

PD-PAK-465
34975

FINAL EVALUATION

MALI -- VILLAGE REFORESTATION PROJECT
(AID PROJECT No. 688-0937)

TABLE OF CONTENTS

I. Summary	1
II. Background and Conclusions	3
A. Background	3
B. Project Goal and Purpose	6
C. Evaluation Purpose	7
D. Evaluation Methodology, Team Composition and Schedule	7
D.1 Methodology	7
D.2 Team Composition and Schedule	9
E. Major Conclusions	10
E.1 Conclusions vis-a-vis Evaluation Objectives	10
E.1.1 Assessment of Progress	
E.1.2 1983 Mid-term Evaluation	
E.1.3 Analysis of Constraints	
E.1.4 Recommendations	
E.2 Other Conclusions	13
F. Evaluation Findings	14
III. Management and Organization	15
A. Project Management and Supervision	15
A.1 Direction and Leadership	15
A.1.1 National Level	
A.1.2 Regional Level	
A.1.3 Station Level	
A.2 Planning	19
A.2.1 Annual Plan of Operations	
A.2.2 Quarterly and Monthly Planning	
A.3 Management	20
A.3.1 Documentation	
A.3.1A Reports	
A.3.1B Site Visit Reports	
A.3.1C Filing System	
A.3.1D Communications	
A.3.2 Commodity Procurement and Management	
A.3.3 Construction	

B.	Project Organization	23
B.1	Personnel Scope of Work	23
B.2	Primes	23
B.3	Centralized versus Decentralized Operations	24
C.	Financial Management	24
C.1	Analytical Accounting System	25
C.2	Financial Management Procedures	25
D.	Peace Corps	26
IV.	VRP/Village Relationships	27
A.	Overview	27
B.	Extension and Training	28
C.	Fining Policy	31
V.	Technical Considerations	33
A.	Nurseries	33
A.1	Station Nurseries	34
A.1.1	Progress Since the 1983 Evaluation	
A.1.2	Reporting and Documentation	
A.1.3	Present Observations	
A.2	Mini-Nurseries	38
B.	Rural Forestry Interventions	41
B.1	Windbreaks	43
B.2	Living Fences	44
B.3	Mis en Defens	45
B.4	Woodlots	47
B.5	In-field Planting	48
B.6	Other Possible Project Activities	49
C.	Experimentation/Demonstration	50
A N N E X E S		
A.	Project Logical Framework	
B.	Sociological Evaluation	
C.	Evaluation Terms of Reference	
D.	Evaluation Recommendations	
E.	Acronyms and Abbreviations	
F.	VRP Implementation Letter No. 10	

I. Summary

The final evaluation for the Village Reforestation Project (VRP) in Mali took place during the first two weeks of January 1987. The VRP is being implemented by the Government of the Republic of Mali's (GRM) Forest Service in the country's Fifth Region (Mopti); it is AID-financed. The VRP was conceived and designed as a "pilot" project to try out and evaluate ways and means for the Forest Service to evolve from a "police force" protecting Mali's natural resource base through repression (fines levied by forestry agents) to an "extension agency" teaching villagers how to build up and protect the natural resource base and fostering the villagers' participation in the task. This evolution of the Forest Service has been mandated by national policy in the face of evidence that the policy of repression only (inherited from colonial days) was not working and could not work because of limited resources (on the physical dimension alone, there simply are not anywhere near enough forestry agents to police Mali's countryside intensely enough to begin to control acts destructive of the environment).

Mali faces a situation of intensely increasing pressures on the natural resource base. First is an underlying increase caused by an ever-increasing population. Second, periods of drought naturally cause the population to "mine" the resource base to make up for the reduction in agricultural and natural vegetation. As a result, the deterioration of the environment in Mali and other countries of the Sahel has been dramatic, particularly since the latest pattern of drought began in the early 1970s.

Mali's Fifth Region is known for its environmental harshness, caused by low rainfall and poor soils. Today, it lies almost entirely in the Sahel zone and has average annual rainfall between 500 to 600 millimetres. It is a region of diverse ecological conditions, economic activities (including a major herding element) and ethnic groups. The facts that the livestock industry is one of Mali's major foreign exchange earners and that the Fifth Region is at Mali's geographic center contribute to making it an important area politically,. All of these conditions were felt to make the Fifth Region an ideal area for a pilot project with the VRP's objectives.

The VRP was authorized in 1980 at a life-of-project (LOP) amount of \$495,000 over five years. In July 1983 it was amended to add \$160,000 and to extend the Project Assistance Completion Date (PACD) to September 30, 1987 (which is the current PACD). As indicated earlier, the VRP's mandate was essentially to try out and evaluate activities to restore and protect the natural resource base in the project area, while raising the villagers' consciousness and involving them in the task of restoring and protecting the environment. The project began operations in two district ("cercle") centers -- Bandiagara and Fatoma (near Mopti) -- and expanded to a third (Djenne) when it was increased and extended.

A mid-term evaluation was conducted in July 1983 by a three-person team from outside. This evaluation recommended a shift in emphasis away from village woodlots to provide fuelwood to other interventions, a beefing up of technical management through the creation of a position of technical director at the regional level and certain management and operational improvements.

The present final evaluation was conducted by a five-person "in-house" team, including a forester and a sociologist from the Malian Forest Service and a forester, project officer and design and evaluation officer from AID. This final evaluation had essentially standard objectives of determining actual vs. planned progress, impact, constraints, etc. The underlying programmatic objective was to make a recommendation as to the feasibility and desirability of a proposed three-year extension of the project.

The evaluation concludes that the VRP did achieve its purpose in the formal sense of having produced the magnitude of outputs called for in the logical framework's "objectively verifiable indicators" and of meeting the "end of project status" conditions specified there. The VRP evaluation finds that the VRP has fostered better relations between the villagers in the project area and the Forest Service and that it has created a new image of the Forest Service as "environmental extension agents," exactly in the manner foreseen in the project design. The villagers have gained greater awareness of environmental improvement and protection and devote increasing efforts and thought to it. They are fairly well versed on the basics of conservation legislation, including the Forestry Code. A number of project activities have succeeded very well and those that have not have provided valuable experience and lessons learned. While not having solved in any manner the controversy about the need for, and the utility of, the Forest Service's fining system (for infractions of the Forestry Code), the VRP has kept the issue up front. In short, implementation of the VRP to date has resulted in a number of very positive developments and has demonstrated rather conclusively that the project's basic approach to the rural areas is correct.

In the larger picture, these very positive findings are offset, however, by the conclusion that the VRP failed significantly to live up to its potential as a true pilot project. While the measures of success in the logical framework were achieved, the evaluation team concludes that the logical framework misrepresented the project design by setting targets lower than one would expect from the project paper text. The VRP was found not to have achieved the purpose in terms of the higher accomplishments implied by the project paper. In particular, VRP implementation was extremely deficient with regard to its training activities, to the development of a useful information system and to utilization of available technology to further project ends.

As a result of these deficiencies, VRP accomplishments were significantly below its potential and it lost much of its value as a "pilot" project (particularly because the information system did not produce data permitting a rigorous social and economic analysis of project interventions). The major cause for these deficiencies and the resultant underachievement was a lack of effective project leadership at the regional level. To work effectively, a pilot (i.e., "experimental") project like the VRP requires dynamic, dedicated and inspiring leadership. This simply was not present and the project suffered as a result.

The ultimate judgement of the evaluation team is that the basic rationale for the VRP remains valid and that project implementation to date shows that the basic project approach is right. Therefore, we believe that AID should

favorably consider a project extension, but only provided that the Forest Service makes a commitment to provide the type of leadership required to give a pilot project like VRP a chance to live up to its potential.

II. Background and Conclusions

A. Background

Like all of the other countries in the Sahel, Mali has been subjected during the past decade and a half to a particularly devastating diminution of its renewable natural resource base. The two major causes of this situation have been drought and human action. The knowledge that drought is a regularly recurring phenomenon in the Sahel does not mitigate its disastrous effects when it does strike and it has been particularly severe for varying periods since 1971. Severe drought always cause the human populations in the affected area to increase their exploitation of the natural resources base — particularly of trees in Mali — to compensate for the loss of agricultural production and forage. This virtually standard effect has been accentuated in the recent past in Mali by the fact that the population is greater than it ever has been before and is growing at a relatively high rate (at least three percent per year). Because agriculture (including livestock) is virtually the sole economic basis of life in rural Mali, this chain of events has led to crisis, including threats of massive starvation (avoided by outside donors through massive importations of relief grain), large outward migration, the break-up of families, etc.

The government of the Republic of Mali (GRM) has counterattacked by attempting to mount a response to the drought and its consequences at many levels. It has united with the other eight Sahelian countries to form the Multinational Committee to Counter the Sahel Drought (CILSS — Comité Inter-Etats de Lutte Contre la Secheresse au Sahel). It has initiated and followed through on national policy dialogue resulting in a revision of the Forestry Code. It has appealed to donors not only to provide the relief efforts required on numerous occasions during the recent past to avert imminent crisis, but also to provide the development resources required to attempt to repair the long-term damage.

One of the basic components of the national strategy to counter the effects of drought in Mali has been the conviction that success in any rehabilitation effort would be possible only with the active commitment and participation of the rural population. This conclusion was arrived at not so much from any ideological basis as from the pragmatic realization that the GRM simply does not have the resources to make any impact in the countryside without the voluntary participation of the rural population. Another basic component was the elemental conviction that the environment must be looked at, and dealt with, as a whole.

It is, of course, one thing to formulate strategy and another to implement it. One of the major recognized impediments to implementation of a strategy of "participatory forestry" was that Mali, like virtually all the ex-French colonies in the Sahel, was left with a Forest Service which was authoritarian in philosophy and modus operandi. The Forest Service reflects this situation

in its paramilitary organization, in the uniforms worn by forest agents and in the salutes they exchange when greeting one another. The Forest Service has looked upon its job as to halt the destruction of forestry resources by humans by enforcing the Forestry Code, and has considered as the major tool to accomplish this a structure of fines which Forestry Agents levy on offenders (and of which these same agents receive a part of the proceeds). Thus the preponderant orientation of the Forest Service has been repression of destructive activities (all of which were outlawed by the Forestry Code) and, consequently, their relations with the rural population could be described as wary at best, often hostile. A strategy of "participatory forestry development" would require that this pattern be broken, that the Forest Service become, in shorthand, an "extension agency" working with rural population to improve the natural resource base instead of simply a "police force" attempting only to prevent further destruction through repression (a task physically impossible in any case because of the small number of forestry agents in relation to the size of the territory which needs to be policed).

The Village Reforestation Project (VRP) was expressly conceived as a pilot project to fit within the framework of policies and circumstances described above. It was based on the convictions that there were a large number of "reforestation" (broadly defined to include all manner of activities to rehabilitate, protect and conserve vegetation) activities which could be successfully tested and then broadly diffused under a scheme in which the Forest Service and the rural population worked together as partners. These activities would improve villagers' standards of living by increasing agricultural and forestry products production and would serve the wider society as a buttress against spreading "desertification." The project was designed with three basic components, as follows:

-- Plant Production: As designed, plants needed for the project would come from central nurseries at each of the three VRP cantonnements (Chef lieu de cercle) of Bandiagara, Djenne and Mopti.

-- Extension: An extension team composed of a Forestry Agent, a community development agent and a Peace Corps Volunteer would be established in each of the three cantonnements.

-- Experimentation/demonstration and data collection: Experimentation and demonstration plots would be established in the three cantonnements and an extensive system of data collection to measure project progress and to make economic analyses would be installed.

The Project Grant Agreement was signed on September 26, 1980 with a LOP funding level of \$495,000 from the regional Accelerated Impact Program (AIP) and a PACD of September 30, 1985. Actual funding became available in May of 1981 and supported project activities in the Mopti and Bandiagara circles.

In July 1983, the Grant Agreement was amended to provide incremental funding of \$160,000 from Mission bilateral funds and to extend the PACD to September 30, 1987. This amendment permitted project activities to commence in the third circle, Djenne.

In order to begin the transition of the Malian Forest Service from police force to extension agency, the VRP design had as a key provision the banning of all fining by forestry agents in areas where the VRP was active (forestry agents were to be prohibited from wearing uniforms in these areas as well). As compensation for the income that they would lose because they would not be receiving their share of fines they had levied, forestry agents working in the VRP area were to be paid a special allowance ("prime") by the project (this prime had another dual purpose of encouraging conscientious and diligent work).

An important aspect of the VRP was its location. Mali's Fifth Region is known as an area of the country with particularly harsh environmental conditions, especially in terms of scanty rainfall and poor soil. This region lies almost entirely in the Sahelian Zone where the average annual rainfall is between 500 and 600 millimetres (20 to 24 inches). Formerly forming the Inland Delta, innumerable ponds and lakes provide the region with an important grazing and fishing potential, thus providing an acceptable standard of living to the population. But the years of drought have upset this economic stability and the consequences of this are found today in the formation of the "desert compactations" around water points where the concentration of livestock has caused an overexploitation of the vegetation and the destruction of the soil through constant trampling by the animals.

The drying out of the ponds and the lakes and the extremely low annual increases in river levels have reduced the areas which are flooded annually, thus causing the disappearance of forests and bourgoutieres (watery areas -- small ponds, etc. -- in which a special dry-season forage is grown), grave injury to thorny forest areas and overexploitation of pasture areas. The population, essentially comprised of herders, fishermen and farmers, have migrated to the more suitable areas and continue to exploit what vegetation is left in an irrational manner, either to plow new fields, to feed their animals or to satisfy their needs for wood for construction or for fuel (fuelwood provides 95% of energy requirements in the region). One must also note that there has been an important emigration of the workforce from the villages.

Compounding the difficulties posed by the harshness of the environment is the fact that the proportion of herders in the population is larger-than-normal for Mali. These are transhumant herders who range over a large part of the Fifth Region. It has been sarcastically remarked of them that their "total devotion to environmental protection has yet to be proven." But animal husbandry is a major component of the Malian economy (and a major earner of foreign exchange), so the herders -- and, thus, the Fifth Region -- are politically very important.

The Fifth Region is considered the key area in Mali's fight against "desertification," the feeling being that if this process can be stopped in the Fifth Region, then the major part of the battle will have been won. In addition to all of the above factors making the Fifth Region a very proper setting for a "reforestation" pilot project in Mali was the fact that there is a great deal of environmental variety within the region and, indeed, very different ecological zones can be found very close to the regional capital of Mopti. Each of the three cantonnements selected for VRP activities represents a different physical and economic environment, from the uplands with

essentially sedentary dryland farming (Bandiagara), to the delta with sedentary wetland farming (Djenne) and the delta with mixed wetland farming and transhumant livestock raising (Mopti).

Further diversity was found in the ethnic composition, with a different group dominant in each cantonnement -- Dogon in Bandiagara, Bambara in Djenne and Fulani (Peul) (herders) in Mopti. In summation, the Fifth Region was thought to be an excellent site for a pilot reforestation project in Mali because it was felt that if the activities could be made to succeed there, they could easily be transferred elsewhere in the country. Finally, a successful pilot project in the Fifth Region would be important proof of the GRM's seriousness in battling desertification and its ability to win the battle over the longer term.

From its start in 1983, the project's actions included the production of plants, the implantation of woodlots (collective and individual), shadetree plantings, raising of living fences and construction of improved stoves in the villages. Demonstration and experimental plots have been undertaken directly by the project. All of the project's activities were evaluated in June 1983; the major recommendations emerging from this mid-term evaluation were the following:

1. Reduction of the emphasis placed on woodlots for fuelwood because these do not seem to be economically or socially viable.
2. Increased importance accorded to tree plantings to improve soil fertility, to the fight against erosion, to planting shadetrees and trees used for other purposes of amenity.
3. An enhanced training of Malian personnel assigned to the project in the areas of technical management, extension activities in the villages, and accounting of local costs of operations by program and objective to permit technical and economic analyses of project activities:

From 1983 until 1986, project management more or less followed these recommendations with the hope of improving project performance, trying to match project activities to local social and environmental conditions.

B. Project Goal and Purpose:

The goal of the VRP project is: "To improve the well-being of villagers."

The sub-goal is: "To contribute to the rehabilitation of Mali's renewable resource base."

The project purpose 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."

(A copy of the logical framework is found in Annex A.)

C. Evaluation Purpose

This was an end of project evaluation (the current PACD is September 30, 1987) with the underlying programmatic objective of determining whether or not recommendation of a three-year project extension is warranted. The exact objectives of the evaluation, as set out in the terms of reference, were the following:

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 mode.

(The complete Terms of Reference are found in Annex C.)

D. Evaluation Methodology, Team Composition and Schedule

D.1 Methodology

The approach of the evaluation team, as defined in the terms of reference, consisted of a series of discussions at Bamako with responsible officials of DNEF, the Ministry for Natural Resources and Livestock, the Peace Corps and USAID. Afterwards, the team went to the Fifth Region for discussions with VRP field agents and for visits at each cantonnement of eight villages, two where project activities had succeeded fully, two where they had succeeded moderately, two where they had failed and two not covered by the project. During the visit to the first cantonnement (Bandiagara), the team realized that the concepts of "success" and "failure" were subjective and there would not be sufficient time to follow the original format taking into account the wide dispersion of villages. Therefore, it was decided to visit villages presenting the largest number of different types of activities possible, being sure always to visit some villages not included in the project.

It should be noted that the evaluation team had been divided previously into three groups according to the questions defined in the terms of reference, as follows:

- Problems of management and organization of the VRP should be the responsibility of USAID's Project Officer and DEO.

-- Problems associated with extension activities were made the responsibility of the sociologist with regard to villagers' perceptions while the aspects of organization of the extension teams, training and cooperation with other organizations should be the responsibility of the two foresters.

-- All the technical considerations were also the responsibility of the two foresters.

-- All evaluation team members would give their opinions as to a possible extension of the project. (In reality, the team worked closely enough together that each member was free to add his views with regard to any point.)

As to the collection of data, the group responsible for management and organization of the VRP examined the accounting records both at the cantonnements and at the office of the project accountant in Mopti. Afterwards, questions directed at officers directly or indirectly responsible for financial management made the situation clearer to the evaluators. The field visits filled in any information gaps.

With regard to extension, the sociologist visited an average of four villages in each cantonnement of which at least one was not included in the project. Casual and more formal discussions with villagers, extension agents and other agents permitted him to understand certain constraints.

The group responsible for technical considerations and for part of the extension effort had prepared beforehand forms to be filled in providing information on the production and distribution of nursery seedlings and on associated costs. Other forms permitted one to make an assessment of accomplishments by type of activity from the start of the project until 1986, to see the degree of success and the costs of the various activities. Visits to the nurseries, to the experimental and demonstration plots and to village project activities and questions directed at forest service agents at all levels permitted the group to collect sufficient information. It must be noted nonetheless that all information requested in the forms was not provided.

A debriefing was held at the end of the visit to each cantonnement. Afterwards a general debriefing including the project director, his technical director, the chiefs of the three cantonnements, their assistants, the extension teams, nursery directors, the project accountant, the USAID project manager and the members of the evaluation team allowed a discussion with all the responsible officers of all project constraints and the formulation of concrete proposals capable of relieving the bottlenecks to project implementation.

The Terms of Reference (Annex C) contain a list of the more important VRP project documentation which was consulted as background by the evaluation team.

D.2 Team Composition and Schedule

The evaluation was conducted "in-house" with GRM and USAID personnel identified to perform the scope of work. An in-house evaluation was decided upon for the following reasons: (a) the mid-term evaluation had been an "outside" evaluation, so the VRP had been subjected relatively recently to the objectivity sought through this mode of evaluation; (b) It was felt that participation of team members who were familiar with the problems and questions to be examined would yield a more in-depth examination of the critical issues; and (c) Project funds available for an evaluation were extremely limited. To enhance the chances for objectivity, no VRP project managers from either the Forest Service or USAID were assigned to the team (although they were closely associated with the conduct of the evaluation and were consulted as resource persons when thought advisable. The DREF VRP Technical Director and the USAID VRP project manager accompanied the team on its field visits.)

Following were the members of the evaluation team:

GRM Forest Service

Forester (N. Keita, Technical Director, DREF, Segou)

Sociologist (M. Sissoko, DNEF)

AID -- USAID/Mali and USAID/Senegal

Forester (J. Anderson, currently with USAID/Senegal; previously USAID/Mali project manager for VRP)

Project Management Specialist (C. Phelps, USAID/Mali)

Design and Evaluation Officer (Z. Hahn, USAID/Mali)

The actual schedule followed by the team was as follows:

- | | | |
|---------|---------|--|
| 5 | January | Opening meetings in Bamako |
| 6 | January | Travel to Mopti |
| 7 | January | Meetings with regional government officials and preliminary discussions with VRP administrators |
| 8 - 9 | January | Field visit, Bandiagara |
| 10 - 11 | January | Field visit, Koro |
| 12 - 13 | January | Field visit, Djenne |
| 14 - 15 | January | Field visit, Fatoma (Mopti, near Sevare) |
| 16 | January | Meeting with the Regional Development Committee and debriefing with VRP personnel (from all three cercles) in Mopti. |

17 January Return to Bamako

Koro was included in the itinerary to permit the team to see first-hand the activities of the CARE Village Agroforestry Project and compare organizational structures and extension and technical approaches employed by the VRP and CARE projects.

