE CONSULTANTS' RESPONSES TO THE CONCERNS
RAISED IN REFTTEL.

1. CHRISTOPHERSEN/KARCH APPRECIATE OPPORTUNITY TO
RESPOND TO THE SEVERAL QUESTIONS RAISED IN REFTTEL. FYI,
CHRISTOPHERSEN AND KARCH HAVE BOTH RETURNED TO
WASHINGTON, D.C. WHERE THEY ARE PRESENTLY WORKING FULL
TIME WITH E/DI.

2. CHRISTOPHERSEN/KARCH ARE CURRENTLY WORKING ON THE
FINAL NRM REPORT (DUE AUG. 31) WHICH CONTAINS A
FINANCIAL AND ECONOMIC ANALYSIS ON SOIL CONSERVATION
INTERVENTIONS. THE SAME ECONOMIC MODEL DEVELOPED FOR
THE VRP REPORT IS EMPLOYED IN THE NRM REPORT. IN THE
PROCESS OF REFINING THE MODELING APPROACH THE

CONSULTANTS HAVE FOUND IT NECESSARY TO MAKE SOME
ANALYTICAL CORRECTIONS. THESE HAVE NOW BEEN COMPLETED
AND SHOW THAT THE INTERVENTIONS ARE GENERALLY MORE
ATTRACTIVE THAN THE RESULTS GIVEN IN THE VRP REPORT.
THE CONSULTANTS WILL REVISE THIS CHAPTER OF THE REPORT
IF REQUIRED BY THE MISSION. PLEASE ADVISE.

3. AS MENTIONED SEVERAL TIMES THROUGHOUT THE VRP
REPORT, THE MAJOR PROBLEM WITH THE ECONOMIC AND
FINANCIAL ANALYSES OF VRP INTERVENTIONS IS THAT THERE
ARE FEW DATA AVAILABLE ON CROP OR WOOD PRODUCTION
YIELDS. THEREFORE, THERE IS NO TABLE SHOWING THE
BUILDUP OF BENEFIT STREAMS FOR THE VARIOUS CASES.

4. REFERENCE IS MADE TO TABLE 2.2 (P. 15 IN THE REPORT)
WHERE THE BENEFITS OF THE INTERVENTIONS ARE ESTIMATED.
THESE BENEFITS ARE ASSUMED ON THE BASIS OF: INFORMATION

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ACTION TAKEN:
DATE: 29 AUG 88
INITIALS: <i>Prof</i>

*NO ACTION
NECESSARY*

AUG 29 1988

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OBTAINED FROM FARMERS IN THE FIELD, FROM INTERVIEWS WITH ORGANIZATIONS SUCH AS MILS MOPTI, AND OTHER SOURCES. IN THE ANALYSES, THE CONSULTANTS ASSUMED THAT THE BENEFITS OF THE INTERVENTIONS FOLLOWED A SIGMOIDAL FUNCTIONAL SHAPE OVER THE TIME HORIZON ANALYZED. THIS FUNCTIONAL SHAPE WAS ESTIMATED BY THE CONSULTANTS ON THE BASIS OF FIELD INTERVIEWS AND USED IN AN ECONOMIC AND FINANCIAL MODELING FRAMEWORK (LOTUS 123) DEVELOPED BY THE CONSULTANTS IN THE FIELD.

5. IT IS EMPHASIZED THAT THE ESTIMATION OF BENEFITS USING ONLY UNPUBLISHED, UNDOCUMENTED AND HIGHLY VARIABLE FIELD INFORMATION NECESSITATES THAT THE RESULTS BE INTERPRETED WITH EXTREME CAUTION. THE MAGNITUDES OF THE RESULTS (NPV'S) ARE MUCH LESS INTERESTING THAN THE RELATIVE DIFFERENCE BETWEEN THEM. FURTHER, BECAUSE OF THE GENERAL UNRELIABILITY OF THE NPV RESULTS, THE CONSULTANTS ADDED THE BREAK-EVEN ANALYSES WHICH SHOWED THE INCREASES IN CRCP YIELDS FARMERS WOULD HAVE TO RECEIVE IN ORDER TO JUSTIFY HIS INVESTMENTS, BASED ON SOME ASSUMED VALUE OF HIS TIME. THE BREAK-EVEN APPROACH IS MORE REALISTIC GIVEN THE NEAR TOTAL ABSENCE OF RELIABLE INFORMATION ON THE BENEFIT SIDE.

