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FINAL REPORT
ON THE
EVALUATION OF
OPERATION HAUTE VALLEE, MALI

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DEVELOPMENT ASSOCIATES, INC.

MANAGEMENT AND GOVERNMENTAL CONSULTANTS

2924 COLUMBIA PIKE • ARLINGTON, VIRGINIA 22204

C. Weir

FINAL REPORT
ON THE
EVALUATION OF
OPERATION HAUTE VALLEE, MALI

Volume 1

Prepared for:

THE U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT
Bamako, Mali

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Prepared by:

James L. Roush
DEVELOPMENT ASSOCIATES, INC.
2924 Columbia Pike
Arlington, Virginia 22204
Tel.: (703) 979-0100

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DEVELOPMENT ASSOCIATES, INC.

Film

PREFACE

Section 4.2. Covenants, Item (k) of the Project Grant Agreement for the Operation Haute Vallee project provides for evaluations as follows:

"The parties agree to establish an evaluation program as part of this project. A joint evaluation, unless otherwise agreed in writing, will take place in 1980 and every subsequent year of the project, and will take place at the project site at a time deemed appropriate for a thorough review and analysis of (i) progress toward attainment of project objectives; (ii) identification and/or evaluation of problem areas or constraints; (iii) options for resolution of problem areas identified; and (iv) evaluation, to the extent feasible, of the overall development impact of the project."

No evaluation was carried out in 1980, although planning for such an evaluation was initiated. A scope of work for the evaluation was cabled to AID/Washington in March 1981 -- see excerpt of Bamako 1314 attached at Annex A. Subsequently, it was decided to add an expert to review the proposal for the health component -- funds were allocated in the project budget for a health component, but a precise activity was to be developed after the project was initiated. After several delays, an August 1981 starting date for the evaluation was established.

Although it was to be a joint evaluation, no GRM (Government of the Republic of Mali) personnel participated in the formulation of the scope of work. However, employees of the Institute of Rural Economy (IER) of the Ministry of Agriculture were designated to participate in the evaluation as members of the evaluation team. The head of the IER group (M. Samake) also served on the liaison committee for the evaluation. The liaison committee, which facilitated and monitored the evaluation, also included the Director of the Operation Haute Vallee -- the implementing organization (M. Kante), the acting Chief of Party (Mr. Schmidt) of the technical assistance contractor (Louis Berger International, Inc. -- LBII), the chief of the Design and Evaluation Office (Mr. Shoemaker) of the U.S. AID mission (USAID) and the acting USAID Project Officer for the Haute Vallee project (M. Toure).

The evaluation consisted of 13 people drawn from five organizations:

Development Associates, Inc. (contractor) - Mr. Roush, Mr. Goodrich
Multinational Agricultural Systems, Inc. (MASI-contractor) - Mr. Cooper
AID Regional Office in Abidjan (REDSO) - Ms. Stier, Messrs. Bronson, Anders
and Eldredge
Institute of Rural Economy (IER) - Mme. Sy, M. Samake, M. Traore
USAID - Ms. DuRette, Messrs. Hall and Jacobs

The USAID had established nine areas of analysis, and the team members were assigned to these areas. Mr. Roush, whose contract provided for him to write the draft evaluation report, was made team coordinator in addition to other responsibilities. Mr. Cooper was sent home because of a lack of French and M. Traore made no substantive contribution. Thus, the assignments by areas of analysis, excluding Cooper and Traore, were as follows:

Management/Information Systems - Roush
Financial Management - Jacobs, Roush, Goodrich
Credit Program - Roush, Sy, Samake
Sociological - Stier
Technical Agricultural - Bronson, Anders
Engineering - Anders, Eldredge
Health Sector - Goodrich, Samake
Economic - Samake, Hall
Human Resources (Literacy & Training) - DuRette
(Note: Jacobs and DuRette were assisted by USAID Malian employees Adama Traore and Abdoul Diallo, respectively.)

The preparation of the report was delayed because: (a) all team members were not in Bamako concurrently; (b) some team members were unable to prepare their reports before leaving Bamako; (c) one team member was ill and was unable to submit his report until early November; (d) reports had to be distributed in both French and English and translating services were not always timely and accurate; (e) typing and reproduction services were inadequate; and (f) the team coordinator had to leave a week early because of illness in his family. The result was that the draft report was prepared in the U.S. and sent in sections to Bamako for translation and distribution. To expedite the preparation of a final report, the team coordinator and writer of the report returned to Bamako November 23-December 4, 1981 to obtain comments on the draft report, gather additional data as necessary, obtain French versions of the report, etc. Both the English and the French versions of the final report were prepared in the U.S.

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VOLUME II

Volume II is comprised of nine (9) working papers,
distributed in limited quantity to the USAID and OHV.

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 Lambert Conformal Projection
 Standard parallels 8° and 32°
 Scale 1:1,000,000
 Boundary representation is
 not necessarily authoritative

—+— Railroad
 — Road
 ✈ Airport

EXECUTIVE SUMMARY

Project Setting

The site of the Operation Haute Vallee project is the upper reaches of the Niger Valley (referred to in French as the Haute Vallee). The organization responsible for project implementation is the Operation Haute Vallee, a semi-autonomous agency of the Government of Mali (GRM) under the Ministry of Agriculture. The Operation (OHV) is responsible for coordinating and promoting the integrated development of the Haute Vallee region.

The Haute Vallee project area covers about 13,800 km² and lies on both sides of the Niger River between Bamako and the Guinea border. Although the capital city of Bamako falls within the area, the city and its environs are excluded from the project area. On the left bank of the Niger River, a plain, dissected during the rainy season by numerous streams, slopes gently to the river. On the right bank, there is a well-defined terrace above the flood plain. About 35 percent of the area's soils are suitable for agriculture.

The population of the project area at the inception of the project totaled about 211,000. Population density was low, averaging 12 persons/km². About 94 percent of the total population was engaged in agriculture, and the people lived in over 200 rural villages and several small towns. The 1977 "Socio-economic study of the Haute Vallee" by the GRM Institute of Rural Economy (IER) showed that there were about 16,000 farm families in the project area. The IER study indicated the following concerning the average farm family in the Haute Vallee:

- Average about 12 hectares each, with about 5 hectares cultivated;
- Cereals (paddy, millet, sorghum, maize) took up 75 percent of the cultivated hectare; and
- Cash crops (mainly peanuts, cotton and tobacco) covered approximately 22 percent of cultivated hectare.

Project Funding

AID Authorization: \$18,395,000
(September 1978)

Malian Contribution: \$6,917,000*

*Of which \$2.2 million is in kind

AID Obligations:	FY 1978	-- \$	500,000	
	1979	--	4,532,000	
	1980	--	3,150,000	
	1981	--	3,730,000	
Cumulative Obligations	--	\$11,912,000	--	65% of project budget
Of which: Earmarked		9,600,000	--	81% of obligations
Expended		6,870,000	--	58% of obligations

Revised Budget as of 7/31/81

	(\$ Millions)
Technical Assistance/Studies	\$ 3.7
Training	0.7
Equipment/Commodities	3.8
Construction	5.1
Road rehabilitation	(2.9)
Buildings	(1.0)
Bancoumana polder rehabilitation	(1.2)
Agricultural Credit	1.8
OHV Operating Costs	1.8
Health	0.5
Contingencies/Inflation (not yet allocated)	1.1
TOTAL	<u>\$18.4</u>

Project Goal and Purpose

Sector Goal: Improve incomes and the quality of life of the rural poor in the Haute Vallee area.