E. Major Conclusions

This section is divided into two parts. In the first, the evaluation team's conclusions are given with regard to each of the evaluation's first four formal objectives, as they were stated in the terms of reference. The fifth and final formal objective (to assess the feasibility of a three-year extension) is discussed in the following section, "Evaluation Findings."

E.1 Conclusions with Regard to Formal Evaluation Objectives

E.1.1 "Assess the progress made toward attaining the project purpose and measure actual versus planned progress."

In a strictly formal sense, the progress made toward attaining the project purpose is assessed by comparing actual project progress against the "objectively verifiable indicators" set out in logical framework of the project paper (copy at Annex A). In these formal terms, the project has been a success -- in general, it has achieved the magnitude of outputs set out as the target and the conditions indicating purpose achievement do obtain. (This conclusion is stated "in general" because the logical framework is heavily oriented around woodlots, which have been de-emphasized since the 1983 mid-term evaluation. Even with this de-emphasis, however, the magnitude of outputs has been achieved.)

It must immediately be noted, however, that the logical framework for this project set very modest targets for "magnitude of outputs" and "end of project status conditions" in comparison to actual text of the project paper. If project progress is measured against the project paper text instead of the logical framework, the conclusion must be that the project has been much less successful in meeting its purpose and goals. While it has fairly successfully met its major overall goal of "getting the ball rolling" on a program of true village reforestation (see discussion in "Evaluation Findings" section), it has failed to fulfill many of the significant "promises" made in the project paper with regard to implementation of a number of aspects of project design which, as described there, were important features of the project. The most significant of these aspects are the following:

-- Leadership. The project paper generally portrays the project as being implemented by very dynamic leaders. Such leadership is a logical necessity for a "pilot" project like the VRP to be truly successful in pushing the limits to see what is possible. In actuality, the leadership in general has been much less than dynamic and significant potential progress has been sacrificed as a result.

-- Training. The project paper indicates that there will be a significant amount of training undertaken for all personnel involved in project implementation (including villagers). In actual fact, with the possible exception of training for the production of improved woodstoves, training under the VRP to date has been extremely limited. What training has been done (mostly in the techniques of planting and caring for trees) has been germane, but training in general has been woefully lacking for a "pilot" project.

-- Information System. On its first page, the project paper states, "As this project is experimental in nature, an information system will be established that will allow for the project strategy to be rigorously evaluated for effectiveness and replicability." This simply has not happened. While certain records have been kept (largely on nursery production and tree survival rates) they tend to be rudimentary and sporadic.

These are major failings and have caused the VRP to fail in a significant way to live up to its potential as a true pilot project, as it was portrayed in the project paper (although not necessarily reflected in the logical framework).

E.1.2 "Determine the utility of the adopted recommendations from the 1983 mid-term evaluation and the degree to which those recommendations have been implemented."

By means of Project Implementation Letter No. 10, dated April 5, 1984, the Forest Service and USAID/Mali "adopted" 18 discreet recommendations of the mid-term evaluation to be implemented (see copy at Annex F). In quantitative terms, it can be said that all but five of the recommendations were followed up by the Forest Service (these five are numbers 2.3, 2.8, 3, 5 and 6). So, again, in formal terms, the follow-up to the mid-term evaluation was a "success." However, as expressed by one of the evaluation team members, it appears by and large as though the recommendations were followed "more in letter than in spirit." As an example, per Recommendation No. 2.1, a technical director was indeed assigned to the Regional Direction by the Forest Service, so the letter of the recommendation was followed. Unfortunately, the implied increase in quality and quantity of project implementation actions did not follow from this assignment, so the spirit of this recommendation was not met.

Some of the mid-term evaluation's recommendations dealt with the critical aspects this evaluation has found to be deficient in project implementation. For example, with regard to the information system Recommendation 2.3 was designed to "provide better analytical information and details on the implementation activities of the project." With regard to training, No. 2.8 called for the Forestry Service to "organize an information and training seminar in 1984." (The mid-term evaluation did not analyze or remark on project leadership at all. It must be noted that this evaluation was held within two years of the start of any project activities and that the project was still operating at a fairly slow pace when it was held.) It is interesting to note with regard to the recommendations adopted from the

mid-term evaluation that it is precisely the recommendations dealing with the "critical deficient aspects" noted by this evaluation which are recorded as not having been followed. Since the mid-term evaluation did not deal with one of the three critical deficient aspects and since the recommendations dealing with the other two (in a limited way) were not implemented, the mid-term evaluation had no effect on what we believe to be the fundamental problems being faced by the project.

The one major beneficial impact of the mid-term evaluation was to steer the DREF away from woodlots as the major technical intervention of the VRP. The emphasis on woodlots was a useful experiment, but without a well functioning information system, it seems as though the project by itself could not make the analysis to determine that woodlots were not working as anticipated. Since, in the absence of strong leadership there is a tendency for project personnel at the cantonnement level to treat the project paper as the "the Bible" and since the project paper did stress the creation of woodlots, it appears that without the mid-term evaluation, there probably still would be a strong woodlot emphasis in the VRP. Another definite beneficial impact of the mid-term evaluation was improvement in the effectiveness of the VRP accounting situation (although, as noted elsewhere, there is still much to be done in this area).

E.1.3 "Analyze the major constraints (institutional, managerial, technical, sociological) that hinder project implementation and effectiveness."

Flowing from the analysis in Section E.1.1 above of the critical deficient aspects of the project is the evaluation team's opinion that the managerial constraint is by far the most significant one at the present time. Constraints do exist in the other areas mentioned, but they play a minor role in "hindering project implementation and effectiveness" when compared to the managerial constraint. The technical constraint appears to be the least important at this time. It seems clear that there exist known technical means for accomplishing the VRP's objectives and that the only question is their application. Finding ways to deal with the sociological and institutional constraints is exactly the raison d'etre of the VRP. These have not disappeared since the project started, but a learning process has been initiated and some progress has been recorded with regard to relief of both -- more with the sociological (villagers' perceptions) than with the institutional (nature and outlook of the Forest Service). That more progress has not been made is due primarily to a lack of good effective leadership and thus, the managerial is by far the most important constraint to be worked on at this time.

E.1.4 "Formulate specific recommendations for alleviating the identified constraints and improving project performance."

As indicated in the previous discussion, the evaluation team believes that the most important recommendation to be implemented if the VRP is continued is a thoroughgoing review of the project leadership and replacement in those cases where it is judged that a particular leader does not fit the profile required for a successful implementation of a pilot project. In general, we believe that the leadership of this project must be particularly enthusiastic,

energetic and inspiring. Good technical knowledge is also a prerequisite, of course, but without the other qualities, it means very little in terms of forwarding project objectives. Experience in the Forest Service will be useful in terms of how to approach headquarters in presenting VRP issues, problems and progress, but otherwise has very little to do with successful implementation of this project, given its experimental and pilot nature. The evidence to date suggests that unless this constraint is relieved, it is not worthwhile continuing the project. Conversely, there is no apparent constraint to markedly improved project implementation with appropriate leadership.

Relieving the other two major constraints discussed above, inadequate information system and lack of training, will undoubtedly be high on the list of things to do for an appropriate VRP leader, so, in a way, relieving the leadership constraint will go a long way toward relieving these other two. With regard to the information systems constraint, the evaluation team tends to believe that the subject is so critical to project success that one person should be assigned to work on it and that there is sufficient work involved to justify creating a new position to deal specifically with installing and following such a system. The person having this responsibility should be provided with short-term technical assistance, perhaps three months at the start and then quarterly (or half-yearly) follow-up. Depending on how installation of this system is going, the person responsible might also pick up responsibility for training planning and logistics. (If training activity is significantly stepped up, there is a clear workload implication which has to be dealt with.) This is one possible solution; it might be necessary to assign somebody additional to the Fifth Region for a year or two to deal just with the training workload, or, at least, until the training effort has become an institutionalized matter that can be dealt with on a more or less routine basis.

E.2 Other Conclusions

The evaluation team generated a large number of specific recommendations. These are found at the end of each section and have been gathered together for convenient reference in Annex D. Naturally, it is recognized that if the VRP continues not all of these recommendations can be tackled simultaneously. These recommendations have been listed in each section in approximate order of importance as perceived by the evaluation team. We believe that these recommendations largely speak for themselves and that further discussion about them here would be superfluous.

Two other subjects which should be discussed briefly are recurrent costs and women's role in the project. With regard to the recurrent cost implications of the project, there is no visible way that these could ever be assumed by the GRM once donor funding ceases. This is the essential conclusion of a study on the matter financed under the project. This is apparently the condition of most donor-financed projects in Mali. A step in the right direction has been the decision to charge for seedlings, but it has more value as a declaration of principle than as any sort of effective response to the recurrent cost burden. In addition, the revenue generated by these sales now go to DNEF in Bamako, so they have no practical effect with

regard to the VRP. There is evidently precedent for having such revenue stay at the regional level and, in principle, the evaluation team believe that the DNEF should follow the policy of utilizing such funds in the region where they are generated. We have made no recommendation to this end however in view of a) the relatively small amount of funds involved and b) the fungibility of funds.

It is the judgement of the evaluation team that the VRP has 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 (reduced labor for collecting fuelwood, easier cooking). Otherwise, there appears to be very little effect on women's status, positive or negative (as youths, young women apparently have done quite a bit of the woodlot watering -- along with young men -- required by the project, but this seems to be an expected role for village youths). This is not to say that women do not participate in project activities and, indeed, even in decision making nor that they do not share in the benefits produced by VRP activities. But there is no immediate evidence to suggest that either the project or the women in the project area could have benefitted significantly from a greater concentration on women's interests.

F. Evaluation findings

As indicated earlier, a fundamental purpose of the evaluation was to make a recommendation on whether or not a three-year project extension is warranted and feasible. As expressed in the fifth objective of the terms of reference, the evaluation team was "to assess the feasibility of a three-year extension phase and propose any modifications in project structure, orientation or implementation mode."

The evaluation team finds, in general terms, that it is highly desirable that the VRP be continued. There is still a need for its basic function of providing a "laboratory" in a politically and economically important, but ecologically difficult, region of Mali for the Forestry Service to try out different modes of operation and approaches to accomplish its basic goal of protecting -- and restoring and improving, if possible -- Mali's renewable natural resource base. To recapitulate, the need for such a laboratory is great at the present moment when political and administrative leaders in Mali have acknowledged that existing systems of protection and conservation are breaking down and, as a consequence, are looking for new approaches in a context of extremely limited resources.

The VRP has had its definite successes. As a "laboratory," it has been particularly useful in keeping the "repression" versus "extension" issue (or the "fining issue") to the fore. This issue is far from being settled and the evaluation team believes that there is still much inquiry and experimentation to be done before any definitive answer can be provided. But, without the VRP, the arguments pro and con on the issue would be much more in the realm of pure conjecture than they presently are. Similarly, the VRP served a very useful purpose in "shooting down" in a quite convincing manner what were essentially theories about using village woodlots to solve the fuelwood problem in Mali's rural areas (or, at least, in those with more limited rainfall). Lessons are being learned about how to organize and implement

extension efforts effectively — lessons that can only be learned by experimentation in the field. The VRP has raised considerable grass-roots interest in conservation — and natural resource management. There are some very striking instances of individual success in the use of "mini-nurseries," living fences, woodlots, etc. All of this speaks strongly for extension of the VRP.

Nonetheless, it is the evaluation's team judgement that, essentially because of uninspired leadership, the VRP has been operating enough below its potential that project extension should not be pursued unless the Forestry Service makes an unambiguous commitment to provide the VRP with the vigorous, dynamic leadership required to make such a relatively complex and experimental "pilot project" effort succeed in finding out as much as possible about how to utilize new approaches to rural agroforestry to conserve and improve the physical environment. Further commitments should also be made by the Forestry Service before extension is pursued. As stressed earlier, two very important areas which have been much neglected are the information system and the project's training program. As detailed in the evaluation's numerous recommendations, available technology (particularly that which can be employed to reduce the amount of watering needed for project interventions) needs to be exploited and the project needs better management and organization. All of these are important aspects, but they are secondary to the leadership issue in the sense that the evaluation team believes that if the Forestry Service does make, and follow through on, a strong commitment to provide the VRP with the kind of leadership it requires, then the other problems which the project is facing will be tackled in a satisfactory manner.

To conclude, then, the primary recommendation made by the evaluation team is that, if the Forestry Service desires to continue the VRP effort, it immediately review project leadership and make the adjustments required to insure that the project has the opportunity to live up to its considerable potential. If the Forestry Service is prepared to make the commitment to tackle the leadership problem which the VRP faces, then the evaluation team strongly recommends that AID support a three-year project extension.

III. MANAGEMENT AND ORGANIZATION

A. Project Management and Supervision

The evaluation team found the project has generally improved its management and supervision functions since the last evaluation in 1983. But, several of the 1983 evaluation recommendations concerning project management remain only partially implemented. The evaluation team feels the project's technical activities would be further along had more attention been focused on project management and supervision at all levels.

A.1 Direction and Leadership

The Village Reforestation Project is unique to the USAID/Mali portfolio in that there is no USAID-financed technical assistance component. Malian professional foresters are directing this pilot project effort. The

experimental nature of the project requires flexibility, innovation and adaptation to lessons learned. Under these circumstances, leadership must be particularly dynamic and dedicated, requiring individuals with strong technical knowledge and administrative capability who can translate their experience into concrete, effective action at the field level.

It is the evaluation team's judgement that the lack of appropriate leadership in certain critical VRP positions has been the major factor in preventing the project from making better progress than it has. Both DNEF and USAID have failed to take action to ensure that the VRP has leadership equal to its demanding implementation plans and purpose. To rephrase the problem, it is not that the leadership in question was inadequate in any way when looked at in terms of Forest Service personnel requirements and availabilities in general but rather that these leaders were not equal to the very demanding tasks posed by an innovative, "pilot" project like VRP.

To elaborate on this point, looked at in the large, the VRP experienced virtually none of the constraints often found in other projects, i.e., there were no apparent financial or technical constraints (and, in particular, the lack of technical knowledge or assistance is not a constraint in the field of forestry in Mali) and the project enjoyed a largely willing, interested and capable field work force (i.e., at the cantonnement level). The project implementation plan is comparatively straight forward and simple. What seemed to be lacking was the vision and leadership needed to employ and engage the project's resources fully in pursuing the project purpose. In essence, the lack of appropriate leadership is at the bottom of most other deficiencies cited in this evaluation, including the lack of effective training, the lack of an adequate information system, insufficient planning, the use of inappropriate technology (particularly with regard to the watering question), to name but a few of the more important.

Finally, we would like to stress that it is not the case that all VRP leadership failed to meet the project's extremely demanding leadership requirements -- the evaluation team found some of the leaders to be outstanding and fully up to VRP requirements. Unfortunately, however, the superior leadership was not found above the cantonnement level, and thus the VRP lacked an overall direction at the higher levels equal to its ambitions and potential. Change will be required in VRP leadership if the project is to have a decent chance for success in any extension phase. Following is a review of the leadership situation at each level of project activity.

A.1.1 National Level

The project is represented at the national level by the Chief of the Division of Soil and Water Conservation within the Forest Service (DNEF - Direction Nationale des Eaux et Forêts) and by the USAID/Mali Project Officer. Both of these individuals are judged to be extremely competent in their technical fields of forestry. Their project management has been effective in focusing upper level management's attention on this relatively small project and pushing implementation forward in the field. Both officers work well together, have complementary concepts of project direction and a good working knowledge of the project.

The one problem the evaluation team diagnosed at this level (in addition to the previously discussed failure to insure VRP field leadership) is that both project officers do not spend enough time in the field, either at the level of the Forest Service's Regional Office (DREF - Direction Regionale des Eaux et Forêts) or more particularly, at the cantonnement level. This situation seems almost inevitable given the other demands and responsibilities of these officers within their organizations. Nonetheless, more field time would contribute significantly to project effectiveness in two major ways: One, it would enhance the soundness of technical interventions and, two, it would enhance the morale of field personnel.

It is likely that the root cause of this particular problem lies at a level above that of the project officers. Since the project is relatively small in financial terms it tends to generate less concern among upper management than other larger projects. To repeat, however, the pilot nature of this project demands significant inputs of management time and effort at all levels if it is to be successfully and effectively pursued.

A.1.2 Regional Level

Project Director: The Regional Director of the DREF also serves as the Project Director. As Regional Director he administers all Forestry Service activities in the Fifth Region. As Project Director he is responsible for the administration and supervision of the technical implementation of the Village Reforestation Project. In this leadership capacity he should serve the project as its primary advocate, spokesman, and motivator. He is in charge of promoting understanding, cooperation, and coordination of project activities within the project and between the project and other regional activities. The evaluation team feels the Regional Director could and should be more dynamic in fulfilling this essential leadership role.

The evaluation team realizes the Regional Director does not have sufficient time to supervise project implementation adequately at the field level. Because of this the Project Director must delegate responsibility to, and rely heavily upon, the Technical Director and Chiefs of Station to direct activities and provide leadership at the field level. The evaluation team wants to encourage continued efforts by the project to decentralize decision making and planning to the level of the Technical Director and Chiefs of Station.

Technical Director: The project's Technical Director position evolved out of a recommendation of the 1983 project evaluation. This is a full-time project position with the primary responsibility for field leadership and project implementation. Duties of the Technical Director include: determining and implementing project field objectives; developing work programs for station personnel in conjunction with the Chiefs of Stations; conceptualizing, programming and implementing the project's extension component; supervising the nurseries, experimentation and demonstration units, and extension of improved wood stoves; and planning and assisting in needed training programs for project personnel.

Technical assistance to the Village Reforestation Project is being provided totally by Malian professional foresters. The Technical Director position is the project's key technical assistance position and vital to effective project implementation. The position requires an individual with not only technical knowledge and experience but with considerable experience in management and supervising personnel. He must be the primary motivator at the field level, in charge of getting the work done at the three stations and extended to the local population. The Technical Director must take the project's objectives and translate them into actions on the ground. The job requires at least 75% of the Technical Director's time be spent in the field moving among the three involved stations, supervising the program, working with the field agents and villagers on appropriate technical interventions, training personnel, planning with the Chiefs of Station, and evaluating and analyzing project results.

Presently, the evaluation team feels this critical field aspect of the Technical Director's job is not being satisfactorily performed. The Technical Director is averaging only two days per month at each station which is not considered adequate to begin to fulfill his diverse work responsibilities.

The job of Technical Director is not easy; it requires considerable travel with a majority of time being spent in the field under difficult living conditions. The position requires a dedicated, motivated, professional forester who is willing to make the commitment to the demands of the job. Both the Direction of Water and Forests and USAID/Mali realize the critical nature of this position to the success of the project and the fact that it will take a special individual to fill it effectively.

This pilot project is at the juncture where over the next three years it can demonstrate reforestation activities that offer appropriate conservation measures which can be integrated into the activities and lives of Mali's rural agricultural population. However, to realize these objectives and have any hope of continuing them through further financing, the project has to show concrete results. The Forest Service must insist on the most qualified person available filling the position of Technical Director. The evaluation team feels that the incumbent Technical Director has tried to fulfill the requirements of his position. But, he has not proven to be the dynamic leader which this job requires.

A.1.3 Station Level

In the administrative circles of Djenne and Mopti, the evaluation team judges the leadership by the concerned Chiefs of Station to be good. These two Chiefs of Station have similar leadership traits. They both are trained foresters and have previous field experience at a technical and administrative level, they have a good understanding of, and belief in, project objectives; and they have rapport with their staffs. Staff morale at Djenne and Fatoma Stations is good and personnel express general satisfaction with the way their work is going.

At Bandiagara, the third circle involved with the project, the Chief of Station seems considerably less qualified and maintains generally poor relations with his staff. Morale is generally poor and the staff are quite open about the situation.

At the cantonnement level the Chiefs of Station have dual responsibilities - administration of all Forest Service activities within the cantonnement and implementation of the Village Reforestation Project. Significantly, the two Chiefs of Station judged to be doing a good job are spending the majority of their time on project activities. The Chief of Station judged to be doing a poor job said that he spends approximately two thirds of his time on non-project related activities.

The imperatives for good leadership in a pilot project are obviously felt strongly at the field level. The Village Reforestation Project cannot be implemented without good leadership at the cantonnement level.

Specific Recommendations

(1) That the Forest Service immediately conduct an in-depth review of all personnel assigned to key leadership positions in the VRP vis-à-vis the exceptional leadership requirements of a "pilot" project like the VRP and take steps to insure that the VRP leadership is up to the challenge presented by this project. Further, that the Forest Service constantly review VRP leadership to insure that it continues to meet the project's needs.

(2) That the Forest Service (and, as appropriate, USAID) take administrative steps to insure that all levels of VRP leadership spend sufficient time in the field to insure continuous familiarity with the status of project implementation and the constraints which must be overcome to insure project success. Recommended levels of field time include at least three days per cantonnement per quarter for national level project managers (accompanied by the Regional Director), an additional two days per month per cantonnement for the Regional Director and five days per cantonnement per month for the VRP Technical Director.