6. TABLE 2.4 ON P. 17 OF THE REPORT SHOWS THE ASSUMED BUILDUP OF BENEFITS IN THE BASE CASE (NO INTERVENTIONS). THE BENEFITS ARE ESTIMATED USING ASSUMPTIONS ON CROP ASSOCIATIONS, INITIAL CROP YIELDS, CROP PRICES WHEN SUPPLIES ARE RELATIVELY ABUNDANT (AT HARVEST TIME) AND THE EXTENT TO WHICH YIELDS DECLINE IN THE ABSENCE OF ANY INTERVENTIONS. ALL OF THE

ASSUMPTIONS WERE BASED ON THE INTERVIEWS CONDUCTED IN THE FIELD WITH FARMERS, MILS MOPTI AND OTHER ORGANIZATIONS.

7. THE ASSUMPTION THAT FALLOW PERIODS HAVE SHORTENED OR DISAPPEARED IN THE REGION IS, AGAIN, BASED ON INTERVIEWS WITH MILS MOPTI AGRONOMISTS. THE INFORMATION WAS CONFIRMED BY FARMERS IN THE THREE CIRCLES. THE EXPLANATIONS ARE: INCREASED POPULATION, CHANGING WEATHER PATTERNS (INCREASED FREQUENCY OF DROUGHT PERIODS), INCREASED EROSION, ETC. BASED ON THE INFORMATION OBTAINED, THERE IS LITTLE, IF ANY, SPARE LAND TO FALLOW. THE SUGGESTED REALISTIC BASE CASE IS NOT AN AVAILABLE OPTION ACCORDING TO THE INFORMATION OBTAINED IN THE FIELD.

8. THE CONSULTANTS CANNOT COMMENT ON ANY UPWARD OR DOWNWARD BIAS IN THE PROFITABILITY ESTIMATES. AS EXPLICITLY STATED SEVERAL TIMES IN THE REPORT, THERE IS VIRTUALLY NO HARD INFORMATION ON THE BENEFIT SIDE OF THE

INTERVENTIONS AND THE CONSULTANTS HAD ONLY COST ESTIMATES (AND SOME UNDOCUMENTED AND VARIABLE BENEFIT ESTIMATES) WITH WHICH TO WORK. FURTHER, THE KINDS OF ANALYSES REQUESTED BY THE MISSION NECESSITATED THAT A BASE CASE BE DEVELOPED, ANCHORED TO THE BEST POSSIBLE AND REALISTIC ASSUMPTIONS. THE BASE CASE PRESENTED IN THE REPORT REFLECTS FIELD REALITIES AS OBSERVED.

9. IN THE ANALYSES, THE BENEFITS OF THE INTERVENTIONS ARE MEASURED AGAINST THE BASE CASE NO-INTERVENTIONS SCENARIO. THE ASSUMED SIX PERCENT DECLINE IN YIELDS WITHOUT ANY INTERVENTIONS, THEREFORE, IS A KEY ANALYTICAL ASSUMPTION. THE SIX PERCENT DECLINE ASSUMPTION WAS OBTAINED FROM MILS MOPTI AGRONOMISTS WHO ALSO STATED THAT MOST FARMERS DO NOT IMPROVE THEIR LAND WITHOUT ANY OUTSIDE SUPPORT. FOR EXAMPLE, FARMERS, IN GENERAL DO PROTECT THE ACACIA ALBIDA TREES IN THEIR FIELDS, BUT THEY MAY NOT KNOW THE OPTIMAL NUMBER OF TREES IN THEIR FIELDS UNLESS THEY ARE SO INFORMED BY UNKNOWLEDGEABLE EXPERTS. WINDBREAKS ARE NOT CARRIED OUT BY FARMERS IN THE REGION EXCEPT UNDER PROJECT SUPERVISION. CONTOUR RIDGES ARE NOT PRACTICED BY FARMERS IN THE REGION EXCEPT UNDER PROJECT SUPERVISION OR AFTER INTENSIVE TRAINING SESSIONS. MANY FARMERS HAVE, ON THEIR OWN INITIATIVE, HOWEVER, CONSTRUCTED ROCK RIDGES IN THEIR FIELDS IN RECTANGULAR PATTERNS, BUT NOT ALONG THE CONTOUR LINES.