Project Purpose: Increase food crop productivity, production and marketing in the Haute Vallee.

End of Project Status: One-eighth of the Haute Vallee farm families (i.e., 2,000 families) will have been introduced to improved technology and will have increased food crop productivity, production and marketing; and better support systems for agriculture, functional literacy, health and transport services and facilities will be in place.

The Project Paper stated that the proposed project really was a 10-year project. However, because of AID regulations, it was divided into two phases, and objectives and targets were established for Phase I, the current project.

Project Strategy

Perhaps because of the complexity of the project, a project strategy was not clearly enunciated in the Project Paper. Seven project components were decided upon which were to be complementary in bringing about increased food production by largely subsistence farmers:

- Animal traction -- to increase productivity
- Improved irrigation (Bancoumana) -- to increase rice production
- Credit -- to expand access to basic agricultural technology
- Road rehabilitation and upgrading -- to ensure that increased agricultural production could be marketed
- Disease control -- to improve labor efficiency and the general welfare
- Functional literacy -- to facilitate access to agricultural information and improve the general welfare
- Support for OHV -- in crop research to support increased agricultural productivity and in administration to insure that OHV could manage the increased program

Two components were considered critical to the achievement of the project's overall objectives: roads and credit. In addition, the designers were concerned about the management burden being placed on OHV and the USAID, and urged a phasing of project activities and the tailoring of the level of assistance to the capacities of the farmers of the region and the OHV. Significant levels of management training and technical assistance were also recommended to deal with the lack of management expertise. There was also concern about OHV's financial viability, and a study was planned to explore possibilities for increasing OHV revenues.

The first chief of party of the technical assistance contractor (Louis Berger International, Inc. -- LBII) provided a focus for the project: animal traction-based farm improvement centered on pilot farmers who would agree to follow OHV's agronomic and cultivation practices recommendations in return, for credit to finance the purchase of oxen and farm equipment as needed, as well as production inputs.

However, he tried to make up for lost time by using non-Malian data in his computer program and trying to end run the OHV procurement system; he was unable or

unwilling to communicate his ideas to OHV senior staff. The result was that he was removed, and there was a hiatus for a period of a few months. Gradually, the technical assistance team has begun to try to reformulate a project strategy. Nevertheless, no project strategy has been articulated, let alone agreed to by OHV and USAID.

Recommendation: That OHV and USAID establish long-term project goals and develop a medium-term strategy and implementation plan for the project (No. 1, II.B).^{1/}

Section II.C. offers ideas on: (a) long-term priorities; (b) elements of a medium-term project strategy and plan; and (c) how to organize and conduct the planning process to develop a more operational plan.

Reconciling Project Priorities

One of the reasons for the lack of an agreed strategy is that the objectives and priorities of OHV and USAID have been different. For example, OHV's main source of income has been, and continues to be, the fees it receives from other state enterprises for the commercialization of cash crops (cotton, tobacco and peanuts). There is a single ultimate buyer of cotton, a state monopoly. Thus, OHV's interest has been to promote the production of cotton, the only crop it could be sure of marketing at harvest time. OHV also has earned money from distributing farm inputs, generally on credit. To ensure repayment, the farmer needs a cash crop. Hence, OHV was led once again to cotton. OHV could recoup its loan when it purchased the farmer's cotton, minimizing the risk of default on the loans extended.

The purpose of the AID project, on the other hand, was to increase the production of cereals -- especially millet-sorghum. The project designers projected an increase in the area planted to food crops, particularly millet-sorghum and rice, and some increase in yields. Expanding the area farmed and obtaining higher yields would increase the requirement for a greater investment in weed control.

^{1/}Only the principal recommendations will be repeated in the Executive Summary. The number of the recommendation and the section of the report in which it is presented will be indicated in parentheses.

This would lead to a considerable expansion of the use of animal traction for weeding. This in turn meant there would be a need for credit to finance the purchase of oxen and small scale mechanized equipment and a cash crop to repay the loan. Thus, some expansion in cotton production was probably seen as necessary at the outset of the project, but this was supposed to change during the course of the project.

The Project Paper called for a credit specialist on the technical assistance team, and for the introduction of a revised and more liberal credit system by the third year of the project. Potentially of even more importance was the plan to do a detailed study of OHV operations with a view to recommending a program for increasing OHV's revenues. The road component was also expected to lead to improved access to markets by the farmers -- free markets where the farmer could expect to obtain higher prices and become more independent of OHV marketing arrangements and GRM price policies.

Unfortunately, the OHV dropped the credit specialist from the technical assistance team before the contract was signed, and the proposed study of the credit system and its re-vamping has not taken place. The study for improving the OHV revenue structure also has not been undertaken. The road rehabilitation program has been delayed. Consequently, the basic position of OHV has not changed, and it necessarily is still heavily oriented toward the production of cotton.

On the positive side, there has been a considerable increase in the production of corn, in part facilitated by OHV activities, but largely due to increases in the price of corn on the parallel market. This new development, coupled with the increasing availability of technological interventions that potentially can increase food grain production dramatically, increases the importance of the project to the GRM. This can lead to policy changes that will permit OHV to change its modus operandi.

Some recent policy-related events further increase the chances for a harmonization of project objectives. Policy statements in the new five-year plan indicate that there is going to be increasing reliance on private enterprise and more liberal market arrangements. The GRM has initiated the process of de-controlling cereal prices. It has already abolished some parastatals and taken steps to convert

others to mixed private-government ownership. With IBRD/IDA financing, the GRM is launching a six-month study of all of the "Operations" to determine whether and how they can become self-supporting organizations--if there is a rationale for their continued existence.

To support the joint planning recommended above, to expedite the harmonization of OHV-USAID objectives and to enhance the chances of a successful project, it has been recommended that:

- Short-term technical assistance be recruited to study ways of increasing OHV revenue and improving OHV's financial structure, to up-grade OHV planning and financial management and to improve OHV logistical performance (No. 37 -- IV.B.; No. 28 -- IV.A.);
- The GRM minister of agriculture and the USAID director become more actively involved in reviewing project planning and implementation (No. 39 and 40 -- VI; No. 34 -- IV.A.); and
- The credit program be re-oriented and re-structured and be made more efficient (No. 3, No. 4, No. 5, No. 6 -- III.C.).

Project Implementation/Progress By Project Component

The Project Grant Agreement was signed within the same month the project was approved (September 1978), but virtually nothing has been on time since. Most proposed activities are one to two years behind schedule due to various factors: AID red tape and procurement delays; inadequately trained OHV managers, exacerbated by an insufficient use of technical assistance; poor contractor performance; deviations from project design; grossly inadequate project management by USAID, reflecting in part AID/Washington (AID/W) inability or unwillingness to provide qualified personnel; and faulty assumptions in the Project Paper.