(3) That the Forest Service set up an administrative process to review at appropriate intervals authority delegated to project leadership at the various levels vis-à-vis their responsibilities (duties).

A.2 Planning

Project planning is currently being done primarily at the regional level with input from the DNEF, USAID and the Chiefs of Station. Annual project planning is presented in the project's Plan of Operations. This presents broad operation guidelines and budgets, and imposes certain activities and production quotas on station operations from the national level. Quarterly work plans are the more detailed working documents which are prepared every 3 months during supervision visits to the stations by DNEF, USAID and DREF personnel. The evaluation team feels project planning systems need to be modified.

A.2.1 Annual Plan of Operations

The evaluation team feels that more input by the field stations into the project's planning process is essential. Station personnel are in the best position to determine what nursery production needs are, what tree species are in demand, and how the project can best address the needs and interests of the local villagers. The stations should also know what their budget requirements are for their level of operations. Each station should prepare annual budgets to correspond with its proposed work plan. Annual station work plans and budgets should be submitted to the DREF for consideration during the preparation of the Plan of Operations. These should be reviewed, modified as need be to fit policy and financial constraints, and approved by DNEF, USAID, and DREF. The evaluation team feels that more attention paid to the preparation of the Annual Plan of Operations would focus management decisions on directing actions to meet project objectives.

The Annual Plan of Operations should be a more comprehensive and detailed planning tool, spelling out for each station by component specific operational activities and associated budgets. DNEF, DREF and USAID should work with the stations in developing uniform planning systems, where spread sheets are used to lay out tasks, inputs and outputs on a time line. Utilizing spread sheets would add definition to project planning efforts and facilitate reporting in that planned objectives versus actual accomplishments can be readily shown. Quarterly modifications of the plan would be done during the supervision visits by DNEF, USAID and DREF to each station.

A.2.2 Quarterly and Monthly Planning

More comprehensive and thorough annual planning would also facilitate preparation of quarterly and monthly work plans and budgets. Quarterly work plans should refine the detail of the Annual Plan of Operations and accent any changes in implementation schedules or budgets. Quarterly work plans should continue to be reviewed and approved during the supervisory site visits and should serve as the document against which project progress is measured. Stations should continue to prepare monthly and weekly work plans as needed for their internal use.

Specific Recommendation

(1) The team wants to reiterate and expand upon an important recommendation from the 1983 evaluation, that Chiefs of Station and below be given clearly defined authorization and responsibility for planning, budgeting and implementing field operations.

A.3 Management

A.3.1 Documentation

Complete and organized project documentation is important to project supervision and monitoring. Proper documentation can facilitate communications along the management chain and prompt decision making and delegation of authority. Equally important in the documentation process is having organized and complete files at the national, regional and station levels.

A.3.1.A Reports

An extensive reporting system is laid out in the Project Paper (page 46-49) which includes: annual, quarterly and monthly reports from the project direction; and monthly reports from each station broken out by component. The various reports have been faithfully prepared and submitted. But, to reiterate a criticism from the 1983 evaluation which is still pertinent, reports are mainly descriptive and make no effort to analyze or interpret the information obtained. Complete and precise monthly station reports are vital to project documentation planning and evaluation.

Monthly reports from each station should be direct, concise descriptions of actions which occurred in each component ("volet"). Actual work accomplishments in each volet should be compared to the work plan. Modifications to the work plan should be indicated and reasons discussed in a narrative section of the report. Improving the quality and organization of station monthly reports will assist project management determine whether project objectives are being attained and what redirection is needed.

A.3.1.B Site Visit Reports

Site visits are important for project management and supervision. Site visits to date have been irregular and poorly documented. To adequately monitor project implementation regularly scheduled site visits (suggested minimum field visit schedules are given in one of the recommendations for section A.1 above) and reports by project management are required.

Site visit reports should be prepared by the DNEF and USAID Project Officers, the Project Director, Accountant, and Technical Director, to document project status, decisions reached and actions required as a result of their field visits. It is also proposed that project extension agents complete a site visit information sheet during each visit they have with their various village cooperators. This will provide a record of village involvement, which among other advantages, will minimize program continuity problems when there are personnel changes.

A.3.1.C Filing System

Complete and organized files are essential to project documentation. At the regional level no central project files exist. Individual files are kept by the Project Director, Technical Director, and Accountant, with varying degrees of completeness and organization. Filing is also a problem at the station level. Documentation is incomplete and disorganized, often with piles of project documents stacked together on bureau shelves.

A.3.1.D Communications

Many relevant project documents which the Chiefs of Station consider to be valuable resource materials could not be located at the stations including: the Project Agreement and Amendment, Project Paper, Project Implementation Letters, and the 1983 evaluation report, among others. Also, monthly reports from the other project stations could not always be found and were not always current.

Station personnel also indicated that they receive very little, if any, information on what other reforestation projects in Mali and in the Sahel are doing. In addition, nothing in the way of technical reference materials is available at the stations.

A.3.2 Commodity Procurement and Management

Major commodity procurement as described in the Project Paper and Project Agreement has been completed. The project continues to buy necessary office supplies, nursery tools and equipment and vehicle and mobylette spare parts using project operating expenses.

It will be necessary to budget funds during the extension phase of the project to buy replacement vehicles and mobylettes. All project vehicles are operating. But they are all at least four years old and in various states of disrepair.

The project does not have an adequate commodity procurement and inventory control system and is carried in the "inadequate" category in this regard in the latest USAID/Mali 121(D) Certification Report dated December 1, 1986. Vehicle use logbooks are not kept on project trucks or motorcycles. Establishing these capabilities is important to determining recurrent project cost. This information will be a factor in setting up the analytical accounting system proposed in section C1.

A.3.3 Construction

Project construction as described in the Project Paper and Project Agreement has been completed. No new construction is envisioned for the extension phase of the project.

Specific Recommendations

(1) During the next supervision visit, the DNEF and USAID Project Officers should work with regional and station personnel to establish organized and complete reporting and filing systems. Follow-up on establishing these systems should be done during subsequent visits.

(2) Each Chief of Station should supply the DNEF and USAID a list of relevant documents which their station needs. Then, during the following quarter, DNEF and USAID would do the necessary photocopying and distribution.

(3) An effort should be made to provide the regional office and each station with a basic technical reference library using project funds.

(4) To reiterate a recommendation from the 1983 evaluation, DNEF should assure the dissemination of technical information between projects within DNEF with comparable objectives particularly by its Division de Conception, Projet et Programmes and its Subdivision de Reboisement et Aménagement.

(5) The VRP should move immediately with USAID TA to establish a commodity procurement and inventory control system which will be completely "adequate" for FAA Section 121(D) compliance purposes. Such a system should include vehicle (including motorcycle) use reports. A system of reports should be developed for commodity procurement and management and these should be submitted regularly (probably semi-annually) to DNEF and USAID.

(6) Annual commodity procurement plans need to be prepared and approved during the annual planning cycle.

B. Project Organization

The basic organizational structure of the project appears sound. However, some precision of the roles and responsibilities of project personnel within this organizational framework is necessary. As well, decentralization of certain project activities should be tried to increase efficiency.

B.1 Personnel Scopes of Work

The evaluation found that project personnel in general had trouble describing in detail the specific duties and responsibilities of their jobs. Some degree of confusion exists at all levels of the project concerning defined scopes of work. For example: No documentation could be found specifically describing project and non-project roles of the Project Director, Administrative Assistant, and Chiefs of Station. The 1983 evaluation developed a thorough scope of work for the project's Technical Director which was incorporated into PIL No. 10. It is implicit, but not specifically stated in these documents, that the Technical Director and Regional Accountant are to work strictly for the project. However, this is not the impression of the Project Director. The Project Paper was referred to by the Chiefs of Station as the Document which describes, in general terms, tasks to be performed under the nursery, extension and experimentation/demonstration activities. However, no updates or modification to these job descriptions exist. Not until 1985 did Peace Corps Management and the DNEF develop detailed roles and responsibilities for PC volunteers serving as project technicians to the nursery and extension volets.

B.2 Primes

The Project Paper laid out a structure and rates for the payment of primes to project personnel. The evaluation team feels that the system for payment of primes needs to be modified from being one of automatic monthly payment to project personnel, to one where payment is linked to work performance. Part of the original justification for the payment of primes was that the project, through a condition precedent, specified that Forest Service personnel could not engage in any form of repressive forestry activity within the project zone. Thus, Forest Service personnel seconded to the project were not permitted to supplement their income, like other DREF agents, by leveling fines against villagers for cutting and burning violations. The primes system was, in part, an attempt to compensate the agents for this loss of income.

The DNEF policy regarding collection and distribution of fines has changed. The field agent's percentage has been reduced and a proportion of the collected fine is now pooled to be shared at the station level. This means that all agents now are sharing in the fines whether they did any fining or not. With this change, project extension agents are now getting a proportion of fining revenues as well as their primes. Project staff are now looked upon as receiving double compensation.

This was rumored to be causing personnel problems, but was never addressed directly to the evaluation team. The evaluation team, however, feels primes are still justified since the project is imposing much heavier work loads and responsibilities on its agents compared to their colleagues not working for the project. These primes are, in fact, incentive allowances with which the project hopes to attract and maintain qualified personnel. But as an incentive they need to be earned, and not taken for granted.

B.3 Centralized versus Decentralized Operations.

The evaluation team felt that the project operating within the institutional structure of the DREF as opposed to being a separate activity, was a positive long-term approach. However, some decentralization of project activities is appropriate as well as further delegation of authority to the cantonnement level.

Major project components where decentralization seems indicated are the extension system and the nurseries. These proposed decentralizations are discussed in detail in the "Technical Considerations" section of this evaluation.

Specific Recommendations

(1) Scopes of Work for each project position from the Project Director thorough station personnel should be developed and agreed to by all parties concerned. This will better define in writing the role of each position with specific duties and responsibilities. Also, this will clarify delegation of authority at each level

(2) Future payment of primes under the Project should be based on work performance. The procedure for paying primes on this basis should be worked out among DREF, DNEF and USAID and formalized by the issuance of a PIL.

C. Financial Management

Since the last evaluation, financial management has generally improved with the addition of a project accountant and shifting accounting responsibilities from the DNEF to the regional level. The VRP has maintained FAA Section 121 (D) "approved" status for its accounting practices. However, there is still room for improvement in financial management at both the regional and station levels.

C.1 Analytical Accounting System

The establishment of a system which would yield data for evaluating implementation performance of village level reforestation activities was a major output described in the Project Paper. An important recommendation of the 1983 evaluation reiterated the necessity to establish without delay a simple yet adequate system of collecting and reporting financial information. Such a system requires detailed cost accounting at the field level to enable economic analysis as well as a means to measure the technical efficiency of various project components by function and objective. Such a system should be established immediately. A description of the various components of the analytical accounting system is included in the 1983 evaluation report.

C.2 Financial Management Procedures

USAID accounting procedures for disbursement of project funds were established in PIL No. 2, dated 1/23/81 and modified in PIL No. 7, dated 2/28/83. As a result of recommendations from the 1983 evaluation project accounting was concentrated at the regional level under the guidance of a qualified accountant in January 1984. Since that time project financial management has improved. The evaluation team feels however that further procedural modifications are necessary to improve timely submission of monthly financial reports and availability of operating funds.

Current requirements call for monthly financial reports, including bank reconciliation statements, to be submitted to USAID not later than 15 calendar days following the end of the month. Although the project is getting better, these reports are always late.

Project financial procedures also call for requests for advancement of funds to be submitted quarterly to the USAID Controller's Office not less than six weeks before the end of the quarter. These are often late, resulting in funding delays as well as outstanding advances of funds to the project beyond the 90 days limit stipulated by the U.S. Treasury Department. To conform with regulations, the USAID Controller has recommended some modification to the procedures for requesting advances.

The USAID Controller recommends when the financial report is submitted for the first 30 days of the 90 day advance, that it be accompanied by a request for advancement of funds for another 30 days. In this way the project, on a monthly basis, is clearing the first 30 days of its advance while requesting an advance for another 30 days, thus keeping a revolving 90 days advance. If reporting deadlines are met, there will be a 6 week cushion of operating funds, in which time it should be possible to process the voucher, order, and receive the check. Timely submission of financial reports and requests for advancement of funds are imperative for the system to operate efficiently. This proposed modification to the current system puts little additional administrative burden on the project since a request for advancement of funds is a simple one page form. However, to work properly, the modified system will require more forward operations planning by the project, and the DNEF and USAID project officers.

Specific Recommendations

(1) Modify financial management procedures to begin monthly, instead of quarterly, requests for advancement of funds.

(2) USAID should provide technical assistance to the project to establish an analytical accounting system and train regional and cantonnement level personnel in its use and application.

(3) The project's regional accountant will have to improve his record of monthly site visits to each station to adequately supervise and monitor the implementation of this accounting system.

D. Peace Corps

From the perspective of Project Direction at the DREF and the Chiefs of Station, participation by Peace Corps Volunteers in the project has, overall, been positive and constructive. (Peace Corps did not commit itself during the evaluation to the need or desirability of assigning further Peace Corps Volunteers to the project.)

Because two PCVs were on leave at the time, only two of the four volunteers currently assigned to the project were working and interviewed by the evaluation team. Both were nursery technicians. They expressed the belief that their counterparts were trained and qualified to run the nurseries without their assistance, but they felt they had served useful roles in initiating certain efforts and motivating work performance. Both recommended, with certain qualifications, that Peace Corps continue its involvement in the Project. Both also stated that they felt a less defined role for participating volunteers with fewer specific duties and responsibilities was desirable.

This response reflected their desire to work more closely with villagers, removed somewhat from the structure and regimentation of working under the DREF and Chiefs of Station.

Contrary to the Volunteers' desire for less structure and definition of their role within the project, the evaluation team feels that further definition of the specific duties and responsibilities of Volunteers is required. The project is working through the institutional structure of the DREF at effecting village level development. As long as Volunteers are working on the project they should continue to work within this structure.

The role of Peace Corps Volunteers as nursery technicians is considered to be appropriate by project personnel and by the evaluation team. In the future, utilizing Peace Corps Volunteers as roving technicians to assist in the establishment of mini nurseries at the village level could respond to project needs, as well as meet Volunteers' desires to be more involved at the village level.

For Peace Corps Volunteers serving as extension agents, effective interactions at the village level are more difficult because of the communications and cultural barriers which exist between Volunteers and villagers. It is the opinion of the evaluation team that if Peace Corps Volunteers work in the project's extension program in the future, they should continue working together as a team with a Malian counterpart.

There was a gap of more than one year, from June 1985 until July 1986 when there was no Associate Peace Corps Director (APCD) responsible for forestry Volunteers. Direction and supervision of the Peace Corps Volunteers assigned to the project should now improve with the new forestry APCD being in place. Both of the PCVs interviewed expressed a need for increased site visits from the Bamako based Peace Corps staff.

Specific Recommendation

(1) The APCD for forestry should visit Volunteers assigned to the project at least once every quarter. It would be useful if she coordinated her site visits with the supervisory visit to the project by DNEF and USAID personnel.

IV. VRP/Villager Relationships

(Note: The various parts of the following section have been drafted by different team members. Points made in the basic drafts have been buttressed with observations from the sociological evaluation. The full text of the sociological evaluation is found in Annex B.)

A. Overview

The evaluation found that the VRP is slowly but surely achieving its underlying "sub-purpose" of changing villagers' perceptions, attitudes and awareness of their physical environment, the need to protect it, their basic responsibility in the environmental protection effort and the role of the Forest Service in the effort. Villagers in the VRP area, and even to a degree in surrounding areas, definitely have become more conscious of the need to conserve and protect their environment. They have come to think of this to a large extent in terms of the reforestation activities being carried out by the VRP. The villagers also are changing their ideas of the Forest Service, seeing it more in terms of cooperation than of conflict. Lines of communication between villagers and the Forest Service are noticeably more open in the VRP area than outside it, indicating a higher degree of trust among those villagers in the project area. Villagers in the VRP area also demonstrated a good understanding of the basic provisions of Forestry Code as a direct result of their continuous discussions with the forestry agents. As discussed again further on, the team feels in general that much more could have been achieved if the training program had been pursued adequately, but the point here is that the general approach of VRP vis-a-vis the villagers has been shown to be valid.

B. Extension and Training

Extension activities constitute one of the most important tasks in rural development. As a consequence, extension activities require qualified personnel capable of understanding the point of view of the population which they are serving so as to be able to understand fully how this population lives and works and its consequent concerns and to be able to propose effective changes to improve their living conditions from both a social and economic viewpoint. Extension agents must always bear in mind that they work for the villagers and that their objectives often are incompatible with the villagers' primary concerns and that, furthermore, there are many other actors in addition to the extension agents involved and these other actors often have opposing interests. In order to carry out its extension component, the VRP has established at every cantonnement an extension team composed of three persons. This team is responsible for spreading an understanding of VRP objectives in the villages, for implementing project activities with village cooperation and for follow-up of project activities.

The terms of reference required the evaluation team to look at the extension effort fully. Beginning with organization, the extension team is composed of a Forest Service agent, a community development agent and a Peace Corps Volunteer. This composition is generally good to the extent that the different members complement one another. The forester is fairly competent in forestry techniques, the community development agent is supposed to understand how to engage the villagers' interest but the competencies of the Peace Corps Volunteers are not clear and precise. Therefore, the PCVs' membership in the team should be reconsidered, taking account also of linguistic difficulties.

Otherwise, the VRP started from a set of assumptions in formulating such an extension team. But it has not been established that the foresters have mastered completely all the techniques which the VRP is attempting to implement in the villages. The extension team members, notably the foresters, stated on a number of occasions during the course of the evaluation that they do not have working knowledge of either techniques for wind-breaks and living fences, or of soil and surface water conservation techniques and that they would like to learn all these techniques in order to be able to extend them to the villagers. As to the community development agent, he serves simply as an intermediary between the forester, who is the principal extension agent, and the villagers. He is perhaps afraid to attempt to teach extension themes which he has not mastered because he has not perfected his extension competency. Thus it has been determined generally that project activities were not matched to local environmental and social conditions, particularly at the beginning of the project. There is thus reason to review this extension team composition under which the team members have not been able to develop the idea of complementarity because from the start they were not provided with all the necessary competencies, either in extension or in forestry techniques.

The centralized extension team structure which has always been the VRP approach from its start until 1986 has not permitted either an appropriate diversification of project activities or a rapid extension of project activities to many localities. None of the extension team members feel themselves responsible for either any failure or success and generally there

is no individual initiative taken. The extension team is content simply to follow the instructions which come down the chain of command to execute their work in conformance with the written instructions. On the other hand, performing all aspects of extension together, from increasing villagers' awareness through actual execution of activities, overtaxes the extension team. Consequently, follow-up is not correctly performed, resulting in numerous difficulties.

A "decentralized" extension team structure which would make each agent responsible individually would permit savings of both time and money because the current team of three would be broken up to develop the same extension theme in different villages. If the team were broken up the members would use the same means and the same amount of time to cover three villages instead of one. In addition, decentralization would allow each agent to remain constantly in contact with a certain number of villages with which he could develop good social relations allowing him to be respected and listened to. These permanent contacts also would permit him to become familiar with the fundamental concerns of the villagers and to analyze all of their problems objectively. Thus, his mission would involve everyone in the village and this cooperation would spawn a concept of development shared by the agent and the villagers. The decentralization of the extension team is one of the primary concerns of those responsible for VRP management. All levels have expressed the feeling that each extension agent would like to be responsible individually for his work and all the involved Forest Service employees are inspired with this desire to correct mistakes caused by the centralization of the teams.

The assumption that the proposed decentralization could work successfully is based on the belief that the knowledge that all extension agents should have, both in a technical sense and in a community relations sense, is not complicated (with, of course, the exception of local languages) and can be learned fairly easily by the agents. In order for the agents to obtain sufficient knowledge to further VRP goals effectively, however, the training program must be strengthened significantly, with regard to frequency, content and practicality. The evaluation team established that to date training activities have been quite sporadic, limited in their subject matter and largely theoretical. As an example, among all of the possibly useful techniques which could be employed in the VRP area, virtually the only subjects the extension agents have been trained in to date are producing and planting seedlings and the use of the "GRAAP" technique (which employees special "stick on" boards) to explain the need for environmental protection to farmers. Indeed, given the supposedly pilot project nature of the VRP, the overall lack and poor quality of the training effort to date is one of the more surprising and disappointing findings of the evaluation. Even if decentralization was not pursued during a possible extension phase of the project, training would have to improve significantly in order for the project to begin to fulfil its potential. Pursuing a policy of decentralization of extension teams would make an effective training program for extension agents even more necessary. Furthermore, as noted in the sociological evaluation, given the nature and purpose of the VRP, any training program developed under the project should include training sessions for villagers as well as agents (that is to say formal training sessions for villagers as opposed to the "informal training" which the agents are constantly undertaking in their work).