12. RFFTEL MAKES AN EXCELLENT OBSERVATION (PAR. 6) ABOUT THE NEGATIVE NPV ASSOCIATED WITH THE CONTOUR RIDGE INTERVENTION IN THE REPORT. CONSULTANTS AGREE THAT A NEGATIVE FINANCIAL RESULT IS PECULIAR GIVEN THE FACT THAT FARMERS ALREADY DO GO TO THE TROUBLE OF CONSTRUCTING (RECTANGULAR) DIKES IN THEIR FIELDS. FOLLOWING IS AN EXPLANATION:

RECTANGULAR ROCK RIDGING IS MUCH LESS ELABORATE THAN CONSTRUCTING CONTOUR LINE RIDGES. THE LATTER IS MUCH MORE TIME CONSUMING AND LABOR INTENSIVE. IT IS POSSIBLE THAT THE ASSUMPTION CONCERNING THE INCREASE IN YIELDS ATTRIBUTABLE TO CONTOUR DIKING USED IN THE ANALYSIS MAY HAVE BEEN UNDERSTATED. THE FARMERS INTERVIEWED WHO HAD BEEN PROPERLY TRAINED IN CONTOUR DIKING REPORTED THAT NONE OF THE DIKED FIELDS PLANTED PRODUCED ANY YIELDS, BECAUSE THERE WAS NO RAINFALL DURING THE GROWING SEASON. THE PERCENT YIELD INCREASE FOR CONTOUR DIKES ASSUMED IN TABLE 2.2 OF THE REPORT WAS BASED ON THE SAME ASSUMPTION USED IN THE NRMS STUDIES (TO BE PUBLISHED IN AUGUST). FARMERS IN THE BANDIAGRA CIRCLE (WHERE MOST OF THE ROCK DIKING TAKES PLACE) HAVE BARRIERS TO EXIT. THERE ARE VIRTUALLY NO OTHER EMPLOYMENT OPPORTUNITIES AVAILABLE. THEY ARE FACED WITH THE SITUATION OF HAVING NO OTHER OPTIONS LEFT BUT TO MAKE THE LAND IMPROVEMENT INVESTMENTS OR LOSE THE LAND TO EROSION ALTOGETHER. IF THE INVESTMENTS ARE MADE, THE LAND WILL HAVE A PERMANENT ZERO VALUE. THE IMPORTANCE OF PROTECTING THIS LAND ASSUMES A MUCH HIGHER IMPORTANCE THAN CAN BE EXPLAINED

BY THE FINANCIAL RESULTS GIVEN IN THE REPORT. A KEY ASSUMPTION USED IN THE ANALYSES IS THE VALUE PLACED ON THE FARMER'S TIME. THIS VALUE IS EXPRESSED IN MONETARY TERMS. IT SHOULD BE NOTED THAT THIS VALUE IS NOT AN OUTOFPOCKET COST. THE FARMER IN THE BANDIAGARA CIRCLE DOES NOT FOREGO AN INCOME EARNING OPPORTUNITY BY CHOOSING TO CONSTRUCT CONTOUR DIKES IN HIS FIELDS. IT IS RECOGNIZED, HOWEVER, THAT THE NEGATIVE NPV ASSOCIATED WITH THIS INTERVENTION PRESUMES THAT ALTERNATIVE EMPLOYMENT OPPORTUNITIES ARE AVAILABLE. FOR THIS REASON, IT IS POSSIBLE THAT THE TIME VALUE ASSUMPTION USED IN THE ANALYSIS IS OVERSTATED. BECAUSE FARMERS ARE WILLING TO SPEND THEIR TIME IMPROVING THEIR LAND, OR LEASE IT, MEANS THAT THEY HAVE A DIFFERENT IDEA ABOUT THE VALUE OF THEIR TIME THAN THE ASSUMED VALUE.