The highlights of the findings and recommendations regarding the seven project components are given below:

1. Animal Traction

The Project Grant Agreement called for the construction of eight animal traction centers over five years. The centers were to serve for training, research and the provision of farm support services (animal care,

production and/or repair of farm equipment, and stocking of supplies and spare parts, etc.). OHV built four centers in the first year of the project, then virtually abandoned them. The principal activity has been the purchase and sale on credit of work oxen (80 pairs in 1981).

Recommendation: That an integrated animal traction program be prepared, including suggestions for the use of the already constructed centers. (No. 2 -- II.B.)

2. Credit

The project designers considered the provision of credit as one of the two most crucial components of the project (the other was roads). It was felt necessary to make credit terms easier for the purchase of farm equipment, to permit credit to be made available to purchase work oxen and to raise interest rates so that the credit fund would not decapitalize. These steps were to be undertaken on a modest basis immediately while a long-term credit advisor, who was to be part of the technical assistance team, would arrange for a detailed study of the system. A new system was to be instituted by year three of the project.

Credit for work oxen was initiated in year two, but the other changes were not attempted until year three. Even then, the changes, which were insisted upon by USAID, were not thought through sufficiently, were based on incorrect assumptions about field conditions and were issued too late in the crop season. Furthermore, the evaluation team found that OHV's instructions to its field personnel did not correspond to the Project Implementation Letter, and the field reality did not correspond to OHV's instructions and assumptions. Thus, the structure of the credit system still needs to be modified; the current system is not solvent. The system of management of the credit program is grossly inadequate -- in Bamako and in the field.

Recommendation: That USAID do a financial review or request an audit of the use of agricultural credit funds; that USAID make no further funds available for the credit fund until a number of specified actions are taken (No. 3, No. 4 -- III.C.).

3. Farm-to-Market Roads Rehabilitation

The project calls for improving 203 kilometers of existing roads and tracks to Class B all-weather standards, including laterite surfacing, and making minimal improvements in another 195 kilometers -- some grading and installing of drainage structures. Within one year after execution of the Project Agreement, the GRM was to identify a satisfactory source of funding from its revenues for funding the maintenance of the roads improved under the project.

A decision was made to build all roads to a Class B standard, although no analysis was made indicating the impact on the number of kilometers of roads that could be rehabilitated during the project period or the impact on the project budget. Road priorities also were changed, and there is no documentation indicating the basis for the change. There have been serious implementation delays, the major causes being the delays in equipment procurement (an AID responsibility) and the inadequacy of the International Harvester equipment (AID/Washington insisted that it be purchased) and the lack of back-up support for the equipment.

Additional delays seem likely unless there is improved planning, a better arrangement made for obtaining spare parts, particularly for IH vehicles and equipment, and agreed procedures are established for advancing USAID funds to the public works road construction brigade.

No source of funding has been identified for road maintenance, and no discussions have taken place with responsible GRM authorities on the subject. This is not serious yet, because no roads will be needing maintenance until late 1982/early 1983. The 45 kilometers of roads constructed in 1981 will have to be somewhat re-worked in 1982 because drainage materials were not available in 1981 in time for installation before the onset of the rainy season.

Recommendation: That the USAID engineer position not be dropped for at least a year; that some operational decisions and actions be taken to insure a full season of work in 1981/82; that USAID initiate a dialogue with the GRM within six months to resolve the road maintenance problem; and that no road construction be financed in 1983 if a road maintenance strategy and plan has not been developed prior to that time (No. 8, No. 9, No. 10, No. 11 -- III.D.).

4. Disease Control

The Project Paper called for a detailed design for a "limited health intervention" in the project zone. The design was not completed until February 1981. The health member of the evaluation team made some suggestions for improving the managerial aspects of the project. However, the USAID is still concerned about its own management workload and may not be willing to go ahead with the health activity unless a U.S. private voluntary organization is prepared to implement the program. One of the principal activities of the project is the rehabilitation of the Bancoumana polder to permit increased irrigated farming of rice. This was one of the reasons for including a health component in the project. It seems prudent for the USAID as a minimum to utilize some of the funds allocated for health to gather information about the health conditions of the irrigation farmers at Bancoumana (No. 13 -- III.E.).

5. Functional Literacy

The Project Grant Agreement calls for the establishment of 100 functional literacy centers in villages in the project area, with 25 of the centers offering classes for women only. Materials used in the centers were to be on agricultural and health themes suggested by OHV extension agents.

The establishment of centers is ahead of schedule, although a number of the centers have closed. The goals of providing greater support to OHV extension and credit activities and increasing classes for women have not been achieved. Neither OHV nor USAID management have devoted much attention to the content or progress of the activity. DNAFLA, the GRM functional literacy organization in the Ministry of Education, evaluated the activity in 1980 and expressed dissatisfaction with the program. The OHV has done little in the interim in the way of corrective action.

Recommendation: That USAID suspend support to the functional literacy activity at the end of 1982 unless a number of specific corrective actions are taken; and that better linkages be established between OHV, USAID and DNAFLA for planning, implementing and monitoring the activity (No. 14, No. 15 -- III.F.).

6. Irrigation Improvement and Polder Rehabilitation at Bancoumana

The Bancoumana polder irrigation system is located in the flood zone of the Niger River about 60 km from Bamako. It is farmed by 160 farm families and supports 2,000 people. The polder was poorly designed, and water levels are unequal in its existing 540 hectares. As a result, good water management has been next to impossible. Yields are poor (only 0.8 tons/hectare); average yields of 3 tons per hectare should be obtainable. The activities necessary for rehabilitation and extension of the polder system are:

- repair and reconstruction of the perimeter dike to the necessary crest level of 20 cm. above the estimated 100 year flood level;
- repair and reconditioning of all control gates;
- cleaning and shaping of canals;
- cleaning and extension of the drainage system; and
- leveling of the farmers' plots.

It was assumed that the leveling and rehabilitation of the individual farm plots and the rehabilitation of secondary and tertiary canals could be carried out by the farmers themselves using animal traction. Thus, the project was to rehabilitate the main canal and to level and rehabilitate only 100 hectares of farm area which could be used as a demonstration area. Funds from the Credit Fund were to be used to help the farmers finance the purchase of oxen and equipment needed for the rest of the work. Unfortunately, the assumption regarding the use of animal traction was invalid because of the small size, weight and pulling force of N'Dama oxen--about two-thirds the strength of the Asian breeds--and the heavy hydromorphic gleysoils to be worked. Now, when construction is about to begin, the USAID and OHV are faced with a large portion of the project's funds being required to rehabilitate the polder, but only 100 of the 550 hectares of farm land will be put into cultivation and no funding is in sight for the leveling and preparation of the other 450 hectares.

There has been extensive delay in the planning of this activity. However, as of August 1981, final engineering plans were almost completed. The OHV contract with OTER, a GRM construction agency, had been drafted. A start

of construction was planned for January 1982 with 50-100 hectares to be ready for farming by May 1982.