A frequent suggestion with regard to the extension effort is that the number of agents be augmented in one way or another. In two of the three cantonnements in which the VRP is active (Mopti and Bandiagara), local languages and dialects have posed significant problems to the extension teams. One suggestion for overcoming this problem is to recruit "village extension agents." This system is used in the CARE forestry project in Koro and seems to be working well there. Another idea is to make arrangements for Forest Service agents not in the VRP ("regular agents") to engage in spreading the extension themes while on their normal rounds. This is being tried to a limited extent in Djenna cercle at the present time. These agents get no recompense for this activity except for an allowance for fuel for their mobylettes. It is still too early to make a full assessment of this experiment, but it appears to be working well. Both of these possibilities could be explored during a further phase of the project.

The VRP has not been able to develop effective collaboration with other extension organizations as is evidenced by the fact that during the course of the meeting with all of the chiefs of extension services in the region called together under the aegis of the Regional Development Committee, the evaluation team was surprised to hear some of these leaders state that they are not familiar with the VRP. It is the VRP Fatoma cercle nursery which provides the seedlings to the Fishing Development Operation for its reforestation requirements. Nonetheless, this cooperation perhaps can be undertaken successfully with certain entities which already have extension agents and financial resources to be used to restore the environment. VRP management at Mopti was informed of actions already taken along these lines during the course of the discussion of the evaluation team with the Development Committee and should take advantage of this opportunity. It must be noted that stress should be put on this cooperation at the Bandiagara cantonnement where the Agricultural extension service has a project for conservation of soil and surface water. There is also the possibility of investigating the participation of the political and administrative officers who until now have not participated at all, either in education or in implementation activities.

Specific Recommendations

- (1) That the training program be strengthened significantly, with close concentration on content and stress on ensuring sufficient practical — as opposed to theoretical — training experience. Particular attention should be paid to establishing an appropriate program (with a definite plan and schedule) for extension agents to give them training in both the technical and community relations sides of their jobs. A separate training program should be developed for villagers in the VRP area.
- (2) That extension work be "decentralized" during any project extension with agents essentially assigned to work by themselves in a certain number of villages (this does not preclude various joint activities with other agents when appropriate).
- (3) That limited experiments be made with taking "village extension agents" into the VRP, with an appropriate system to measure their effectiveness in the VRP program.

(4) That further discussions be held between the Forest Service and AID on the desirability of drawing more of the "regular" forestry agents into VRP activities.

(5) That detailed discussions be held with the Peace Corps to determine whether they are willing to make further assignments to the VRP and, if they are, that a close review be made of the desirability of having PCVs in the role of extension agents.

(6) That VRP management (down through Chiefs of Cantonnement) actively seek out and follow-up on possible ways of achieving effective collaboration with other extension services with a current or potential real interest in reforestation conservation.

C. Fining Policy

A major policy question looked at by the evaluation team is whether or not the prohibition on fining for forestry agents working under the VRP should be maintained during any extension. A condition precedent in the present project agreement effectively has banned fining for infractions of the Forestry Code in areas in which the VRP is active. (It also banned the wearing of uniforms by forestry agents.) The purpose of this ban was to reinforce the conversion of the forestry agent in the VRP area from "police officer" to "forestry extension agent," thus changing him from the farmers' "enemy" to an "advisor and helper."

For a brief reiteration, the question of fining for infractions of the Forestry Code in Mali is extremely controversial. Begun under the French before independence, fining has been carried on by the para-military Forest Service (in Mali and other Sahelian countries) ever since, even though there have been major changes in both the Forestry Code and the rules by which fines are levied and even though a recent decision has been made officially that concentration within the Forest Service should be on "extension" as opposed to "repression" (fining). Those for continuation of the practice see it as the only really effective line of defense against total destruction of the environment and point out that there is no place in the world -- certainly not in the U.S. -- where such destruction would go unpunished and that it is nonsense to have a code protecting the environment without sanctions for breaking the code. On the other side of the argument it is claimed that fining sets up an adversarial relationship between the Forest Service and the farmers which renders impossible constructive action to restore and protect the environment cooperatively. It is claimed that there are so few agents in relation to the territory to be covered that the fining does not furnish an effective defense against destructive practices. Furthermore, at least on occasion, fining has been shown to be extremely arbitrary and it is claimed that both the Forest Service and the agents have a vested interest in the system because it yields income to both.

To elaborate on the latter point, agents who work on extension and "productive" activities often do not have the same opportunity to do "police" work and thus perceive that they are at a financial disadvantage. (This is true to an extent for VRP agents.) Recently the Forest Service has revised the schedule of commissions from fining. The main thrust of this revision has been to reduce the commission to the individual agent directly involved and to share commissions across a broader spectrum of forestry personnel. The Forestry Fund still receives 75% of fining revenue while the individual agent's percentage has dropped from 15 to 10 percent. Five percent of fines are now shared among all agents at the local level. In addition, Division Chiefs at the national level now also get a percentage.

With regard to the results to date of the VRP "experiment" of banning fining in the areas in which it is working, the evaluation team found it extremely difficult to make a definitive judgment on the subject. The evidence tends to be quite anecdotal and difficult to verify. On the one hand, as noted in the sociological evaluation, villagers report that they see the forest agents working in the VRP in an entirely new, much more favorable light, tending to look upon them now as "planters" more than traditional "forestry agents." The agents themselves report that they have established good relations with the villagers (which is not the usual state of these relations). (It is probably particularly true that in a situation like this interviewees tell interviewers -- i.e., the evaluation team members -- what they think the interviewers want to hear.) On the other hand, some Forest Service officials report that the villagers in the VRP areas have been taking the situation of no fining as a licence to do what they will with the forestry resources in their area. (The evidence for this contention, also seems to be largely of hearsay nature.) The belief that this latter situation is

occurring has led to strong recommendations that the ban on fining be lifted in any project extension phase. If this were done, then VRP agents would simultaneously practice fining and extension (not necessarily literally -- they might practice the two in some system of "rotation"). It is claimed that this works well enough "in all the other projects than VRP" and that it would remove the abnormal situation (alluded to above) of having areas (under the VRP) with absolutely no sanctions for environmental destruction.

Given the incomplete nature of the evidence which we were able to gather during the evaluation, the evaluation team hesitates to make the recommendation proposed by some that the ban on fining be lifted during any project extension because of the fear that any gains in terms of improvement of agent/farmer relationships would be eliminated by such a move. Instead, we believe that a better course would be to leave the issue to be reconsidered by both the Forest Service and AID. We believe that procrastination is the correct course in this case for two reasons. First, in lowering the schedule of fining commissions to the agent (see above), the recent change in the fining system theoretically should have lowered the financial incentives to the individual agent and, thus, possibly decreased the abuse of the fining system. We believe that the effect of this change should be analyzed before any decision on how to proceed in the VRP area is made. Then, the Swiss recently have begun a nationwide study of "repression" (specifically to include the question of fining) in the forestry sector in Mali. The results of this study are due out during the summer of 1987 and they should make an important contribution to the debate.

Specific Recommendation

- (1) That the Forest Service and USAID set a definite date for reconsideration of the VRP ban on fining (and wearing uniforms) and that a definite plan be elaborated to gather relevant information on the subject prior to convening the meeting to reconsider the issue.

V. TECHNICAL CONSIDERATIONS

A. Nurseries

Obviously reforestation activities are impossible without an adequate supply of appropriate quantities and qualities of seedlings. Hence nursery production is a key element in project success. For this reason and in order to focus responsibility, nurseries have been viewed as a distinct project component. Unfortunately it seems that this has tended to isolate nurseries from closer integration with other project components such as extension, the interventions themselves and experimentation/demonstration. It is up to the station chiefs and technical director to make sure this integration happens, i.e., that nurseries are seen as an integral part of the reforestation process and not as an end in themselves.

Since the mini-nursery component of the project is starting to take off and the Forest Service appears to be behind the decentralization of production (and even the de-evolution of Forest Service nurseries), the project might profitably start thinking about the complementary roles that station and mini-nurseries might play. For some forestry activities the needs of a large-scale reforestation effort are sometimes met through large, temporary nurseries near the planting site. Production in permanent nurseries is oriented to high value, difficult-to-produce stock. This is true partly because of the costs of mining the soil at the nursery site that permanent production implies. While this may not be totally appropriate for the project environment, it may help the project better define the roles of various types of nurseries. For example if a firm village commitment to a specific medium scale activity can be identified, it may be worth attempting to set-up a temporary nursery in the village or close to the site. This would further engage the village and give an idea of the level of effort a village could sustain. Mini-nurseries do not have to be conceived of as central nurseries but on a smaller scale.

The movement towards better integration of the nurseries into the reforestation system should be encouraged. Seedling production should be flexible and evolve as the project progresses.

A.1 Station Nurseries

In general project nurseries have technically improved since the last evaluation and nursery techniques are increasingly mastered by project personnel (including the laborers). Equally important is continued concern for further improving production techniques. Problems remain in planning, record keeping, organization and management and in some relatively minor nursery techniques.

A.1.1 Progress Since the 1983 Evaluation

Diversification:

The 1983 evaluation recommended the diversification of production since, until that time, there was an overreliance on the production of neem. Nursery production has indeed been diversified at all the project nurseries and there is greater production of local indigenous species, fruit trees and species appropriate to a broader range of interventions. However the idea behind the 1983 recommendation does not seem to have been completely understood by project personnel and some diversity seems to have been done for diversity's sake alone. Production remains dominated by exotics (80%) which, in and of itself, may not be a problem since many of these exotics (neem, parkinsonia, prosopis, etc.) are appropriate and have proven themselves in the zone for certain interventions.

Production in Pots:

In a semi-arid environment with a poorly developed transportation network, production in pots is usually technically superior to bareroot techniques to assure good establishment rates. The 1983 evaluation

recommended increased production in pots. To a large extent this has also been accomplished. The 1983 evaluation showed that production in pots was only about 10-20% of total production in the best case. In 1986, in general, production in pots varied between 25% at Fatoma and 37% at Bandiagara. Plans for 1987 call for between 55% (Djenne) and 68% (Bandiagara) of production to be in pots. This evolution is satisfactory. Further increases in percent production in pots should be the result of an analysis of the needs of the project after the coming campaign. Production of seedlings outside of pots should be continued essentially only if they are to be used as shadetrees (in people's compounds) or will be planted in individual orchards where they can be watered easily.

Number of Laborers:

Over the life of project the total production of seedlings has in general increased although it has fluctuated widely for some reason. Hence the 1983 recommendation to limit nursery workers to five (from the initial ten) has not proven to be a constraint to nursery production. If present trends continue there will be no need to change the number of workers.

Improved nursery production:

The present evaluation took place at the start of the production campaign and hence it was difficult to assess the quality of seedlings. However there have been some notable nursery improvements including the construction and use of compost bins, the establishment of a seed stock (although limited in scope and poorly organised), the application of grafting techniques and a general improvement in soil and seedbed preparation.

There are other improvements in nursery production which should prove useful. Among others, the following should be noted:

- Thinning out the seedlings in the beds and in the pots. In all of the nurseries visited, the distance between plants in the beds was never greater than 5 cm. This will not produce vigorous plants to be used in reforestation.
- The mixture of soil in the pots should be improved by making enough tests in each cantonnement of local soil types (in view of the great differences in soils between the cantonnements).
- Avoid seeding directly in the pots without first having watered them. This will avoid competition between the young seedlings and weeds which was the case in the Fatoma nursery.
- Do a good job of site selection for the nurseries in the future. Above all avoid sites subject to flooding, like that of the nursery at Djenne.
- Stress the improvement of the beds in nurseries with heavy soils by adding sand and fertilizer.

-- Establish a well organized system for collecting seeds and improve the storage conditions for seeds, which are often attacked by mice.

-- For the production of fruit trees, particularly mango and citrus trees, plan on a two-year basis in order to be able to satisfy the demand and to provide improved plants.

A.1.2 Reporting and Documentation

The 1983 evaluation proposed a system of reporting for the nurseries including annual, monthly and weekly programs; a daily journal and a record file. Although the situation varies from station to station, this system is not always respected. The next section deals in detail with this subject.

A.1.3 Present Observations:

In general the problems encountered at the nursery level can be grouped into five categories.

1. Nursery techniques - Some improvement is needed in nursery techniques. At least one of the nursery chiefs is inexperienced and could use further training. This has not been a major constraint to date since the laborers are experienced and there is close supervision by the station chief. Examples of poor technique include the failure of eucalyptus production, the barerooted stock have often not been appropriately thinned to avoid damage and waste during lifting, grafting techniques have not yet been fully mastered, the soil mixture for pots does not always appear appropriate and techniques for eliminating weeds before planting are not always used. These types of problems seem to be the result of either the lack of technical knowledge or the lack of application of good techniques. This evaluation cannot replace a good manual on nursery production and it would be senseless to impose recommendations from outside. The project must concentrate on developing techniques that work and in overcoming problems.

2. Management and Organisation - In several instances personnel and material management need improvement. In some cases nursery workers have been called upon to carry-out tasks unrelated to nursery production and the objectives of the project. Material and equipment needed for the nursery are not always stored at the nursery site in spite of the existence of adequate facilities. Pesticides are poorly stored and instructions on their use not always available. Seed stocks are poorly marked and stored. Fencing has been allowed to deteriorate. While this is not a comprehensive list of problems, it is clear that personnel policies and the physical state of the nursery infrastructure and material should be periodically reviewed.

Supervision of the nursery work has varied greatly from station to station but at one station (Bandiagara) it seems to be particularly poor. Visits to this nursery, located on the outskirts of town, have been inexcusably infrequent.

3. Documentation and Record Keeping - As the 1983 evaluation points out, good record keeping at the nursery level is essential. The new policy on the sale of seedlings makes adequate documentation all the more important. Although some records are kept at the nursery level, the system of documentation is poorly organized, incomplete and susceptible to loss or damage. Information available on production, for example, is often in a form that makes tabulation difficult. A single notebook contains information on diverse activities. In some cases data is not collected or available on distribution of the daily work activities of nursery personnel. Documentation is not regularly reviewed by the station chief. Some data exists on loose sheets of paper or in temporary, inadequate notebooks. Previous year's data is sometimes unavailable at the nursery. In some cases the recommendations on documentation from the 1983 evaluation are not respected.

4. Target Setting - Total nursery production figures of 50,000 plants per nursery per year are somewhat arbitrarily handed down from the Regional Direction of the Forest Service. It is claimed that these targets reflect national directives within the framework of the Anti-Desertification Program. There appears, however, to be some leeway in interpreting these targets at the regional level. Regardless of which level sets these targets they are not always appropriate for project and local needs and they have not resulted from an analysis of field realities. Even though these targets are not overly ambitious they provide an incentive to achieve a production level with little regard for project needs. The targets not only result in inadequate species selection but in poor nursery technique, since it encourages unthinned bare-root stock. These targets result, in some cases, in the production of seedlings that are easiest to produce in a nursery. Neem particularly meets these requirements because seeds are easily available throughout the year, germination rates are good and they can be produced as bareroot stock.

Efforts to meet these targets are also encouraged by the lack of forceful, concrete counter-proposals from the "bottom-up" due to inadequate analysis of previous years production, distribution and remaining stock; inadequate collaboration with the extension teams and insufficient attempts by the extension teams to solicit and jointly define village needs.

5. Planning - Nursery planning has improved somewhat from the 1983 evaluation. In all cases yearly programs have been developed and in some cases monthly and weekly programs were also in evidence. Problems remain, however, as evidenced by continuing bottlenecks in the supply of seeds, manure and other inputs. In addition for certain species and techniques, such as grafted mangoes, one year forward planning is clearly insufficient. Planning is often done in a near vacuum and in "snap shot" fashion. Little of past experience or of estimates of future activities is incorporated into the planning process.

To improve such forward planning, it will be necessary to start by using information on earlier distribution of seedlings and use this for a base to make an estimate of the percentage which the demand for each species will represent. If data on earlier distributions are not available, then the extension agents should make a census during their extension visits of what

the villagers actually are planting by themselves. For example, at Tille in the Bandiagara Cercle there is a farmer who tends a garden in which he raises baobab right next to a village woodlot in which exotic (foreign) species are raised; in addition, the whole village plants the seeds of the ronier palm (another local species) in the fields. Examples like these are found in all the cantonnements but unfortunately make no impression on the extension agents.

A.2. Mini-Nurseries

Mini-nurseries, briefly mentioned in the PP and more forcefully recommended in the 1983 evaluation, have made good progress in the past few years. In 1984 there were no mini-nurseries within the project. As of 1986, there were approximately 25 predominantly collective or school nurseries with a production of probably over 12,000 plants (10% of total project production). (These figures are rough due to the lack of data and the apparent contradiction between several sources of data.)

At the time of the evaluation the school and collective nurseries were, by and large, bare and hence their technical adequacy could not be judged and they were not visited. However two individual nurseries were visited. Both of these were closely related to successful forestry activities. In the first case an individual produced neem, leucana and baobab seedlings in his garden plot on the perimeter of the village. After initially pricing his seedlings above the Forest Service rates and finding himself unable to move his stock, he followed project advice and lowered his prices and totally cleared his production. The project personnel also assisted by orienting some potential clients to him. The availability of seedlings at the village level has encouraged the villagers to plant. The perimeter of the village is almost completely covered by well protected, small scale family tree plantings (10-20 trees), integrated with gardens.

In the second case, an individual who has worked with the project since 82-83 has, for several years, produced eucalyptus seedlings. Although the techniques used are rudimentary they are effective; when the project's eucalyptus production failed, he provided seedlings, free of charge, to the project. He also has a successful agricultural plot intercropped with eucalyptus. (He is starting to harvest 5 metre building poles at 3-4 years which sell for 3,000 FCFA in Mopti. The stump sprouts are growing faster than the initial planting and they may be ready to harvest in 2-3 years.) From his mini-nursery he is supplying his neighbors with seedlings. Although he is not charging for the seedlings he is receiving very real benefits. Initially his use of the plot met some resistance from the village chief. The provision of seedlings is solidifying his relations to his neighbors and to the land. The planting of eucalyptus is spreading in this particular micro-ecological zone and seems to be self-perpetuating on a local level.

It is not known for what types of planting the production from school or collective nurseries has gone. There is a danger however that, because these nurseries are more or less under a government administration, the plantings will not be well integrated into the social and physical environment of the rural areas. This issue deserves some monitoring.

It appears that at least the individual nurseries provide potential for small-scale, viable, private enterprises. They certainly seem capable of providing important, mainly off-season, supplemental income to rural people without detracting from major income producing activities. As more successful experience is gained in tree planting local demand should increase. At this point, however, it seems unlikely that individuals could support themselves and their families from tree seedling sales alone. The poor transportation network and the limited means available to villagers restrict the "demand area" or potential market. In addition the limited capacity of villagers to plant large numbers of trees in any given year limits demand.

At this point, it appears that the policy on the sale of seedlings from Forest Service nurseries has provided an incentive to the mini-nursery activity. In order to avoid paying for seedlings farmers seem to be turning to local production. In addition, potential seedling producers are no longer being undersold by totally subsidized production from the Forest Service. The impact on local production alone seems to justify the continuing of a sales policy in some form. It should be noted, however, that there is some belief that the policy of charging for seedlings places a "drag" on reforestation activities in general because many of the rural dwellers are not able to afford even a very modest charge. (In the VRP project area, Forest Service agents have tended to provide seedlings in exchange for local contributions, mostly labor, so in these areas seedlings have been "free" to farmers in a financial sense. This is one policy area which deserves study and reflection in the very near term.)

The myriad benefits of mini-nurseries, such as moving production closer to the planting site (decreasing the negative effects of transport) and making production more appropriate to the clients' needs, do not have to be spelled out here. The project should continue to encourage the establishment of mini-nurseries especially those with close links to high potential rural interventions since, at least superficially there seems to be a mutual positive interaction. The project should continue to provide technical advice through the extension teams and nursery chief and supply limited amounts of inputs such as seed and pots. If the mini-nurseries expand faster than the private sector input supply system can become functional, the project should consider being a temporary supplier of certain inputs on a cash basis at some time in the future. Special emphasis should be put on encouraging mini-nurseries wherever the project has financed wells or well improvements that make water available all year around, integrating nurseries into local traditional gardening practices and encouraging women's participation because they are often involved in gardening activities.

The present level of VRP support to mini-nurseries seems just about right. It should be borne in mind that higher levels of support have the potential of hurting efforts to achieve sought-after self-sufficiency because the day that the farmers no longer have the means to obtain these materials, their interest in reforestation will cease. For instance, in the village of Souala at Djenne, to water the seedlings planted in the village woodlot a villager has demanded a dipper and some water cans even though his own vegetable garden was only 100 metres from the woodlot. Thus, to a certain extent VRP support can undermine project goals because the villagers will always think that project supported nurseries belong to the project and not to them.

The success and continuation of mini-nurseries may be a function of the success of the tree plantings done with the stock (mini-nurseries may fail when the out-planting fails). On the other hand the replication of successful activities may be constrained by the lack of locally available stock. In the two mini-nurseries visited, the first seems to have resulted in successful forestry activities while at the second, successful forestry activities have provided incentive for the creation of a mini-nursery.