11. REFTEL PARA 7 PERCEIVES AN INCONSISTENCY BETWEEN THE NPV OF CERTAIN INTERVENTIONS TAKEN SEPARATELY VERSUS INTERVENTIONS IN COMBINATION. THE EXPLANATION IS AS

FOLLOWS: THE ANALYTICAL MODEL DEVELOPED BY THE CONSULTANTS ALLOWS FOR SYNERGISTIC EFFECT BETWEEN INTERVENTIONS WHEN CARRIED OUT IN COMBINATION. SEVERAL OF THE INTERVENTIONS WORK BETTER IN COMBINATION WITH OTHER INTERVENTIONS. FOR EXAMPLE, CONTOUR RIDGES BY THEMSELVES DO NOT INCREASE SOIL FERTILITY, THEY ONLY MAKE BETTER USE OF SCARCE RAINWATER. WINDBREAKS BY THEMSELVES SLOW EVAPO-TRANSPIRATION RATES BUT HAVE LIMITED EFFECTS ON SOIL FERTILITY (DEPENDING ON SPECIES) AND PROBABLY NO EFFECT ON WATER EROSION. ACACIA ALBIDA FIELD TREES BY THEMSELVES PROVIDE SOIL FERTILITY BENEFITS BUT FEW WIND BREAKING BENEFITS. THE THREE INTERVENTIONS IN COMBINATION WILL PROVIDE INCREASES IN SOIL FERTILITY, DECREASES IN WIND EROSION, BETTER PLANT MICRO CLIMATES, HYDROLOGICALLY STABLE SOILS, BETTER SOIL PHYSICAL PROPERTIES, ETC., ALL RESULTING IN INCREASED YIELDS AND MORE STABLE AGRICULTURE, HENCE HIGHER NPV'S. THE THREE INTERVENTIONS CONSIDERED SEPARATELY WILL HAVE

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LOWER EFFECTS ON YIELDS, THUS LESS RETURN PER UNIT OF INPUT AND THEREFORE LOWER NPV'S.

12. THE CHOICE OF A FIVE PERCENT DISCOUNT RATE FOR THE ECONOMIC ANALYSIS WAS MADE ON THE BASIS OF THE CONSULTANTS UNDERSTANDING OBTAINED FROM SALIFOU KANUTE, DIR. DIR OF E AND F WHO ACCOMPANIED THE TEAM IN THE FIELD) THAT VARIOUS KINDS OF INTERVENTIONS ARE TO BE PRIORITIZED. TO THIS EFFECT, THE LOW RATE WAS CHOSEN TO REFLECT THIS PRIORITIZATION. IT SHOULD ALSO BE NOTED THAT THE RATE USED IS A REAL, NOT NOMINAL RATE. THE CORRESPONDING NOMINAL RATE WOULD BE SUBSTANTIALLY HIGHER. WHITEHEAD

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ANNEX K

Personal Services Contractor Scope of Work

The PSC will work directly with the Forest Service's Regional and Technical Directors. Together they will coordinate input delivery between the regional level and the "Cercle" level, supervise and follow-up program development, activity planning, and implementation, and ensure timely reporting at all levels. The contractor will assist in planning project resource allocation according to program needs in collaboration with the three levels involved: USAID and DNEF to implement program and policy decisions, the regional headquarters to coordinate monthly financial needs and monitor expenditures, and the "Cercle" level to follow-up on activity extension and support. He will be responsible for direct liaison with USAID/Mali for close monitoring and evaluation of the project as well as for the identification of major policy areas to be pursued at the national level. He will participate in all project evaluations and ensure effective operation of studies and evaluations as described in their scopes of work.

At the field level the PSC will ensure coordination between the project and other malian institutions such as ODRs, others donor projects, and NGO activities through cooperative protocols. The PSC will identify with the Project Director and Technical Director relevant actions to be carried out in a collaborative manner. The PSC will stimulate and achieve close collaboration with the CARE/Mali project in Djenne in the areas of developing common training plans, socio-economic studies and information exchange. The PSC will be responsible for initiating preparation and implementing a training program for both agents and farmers and the drafting of scopes of work and orientations for surveys and studies.

In close collaboration with the LTC technical assistant, the Regional Director of the Forest Service, the Project's Technical Director, and project staff in the field, he will ensure effective implementation of a Management Information System (MIS) for cost accounting and technical outputs. He will be responsible as comanager with the Regional Director, for signing project operating expense checks, purchase orders, local contracts arrangements, and input delivery for gasoline, equipment and other commodities.

Qualifications. The incumbent should have a Master of Science degree or equivalent either in forestry or a related natural resource management field, and at least three years' experience in forestry or conservation-related rural development work in Africa, preferably in the Sahel. Professional communication ability in French is essential (FSI S/3 R/3 level at a minimum). Practical experience should include administrative/management experience and demonstrated supervisory, financial management capabilities, and a familiarity with research design and implementation. A familiarity with USAID regulations and procedures is also desirable.