Although the planning for the construction activity is complete, there is little evidence of planning for the agricultural side of the activity. Few of the farmers in the area have the necessary oxen and equipment to carry out the improved practices that will become feasible. There is a need for special training of the extension agents, an intensive farmer education program and training of farmers in the use of animal traction equipment. In addition, the farmers of the polder have yet to agree to the terms of the contract for the management and maintenance of the polder and the set of water charges that OHV has prepared.

Recommendation: That the USAID Director not approve the contract for the construction work at Bancoumana until OHV has submitted a satisfactory agricultural plan and USAID has established that the farmers at Bancoumana have approved all the plans for the polder. Also that OHV request the technical assistance contractor to prepare a work plan by July 1982 for completing the rehabilitation of the other 450 hectares in the polder (No. 16, No. 17 -- III.G.).

7. Administrative Support to OHV

The Project Grant Agreement provides the following:

"The project will assist OHV in a number of ways so that its effectiveness as a conduit of improved technology will be greatly enhanced. This assistance will be in several forms: (1) training abroad and in-country for numerous OHV agents; (2) provision of long-term expatriate specialists in credit, crops, animal traction, rice production, financial management and administration; (3) provision of five 10-ton trucks; (4) construction of headquarters building; (5) a minimal expansion of six field offices; (6) construction of four small warehouses; (7) provision of equipment and technical advisors to OHV to improve the operation of the vehicle garage; (8) an increase in the number of OHV's vehicles; and (9) provision of mobyettes for field agents, the cost of which will be repayable to OHV so as to ensure the replacement of their mobyettes."

In addition, USAID has financed a base-line survey of the project area and provided funding for maintenance and other operating costs.

Primarily because of site changes, the construction of the headquarters building has been delayed--the contract was signed in August 1981, two years late. The cost also went from \$193,000 to \$600,000 because of changes in design--two-story vs. the original one-story plan. The construction of a new garage for OHV was added to this project component. The contract for construction was expected to be awarded before the end of 1981. There are no firm plans for construction of field facilities.

Most of the equipment and vehicles have been procured, but considerably behind schedule. The procurement of vehicles was a particular problem. The AID/W insistence on buying the International Harvester vehicles has been very costly--particularly in terms of the efficiency and effectiveness of the project. A discussion of the procurement problems in Mali and suggestions for reducing some of the delays were provided in the Roush report on USAID technical assistance in Mali.^{1/}

The technical assistance contract with Louis Berger International, Inc. (LBII) was not signed until one year after the signature of the Project Grant Agreement. The first members of the LBII team to arrive did not have adequate housing, office facilities or vehicles for a number of months.

The first chief of party had his concepts of what the project should be and tried very hard to carry them out. In the process, he did not attend sufficiently to his duties as chief of his team. Neither was he able to establish good working relations with his counterpart, the Director of OHV. He was removed as chief of party in August 1980, approximately one year after the signature of the contract. The administrative officer was made acting chief of party and has remained so -- although the Director of OHV requested that he be made permanent chief of party and that a senior agricultural officer be recruited to serve in a new technical coordinator position which would replace one of the agronomist positions.

^{1/}Roush, James L., Development is a Joint Effort: Discussion Paper on Improving the Effectiveness of USAID-Funded Technical Assistance to Mali, USAID/Mali, December 15, 1980.

The Project Agreement called for long term experts in credit, crops (agronomist), animal traction, rice production, financial management and administration (chief of party). Although included in the Request for Proposal, the credit advisor was dropped by the Director of OHV in the contract negotiations. The Agreement also provided for the services of an engineer and an equipment maintenance/spare parts expert for work on the road construction activity. There has been dissatisfaction expressed by the Director of OHV with various members of the LBII team, and an agronomist and an engineer have been replaced -- as well as the first chief of party.

The utilization of the contract team by OHV has not been optimal. This appears to reflect a lack of experience by the Director in using technical assistance, the unfortunate situation revolving around the first chief of party, and inadequate support, guidance and monitoring by USAID. Since the departure of the first chief of party, relationships have gradually improved, and there is greater use being made of the team. However, the team needs to be more effectively integrated into the OHV operation. This will be difficult until the team's offices can be co-located with the rest of OHV.

The contractor's performance has been disappointing in terms of the initial disregard for the approved project design, the capabilities and attitudes of some of the personnel recruited for the project and the paucity of assistance provided to OHV in general planning and management improvements. The latter has been increasing in recent months, particularly in the financial management of AID resources, but will continue to be limited until the Chief of Party position is filled with a highly qualified, experienced executive and/or greater use is made of short-term technical assistance.

Recommendation: That the Chief of Party and Agricultural Credit Advisor positions be filled and the administrative officer position be up-graded; that greater use be made of short term technical experts (No. 20, No. 21 -- III. H.).

There have been serious delays in sending personnel for long term training, in part because of a lack of English proficiency among potential candidates. The limited amount of short-term training would appear to reflect inadequate planning and insufficient attention being given to training by OHV management, USAID and the technical assistance contractor. A revised training plan should be prepared for the project taking into account the recommendations in this report and the medium term project strategy and implementation plan to be developed.

Management of Project Implementation

As indicated above, each of the project components is behind schedule, some considerably so. The immediately obvious reasons for the delays are given in the Section III presentations. In Section IV, Project Management, the more fundamental problems or issues underlying those reasons are analyzed and suggestions and recommendations made for improving project implementation and financial management in the future.

The more basic problems contributing to poor project implementation performance discussed in Section IV are:

1. Frequent deviations from original plans;
2. Inadequate and ineffective planning;
3. Insufficient use of technical assistance;
4. Inadequate and ineffective systems for monitoring project performance;
5. Poor collaboration and communication; and
6. Lack of training and orientation in effective management techniques.

The principal recommendations made for improving the management of project implementation include the following:

- That annual and quarterly work plans be prepared for all project components (No. 27 -- IV. A. 2.);
- That OHV request short term assistance from LBII in planning (No. 28 -- IV. A. 2.);
- That OHV and USAID establish a project monitoring system (No. 31, No. 32 -- IV. A. 4.);

- That more meetings be held to review project progress, including periodic reviews by the Minister of Agriculture and the USAID Director (No. 33, No. 34 -- IV. A. 4.);
- That OHV and USAID make a greater effort to foster a spirit of cooperation and collaboration and to improve communications among the project administrators, technical assistance experts, USAID and the farmers (No. 35 -- IV. A. 5.); and
- That USAID support the establishment of an in-country management training program along the lines of the Denver Research Institute proposal submitted to USAID in mid 1979 (No. 36 -- IV. A. 6.).

Financial Management

The management of both AID and non-AID financial resources available to the project was reviewed because the financial viability of OHV is essential to the success of the project as it has been designed. Furthermore, there are indications that OHV has used AID resources to cover periodic shortfalls in its current operating funds.

OHV's financial management system has shortcomings and needs substantial improvement in each of the following:

- Procedures for establishing annual and quarterly budgets and monitoring adherence to the budgets;
- Procedures for controlling the flow of funds (receipts and disbursements) and the control of commodities purchased by or donated to the organization;
- An accounting system for the receipts and disbursements of funds which supports the budgeting and funds control sub-systems; and
- A financial management information system based on the foregoing sub-systems which provides management with periodic reports to guide its financial decisions.