The project should be aware of the fact that some mini-nurseries may be temporary in nature and respond to a single need that is fairly quickly satisfied. Thus they should not try to force these nurseries into becoming permanent, small-scale replicas of central nurseries.

Specific Recommendations

Central Nurseries

(1) Annual in-service technical training programs should be developed for all nursery personnel in general and those with limited experience in particular.

(2) Closer supervision should be provided by Station Chiefs and the Project Technical Director to assure the application of good nursery techniques. (See Management section and No. 3 below.)

(3) Reporting and documentation should be improved by requiring the nursery chiefs to maintain 3 permanent hardbound notebooks on (a) production, (b) distribution and sales and (c) a daily work log. The daily work log should also note visits by project supervisors and other personnel. The log should be initialed by the visitor on the appropriate day and include comments and observations on nursery production. The Station Chief should review and sign all notebooks attesting to their adequacy at least once a month.

(4) Nursery planning should cover a two-year period and should deal directly with possible constraints in the supply of essential inputs. Planning must take into consideration at a minimum (a) an analysis of the previous three years' experience with special emphasis on increasing production of those species totally distributed during earlier years and decreasing production of those species consistently left as unmoved stock, (b) detailed discussions with the extension teams and technical agents on villagers' expressed desires for the coming campaign, (c) detailed discussions with agents involved in experimentation and extension on the species that have been the most successful (i.e. have the highest survival rates), (d) estimations of the trends in rural interventions and the species most appropriate for these interventions, (e) the production of mini or decentralized nurseries, (f) an analysis of the needs of various political organizations and administrations and their commitment to in fact use the seedlings (as evidenced by advances if possible), (g) the negotiation of national and/or regional targets and (h) estimates of the needs for the campaign following the current planning cycle.

(5) The project should be exempt from strict adherence to nationally or regionally imposed production targets when these targets clearly do not coincide with project needs. However, it is the responsibility of the national and regional supervisors to assure themselves that production is more or less matched to the means available to the project.

(6) Organization and management should be improved especially in terms of personnel and material. Nursery laborers paid with project funds should not be diverted to tasks unrelated to project goals.

Mini-Nurseries

(7) Individual or group mini-nurseries should be actively promoted by the project especially when (a) the project has helped develop a water source, (b) they can be integrated with garden plots, and (c) when links to high potential interventions exist.

(8) The project should continue to supply technical advice as well as certain inputs such as seeds or pots. In the short term this support should be free. In the medium term, if there is no development of alternative sources of supply, the mini-nurseries should pay for inputs. The project should not develop water sources solely for mini-nurseries but strive to have mini-nurseries integrated into situations where the water problem has been resolved.

B. Rural Forestry Interventions

The variety of interventions or forestry technologies has broadened considerably over the life of the project. The project is now armed with a greater diversity of tools and techniques with which to achieve the objectives of reforestation, agroforestry and environmental management. Project personnel should be constantly assessing which technique works best under which social and physical situation. Interventions which perform poorly should be de-emphasized while successful ones should be extended. In addition new opportunities for interventions should be developed. For instance, the village shelterbelts in the inundated areas may be an intervention worthy of extending in similar situations. Over the coming years progress should be made on the process of moving through a limited set of unproven interventions, to a broader array of potential and attempted interventions to finally a package of a limited set of interventions ready for broad dissemination and a methodology for identifying, developing, adapting and implementing interventions. There may be some plantings that cannot be easily included in any set of interventions but it is unlikely that these will be significant.

One of the tendencies of the project that should be resisted is to try a type of intervention simply because it is an available tool and targets may have been set to execute a certain number of each type of intervention. This leads to a lack of integration of interventions in the social and physical environment. For instance, windbreaks are tried in inappropriate situations simply because it is felt that windbreaks are, in some general sense, "good". Woodlots are executed to produce firewood in situations where the value of the product does not justify the investment and where it is unreasonable to expect good growth rates. Interventions are only "good" in so far as they fit a particular situation.

For many of the interventions being extended by the project, villagers or individuals are being counseled or required to water the trees during at least the first dry season in order to assure the establishment and survival of the trees. From an economic, social and technical point of view this need or dependency on watering is undesirable, untenable and unnecessary. Watering significantly increases the cost of each tree. To compensate, benefits have to be higher which is not always feasible. Watering requires a commitment and organization at a village or individual level which is often difficult to attain. It uses scarce resources for which there are competing demands which may be of higher priority. As water resources dwindle during the dry season and the needs of trees increase, watering becomes an onerous task. Minor breaks in the watering or insufficient water application can mean the death of trees. The technique may be self-defeating by increasing the tree's dependence on artificial water supplies. Superficial root systems may develop to the detriment of deeper rooting. The trees may become so dependent on watering that they can never do without it.

To a large extent this situation exists because of the lack of application of all the techniques available to the forester. The project should set as one of its highest priorities the execution of interventions that do not need to be watered. Some of the techniques are well known and already used by the project such as the increased use of pots and the improved selection of species. More emphasis needs to be placed on getting the maximum number of plants in the ground during the optimum planting window. This is difficult given the dispersion of the sites and the vagaries of the rainy season. However, good planning and mobilization would go a long way towards improving the situation. If breaks occur in the rainy season after planting it may be preferable to water to cover rainy season gaps than to be condemned to water during the dry season. In addition, more emphasis needs to be placed on soil work, site preparation and the use of water conservation and harvesting techniques. The evaluation team was struck by the improved performance of trees where plowing, intercropping, large holes and other techniques had been used.

Annual replanting or "beefing-up" of interventions, especially woodlots, is common in the project. Consistent need for replanting is a sign that something is wrong. While filling gaps is necessary for such interventions as windbreaks, it is less essential for others, such as woodlots. Much effort is being wasted on "beating a dead horse" by replanting at sites that are just not ever going to do well. More emphasis should be put on site work than on replacing individual trees without changing the conditions in which they might survive. Because of these diminishing returns the project should put a limit on replanting. Dead plants should be replaced the next growing season and the intervention should be considered to be on its own. If villagers or individuals wish to continue they can always do this on their own. Plantings from 1982 or 1983 are providing to much of a drain on project resources and should be considered completed, for better or worse. This should allow more effort in identifying and extending successful activities.

What follows is a qualitative assessment of the major interventions the project has promoted. Quantitative analysis is impossible at this stage due to the lack of a broad sample and time-series data.

B.1 Windbreaks

The evaluation team visited project windbreak interventions and also an example of those at the CARE/Koro project. One project activity, an individual who planted neem to protect a mango orchard, seems to have been particularly successful with good survival and growth rates and adequate coverage. The other interventions have been less successful. Although project activities in this realm have been relatively recent, there are a few observations to be made.

First, there appear to be problems in site selection and integration of windbreaks into the existing environment. Windbreaks are done primarily to protect productive land from the damaging effects of wind and wind erosion. Secondly, they provide other direct benefits such as wood and fodder. In both the CARE and VRP projects windbreaks have been tried in fields that are already covered with a certain density of *Acacia albida* and other species. This kind of coverage already provides some protection from wind. It may be more efficient to optimize this density than to create windbreaks. Windbreaks are often used in fairly open terrain and, at least in the U.S., are sometimes needed since much vegetation has been removed to allow for mechanized agriculture. This does not seem to apply in large areas of the 5th Region. In addition the absence of good wind data makes the planting of windbreaks in straight lines less of a concern than incorporating existing vegetation into the windbreak system. Both the CARE and VRP projects provide examples of cases where existing trees seem to have been avoided in order to do straight line windbreaks.

The northern or flooded areas of the project zone, where little vegetation exists to break the wind, present perhaps the best opportunity for windbreak activities. Windbreaks may be particularly useful for rice fields in spite of the potential problem of bird pests. In addition, large areas of bare land, previously seasonally flooded, are being converted into dry land farming. While this may not be a permanent shift, windbreaks may be useful in these areas. However, in some of these areas, natural regeneration of *Acacia albida* is quite extensive and the encouragement and manipulation of this growth may be a more cost-effective means of protecting lands from wind.

The second observation is that, at least at Bandiagara, project personnel do not understand how windbreaks work or their objectives. They are thus unable to use the technology sensibly. Since the effectiveness of a windbreak is a function of its height, this has ramifications for species selection. The use of species that are relatively short at maturity is not cost-effective since many more lines are needed to get adequate protection. This costs money and takes additional land out of production. If fields are already fairly well protected from wind the incremental benefit from windbreaks may not be worth the costs.

The species most often selected for windbreaks in the zone is neem. This is a sound choice. Its height, survival rate, shape and growth rate make it a good windbreak species. There are other species that deserve attention and the use of smaller species to provide a "wedge" effect on the windward side of the break needs to be explored. Attempts by the Koro project to use Balanites, however, has been a failure.

Post-establishment extension should also be strengthened. The individual who planted a break to protect his mangos has started to prune his neems. This should be done only in so far as it does not compromise the effectiveness of the break or increases it by encouraging height growth and adequate shaping.

The scope of windbreak activities also has to be taken into consideration. It is not possible to have an effect on the wind problem with a single row of trees 25 meters long. There is a certain minimum intervention size for a particular situation for windbreaks. Unless the project is assured that the social and physical requirements will be met, it is better off not beginning. Although the windbreak can be built in steps the final objective should be in sight from the start. The project should consider that under most conditions at least 2 or 3 rows at least 200 meters long is a minimum requirement.

In sum, project personnel need additional training in windbreak technology. The selection of sites and the integration into the environment deserve special emphasis. It should be recognized that this technology may not be as broadly applicable as others such as living fences.

B.2 Living Fences

Living fences seem to be one of the most promising rural forestry interventions in the project zone. Living fences respond to a pressing village need (protection from animals), build upon existing activities (both living fences and the use of thorny branches and millet stalks are widely used), are by and large low cost and small-scale and can be integrated into existing systems. Living fences can theoretically provide secondary products and replace the need for continual harvesting of biomass to make fences. Given the slow growth rates of some woodlots it appears that the amount of biomass harvested annually to make fences may exceed the annual increment from the woodlot. For these reasons the project should see every "dead fence" as an opportunity for a living-fence. The protection of project plantings by a living-hedge should be a priority.

The promotion of living fences has greatly increased since the 1983 evaluation when it was basically non-existent. In some cases there has been an increase of nursery production of living fence species. For example the program for 1987 calls for the production of 27,000 living fence species (Parkinsonia and Prosopis) which is about 20% of total planned production. (For 1986 about 16,000 plants of these two species were produced.) However, because of the close spacing required for an effective fence and the high potential demand, this production represents only a small fraction of what might be absorbed. In addition, only a limited number of potentially adapted species are being used or promoted. Nursery production of living fence species should be increased and diversified.

To satisfy the needs additional activities are needed to supplement central nursery production. The project should attempt the direct seeding (of selected and pretreated seed) of certain species along existing fence rows. Although the direct economic returns from these species may present a constraint, they should also be tried in mini-nurseries.

A word of caution may be in order about the larger diffusion of living fences. There may be real social and physical constraints to converting temporary fencing (dead fencing) to permanent fencing (live fencing). For reasons of land tenure or seasonal flooding, for example, temporary fencing may be more appropriate than permanent structures. Extension efforts should be sensitive to these possibilities before pushing living fences.

Parkinsonia and Prosopis have proven themselves in the zone and are good choices for living fences. Since production to-date has been somewhat limited, it has been difficult to cover the area needed for project interventions. The project has often attempted to find a compromise to this situation by increasing the spacing between plants. The idea is to reduce the gaps each year until a technically satisfactory spacing is achieved and the dead fencing can be removed. However, the evaluation team considers that this delays the time when one can do without dead fencing. It would be better to concentrate available plant material on a section of the fencing needed so that at least part of the perimeter can be converted as soon as possible.

Although the VRP living fence interventions are relatively recent the necessity for pruning and otherwise improving the fence should not be ignored. Little is served by a living-fence that, through lack of upkeep, grows into a line of plants that do not inhibit the passage of animals.

B.3 Mis en Defens

One of the project's objectives is to encourage locally autonomous environmental management. Given the fact that tree planting is just one element of forestry and will have limited impact on desertification, the management of existing vegetation is essential. Although the impetus for mis en defens seems to have come from the national level, it is the project intervention which most closely corresponds to natural vegetation management and therefore is an important initiative.

However, the emphasis to date seems to have been on the administrative arrangements for the delimitation of the areas and their protection. The activity seems oriented towards satisfying national targets and helping one set of clients use the forest service to control access of other groups to resources (Barbé). Hence in some cases the objectives of mis en defens, its relationship to local villagers and the possible management techniques for increasing productivity are poorly understood.

By and large the mis en defens parcels are already degraded. Simple protection, already difficult to assure without expensive fencing, will eventually allow for rehabilitation but it will be a long process. Out of the array of possible cost-effective interventions that would accelerate rehabilitation, the project seems to only have tried enrichment plantings. Unfortunately these plantings seem to be little different from woodlot plantings, although spacing, watering and species selection are somewhat different. In other words the parcels are not viewed as opportunities to manage natural vegetation but are simply seen as areas for additional tree-planting.

The social aspects of the parcels also present problems. The involvement of the local populations seem to be limited. There is a danger that they view the parcels as lands that have been expropriated by the state. This diffuses responsibility and local management. The problem of the "commons" may be exacerbated instead of improved. Project attempts to elicit local participation may meet resistance as a type of "forced-labor" on government lands unless there is clear identification of local people as beneficiaries.

The problem of types of interventions to be carried out can be improved. This evaluation cannot present all the possibilities but activities such as direct seeding (in areas where the natural seeds sources have dwindled), mulching to promote termite activity and provide organic matter (such as is done under the FLUP project) and soil conservation and water harvesting techniques are low cost ways to accelerate natural regeneration.

In general, the best way to proceed is to develop a simple management plan which will describe the present condition of the area, the activities to be undertaken and put in place a simple management system. This will allow effective follow-up of the areas taking care to make an accurate list of all the changes brought about by this or that particular action. It appears that the extension agents do not have competences specific to the reconstitution or improvement of vegetation because, as noted above, instead of favoring a natural regeneration through the use of simple techniques, they have a tendency to make woodlots out of these areas and to plant species there which do not respond to any needs and which continue to die.

The social problems are more difficult to resolve. The local villagers should have a better understanding of the long term objectives of the activity and the direct benefits to them should be well defined. The parameters of local use of the area should also be clarified. If this is done and eventual ownership and use of the land is clearly in the villagers' hands then they should be involved in any and all interventions. The interventions should emphasize low-cost, low-labor and off-season activities to the extent possible.

Because of the problems surrounding ownership of the parcels, the fact that benefits are likely to be long-term and the newness of the activity, the number of parcels should not be increased. However, the techniques of protection and natural vegetation management should be expanded to areas of individual and village fields and lands without the administrative step of registering these as official parcels. For the official parcels the project may want to finance signs but should not fund any costly materials such as fencing. This would only further the aspect of expropriation and limit villager involvement. It should also be pointed out that Sahel ecologies are probably adapted to grazing and browsing and that productivity is increased under these conditions.

If, despite the above reasoning, it is still thought necessary to enclose the mis en defense (for — assumed — very well considered reasons), then the evaluation team believes that the strategy to follow is that of living fences.

B.4 Woodlots (Bosquets)

Among all planned rural forestry interventions the project has the most experience with woodlots. Since 1982 approximately 35 villages or individuals have attempted this intervention. Woodlots were implemented to the semi-exclusion of other interventions until the evaluation of 1983 which recommended that they be de-emphasized in favor of other rural forestry activities. Although there have been a few woodlots that have been successful, in general, this evaluation concurs with 1983 recommendation. Woodlots do not appear to be socially or economically viable and technically they are extremely difficult to do successfully. Their initial purpose, to produce firewood to respond to the "firewood crisis" has also proved faulty. In only one instance did any villager mention firewood as an expected benefit of a woodlot and this was mentioned as a third or fourth order benefit.

In the great majority of cases woodlots have fared poorly. Survival rates are low (40% perhaps), annual replanting is done which increases costs and growth rates have been poor. Woodlots have not been well integrated into the social and physical environment.

There are, however, important exceptions to this rule which deserve description. These exceptions not only serve to refine the 1983 recommendation considering woodlots but also call into question the recommendation on the phasing out of eucalyptus.

One case has already been examined under the section on mini-nurseries. At this site an individual planted eucalyptus in 1983.

The individual has managed to continue to crop under the trees. To date he has not noticed any negative effect on his crops. He stated that if the size and density of his trees became such that cropping became difficult he would abandon cropping and continue with silviculture. This, plus the fact that his neighbors are planting eucalyptus, seems to be prima facie evidence that tree-growing under these conditions is economical.

It appears that a combination of factors account for this success. First, the individual is particularly dynamic and as a retired member of the military he is perhaps more used to working with the administration and more likely to try something new. Second, the site is particularly good with good soils and high water table and is well matched with the demands of the species. Third, species selection is also good. Eucalyptus is probably the fastest growing available species for the site. Fourth, the species is well matched to meet the high market demand for poles because its pole is straight. Fifth, ownership rights and benefit distribution are clear. Sixth, the system is integrated and makes excellent use of available growing space.

While it is clear that this technique is not broadly replicable there are micro zones where it should be successful. As it is the project has been the catalyst for creating this self-perpetuating system in this zone. In similar ecological and social systems the project should encourage similar activities.

The planning for 1987 calls for approximately 10 woodlots per station. This is unacceptably high and should be reviewed and revised. Particular care should be taken in defining the objective of any woodlot and in matching the physical capabilities of the site to produce a product and in assessing the market value of the product.

To the extent that woodlots are pursued in any extension phase of VRP, the following aspects should be considered closely:

a) The Social aspect

The development of collective village woodlots creates in certain villages situations of conflict which the project should avoid in the future. Actually in the Bandiagara Cercle the critical problem is one of land, arable land being reduced in such a manner that each family must expend enormous efforts in order to be able to subsist. In asking villagers to undertake a collective action, certain families will be deprived of their land for which they have such a great need. This happened in all the villages where the project has developed woodlots.

At Fatoma, the landlords most often are transhumant herders. They loan their properties to sedentary farmers. These latter start woodlots or similar plantings as requested by the authorities in order to build a claim to the land; this usually engenders conflicts between the farmers and the herders.

Stress should be placed on individual action where each person is responsible for what he says and does. The current economic difficulties have led to a situation in which the villagers are not unified as they were before and opposing interests and individualism are becoming more and more dominant.

b) The Technical Aspects

— The quality of the seedlings. Until now, the seedlings planted in the woodlots generally have not been rigorously selected in the nursery and often have been transported on motorcycles or mobyettes particularly with regard to replacement plants.

— Refilling the planting holes. The holes in which the seedlings have been placed have been refilled only halfway in order to be able to keep a maximum amount of water around the seedlings. But unfortunately during the rainy season the soil buries the seedling. During this evaluation we verified this situation at the Dondoly woodlot by digging holes around some plants in order to see their root systems. It has been determined that they have a very shallow development because of the constant watering and the roots often have knots which prevent the correct nourishment of the plants. In addition, the top of the root system was buried up to about 20 centimetres under the surface.

B.5 In-field Planting

With regard to in-field planting, the villagers prefer the baobab, the nere, the tamarine and the ronier palm. The species often are raised by the villagers themselves and lacking this, one frequently sees them pull up grown baobab plants and transplant them in woodlots or fields. This practice

has been observed a number of times at Bandiagara and Koro. At Djenne, preference is given to sowing the seeds of the ronio palm in the fields and protecting the abundant natural regenerations of acacia albida. In the same location, the villagers themselves direct seed nere and tamarina in their compounds and around their vegetable gardens. In the future, the VRP should build upon these preferences instead of utilizing species which are not useful to the villagers. The villagers will accept the species provided by the VRP out of fear or respect, but the final result is zero. It has been proven scientifically that the acacia albida improves agricultural productivity, but will the climatic conditions and the browsing of animals allow them to be multiplied artificially in the fields? Or do the extension agents know all the forestry techniques applicable to this species?

B.6 Other Possible Project Activities

Shade tree plantings in family compounds, in public places and in the schools have been undertaken in all the cercles. These activities generally take place without requisite education of the populace. The success of these efforts is pretty good. It is planting of trees in rows which is experiencing failure because of poor upkeep. Nonetheless in certain localities the trees are well protected individually with mud brick enclosures and the result is very satisfactory.

Plantings of fruit trees is also experiencing a large and rapid expansion, particularly at Djenne and Fatoma where individuals own their own nurseries. The VRP is not able to satisfy all the demand for fruit trees. The current situation with regard to all these activities is set out in the tables in the annex.

Specific Recommendations

(1) Every effort must be made to eliminate the need for watering of rural interventions. Special emphasis should be placed on the following:

(a) Planting date. The optimum planting "window" is fairly small. Planning and mobilization of resources should be improved to assure that the maximum amount of planting is done within this window.

(b) Soil and site preparation. Adequate soil preparation before planting is essential. Plowing of planting sites should be encouraged where possible and the use of large planting holes should be required.

(c) Species selection. Additional efforts to select and promote species proven in the zone and suitable for individual sites and types of interventions.

(d) Nursery techniques. Central nurseries should emphasize production in pots. For "large scale" plantings temporary nurseries near the site should be tried. Production should be decentralized through the encouragement of mini-nurseries.