Specific recommendations to effect these improvements include the following:

- That short term technical assistance be utilized to: (a) strengthen the OHV accounting and financial information system; (b) develop improved procedures for procurement planning and for the purchasing, distribution and inventory control of commodities; and (c) study ways of increasing OHV revenues (No. 37 -- IV. B.);
- That OHV recruit a more highly qualified chief financial officer (No. 38 -- IV. B.).

Validity of Project Design

This part of the report (Chapter V) looks at the likelihood that project outputs will be obtained and the project purpose achieved and then critiques the economic, technical, social, administrative and financial feasibility analyses of the Project Paper.

There clearly will be shortfalls in obtaining project outputs. Probable shortfalls which stem from faulty technical assumptions or inadequate attention to design include Bancoumana polder rehabilitation, training to some extent and the overhaul of the credit system. The basic design was not followed in the following activities: literacy (on the qualitative side), road rehabilitation (i.e., trails improvement was dropped), animal traction. Other activities showing shortfalls reflect primarily poor implementation. Poor implementation is also evident in the foregoing activities, but in those activities it appears not to have been as critical to lack of progress as faulty design or disregard of design.

There will likely be a shortfall in the achievement of the Project Purpose, although not necessarily in relation to the shortfall in project outputs because some of the outputs are marginal to achieving the End of Project Status projected. The shortfall can be minimized if the project authorities give high priority to the most crucial elements of project success:

- a. A re-structured, liberalized and more efficient credit system;
- b. A substantially improved OHV performance, particularly with regard to: (1) the dissemination of test results of new technological innovations; and (2) the delivery of production inputs, agricultural machinery and work oxen;
- c. A better OHV financial structure, and improved management by OHV to ensure the foregoing;
- d. Improved marketing possibilities for farmers; and
- e. Greater and better use of animal traction.

The internal rate of return calculated for the project was a very modest eight percent. Besides some conservative technical assumptions, the designers projected a very small gain in yields for sorghum/millet, no change in corn (maize) production, no increase in areas planted to rice outside of the Bancoumana polder and no improvement in the ratio between input costs and output prices. There have been very positive changes in all of the above, so it would appear that the internal rate of return will be considerably better than projected. Clearly part of the improvement is due to changes in relative factor prices, but project activities or project-supported activities have made significant contributions. The balance of payments impact of the project is also likely to be more favorable than projected. The financial position of OHV, however, remains critical.

Lessons Learned

The Lessons Learned chapter (Chapter VII) offers suggestions and recommendations which flow from an analysis of the evaluation findings and the December 1980 Roush study of technical assistance activities in Mali (previously cited). Only those suggestions which would require action by AID/Washington or at the ministerial level of the GRM are summarized in this Executive Summary.

1. Improving Collaboration and Communication

a. In Project Design

One way to improve collaboration in the project design process would be to modify the composition of design teams. More direct participation in project design by USAID and the projected host country implementation agency is needed, but this is not likely given personnel restraints on both sides. Therefore, the expatriate element of the design team should include individuals with management/management information, financial, logistics, manpower planning and personnel development experience who can test the implementation

feasibility of the proposed technical plan. Host countries should be encouraged to establish central project design and evaluation units which could participate in expatriate-funded design and evaluation teams and insure that the aspects of the local cultural, social and political environment are factored into the analyses. AID should help foster and strengthen such units by: (a) supporting the creation of services similar to AID's Development Information Service; (b) training greater numbers of host country personnel in the design and evaluation concepts developed by AID and now used by many other donors; and (c) insisting that USAIDs seek out and incorporate in design teams host country personnel experienced in design and evaluation.

It is usually fairly easy to obtain agreement between host country officials and USAID project design personnel on the general objectives of a project, but there frequently is not a meeting of minds on how those objectives are to be accomplished. Often this results in an unrealistic implementation plan. Two changes in the AID project design and approval process could help this situation:

- 1) AID should make clear that its project approval is binding on the general objectives of the project, but leave considerable latitude to USAID and the host country on how the objectives are achieved--while insisting on a good monitoring system; and
- 2) The implementation process should provide for the joint preparation at the time of, but prior to, the signing of the Project Agreement of a more detailed life-of-project implementation plan, with detailed work plans for the first year and procedures for reviewing and up-dating the plan. Detailed financial and other operational procedures, at least for the first project with an agency or organization, should be worked out and tested for feasibility before the Project Agreement is signed--not presented in the first Project Implementation Letter as is now the practice.

The foregoing implies that AID/Washington will cease and desist in some of its most consistent actions which probably are the greatest contributors to poorly implemented projects: pressuring USAIDs for rapid development of new projects, speedy obligation of funds and early initiation of disbursements. It is well recognized that an extremely high pipeline can provide the Congress with an excuse for reducing foreign assistance appropriations. It is suggested, however, that one of the most important contributors to AID's high pipeline is the obligation of funds before enough of the "hows" of implementing projects have been worked out collaboratively, and the foregoing AID/W pressures are the principal cause for such premature action. Therefore, it is important that AID accept the utility of allowing missions more flexibility in the timing of the signing of Project Agreements and explain to Congress the rationale for the change in the process.

In part because of limited collaboration, inadequate attention is given by AID planners to the interests and motivations of the project implementers and the factors in the cultural and social environment that may discourage initiative, encourage or facilitate practices in resource management that are unacceptable to AID or cause the personnel of the implementing agency to be uninterested in, or negative toward the involvement of intended recipients in the project. To deal with the foregoing types of issues, AID might look at the approval process of individual projects and also undertake some research related to the general problem of dealing adequately with cultural and social factors.

With regard to individual projects, there is need for an analysis in Project Papers of the social/cultural/political problems directly impacting on the feasibility of project implementation. The Social Soundness analysis section of Project Papers usually deals only with the possibility of insuring that the intended beneficiaries of the

project will indeed benefit from the project, and the Implementation section deals mostly with the staffing, structure and track record of the implementing agency. It is suggested that AID provide for a classified presentation of cultural/social/political factors and any other issues that could impact seriously on the implementation of the project.

In terms of the broader problem, a comprehensive study of the principal types of social/cultural/political problems encountered in the implementation of international development projects could identify the most persistent problems, evaluate the various means attempted to overcome or circumvent them and develop some guidelines for dealing with at least some of the problems. As a complement to the foregoing study, an effort should be made to identify any countries which have overcome the most serious social or cultural impediments to effective project implementation and determine the factors which appear to have contributed most to the changed situation. This might lead to new program or training activities or to the convening of seminars to discuss the findings.

b. In Project Implementation, Monitoring and Re-Planning

Recommendations for improving in-progress project planning and project monitoring and for other actions for improving project implementation are included in Chapter IV and in the previously cited Roush report (Sections IV and V). It would be in the interest of the GRM to implement a number of those recommendations in other GRM development projects. In addition, it is suggested that AID incorporate the recommendations, as appropriate, in its Handbook chapters and training programs on project implementation. Furthermore, the Handbook chapter dealing with Project Agreements should require that Project Agreements include:

- those portions of the Project Paper that both parties agree are important to follow in project implementation;

- a requirement for joint reviews of project implementation and joint approval of annual work plans and budgets; and
- a provision that Project Implementation Letters will be the official project documentation and will be used specifically to formalize approval of annual work plans and changes in the overall implementation plan or annual work plans.