(e) Water harvesting and conservation. Water available to the plant should be substantially increased and optimized through the use of well-known techniques for water harvesting and conservation such as micro-catchments, mini-dikes, etc.

(2) Windbreaks. The site and species selection for windbreaks should be improved. They should be better integrated into existing farming systems. The scope of this activity in time and space needed to provide benefits to agricultural should not be underestimated. A larger view of the long-term development of a windbreak system is needed.

(3) Living Fences. Living fences appear to be a promising intervention and should be more actively promoted by the project. All means necessary for accelerating its extension should be employed.

(4) Mis en defens. The number of official mis en defens parcels should not be increased. However, the techniques of natural vegetation management and improving regeneration should be more broadly applied to farmers fields and village space.

(5) Woodlots. The trend towards the de-emphasis of woodlots should continue. Present plans in this regard should be revised downward. However, there is a relatively minor yet important role for small-scale, individual woodlots for building poles and orchards for fruit production. The objectives of woodlots must be clearly and realistically defined and matched to a market.

(6) "Alignments" and "Political" Plantings. The project should avoid participation in all plantings where the objectives do not coincide with a real rural priority and need. Prestige and politically motivated plantings should be eliminated.

(7) Soil Conservation. These types of activities should be promoted even when they do not involve the physical planting of a tree. They are a legitimate forestry technique and respond to the project's objectives concerning environmental management.

C. Experimentation/Demonstration

The Project Paper proposed a small-scale, informal experimental component in order that project personnel could try out certain techniques to overcome some of the major constraints to reforestation in the area. The 1983 evaluation noted the slow start-up of this component and provided some practical suggestions of research topics. It also emphasized the informal nature of the experimentation and recommended decentralized research planning and the possibility of using external sources of technical advice.

Presently, research is ongoing at all three stations, either within the nursery/experimentation enclosure or at a separate 1 ha. site. Activities focus on seed treatments, production techniques, establishment and growth rates for several indigenous species; germination trials for some exotic species; the effects of soil treatments on the establishment and growth of several indigenous species and the influence of planting hole sizes on the behavior of several local species.

There have been problems with research protocols. At Djenna for instance transplanted species were not measured at the time of plantation and hence important baseline data will be missing. Supervision problems have also been encountered during implementation. At one site workers watered a set of plants that should have remained unwatered. In addition, at some sites, large trees have been retained in the experimental plot which may influence the trials (Bandiagara, Fatoma). In some cases research results have not been applied to field-level activities. At Bandiagara for instance previous experimentation on water catchment techniques showed quite clearly that any of the tree techniques used improved growth rates over the control. However this good, practical experience has not been used in the field. None of the interventions visited used microcatchments.

In spite of these problems these trials have the potential of providing some useful information. However, there seems to be a lack of overall vision of the objectives and goals of the experimentation and how it directly applies to the reforestation system, including production and the rural interventions. For instance it is not clear whether the seed treatment trials are linked to real germination problems at the nursery. While soil preparation is important it is not clear that villagers will have the means to easily obtain sand or other materials for addition to the holes. Almost the sole use for Parkinsonia's is for living fences. It is therefore a little strange that it is included in trials on planting hole sizes which range up to 80 cm. Living fence spacings should probably be about 50 cm. Even if it does well in the larger holes it is unlikely that it will ever be extensively planted as individual trees.

To pattern forestry research after agriculture research requires large areas and long durations. Neither of these elements are available to the project. While ongoing research can feasibly be done in the time and space available, valuable opportunities for viewing natural vegetation, traditional forestry and project interventions as research trials are being neglected because of the emphasis on on-station research. To-date those responsible for experimentation have not left the station, either physically or mentally, to monitor and collect data on village level activities.

In addition, simple "desk studies" of data generated by the extension teams or by other projects are not being carried out. Analysis of the extension teams' reports could help orient the project and improve the types of data collected. Some simple hypotheses could be developed and tested with existing data. For example, the effect of planting dates on survival rates, or rainfall on survival rates could be analyzed. If data available was inadequate for such an analysis the experimentation team could work with the extension team to assure the right quality and quantity of data was collected. For instance, there is a fairly major problem with measuring survival rates. In many instances the replantings are included in these calculations. Thus, in some cases survival rates of some plantations go up over time. Some woodlots that have been replanted every year from 1982 show survival rates in the 80% to 90% range. This serves to cloud an analysis of what are the key factors in survival.

If the experimentation personnel took a more active role in data collection and analysis, then the extension teams could be freer to do more extension. In addition, this would narrow the target group of agents for additional training in data collection and analysis.

Specific Recommendations

(1) The project should develop a research program which clearly defines overall objectives and goals and the means necessary to achieve these goals. It should be integrated with production and intervention components. The program should be reviewed and approved by USAID, DNEF and INRZFH.

(2) Applied research protocols should logically follow from the program. Protocols should define the types of supervision and the periodic reporting requirements; plans for the dissemination of results and the disposition of the trials after results have been obtained .

(3) The scope of research should be broadened from on-station trials to include data collection and analysis of rural forestry interventions and "desk" studies. It should also include non-tree-planting forestry activities such as vegetation management and soil conservation.

(4) National-level supervision should be increased and improved. Attempts should be made to keep personnel turnover to a minimum in this component.

ANNEX A

10 10-11-72

PROJECT DES
LOGICAL PRProject Title & Number: VILLAGE REFORESTATION IN THE MOPTI REGION (625.0937.09) (1)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS												
<p>Program or Sector Goal: The broader objective to which this project contributes:</p> <p>Goal: To improve the well-being of villagers.</p> <p>Sub-goal: To contribute to the rehabilitation of Mali's renewable resource base.</p>	<p>Measures of Goal Achievement:</p> <p>Positive economic, environmental and social effects on the populations of affected villages.</p>												
<p>Project Purpose:</p> <p>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.</p>	<p>Conditions that will indicate purpose has been achieved: End of project status.</p> <p>.Methods or procedures for identifying villages and villagers who are capable of and interested in participating in woodlot development being successfully employed.</p> <p>.Methods for introducing reforestation and technology for more efficient use of wood resources at the village level being successfully employed.</p> <p>.Methods for achieving sustained motivation of villages/villagers being</p>												
<p>Outputs:</p> <p>.Village woodlots, tree nurseries, demonstration plots, improved wood-burning stoves and other rural forestry interventions functioning efficiently.</p> <p>.An information system providing a basis for evaluating implementation performance and project impact.</p> <p>.A support system for project activities at national, regional and village levels.</p> <p>.Improved technical capabilities of villagers and project personnel</p>	<p>Magnitude of Outputs: successfully employed</p> <p>.2 tree nurseries .2 demonstration plots</p> <p>.10 communal woodlots</p> <p>.2 experimental plots</p> <p>.40 wood-burning stoves</p> <p>.rural forestry interventions established; a sufficient number of villages to test acceptance, efficiency, practicality, and replicability.</p>												
<p>Inputs:</p> <p>.Technical assistance (Peace Corps Volunteers, short-term specialists), commodities and equipment.</p> <p>.In-country, Third-country Training</p> <p>.Construction</p> <p>.Operating Expenses</p> <p>.Contingencies</p>	<p>Implementation Target (Type and Quantity)</p> <p>AID to contribute \$495,000 as detailed below:</p> <table border="0"> <tr> <td>.Commodities-Supplies</td> <td>\$114,613</td> </tr> <tr> <td>.Construction</td> <td>70,170</td> </tr> <tr> <td>.Training</td> <td>10,250</td> </tr> <tr> <td>.Operating Expenses</td> <td>189,634</td> </tr> <tr> <td>.Contingencies</td> <td>51,083</td> </tr> <tr> <td>.Inflation</td> <td>59,250</td> </tr> </table>	.Commodities-Supplies	\$114,613	.Construction	70,170	.Training	10,250	.Operating Expenses	189,634	.Contingencies	51,083	.Inflation	59,250
.Commodities-Supplies	\$114,613												
.Construction	70,170												
.Training	10,250												
.Operating Expenses	189,634												
.Contingencies	51,083												
.Inflation	59,250												

GN SUMMARY
FRAMEWORK
AIP)

Life of Project
From FY 80 to FY 84
Total U. S. Funding \$495,000
Date Prepared: 9/19/80

MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>National and/or regional statistics or studies.</p>	<p>Assumptions for achieving goal targets:</p> <ul style="list-style-type: none"> .GRM will continue to support rural forestry activities and improved woodlot use activities. .Adequate water resources will be available in the project region.
<ul style="list-style-type: none"> .Species acceptable to villages/villagers in terms of cost of planting, maintaining and harvesting requirements. .Woodlots protection methods acceptable to villages/villagers being employed. .Technology that is more efficient in use of wood resources used at village level. 	<p>Assumptions for achieving purpose:</p> <ul style="list-style-type: none"> .GRM and E.&F will provide adequate policy direction, budgeting support and coordination .Rural villagers will be receptive to project and participate in maintenance & benefits of proj. activities. .Proj. personnel will collaborate w/regional personnel of ongoing Operation Mil. & with 5th Region functional literacy activities .Suff. quality info. can be collected & analyzed by AID & GRM to suff. evalu.
<p>Final Project Evaluation</p>	<p>Assumptions for achieving outputs/proj. prog.</p>
<ul style="list-style-type: none"> .Inspections by Mission and technical personnel. .Operational records and reports from EAux et Forêts. .Project evaluation .Quarterly Peace Corps reports 	<ul style="list-style-type: none"> .E & F will adopt more positive approach to rural forestry interventions. .Project personnel (E&F agents P.C. & AID) will be able to effectively collect and analyze project data. .Peace Corps Volunteers shall be effectively utilized. .Effective in-service training of forestry personnel can be undertaken.
<ul style="list-style-type: none"> .AID financing and procurement documents .Financial and operating records of construction contractor .AID training documents 	<p>Assumptions for providing inputs:</p> <ul style="list-style-type: none"> .Adequate supplies, commodities and equipment can be procured and delivered in a timely fashion. .Qualified candidates for training can be selected.

94

Sociological Evaluation of the Village Reforestation Project

**By: Minkailou Sissoko
Sociologist, DCCS/DNEF**



TABLE OF CONTENTS

- A. Villagers' Perceptions
- B. The Extension Component
- C. Training
- D. Collaboration with Other Organizations
- E. General Conclusions and Recommendations
- F. Methodology of Inquiry

A. Villagers' Perceptions

-- Perception of the environment.

The villagers interviewed are aware of the degradation of their environment -- they have all noticed the disappearance of the forest which used to play such a large role in village life (providing wood, food, forage, emergency nourishment, religious sites, etc.). The disappearance of the forest which they considered as a gift of God (and therefore as inexhaustible) disturbs them greatly; all are deeply concerned about the increasing scarcity of forestry products.

When asked why we have ended in such a situation, almost all of the villagers responded that it is the result of extensive drought; the human factor, even if noticed, is far from being a major cause according to them. Even though they do not feel themselves responsible for this degradation of the environment, the villagers nonetheless all sense the necessity to restore it, even if they are not convinced beforehand of the effectiveness of the actions proposed to do so. The general feeling which emerged from the discussions with villagers is that reconstitution of the natural resource base will be in the first instance the result of an increase in rainfall.

-- Perception of the Forest Service and its Agents

Villagers interviewed in the project area stated that previously the role of forestry agents, as well as that of the Forest Service, was strictly the protection of the environment and enforcement of the forestry code. They say that the agents used to visit them to check up on their activities and to fine them. Attracted by the lure of profit, the agents never used to lack for a pretext for such visits.

But since the agents started reforestation activities, the situation has improved. Commenting on the new role of the agents, the villagers state that the agents are "planters." They teach the villagers how to plant and take care of trees. During their frequent visits, the agents give the villagers lots of technical guidance and explain to them the advantages of trees, reasons for the use of more efficient stoves, and the damaging effects of forest fires.

In analysing the villagers' responses, one easily notes that the forestry agent is now seen in a new light, that of the "planter," whose presence no longer terrifies as it did in days gone by. Antagonistic relationships are being replaced progressively by much more trusting ones characterized by effective communications.

-- Perceptions of VRP Activities

As late as 1983 the villagers believed that the different VRP activities were the exclusive property of the Forest Service. But during this evaluation we have established that the villagers have changed their attitudes in this regard. Asked about who owned the various types of plantations, the villagers responded that they belonged to the village if they were produced collectively and to an individual if he had done all the work involved. As to management of the plantations, this depended again on whether the plantation were collective or individual.

Asked about VRP activities which they consider the most beneficial, the villagers responded unequivocally that they were mostly planting fruit trees, including local species (Acacia albeda, Nere, Karite, Baobab) in this area traditionally considered to be "at risk," that is, an area constantly under the threat of drought and famine. This situation makes any activity which tends to satisfy food needs, and which moreover can serve as a source of emergency food, highly desirable.

In the three stations living fences are also very much appreciated. The local populations think that they could be very useful because they provide protection against animals. Considering the very heavy pressure exerted by the herds, establishment of living fences appears to be a very promising activity.

The villagers are interested equally in the creation of mini-nurseries -- these are seen as providing an element of independence allowing them to produce species of their choice and in sufficient quantity. It is for this reason that the villagers have accepted the idea of the creation of village nursery. The only difficulty indicated by the villagers is the problem of obtaining pots. To get around this stumbling block, the VRP can provide pots to the nursery owners at a relatively low price in relationship to their cost (i.e., at a subsidy). Thus encouraged, there will come a time when the owners order their own pots entirely outside the project.

On the Dogon Plateau, the villagers interviewed expressed great interest in anti-soil erosion activities. Confronted with the problem of land scarcity, the Dogon villagers are very much aware of how erosion reduces their meagre growing areas. The anti-erosion campaign is considered here an activity of primary importance to recuperate and conserve soil.

Following these actions considered most beneficial by the villagers, come such activities as shade tree plantation, which provide places to rest and talk. Certain species used in planting shade trees are particularly appreciated by the villagers. This is the case for example with the neem for its medicinal properties. As to decorative tree rows, they are perceived as an excellent source of ornamentation.

With regard to improved woodstoves, the women appreciate them for reducing the amount of fuel wood required and the speed with which they cook. For their users, the improved woodstoves constitute a tool of liberation which makes their work less onerous. The only difficulty indicated with their use is that they produce cracks when baking a cake.

First among those activities considered to be the least beneficial are the village woodlots (done on a collective basis), the advantages being judged minimum given that the benefits are shared among the whole village. The collective nature of the woodlots has a negative influence on the behavior of individuals by making them realize that it is not necessary to work hard in view of the fact that the products of their work will be shared among the other members of the village who might not have participated in the production (as is the case, for example, with migrants and migrant laborers).

The second VRP activity which the villagers (particularly those of Fatoma) see as less beneficial is the creation of mis en defens (areas specially protected for regeneration of vegetation). In their view, the mis en defens constitute a restriction of their usable land.

-- Villagers' Participation

In sum, it is the entire village which implements (community) reforestation activities. But it is especially the young people (young men, who do the essential work (watering, weeding, fencing). Mobilisation of village efforts is done by the village council or committee. The work is performed either collectively (by the entire village) or by groups of young people or individually. At Sonata (Djenne Cercle) for example, at the call of the Development Committee all of the young people have mobilized to water the plants. At Tincarma (Bandiagara Station), the work is divided among groups of youths who look after the plants according to a fixed schedule.

Alongside these modalities of participation which are almost all identical in the villages interviewed, we found another organization, more individualistic, at Karbaye (Fatoma). Here, the villagers have chosen to recruit a laborer to maintain their woodlot. He is paid, lodged and fed by a fund collected from all the villagers.

-- The Role of Women

Women's participation in VRP activities is very limited. Wherever such participation exists, it is limited essentially to watering plants and to constructing improved wood stoves, with the help of men.

- 6 -

We see the cause of this limited participation by women stemming from purely cultural grounds (religion, tradition, attitude). Given the prominent role which rural women have always played in agricultural production, we strongly recommend a much greater participation by them (in VRP activities), through training and extension programs developed specifically for them in the development of mini-nurseries the work of which is very similar to that of vegetable gardening (in which most women already are involved).

-- Perceptions of Villagers Outside the VRP

Like the villagers in the VRP area, those outside are deeply conscious of the degradation of the environment. They talked at great length about the disappearance of the forest. This consciousness is not at all surprising given the rarity of forest products (wood, fruit).

During the interviews they have characterized the plantings of their neighbors (done under the VRP) as "useful" (it is good to plant trees to fight against the drought, to have fruit to eat and forage for the animals, etc...). Certain individuals have even suggested a certain number of activities, like planting shade trees and fruit trees, including local fruit tree species (A. albidia, nere, karate, baobab).

Even though they are aware of deforestation and judge their neighbors' reforestation activities positively, the villagers not in the VRP harbor great distrust vis-a-vis the Forest Service (to whom, by the way, they attribute the ownership of the plants established under the VRP). This distrust relates particularly to the fact that the Forestry Agents continue to impose fines for infractions of the Forestry Code.

-- Constraints to the spread of VRP Activities

There are three different types of such constraints: land, water and animals.

1. Land.

The problem of land is associated with the complexity of the land tenure system. Actually, agricultural land does not always belong to those who till it and in general it is often under long-term loan to the cultivator. Not enjoying full ownership of the land, the cultivators hesitate to make any large investments on it for which they are not sure they will be able to share in the possible benefits. As to the owners, they are not always willing to accept the establishment of certain plants which might put in question their right of ownership.

60

To demonstrate the constraint to extension of tree planting posed by the land tenure situation, as an example we can cite the case of Adjelon Togo in the Fatoma Cercle. In view of the fact that he was a stranger at Pebessougou, in accordance with African traditions of hospitality, the village chief wanted to give him a parcel for market gardening. But when Mr. Togo had started reforestation activities, the village chief began to admonish him. His request to enlarge his parcel was refused and it is only at the price of corruption that the village chief finally agreed to the request.

2. Water

The villagers complain about the lack of water, particularly during the dry season which sees the drying up of various water sources. During this period of the year, the search for water becomes an extremely onerous task to which men and women are subjected for hours. Being able to find water only with great difficulty, the villagers look to satisfy their primary needs first. The survival of young plants is threatened under these conditions because of irregular and insufficient watering.

To reduce the water constraint, we recommend the following:

- Correct preparation of the planting holes.
- Use of species well adapted to the physical conditions.
- Compatibility with other village practices.
- Planting at the start of the rainy season.

3. Browsing of Animals

The plantations suffer also from the wandering of small ruminants within and around the villages and of large ruminants in the fields. The herds, often left on their own, browse on the plants and thus wipe out the villagers' reforestation efforts.

For better success with the plantations, it is imperative that they be protected from the animals. The project can use local systems of protection already known to the villagers: fences made of earth or of brick, of thorns, of mats, etc.

-- Social Impact of the VRP

From interviews in the field emerges the well-known social impact of the project, that of the change in villagers' perceptions of the forestry agents and of VRP activities. Relations characterized by mistrust have been substituted progressively by those of a much healthier nature, characterized by open communications. Villagers no longer hesitate to approach forestry

- 8 -

agents, whom they consider "planters." The establishment of better relations permits the hope of better results in the extension of VRP activities.

Progress has been realized also in the area of knowledge of the Forestry Code. During the interviews, all the villagers stated that they had become better and better informed of its provisions. Thus, for example, all the villagers are aware of the law making construction and utilization of improved wood stoves obligatory, as well as of that banning land clearing.

These positive impacts of the VRP are due to frequent contacts between the villagers and the agents and even to the willingness of the Forest Service to evolve from an organization of repression to one of extension, and education and participation.

While the project has had an undeniable impact on villagers' perceptions, it is still true that there remains more to be done in the area of environmental protection. Statements by certain Forestry Agents and villagers indicate that certain individuals continue to exploit the forest in a harmful manner. As an example, the inhabitants of Karbaya complain extensively about the goatherds. One should actively pursue a program of increasing villagers' awareness of the need for environment protection.

B. The Extension Component

The extension team confronts numerous difficulties.

The first is linguistic. In the three VRP stations, only one extension agent does not need an interpreter when he talks to the local populations (this is the community development agent in Bandiagara who has mastered the most commonly used languages, i.e., Fulani and Dogon). All the others are obliged to call on an interpreter; since an interpretation always distorts meaning to some degree, the results are always disappointing.

To relieve this constraint, the indicated measure is to proceed to the extent possible to recruit local extension agents. Use of these kinds of agents can have another, much more important, advantage: It will promote identification of the villagers with the VRP because these local agents will be from the same area and most often will share the same beliefs and traditional values as the villagers.

Three criteria could be used for their recruitment: a) be from the area, b) speak the local languages (Fulani and Dogon) fluently and c) have a post-primary education level (completion of the 9th year).

67

The second difficulty is organizational. In the three VRP stations there is no real collaboration between the extension teams and the nursery operators. The major work concern of the latter is to produce the quota fixed for their nursery by national policy instead of focusing on the needs of the villagers. From this flows the problem of dispensing of the seedlings produced (when the evaluation team was at Fatoma there were still 2,000 plants in the nursery which could not be placed during the past season).

To avoid such a situation, nursery production should be based on grassroot demand. This can be done by initiating a close collaboration between the nursery operators and the extension agents who work directly with the villagers. The extension agents should be in a position to provide approximate information on the grassroot demand for trees (choice of species, number of species, etc.). To this end, as is done in the Village Agro-forestry Project in Koro (CARE), the extension agents can deposit in each VRP village a record book in which the villagers will be invited to write the name and the number of seedlings desired for those species which appeal to them. The nursery production thus will be done on the basis of this information and on statistics from earlier years. In our view, this will avoid overproduction.

There is another difficulty which inhibites a smooth distribution of the seedlings and the extension of reforestation activities. This is of a political order. In effect, it has been determined that the political operators are not very dynamic when it comes to reforestation. The "Fight against Desertification" still remains a political slogan instead of being a conscientious effort, a battle for survival. We are led to this conclusion for two principal reasons: a) First is the orders for seedlings which are not then picked up (at Djenne, despite the insistence of the Station Chief, the local section of the UDPM - National Political Party - never picked up its order of seedlings); and b) The second reason is that reforestation activities undertaken by the political authorities generally are not followed up.

C. Training

In order to increase the competency of its extension agents, the VRP has organized training sessions dealing with such techniques as nurseries, agroforestation and grafting. In the same vein, the VRP conducted a seminar on the GRAAP method of demonstration in order to promote better ways to approach rural dwellers. In addition, a study trip to Burkina Faso was organized.

- 10 -

If, as the evaluation team has determined is the case, the VRP has made some progress in the area of practical training of its personnel, there is nonetheless still much to be done in view of the fact that the agents have not mastered sufficiently the techniques which they are supposed to transmit to the village level. It is notably the areas of live fences, wind breaks, and village relations in which the extension agents recognize that they are not appropriately trained. The insufficiency of the training which has been given can be explained partly by the fact that very little time has been allotted to it. This is the case for example with the GRAAP seminar, which only lasted for three days.

In order to obtain better performance in VRP activities, the project should pursue the effort already undertaken while simultaneously broadening its scope by organizing the following:

- Seminars and workshops on the techniques of agro-forestry, soil conservation and the GRAAP method.
- Field trips among stations to promote wider contacts and emulation of successful practices of others;
- Visits to various types of reforestation activities which have proven to be successful in both the social and ecological contexts. The VRP is already in a position to initiate a visit to the reforestation activities in the village of Adjelon Togo at Fatoma for the benefit of agents in the other two cercles (Djenne and Bandiagara). (See the discussion of M. Togo's operations in the "Technical Considerations" section.)
- Visits to other village reforestation projects and some study trips to neighboring countries, particularly to Niger (for wind breaks) to encourage agents and villagers and to facilitate an exchange of ideas.
- Finally, assistance to the agents is also necessary in the techniques of data gathering to improve their extension activities record books and the questionnaires used to determine extension activities (quality and quantity of the data gathered).

It should be noted that this essential training should not be the exclusive privilege of the agents; it is imperative that it be extended to the villagers who have not to date benefitted from any training even though they are supposed to be the principal beneficiaries of the project's activities. This training will help them to master the techniques of production, i.e., of establishing and maintaining plants. Also, we suggest that project administrators schedule adequate time for training sessions because if this is not done the benefits of such sessions will be greatly reduced.

64

- 11 -

D. Collaboration with Other Organizations

In the project area, there are many rural development operations interested in reforestation. Many of these organizations have made provision for, or have already undertaken, reforestation activities. Following are some examples of these activities:

- ORM (Operation Riz Mopti). While ORM is not yet active in the field of reforestation, it nevertheless plans to start a program of village woodlots during the third phase of its project.
- ODEM (Operation Developpement d'Elevage Mopti). ODEM has undertaken a program of regeneration of "bourgouts," under which it is deepening ponds in the Mopti, Koro, Duentza and Teninkou cercles.
- WFP (World Food Program). WFP has completed planting a series of woodlots to be used for windbreaks (stabilization?) along the road from Severe to Mopti.

Although all of these organizations are interested in reforestation, the evaluation team has determined that there is practically no cooperation between them and the VRP. A certain number of constraints tend to check inter-organizational cooperation even though there are factors acting in favor of such cooperation, in particular the existence of a "sponsoring" organization like the regional committee for development, infrastructure like the nurseries and the fact of juxtaposition of the different project areas. There are two primary kinds of constraints, as follows:

- There is no exchange of information or, when it is exchanged, it is not done so in a manner which encourages the different organizations to cooperate.
- The framework for cooperation is still poorly defined between the Forest Service and the other development organizations.

Taking into account the human resources already available in the field, the evaluation team believes that the financial resources devoted to each of the different development sectors do not continue to represent a major constraint. In particular, the Operation Mil Mopti has more than 80 agents in its administrative area who could conduct, in parallel with their other activities, inexpensive forestry activities like the creation of mini-nurseries, extension of improved wood stoves, or the propagation of species like *A. albida*. In order to promote close cooperation between the project and the different organizations interested in the VRP project area; better exchange of information; and coordination of goals, strategies as well as methods of approaching rural dwellers, the evaluation team recommends that the Forestry Service sign a specific protocol on collaboration with the other organizations.

65

This protocol should establish responsibility for specific areas of competence (i.e., reforestation, demonstration, extension, training, etc.) for all of the involved organizations. After agreement among the organizations, the protocol will be implemented by the agents in the field. A verification unit will have the responsibility of overseeing the implementation of the protocol's agreements.

In addition, a diagram showing the distribution of activities in the different areas should be worked up and periodically updated as the results of experience in joint programming of activities become clear.

E. General Conclusions and Recommendations

At the end of the sociological facet of the evaluation, we conclude that after more than 6 years of experience, the VRP has made important progress in the social realm. The villagers' perception (of the VRP and the Forest Service) has improved considerably. Consequent to this improved perception we are witnessing the development of open and much more fruitful communications between the villagers and the Forestry Agents.

Nevertheless, this very positive development should not make us forget the immense task which must be accomplished to insure a broad, aware and responsible participation of the villagers in VRP activities. To accomplish this, we recommend the following:

- An expanded effort to inform the villagers, through the establishment of regular contacts, about the objectives of the VRP, the goals of its activities, and the problems associated with forestry development.
- The devolution of more responsibility on the rural populace for the protection of their environment. The VRP can encourage the villagers to establish committees to keep a protective watch on the forest.
- In this regard we think that a much clearer definition of the rights of exploitation of protected (i.e., VRP) trees certainly would be an invitation to the villagers to protect their environment.
- Taking into account the real needs of the population with regard to the choice of species and VRP activities.
- Integration of VRP activities into the physical and cultural setting of the countryside -- VRP activities must respond to real needs (if they are to be successful).

F. Methodology of Inquiry

The objective of the sociological evaluation was to study the villagers' perceptions vis-a-vis VRP implementation, the sociological constraints inhibiting project implementation and the sociological aspects of training and collaboration with other extension services.

To achieve this objective, the following methodology was adopted.

- Meetings were held between the entire evaluation team and the authorities of AID, the Forest Service and the Ministry of Natural Resources and Livestock and with personnel in the field involved in the implementation of the project. These meetings have permitted the establishment of those points to be stressed. These meetings provided a great amount of help in establishing the parameters of the study.
- Inquiries in the Field. With regard to the sociological evaluation itself, the questionnaire conceived by the sociologist was strengthened by the contributions of other evaluation team members. It was administered in the different villages during the course of meetings which generally brought together the village chief, his advisors and young and old villagers. We tried to limit the number of participants to avoid the phenomenon of "crowd psychology." As to the women, in view of the difficulty one has in getting them together with the men, we have contacted them individually during the visits to improved woodstove activities.

Interviews were conducted in 12 villages among the three VRP Stations and four among these were not in the VRP area. Five were from Bandiagara, three from Djenne and four from Fatoma (Mopti).

The criteria for choosing villages took account of accessibility and the different types of VRP activities in such a way as to enable us to understand the villagers' image of each VRP activity. It should be noted that during the interviews the sociologist was always accompanied by an extension agent who introduced him to the village chief.

SCOPE OF WORK FOR
IN-HOUSE EVALUATION
ON THE VILLAGE REFORESTATION PROJECT
(688-0937)

1. OBJECTIVES OF EVALUATION

The objectives of this joint USAID-BRM in-house evaluation are:

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 modifications in project structure, orientation, or implementation mode.

II. BACKGROUND

The Project Grant Agreement was signed on September 26, 1980 with a LOP funding level of \$495,000 from the regional Accelerated Impact Program (AIP) and a PACD of September 30, 1985. Actual funding became available in May of 1981 and supported project activities in the Mopti and Bandiagara circles.

In July 1983, the Grant Agreement was amended to provide incremental funding of \$160,000 from Mission bilateral funds and to extend the PACD to September 30, 1987. This amendment permitted project activities to commence in a third circle, Djenné.

The goal of the project is to contribute to the rehabilitation of Mali's renewable resource base and thereby improve the well-being of the rural population. The project has a dual purpose: first, to identify successful and cost effective means for achieving reforestation and a more efficient use of wood resources by and with the full participation of the rural population; and second, to encourage locally autonomous and responsible environmental management at the village level.

The pilot nature of the project needs to be underscored. It was one of the first rural forestry initiatives undertaken by the Malian Forest Service and one of the first projects to emphasize the extension role of forestry agents. As such, a certain degree of flexibility is needed to allow for a positive evolution of project and its orientations.

The project strategy includes the development of a support system with three elements: first, the creation of a tree nursery infrastructure; second, the strengthening of the Malian Forest Service's extension capabilities; and third, the implementation of demonstration, experimentation and data collection activities. Project personnel include foresters and technicians from the Forest Service, Community Development Agents seconded to the project, Peace Corps Volunteers, and support staff recruited by the project.

A mid-term evaluation of the project was conducted in July of 1983 with the major recommendations adopted bilaterally in PIL No. 10. These recommendations have been fulfilled to various degrees and will constitute one element for examination in the present evaluation: to determine the usefulness of the recommendations in improving project performance; and why recommendations were followed, only partially followed, or not followed at all.

As a pilot rural forestry effort, the VRF has provided valuable lessons and experiences about appropriate techniques and approaches. The project has evolved from the emphasis in the early years on communal woodlot interventions to the current orientation on promoting a diversification of agroforestry and soil conservation activities with individual farmers in their fields. Private and school nurseries, village and family compound tree-planting, and appropriate training for project staff and villagers complement and strengthen this new orientation.

The past two years, in particular, have witnessed encouraging signs both from farmers and project personnel vis-à-vis positive attitudes to pilot interventions such as planting of *Acacia albida* in millet fields; establishment of windbreaks and live fences; creation of village, individual and school mini-nurseries; and contour rock terracing to reduce erosion and increase water retention. In view of sustaining this progress and allowing the pilot initiatives to take root in the field, USAID/Bamako is considering a three-year extension of the project to September 30, 1990 with additional bilateral funding of \$750,000. This evaluation will assess the feasibility of such an extension.

III SPECIFIC QUESTIONS TO BE ADDRESSED

A. Management/Organizational

1. Project management and supervision:

- (a) Has it been adequate in terms of effectiveness, dynamism and leadership at:
- the Regional level (DREF)
 - the Cantonement level (Chefs de station, d'equipe)
 - the National level (DNEF, USAID)
- (b) What weaknesses, constraints of current management structure can be identified?
- (c) How can project management be strengthened?
- reinforcement of current management structure?
 - assignment of a full-time Chef de projet?
 - assignment of a Technical Assistant as counterpart to Chef de projet?
 - greater supervisory input from the National level?

2. Project organization:

- (a) Is current organization of project personnel an efficient one? Is it well-defined in terms of roles, responsibilities and authorities?
- (b) What are the advantages and disadvantages of having project field personnel operate out of centralized stations (Fatoma, Bandiagara, Djenne) as opposed to more decentralized locations? Of specialized (nursery, extension, experimentation agents) versus a more general role?
- (c) Is there sufficient delegation of authority to the field level (Chefs de station) for programming and budget planning purposes?
- (d) How can project organization be improved?

3. Financial management and reporting:

- (a) Are current project financial accounting and reporting procedures accurate, consistent and commensurate with USAID requirements? with GRM requirements?
- (b) Do reporting procedures provide project management with detailed, accurate and timely information on the level of financial resources being expended at each station and for each programmed activity as well as contingencies?
- (c) Is the financial information in a format that is useful to project management?
- (d) Does the current system of quarterly budget advance requests and monthly justification reports pose any problems with regard to budget planning, funding delays and impact on planned activities?
- (e) Are filing systems adequate for management needs?
- (f) What improvements are needed in financial management systems, accounting procedures, reporting formats and training of the project accountant?

10

A. PEACE CORPS:

- (a) What roles and functions have been provided by Volunteers assigned to the project?
- (b) What impacts have they had on the project?
- (c) Have there been problems in role definition, counterpart relations, and Peace Corps staff support?
- (d) What are Peace Corps' plans for the use of Volunteers in the project extension phase?

B. Extension

1. Extension team organization:

- (a) Has the team composition of forestry agent, Community Development Agent, and Peace Corps Volunteer been an effective and desirable one?
- (b) What are the relative advantages and disadvantages of centralized teams versus a more decentralized structure with each agent responsible for all extension work within a number of selected villages?
- (c) Is there adequate extension programming: site selection, needs assessment, technical advice, monitoring and feedback?
- (d) How can the project better promote "responsibilisation" and "motivation" of its personnel?
- (e) Should the project include village extension workers (*encadrants villageois*) in its activities?

2. Villager perceptions:

- (a) How do villagers perceive the extension agents and the project interventions they promote?
- (b) What do villagers perceive as their critical environmental problems and their priority forestry needs? Are these adequately addressed by the project?
- (c) Has the Condition Précédent prohibiting repressive forestry activities changed the villagers' perception of the Forest Service and forestry agents? To what degree have agents been able to sensitize villagers vis-à-vis explanation of current forestry legislation and the role of villagers in environmental protection?
- (d) Which project interventions (mini-nurseries, *alignement* interplanting, windbreaks, live fences, contour rock terraces, village and compound plantings, roadside plantings, village woodlots, improved cookstoves, etc.) do villagers perceive as the most beneficial to them? Which are perceived as the least beneficial?
- (e) What benefits have already accrued to villagers as a result of the project? What social impacts have resulted from the project?
- (f) What has been the level of participation of villagers in project activities? What has been the role of village women?

- (g) Are there differences in the perception of environmental and forestry problems between "project villages" and "non-project villages"?
- (h) To what extent has the project promoted locally autonomous environmental management practices?

3. Training:

- (a) What types of training activities have the project provided to project personnel? to villagers?
- (b) What training needs still exist?

4. Collaboration:

- (a) Is there adequate collaboration between project extension efforts and those of other organizations in the project zone?

C. Technical

1. Central nurseries:

- (a) How is seedling production in the three central nurseries with regard to choice of species (indigenous, exotic and fruit trees), quality, and quantity produced?
- (b) Are nursery production targets well-matched to the extension program activities and needs?
- (c) What improvements are needed in programming nursery production and in nursery techniques?
- (d) What impact has the new policy on sale of seedlings had on project activities?

2. Mini-nurseries:

- (a) How successful has been the introduction of village, school and individual nurseries?
- (b) What inputs do they receive from the project? Are these inputs sufficient? If not, what additional inputs are needed to improve the quality and quantity of seedlings produced?
- (c) What is the potential of these mini-nurseries in terms of sustainable, small private enterprises? Are there sufficient local demand and markets for seedlings produced in these nurseries?

3. Agroforestry and Soil Conservation:

- (a) How successful are the pilot interventions involving A. albidia interplanting, windbreaks and live fences? Are villagers ready and willing to replicate these activities in their fields?
- (b) What is the present status of soil conservation activities: contour rock terracing in combination with tree planting, establishment of "protection parcels" that exclude human and livestock activity?
- (c) Are there any technical problems with the interventions to date which must be corrected?

4. Village woodlots:
 - (a) What lessons have been learned from the project's early emphasis on communal woodlots?
 - (b) Which species, and under what conditions, have grown best in woodlots? What are the estimated rates of growth and yield in project woodlots? What are the estimated costs of woodlot establishment?
 - (c) Has there been any replication of this intervention by villagers?
 - (d) What recommendation can be made for village woodlots in the project extension phase?
5. Improved cookstoves:
 - (a) To what extent have improved cookstoves been built, maintained and used regularly in the project zone?
 - (b) What other organizations are involved in cookstove promotion and what is the degree of collaboration with the project?
 - (c) What is the potential, in Mopti and other "urban" areas of the Fifth Region, for the promotion of portable metallic woodstoves? Are there opportunities for collaboration with the VITA Portable Metallic Cookstoves Project (688-0237)?
6. Other interventions:
 - (a) How successful have the following interventions been?
 - tree planting within family compounds;
 - tree planting in village public places (mosques, schools, markets, etc);
 - tree planting alongside roads; and
 - planting of fruit trees.
7. Experimentation/Demonstration:
 - (a) What useful findings/results have emerged from the experimentation and demonstration components of the project? Have they been diffused and applied to ongoing activities?
 - (b) What themes or specific problems should experimentation/demonstration address in the project extension phase? How should it be carried out (e.g., in separate plots, in nurseries, in farmers' fields)?
8. Reporting and information flow:
 - (a) Do present reporting formats provide useful information to project management at field, regional and national levels? Can reporting systems be improved?
 - (b) Is there adequate information flow and feedback, both vertically and horizontally?
 - (c) To what extent has data collection been instituted? What types of data has been collected and for what purpose,

D. Project Extension Phase:

1. What is the feasibility and desirability of extending the project for three years?
2. Which aspects of the management, organization, extension and technical components of the project would require modification or strengthening?
3. How can project activities be intensified and more widely diffused within the project zone?

IV. TEAM COMPOSITION AND TIMEFRAME

This evaluation has been conceptualized as an "in-house" effort to the extent that qualified USAID and BRM personnel would be identified to perform the scope of work. This is based on two premises: 1) project funds for the evaluation are very limited; and 2) the concise and direct nature of this evaluation requires team members who are familiar with the problems and questions to be examined. To maintain objectivity, the project managers at DNEF, DREF and USAID will not be team members, although they will be closely associated and consulted as resources persons throughout the evaluation process.

The proposed team composition is as follows:

USAID	BRM
Design and Evaluation Officer	Forester
Forester	Sociologist
Project Management Specialist	

The desired timeframe for carrying out the evaluation is from January 5 to 24, 1987, with approximately two weeks of field work in the Fifth Region and one week of interviews, discussions and report writing in Bamako.

The tentative schedule is presented below:

January	
4	Working dinner chez Lai
5	Courtesy calls at DNEF, USAID, Peace Corps; discussions of evaluation
6	Travel to Mopti
7	Courtesy call to Governor; discussions with project staff
8-9	Site visits Bandiagara
10-11	Site visits Koro
12-13	Site visits Djenne
14-15	Site visits Fatoma
16	Wrap-up discussions in Mopti
17	Return to Bamako
19-24	Report writing

74

For the site visits to Bandiagara, Djonne and Fatoma, each Chef de cantonnement has been requested to select a range of villages and sites which can be visited within the two days allotted to each cantonnement and which represent four categories: 1) successful, 2) moderately successful, 3) failure, and 4) not included in project.

Koro is included in the itinerary to permit the team to see first-hand the activities of the CARE Village Agroforestry Project and compare organizational structures and extension and technical approaches employed by the VRP and CARE projects.

V. PROJECT DOCUMENTATION

The following documentation has been selected to serve as reference for the team members.

- Project Paper
- Project Grant Agreement and Amendment No. 1
- Mid-Term Evaluation (July 1983)
- Plan Directeur (1983-87)
- Plans d'Operation (1984-85, 1985-86, 1986-87)
- Selected Project Implementation Letters
- (NO. 7, 10, 14)
- Rapport d'auto-evaluation de la campagne d'activites 1986 (Dec. 1986)
- examples of:
 - Quarterly budget advance requests
 - Monthly reports from stations
 - Quarterly report from DREF
 - Supervision trip report (DNEF, USAID)
 - Monthly financial justification reports
- Project organigramme.

In addition, other documentation at USAID, DNEF, DREF and the three stations can be consulted as needed.

VI. ESTIMATED BUDGET

The Mission will assume the travel and per diem costs of USAID staff involved in the evaluation. The Mission will also provide two vehicles and chauffeurs for the field work.

The project has reserved funds to cover per diem and honorarium payments for the GRM team members and to defray a portion of the vehicle field costs for Fifth-Region field work.

COMPILATION OF EVALUATION RECOMMENDATIONS

III. Management and Organization

A. Project Management and Supervision

A.1 Direction and leadership

(1) That the Forest Service immediately conduct an in-depth review of all personnel assigned to key leadership positions in the VRP vis-à-vis the exceptional leadership requirements of a "pilot" project like the VRP and take steps to insure that the VRP leadership is up to the challenge presented by this project. Further, that the Forest Service constantly review VRP leadership to insure that it continues to meet the project's needs.