2. Making Project Management More Effective--the People Factor

A number of recommendations for improving project direction and management were made in Section IV above and in Section V of the previously cited Roush assessment of USAID-funded technical assistance activities in Mali. The latter section, especially, includes recommendations which have relevance for a number of USAID-financed activities and probably for non-AID financed projects in Mali as well. In addition, some of the recommendations are believed to have relevance for AID projects and programs in other countries, especially in French-speaking West Africa. It is recommended, therefore, that both the GRM and AID/Washington review the two sections for general applicability. Particular attention in this report is given to seeking ways to offset personnel shortages/inadequacies.

a. Orientation and Training

It is very important that the project director have a full understanding of project objectives and of the personnel implications of the project implementation plan. Frequently, this can only be fully appreciated after exposure to a similar type project in another developing country or in the U.S. Sometimes someone from a budget bureau or an overall government personnel agency must also have full understanding of, and be in agreement with, project plans before it is possible to implement the project effectively. Often, therefore, one of the first project actions should be an orientation tour for the project director, and possibly other host country personnel.

Financial management is an area where it seems particularly important to provide orientation to host country project directors and USAID project officers. It is doubtful that much value will come from the proposed AID training in the Sahel in financial management if the training is geared just to accountants and to assuring proper control over the use of AID funds. To assure its effectiveness, such training must be preceded or accompanied by an orientation for project directors which helps them see how improved financial systems and reports can improve their effectiveness. This orientation will need to be followed up with help in financial management systems beyond just controlling the flow and use of AID funds.

Often project plans call for long-term training in the U.S. for senior project personnel, usually in technical areas. Thus, senior personnel already in short supply are sent off for training, weakening overall project management capabilities because personnel going for training will generally be replaced by a less capable person or by a peer who will try to administer both persons' functions.

It is suggested, therefore, that long term training abroad be done on a sector basis under a special training project rather than incorporated in an action project. Project training then would focus on short term courses or orientation visits abroad plus in-country management training for project managers and middle-level personnel as well as skills training at all levels. Project personnel could still be selected for long term training abroad, but they should be replaced by a qualified officer, preferably one that had already been for training.

USAID personnel also need additional orientation and training in management. The new course in Project Implementation that is now being given periodically in the regions is very helpful and long overdue. However, there is also a need for exposing more senior personnel to a number of management concepts so that they will at least recognize the need for improving management systems and have

some idea of how to go about doing it. Thus, the Development Studies Program should include a management concepts component. Candidates for Director and Deputy Director who do not have a strong background in management concepts should be required to attend the Federal Executive Institute or a short management course prior to being assigned to their new position. AID/Washington officials also need greater exposure to management concepts -- in part to do a better job, in part to assure sympathetic responses to USAID requests for improving internal USAID management as well as assisting host country agencies which are implementing AID-funded projects.

b. Improving Productivity

Often project designs provide for increased agricultural productivity through the introduction of new plant varieties, improved cultivation practices or new technologies and/or more advanced equipment. All too often, however, similar innovations are not proposed for the system of administration of the implementing organization or for the delivery systems for the proposed new technologies. New equipment and new systems introduced into such fields as organizational administration, financial management, logistics planning and management, etc., can increase considerably the chances of implementing a complex project successfully. In general, increased attention should be given to the non-technical needs of development projects.

c. Contracting

Most AID projects provide for AID to contract or finance contracts for technical assistance and for engineering and construction services. It is generally assumed that all other services will be provided by the host country implementing organization using its own personnel. It is proposed that a much greater effort be made to structure development projects to make greater use of indigenous private sectors for providing the services that frequently, if not usually, are provided by government organizations. Where it is

necessary to use a foreign firm, the firm's contract should require the firm to maximize the use of subcontracts with local firms so that a local capability could be built up. Concurrent with trying to utilize more contracting with the private sector to implement development activities, it will be necessary to provide training to appropriate host country personnel in contracting and contract management.

d. Use of Technical Assistance

It is suggested that an appropriate agency of the GRM (perhaps the Ministry of Plan) undertake or arrange for a review of a number of foreign assistance projects involving technical assistance to determine what elements seem to be the most important in a successful technical assistance project in Mali -- e.g., type of contractual arrangement, relationship of contractor's team with host country organization and personnel, minimum language requirements, length of stay of technical assistance experts, amount of orientation and training given to foreign and Malian personnel about each other and about the objectives and planned implementation mode of the project, etc. Based on the results of the study, the GRM could issue general guidance to its agencies on the contracting for, and management of foreign-financed technical assistance.

GRM agencies are urged to review Section V.B. (Contract Management) of the Roush report, including particularly sub-section 5. on Host Country Contracting. It seems quite likely that the GRM review suggested in the previous paragraph would conclude that host country contracting is unnecessarily burdening GRM project directors with administrative problems and limiting the time available to them to devote to policy matters, planning and implementation supervision. Even if host country contracts should be deemed desirable, implementation of a number of the recommendations included in Sections III.D. and V.B. of the Roush report should improve communications and contract management and should result in better results from the contract technical assistance.

AID should insist that USAIDs review host country contracting capability before recommending host country contracts. Furthermore, USAIDs should be reminded that use of host country contracting does not reduce the USAID's responsibility for assuring that proper contracting procedures are followed and that project implementation is both efficient and effective; i.e., that AID funds are properly used.

3. Being Realistic About "Doing More With Less"

In Mali, and apparently elsewhere in the Sahel, AID has been trying to do more with less for a number of years, and the results are coming home to roost. There is now a mad scramble to initiate financial training programs as a means of ameliorating one of the most glaring and consistent problems raised in project evaluations and other assessments. There is a real danger that senior AID management will conclude that some financial management training for selected host country nationals and more Project Implementation courses in the field will largely solve the problems raised. While both of these training courses are badly needed, it is high time that AID administrators, Ambassadors, Directors of Budget and the Congress stop kidding themselves that efficient and effective aid programs can be run without people -- qualified people.

It is also important that AID/W understand, and be able to convey to other interested parties, some of the factors that need to be considered in determining USAID staffing levels:

- a. Dollar values of programs and projects frequently have little relevance to workload.
- b. The number of projects is more meaningful in determining staffing needs, with appropriate qualification:
 - 1) Consideration must be given to regional and AID/W projects located in the country, local currency projects (from counterpart funds or P.L. 480 proceeds), Title II programs, etc.;

- 2) Many projects, such as Haute Vallee, have a number of components, most of which could be separate projects;
 - 3) Projects in the design stage should be included because they frequently are more time-consuming than on-going projects (e.g., a new mission or a mission that is expanding its portfolio significantly needs an early influx of people during the project preparation and initiation stage, not after all of the funds have been obligated).
- c. The local environment in which the USAID operates impacts heavily on staffing needs--level of logistical support, climatic conditions, availability of qualified local nationals to work for USAID to run projects, location in the country of the bulk of the AID program, etc.
 - d. Actual time available for work is less overseas because of R&R in hardship posts, often more sick leave in hardship posts, home leave, training assignments, need to train subordinates or interns -- which are counted as staff under MODE rules, which is unfair to the USAID, the intern and the AID foreign service.
 - e. The level of experience and training of those assigned to a mission affects the numbers required -- a particular problem in Mali where project officers have been interns or those who had just finished their internship.