(2) That the Forest Service (and, as appropriate, USAID) take administrative steps to insure that all levels of VRP leadership spend sufficient time in the field to insure continuous familiarity with the status of project implementation and the constraints which must be overcome to insure project success. Recommended levels of field time include at least three days per cantonnement per quarter for national level project managers (accompanied by the Regional Director), an additional two days per month per cantonnement for the Regional Director and five days per cantonnement per month for the VRP Technical Director.

(3) That the Forest Service set up an administrative process to review at appropriate intervals authority delegated to project leadership at the various levels vis-à-vis their responsibilities (duties).

A.2 Planning

(1) The team wants to reiterate and expand upon an important recommendation from the 1983 evaluation, that Chiefs of Station and below be given clearly defined authorization and responsibility for planning, budgeting and implementing field operations.

A.3 Management

(1) During the next supervision visit, the DNEF and USAID Project Officers should work with regional and station personnel to establish organized and complete reporting and filing systems. Follow-up on establishing these systems should be done during subsequent visits.

(2) Each Chief of Station should supply the DNEF and USAID a list of relevant documents which their station needs. Then, during the following quarter, DNEF and USAID would do the necessary photocopying and distribution.

ANNEX D (2)

(3) An effort should be made to provide the regional office and each station with a basic technical reference library using project funds.

(4) To reiterate a recommendation from the 1983 evaluation, DNEF should assure the dissemination of technical information between projects within DNEF with comparable objectives particularly by its Division de Conception, Projet et Programmes and its Subdivision de Reboisement et Aménagement.

(5) The VRP should move immediately with USAID TA to establish a commodity procurement and inventory control system which will be completely "adequate" for FAA Section 121(D) compliance purposes. Such a system should include vehicle (including motorcycle) use reports. A system of reports should be developed for commodity procurement and management and these should be submitted regularly (probably semi-annually) to DNEF and USAID.

(6) Annual commodity procurement plans need to be prepared and approved during the annual planning cycle.

B. Project Organization

(1) Scopes of Work for each project position from the Project Director thorough station personnel should be developed and agreed to by all parties concerned. This will better define in writing the role of each position with specific duties and responsibilities. Also, this will clarify delegation of authority at each level

(2) Future payment of primes under the Project should be based on work performance. The procedure for paying primes on this basis should be worked out among DREF, DNEF and USAID and formalized by the issuance of a PIL.

C. Financial Management

(1) Modify financial management procedures to begin monthly, instead of quarterly, requests for advancement of funds.

(2) USAID should provide technical assistance to the project to establish an analytical accounting system and train regional and cantonnement level personnel in its use and application.

(3) The project's regional accountant will have to improve his record of monthly site visits to each station to adequately supervise and monitor the implementation of this accounting system.

D. Peace Corps

(1) The APCD for forestry should visit Volunteers assigned to the project at least once every quarter. It would be useful if she coordinated her site visits with the supervisory visit to the project by DNEF and USAID personnel.

IV. VRP/Village Relationships

A. (NONE)

B. Extension and Training

(1) That the training program be strengthened significantly, with close concentration on content and stress on ensuring sufficient practical -- as opposed to theoretical -- training experience. Particular attention should be paid to establishing an appropriate program (with a definite plan and schedule) for extension agents to give them training in both the technical and community relations sides of their jobs. A separate training program should be developed for villagers in the VRP area.

(2) That extension work be "decentralized" during any project extension with agents essentially assigned to work by themselves in a certain number of villages (this does not preclude various joint activities with other agents when appropriate).

(3) That limited experiments be made with taking "village extension agents" into the VRP, with an appropriate system to measure their effectiveness in the VRP program.

(4) That further discussions be held between the Forest Service and AID on the desirability of drawing more of the "regular" forestry agents into VRP activities.

(5) That detailed discussions be held with the Peace Corps to determine whether they are willing to make further assignments to the VRP and, if they are, that a close review be made of the desirability of having PCVs in the role of extension agents.

(6) That VRP management (down through Chiefs of Cantonement) actively seek out and follow-up on possible ways of achieving effective collaboration with other extension services with a current or potential real interest in reforestation conservation.

C. Fining Policy

(1) That the Forest Service and USAID set a definite date for reconsideration of the VRP ban on fining (and wearing uniforms) and that a definite plan be elaborated to gather relevant information on the subject prior to convening the meeting to reconsider the issue.

V. Technical Considerations

A. Nurseries

Central Nurseries

(1) Annual in-service technical training programs should be developed for all nursery personnel in general and those with limited experience in particular.

(2) Closer supervision should be provided by Station Chiefs and the Project Technical Director to assure the application of good nursery techniques. (See Management section and No. 3 below.)

(3) Reporting and documentation should be improved by requiring the nursery chiefs to maintain 3 permanent hardbound notebooks on (a) production, (b) distribution and sales and (c) a daily work log. The daily work log should also note visits by project supervisors and other personnel. The log should be initialed by the visitor on the appropriate day and include comments and observations on nursery production. The Station Chief should review and sign all notebooks attesting to their adequacy at least once a month.

(4) Nursery planning should cover a two-year period and should deal directly with possible constraints in the supply of essential inputs. Planning must take into consideration at a minimum (a) an analysis of the previous three years' experience with special emphasis on increasing production of those species totally distributed during earlier years and decreasing production of those species consistently left as unmoved stock, (b) detailed discussions with the extension teams and technical agents on villagers' expressed desires for the coming campaign, (c) detailed discussions with agents involved in experimentation and extension on the species that have been the most successful (i.e. have the highest survival rates), (d) estimations of the trends in rural interventions and the species most appropriate for these interventions, (e) the production of mini or decentralized nurseries, (f) an analysis of the needs of various political organizations and administrations and their commitment to in fact use the seedlings (as evidenced by advances if possible), (g) the negotiation of national and/or regional targets and (h) estimates of the needs for the campaign following the current planning cycle.

(5) The project should be exempt from strict adherence to nationally or regionally imposed production targets when these targets clearly do not coincide with project needs. However, it is the responsibility of the national and regional supervisors to assure themselves that production is more or less matched to the means available to the project.

(6) Organization and management should be improved especially in terms of personnel and material. Nursery laborers paid with project funds should not be diverted to tasks unrelated to project goals.

Mini-Nurseries

(7) Individual or group mini-nurseries should be actively promoted by the project especially when (a) the project has helped develop a water source, (b) they can be integrated with garden plots, and (c) when links to high potential interventions exist.

(8) The project should continue to supply technical advice as well as certain inputs such as seeds or pots. In the short term this support should be free. In the medium term, if there is no development of alternative sources of supply, the mini-nurseries should pay for inputs. The project should not develop water sources solely for mini-nurseries but strive to have mini-nurseries integrated into situations where the water problem has been resolved.

B. Rural Forestry Interventions

(1) Every effort must be made to eliminate the need for watering of rural interventions. Special emphasis should be placed on the following:

(a) Planting date. The optimum planting "window" is fairly small. Planning and mobilization of resources should be improved to assure that the maximum amount of planting is done within this window.

(b) Soil and site preparation. Adequate soil preparation before planting is essential. Plowing of planting sites should be encouraged where possible and the use of large planting holes should be required.

(c) Species selection. Additional efforts to select and promote species proven in the zone and suitable for individual sites and types of interventions.

(d) Nursery techniques. Central nurseries should emphasize production in pots. For "large scale" plantings temporary nurseries near the site should be tried. Production should be decentralized through the encouragement of mini-nurseries.

(e) Water harvesting and conservation. Water available to the plant should be substantially increased and optimized through the use of well-known techniques for water harvesting and conservation such as micro-catchments, mini-dikes, etc.

(2) Windbreaks. The site and species selection for windbreaks should be improved. They should be better integrated into existing farming systems. The scope of this activity in time and space needed to provide benefits to agricultural should not be underestimated. A larger view of the long-term development of a windbreak system is needed.

80

ANNEX D (6)

(3) Living Fences. Living fences appear to be a promising intervention and should be more actively promoted by the project. All means necessary for accelerating its extension should be employed.

(4) Mis en defens. The number of official mis en defens parcels should not be increased. However, the techniques of natural vegetation management and improving regeneration should be more broadly applied to farmers fields and village space.

(5) Woodlots. The trend towards the de-emphasis of woodlots should continue. Present plans in this regard should be revised downward. However, there is a relatively minor yet important role for small-scale, individual woodlots for building poles and orchards for fruit production. The objectives of woodlots must be clearly and realistically defined and matched to a market.

(6) "Alignments" and "Political" Plantings. The project should avoid participation in all plantings where the objectives do not coincide with a real rural priority and need. Prestige and politically motivated plantings should be eliminated.

(7) Soil Conservation. These types of activities should be promoted even when they do not involve the physical planting of a tree. They are a legitimate forestry technique and respond to the project's objectives concerning environmental management.

C. Experimentation/Demonstration

(1) The project should develop a research program which clearly defines overall objectives and goals and the means necessary to achieve these goals. It should be integrated with production and intervention components. The program should be reviewed and approved by USAID, DNEP and INRZPH.

(2) Applied research protocols should logically follow from the program. Protocols should define the types of supervision and the periodic reporting requirements; plans for the dissemination of results and the disposition of the trials after results have been obtained .

(3) The scope of research should be broadened from on-station trials to include data collection and analysis of rural forestry interventions and "desk" studies. It should also include non-tree-planting forestry activities such as vegetation management and soil conservation.

(4) National-level supervision should be increased and improved. Attempts should be made to keep personnel turnover to a minimum in this component.

ACRONYMS AND ABBREVIATIONS

AID	AGENCY FOR INTERNATIONAL DEVELOPMENT (see also "USAID")
APCD	ASSISTANT PEACE CORPS DIRECTOR
CILSS	COMITE INTER-ETATS DE LUTTE CONTRE LA SECHERESSE AU SAHEL (MULTINATIONAL COMMITTEE TO COUNTER THE SAHEL DROUGHT)
DEO	DESIGN AND EVALUATION OFFICE
DNEF	DIRECTION NATIONAL DES EAUX ET FORETS (FOREST SERVICE NATIONAL HEADQUARTERS)
DREF	DIRECTION REGIONAL DES EAUX ET FORETS (FOREST SERVICE NATIONAL HEADQUARTERS)
FAA	FOREIGN ASSISTANT ACT
GRAAP	GROUPEMENT DE RECHERCHE SUR L'ANIMATION AGRICOLE ET LA PRODUCTION. (ASSOCIATION FOR RESEARCH ON AGRICULTURAL EXTENSION AND PRODUCTION - BASED IN BURKINA FASO)
GRM	GOVERNMENT OF THE REPUBLIC OF MALI
INRSFH	INSTITUT NATIONAL DE RECHERCHE ZOOTECHNIQUE, FORESTIERE ET HYDROBIOLOGIQUE (NATIONAL INSTITUTE FOR RESEARCH IN ANIMAL HUSBANDRY, FORESTRY AND HYDROBIOLOGY)
LOP	LIFE OF PROJECT
PACD	PROJECT ASSISTANCE COMPLETION DATE
PCV	PEACE CORPS VOLUNTEER
PIL	PROJECT IMPLEMENTATION LETTER
TA	TECHNICAL ASSISTANCE
USAID	UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT ("USAID" usually designates the AID Mission in a given country while "AID" is most often used to designate AID as a whole.)
VRP	VILLAGE REFORESTATION PROJECT.



B.P. 34 Bamako
 (INTERNATIONAL ADDRESS)
 USAID/Bamako
 B.P. 34
 Bamako, Mali

TRADUCTION OFFICIEUSE

Bamako, le 5 Avril 1984
 Monsieur le Ministre
 Chargé du Développement Rural
 Gouvernement de la République du Mali
 BAMAKO

OBJET: Evaluation du Projet Reboisement
 Villageois No. 625-0937.09A

Lettre d'Exécution No. 10

REF: Rapport d'Evaluation Intermédiaire

Monsieur le Ministre,

J'ai l'honneur d'établir par la présente notre accord mutuel concernant les recommandations de l'évaluation intermédiaire du projet cité en objet. Comme il en a été discuté avec les membres de votre service, les actions suivantes seront entreprises en vue de satisfaire les recommandations de la dite évaluation:

1. Actions visant à l'amélioration de la Gestion Financière et la rentabilité économique du projet:

1.1. Le Service des Eaux et Forêts affectera un comptable professionnel à la Direction du projet à Mopti.

1.2. Le comptable suivra une formation au bureau de la comptabilité à l'USAID dans le domaine du système de la comptabilité des projets. Il se familiarisera avec un système de comptabilité simple qui l'aidera dans l'établissement d'une comptabilité analytique pour le projet. Le Service des Eaux et Forêts et l'USAID mettront au point un système simple de comptabilité permettant une gestion adéquate des revenus du projet.

USAID au MALI
 AMBASSADE AMERICAINE

ANNEX F



(U.S. MAIL ADDRESS)
 USAID/Bamako
 Dept. of State
 Washington, D.C. 20523

Bamako, April 5 1984

Minister of Rural Development
 Government of the Republic of Mali
 BAMAKO

SUBJECT: Evaluation Recommendations Village
 Reforestation Project 625-0937.09A

Implementation Letter No. 10

REFERENCE: Mid-Term Evaluation Report

Dear Sir:

I have the honor to set forth herein our mutual understanding concerning the implementation of the recommendations of the referenced evaluation. As discussed with members of your staff, the following actions will be undertaken to fulfill the evaluation recommendations:

1. Actions needed for the improvement of the financial management and the economic viability of the project:

1.1. The Forestry Service will assign a qualified accountant to the project in Mopti.

1.2. The accountant will be trained by USAID in project financial management. The accountant will be exposed to a simple accounting system that will aid in the establishment of an analytical accounting system. The Forestry Service and USAID will develop a system for the adequate management of project revenues.

Ministre chargé du
 Développement Rural
 COUPON D'ARRIVEE
 N° 1.800..... 05.04.1984

82

1.3. La comptabilité sera concentrée au niveau de la Direction Régionale à Mopti et le compte du projet à Bamako sera fermé.

1.4. La Direction Nationale des Eaux et Forêts supervisera et assistera la Direction Régionale dans l'établissement des budgets et dans l'analyse et le suivi des dépenses du projet.

1.5. Le nombre des manoeuvres recrutés pour les travaux des pépinières sera réduit à cinq (5).

1.6. Le service des Eaux et Forêts et l'USAID étudieront la possibilité de la mise en oeuvre d'un programme de vente de plants pendant la campagne de reboisement 1984.

2. Actions visant à l'amélioration de l'exécution technique du projet:

2.1. Un adjoint technique doit être affecté à la Direction du projet à Mopti, les termes de référence pour son travail sont définis dans le rapport d'évaluation.

2.2. Le programme des actions techniques du projet sera établi par la Direction Régionale du projet chaque année en Janvier et fera l'objet de l'approbation par la Direction Nationale et l'USAID. Ce programme indiquera toutes les actions qui seront entreprises par chaque unité du projet ainsi que les voies et moyens pour y parvenir. En outre, sur la base de ce programme annuel, la Direction Régionale du projet établira des programmes trimestriels et mensuels d'exécution des activités.

2.3. Le cahier de la pépinière, de l'expérimentation, de l'équipe de vulgarisation et les rapports du projet donneront plus d'informations analytiques et de détails sur les travaux d'exécution du projet.

2.4. L'accent ne sera plus mis uniquement sur les bosquets et plus d'efforts seront faits dans le domaine de la foresterie rurale: ombrage, alignement, haies vives, brises vents, production des arbres fruitiers, contrôle de l'érosion, conservation des sols, agroforesterie, interventions sylvopastorales, etc.

1.3. The financial management system will be concentrated at the Regional level and the Bamako project account will be closed.

1.4. The National Direction of the Forestry Service will supervise and assist the Regional Direction in the preparation of budgets and with the analysis and monitoring of project expenses.

1.5. The number of workers per nursery will be limited to five (5).

1.6. The Forestry Service and USAID will study the possibility of a program of seedling sales during the reforestation campaign of 1984.

2. Actions to improve the technical aspects of the project:

2.1. A technical advisor will be assigned to the Regional Direction in Mopti. The scope of work for the advisor is defined in the evaluation.

2.2. An annual program of technical activities will be established by the Regional Direction in January of each year and will be approved by the Forestry Service and USAID. This program will indicate all activities which will be undertaken by each project component and the ways and means of achieving them. In addition, on the basis of these annual programs, the Regional Direction will establish quarterly and monthly work plans.

2.3. The nursery, experimentation and extension work-books, as well as the monthly reports, will provide better analytical information and details on the implementation activities of the project.

2.4. Village woodlots will receive decreased emphasis, and more effort will be made in the area of rural forestry. This includes but is not limited to shade trees, living fences, boundary plantings, wind-breaks, fruit tree production, erosion control, soil conservation, agroforestry and sylvopastoral interventions.

2.5. La gestion de la pépinière doit être améliorée et l'accent mis sur la diversité des essences d'arbres qui seront produits y compris les essences locales et fruitières, la qualité des semences, des plants (hautes tiges de 1 ou 2 ans), et sur l'augmentation de la production des plants en pots.

2.6. Les parcelles de démonstration seront limitées au nombre de trois (3) par cercle pendant la durée du projet. Les travaux de plantation et d'entretien dans ces parcelles se feront avec la participation des villageois. Les moyens mis dans ces parcelles seront ceux disponibles au niveau des villages.

2.7. Le projet aidera dans la création d'un minimum de trois pépinières villageoises ou privées par cercle à partir de l'année 1984.

2.8. Le service des Eaux et Forêts doit organiser un séminaire d'information et de formation au cours de l'année 1984 auquel participeront les représentants des services de développement rural et les autorités administratives et politiques régionales et locales.

3. Dans l'optique d'une planification et d'une organisation plus rigoureuse du projet, un plan directeur et un plan d'opérations annuelles doivent être établis, les fiches et formulaires recommandés par l'évaluation étudiés et adaptés aux besoins du projet, les cahiers de pépinière, d'expérimentation et de vulgarisation tenus correctement.

4. La vulgarisation des foyers améliorés doit être ralentie jusqu'à ce qu'un modèle plus approprié soit développé ou qu'un expert qualifié soit recruté. Les responsables du projet doivent suivre le travail des organisations impliquées dans le développement et la vulgarisation des foyers.

2.5. The management of nurseries will be improved and emphasis placed on the production of a diversity of tree species, including local species and fruit trees. The quality of seeds and seedlings (1 or 2 year old seedlings) will be improved, and the quantity of seedlings in pots will be increased.

2.6. The demonstration plots will be limited to three (3) per district for the life of the project. The establishment and maintenance of these plots will be done with the participation of villagers. The means used for these plots will be those which are available to villagers.

2.7. The project will assist in the establishment of at least three village or private nurseries per district over the life of the project, starting in 1984.

2.8. The Forestry Service will organize an information and training seminar in 1984. Representatives from the rural development organizations and political and administration officials will be invited to participate.

3. To improve project planning and organization a master plan and annual work plans will be established. The forms and worksheets suggested by the evaluation will be analyzed and adopted for the project, and nursery, experimentation and extension workbooks correctly kept.

4. The extension of improved woodstoves will be slowed down until such time as a more appropriate model is developed or a qualified expert is recruited. Project personnel will closely follow the work of organizations responsible for the development and extension of woodstoves.

5. Une meilleure organisation doit être mise en place pour assurer la coordination et la communication continues entre tous les éléments du projet aussi bien qu'avec d'autres services.

6. Les activités d'expérimentation doivent être développées et exécutées dans chaque cercle. Le document du projet et celui de l'évaluation serviront comme base pour une expérimentation simple et répondant aux besoins de la pépinière et des actions villageoises.

7. Outre les recommandations citées ci-dessus, le personnel du projet devra étudier le rapport d'évaluation et sera responsable de la mise en application de toutes les autres recommandations et suggestions citées dans ce document et visant à l'amélioration du projet.

Si vous approuvez les procédures ci-dessus, veuillez faire connaître votre accord en signant cette lettre et nous retourner la copie.

Veuillez agréer, Monsieur le Ministre, l'assurance de ma très haute considération.

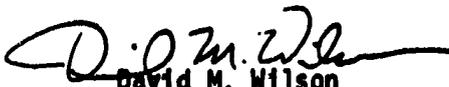
5. Project organization will include better continual coordination and communication between all project components, as well as with other organizations.

6. Experimental activities will be developed and executed in each district. The project paper and the evaluation report will serve as a guide for simple experimental activities which respond to the needs of the nursery and village level activities

7. In addition to the recommendations cited above, project personnel will study the evaluation and will be responsible for the application of any other recommendation and suggestions that would improve project effectiveness.

If you approve of the above procedures please acknowledge your concurrence by signing this letter and returning a signed copy to my office.

Sincerely,

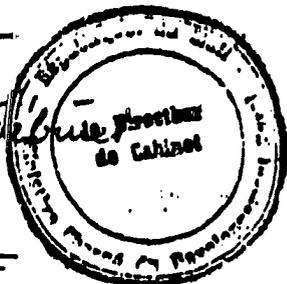

David M. Wilson
Director

Ministre chargé du Développement Rural f.10

Le Directeur de Cabinet



Date: 13 Juin 1984



Ampliation: Directeur Général de la Coopération Internationale

86