Even if there is greater recognition of the requirements for more adequate USAID staffing, it is probably necessary to accept as a given that AID will never have an optimum level of field staffing, taking into account quality and quantity. It is important, therefore, to look for ways to alleviate staffing problems. Some ideas follow:

- a. Reduce the number of regional and centrally-funded projects, or contract for their administration;
- b. Expand and improve the training of AID personnel and their counterparts responsible for project implementation;

- c. Do a more realistic job of estimating staffing requirements;
- d. Fund projects in full--either on a one-shot basis or over a three-year period;
- e. Develop local organizations to provide project implementation support, e.g., management training, consulting services, logistics;
- f. Perform reviews of USAID internal management--to help mission management with its problems, not assess its performance in an audit sense, i.e., no reports for AID/Washington;
- g. Make greater use of host country personnel in USAID staffing;
- h. Re-organize USAID to increase the focus on project implementation and improved management;
- i. Involve the U.S. private sector (profit and non-profit) or other U.S. government agencies more in program planning and project administration.

I. PROJECT AND EVALUATION BACKGROUND

A. Project Setting

The site of the Operation Haute Vallee project is the upper reaches of the Niger Valley (referred to in French as the Haute Vallee). The organization responsible for project implementation is the Operation Haute Vallee, a semi-autonomous agency of the Government of Mali (GRM) under the Ministry of Agriculture. The Operation (OHV) is responsible for coordinating and promoting the integrated development of the Haute Vallee region.

The Project Paper (PP), which was approved in September 1978, provides a brief description of the Haute Vallee region and a summary of the outstanding features of the area that were considered critical to understanding the project design.

A summary of the Project Paper presentation follows:

"The Haute Vallee project area covers about 13,800 km² and lies on both sides of the Niger River between Bamako and the Guinea border. Although the capital city of Bamako falls within the area, the city and its environs, as well as the State Farm at Baguineda, are excluded from the project area. On the left bank of the Niger River, a plain, dissected during the rainy season by numerous streams, slopes gently to the river. On the right bank, there is a well-defined terrace above the flood plain. Two major tributaries, the Sankarani and the Fie, intersect this plateau, forming a peninsula. The Niger flood plain varies around 5 km in width. No detailed hydrogeological survey of the area has been carried out, but it does not appear likely that high-yielding aquifers exist in the area. About 35 percent of the area's soils are suitable for agriculture and include 10 percent hydromorphic soils and 25 percent alluvial soils containing rapidly decomposed organic material, including varied alluviums (20 percent), sandy flood plain soils (2 percent), and ferruginous tropical hydromorphs (3 percent).

The Selingue Dam, on the Sankarani River which feeds into the Niger, borders the project area and is scheduled for completion in 1980. It will have a road across the top, with year-round all-weather access to Bamako, via the Bamako-Ivory Coast highway. Water from the dam will be available for irrigation downstream along the Sankarani river via pumping. Almost 30,000 ha of land could be put under irrigated cultivation once the Selingue Dam irrigation outlet work is completed. The electric power there will serve primarily Bamako.

The Haute Vallee has a Sudanese climate characterized by a well-defined wet season (approximately mid-June to mid-October, with some rains occurring in April-May). Annual rainfall is roughly equivalent to that in North Carolina and varies from 1,300 mm in the south to about 1,000 mm in the north. Average temperature at Bamako is 84 degrees Fahrenheit, varying from a monthly maximum of 102 degrees Fahrenheit in April to a minimum of 62 degrees Fahrenheit in December.

The population of the project area totals about 211,000, of whom about 25 percent are in the Niger right bank districts - 45 percent in the left bank districts, and 30 percent in the Kati district. (This figure does not take into account the city of Bamako, whose population is estimated at more than 400,000.) Population density is low, averaging 12 persons/km². About 94 percent of the total population is engaged in agriculture, and the people live in over 200 rural villages and several small towns. The 1977 "Socio-economic study of the Haute Vallee" by IER shows that there are about 16,000 farm families in the project area.

The worst disease problem in the Haute Vallee is onchocerciasis, followed closely by malaria and, to a lesser extent, schistosomiasis.

The IER study mentioned above indicates the following concerning the average farm family in the Haute Vallee:

- average about 12 hectares each, with about 5 hectares cultivated;
- cereals (paddy, millet, sorghum, maize) take up 75 percent of the cultivated hectareage;
- cash crops (mainly peanuts, and now some cotton and tobacco) cover approximately 22 percent; and
- while no specific hectareage was indicated for vegetable production, vegetables appear to comprise 2-3 percent of total cultivation.

Only two polders are presently cultivated - Krina (200 ha) and Bancoumana (630 ha, of which about 540 ha are cultivated). The BDPA has concluded that there are about an additional 1,000 hectares which could be developed for irrigated rice cultivation in the area.

The Mali Agricultural Sector Assessment shows that while the Haute Vallee farmers have significant numbers of cattle, only 25 percent of their income comes from livestock, the remainder coming from agriculture.

In Mali, specialized state companies have, in theory, a monopoly on marketing almost all agriculture products. These agencies in turn contract with the Operations. In the Haute Vallee, OHV has authority to purchase peanuts, cotton and tobacco, for which it receives a marketing fee, which largely supports OHV's activities. In actual practice, agricultural produce is marketed through the open (parallel) market with prices determined by supply and demand. In general, Haute Vallee's farmers' grain sales to the GRM are a small percentage of their total grain sales, so the average price received by them in a normal year is significantly higher than the official price.

The Haute Vallee is a classic case where poor transportation infrastructure is the major limiting factor to increased agricultural production. The present road network consists of about 230 km of roads on the western side of the Niger River. Segments of this road sometimes become impassable during the rainy season. On the east side of the river, the Bamako-Ivory Coast road borders the project area, and a new road connecting Selingue Dam to this road passes through some of the project area. These roads are linked by well over a thousand kilometers of bush trails which are opened up after the rainy season by the villagers and which provide additional dry season access to most of the area. These trails are closed during the rainy season due to poor surfacing and difficult stream crossings. Improved roads are at the top of the farmers' list of priorities since they become locked in during the rainy season.

Outstanding features of the existing situation in the project area critical to understanding project design

The Haute Vallee area has excellent agricultural potential for many reasons:

- Annual rainfall equivalent to that of North Carolina.
- Proximity to country's largest market, Bamako.
- Excellent existing potential in irrigated rice because of the Niger and Sankarani rivers.
- Exceptionally good future potential in irrigated rice when Selingue Dam is completed in 1980, allowing an additional 30,000 hectares downstream to be irrigated from dam discharges.
- A regional and financially viable Operation (OHV) which most experts conclude has a sound organizational structure which needs no major changes - just assistance.
- An on-going functional literacy program to which support could be given so that it can become a better instrument for introducing improved cultural practices and technology to farmers.
- The existence of one common dialect throughout the region and the absence of major conflicts between ethnic groups.
- A very strong village structure which is already being used effectively in OHV's on-going farm implement supply systems.
- The widespread use, and cultural acceptance, throughout the project area of animal traction.
- The exceptionally good receptivity of villagers, GRM officials and OHV staff/field agents to a project to increase agricultural productivity, production and marketing - if the roads are improved.

There are also a number of reasons why this great potential has not yet been realized:

- The roads and trails in the area are in terrible condition. Farmers everywhere say that getting their food crops to a major route leading to Bamako is so problematic as to make producing more than their needs not worth the effort;
- OHV lacks the facilities and funds to extend its activities over existing levels, and its staff requires more training and technical assistance in order to expand its operations;

- The GRM's credit system, which OHV administers in the Haute Vallee, allows farmers only 3 years to repay; farmers say that they are afraid to take out loans for fear of not being able to repay them in time;
- Farmers everywhere say they dearly want work oxen, but a team costs \$325 up to \$390. And those farmers who have been able to buy the oxen do not always use them effectively;
- The vast majority of farmers are illiterate and DNAFLA (functional literacy agency of GRM Ministry of Education) lacks funds both for extending its literacy efforts beyond the 17 centers presently in the area, and for revising its educational materials to make them better communicate improved agricultural and disease prevention practices;
- OHV has lacked the expertise and funds to extend its agricultural research program in the area; and
- Finally, as in most areas along the rivers in Mali, diseases are very debilitating, especially onchocerciasis, and to a lesser extent, malaria and schistosomiasis."

OHV, the implementing organization, was established by Decree No. 117/PGRM of September 16, 1972. OHV was placed under the general supervision of the Minister of Rural Development (subsequently the Minister of Agriculture) and a board of directors representing various GRM ministries. The principal objectives of OHV in its zone are:

- take all necessary measures to effect the integrated development of the Haute Vallee zone;
- organize the marketing of the agricultural produce of the zone and agricultural credit;
- promote and animate agricultural groupings (collectivites exploitantes) in collaboration with cooperative services with a view to training a professional service of capable agriculturists who in time could themselves manage the collective means of production and marketing;
- train the cadre and farmers of the Operation through re-cycling, seminars, various training programs and functional literacy; and
- propose and carry out, after approval by the appropriate minister, all actions concerning the different aspects of integrated development of the zone.

B. Project Goal and Purpose

Sector Goal: Improve incomes and the quality of life of the rural poor in the Haute Vallee area.

Measures of Goal Achievement:

1. Increase in family income of target group.
2. Increase in numbers of functional literacy courses and in health services operating in villages.

Project Purpose: Increase food crop productivity, production and marketing in the Haute Vallee.

End of Project Status: One-eighth of the Haute Vallee farm families (i.e., 2,000 families) will have been introduced to improved technology and will have increased food crop productivity, production and marketing; and better support systems for agriculture, functional literacy, health and transport services and facilities will be in place.

In the narrative of the Project Paper, the project purpose called for increasing "agricultural" productivity, while the foregoing statement from the Logical Framework used the term "food crop" productivity. The latter clearly was the intention of the project designers, and this was carried over into the Project Grant Agreement. "Food crops" was translated into French as "cereals", but this was understandable because the project focus as formulated was on cereals - millet-sorghum generally, and rice in the Bancoumana polder area.

The Project Paper stated that the proposed project really was a 10-year project. However, because of AID regulations, it was divided into two phases, and objectives and targets were established for Phase I, the current project.

C. Project Design

The Logical Framework for the Haute Vallee project is included as the last two pages of this section. Although the project purpose is to increase food crop production, the project design is not just for an agricultural project; rather, it is closer to an integrated rural development project. For example, the project includes seven complementary project components:

animal traction -- to increase productivity

improved irrigation (Bancoumana) -- to increase rice production

credit -- to expand access to basic agricultural technology

road rehabilitation and upgrading -- to ensure that increased agricultural production could be marketed

disease control -- to improve labor efficiency and the general welfare

functional literacy -- to facilitate access to agricultural information and improve the general welfare

support for OHV -- in crop research to support increased agricultural productivity and in administration to insure that OHV could manage the increased program

While no project strategy was clearly enunciated, the project designers made clear that two components were critical to the achievement of the project's overall objectives: roads and credit. In addition, they cautioned that the project should avoid any grandiose schemes and build upon and improve existing practices that have already demonstrated success in Mali, e.g., use of an autonomous (actually only semi-autonomous) implementing agency (Operation Haute Vallee), irrigated rice production, use of animal traction, and an ongoing functional literacy program. The designers were concerned about the management burden being placed on OHV and the USAID, and urged a phasing of project activities and the tailoring of the level of assistance to the capacities of the farmers of the region and the OHV. Significant levels of management training and technical assistance were also recommended to deal with the lack of management expertise. Flexibility was to be maintained because of the nature of the project, and in order to take advantage of the project's built-in research component. There was also concern about OHV's financial viability, and a study was planned to explore possibilities for increasing OHV revenues.

As indicated above, credit was considered one of the two most critical components in terms of achieving the project's overall objectives. It was felt that the credit program needed to be made viable by increasing interest rates. In addition, credit needed to be made available for the purchase of oxen, and loan terms needed to be lengthened from three to five years. The designers of the project provided for an agricultural credit expert on the technical assistance team and also provided that the credit system should be re-designed by the third year of the project.

**PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK**

Life of Project: _____
 From FY _____ to FY _____
 Total U.S. Funding _____
 Date Prepared: _____

Project Title & Number: OPERATION HAUTE VALLEE

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Program or Sector Goal: The broad objective to which this project contributes:</p> <p>Goal: Improve incomes and the quality of life of the rural poor in the Haute Vallee area.</p>	<p>Measures of Goal Achievement:</p> <ol style="list-style-type: none"> 1. Measurable increase in family income of the target group of farmers involved. 2. Measurable increase in numbers of functional literacy courses and health services operating in villages. 	<p>Special data collection as part of project evaluation starting with base-line study and 4 statistically objective-evaluation reports on the target area project activities and their impact.</p>	<p>Assumptions for achieving goal targets:</p> <ol style="list-style-type: none"> 1. OIM will continue to give priority support to rural and agricultural development. 2. Price received by target farmers for food crops will be sufficiently high so to generate more cash from employing improved technology.
<p>Project Purpose:</p> <p>Increase food crop productivity, production and marketing in the Haute Vallee.</p>	<p>Conditions that will indicate purpose has been achieved: End of project year.</p> <p>One eighth of the Haute Vallee farm families will have been introduced to improved technology, have increased food crop productivity, production and marketing, and better support systems for agriculture-functional literacy, health and transport services and facilities are in place.</p>	<p>1-9. Verification of those KIM's by on-site inspections and OIM/OIV reports plus the four special statistically objective evaluation reports.</p>	<p>Assumptions for achieving purpose:</p> <p>An effective and viable credit system is in operation. OIV staff trained and expanded significantly. Official producer prices of food crops are raised significantly, or official commercialization remains near existing levels. Farmers make use of support systems in agriculture, health, literacy and roads.</p>
<p>Output:</p> <p>A fully irrigated polder rehabilitated and in profitable operation. An expanded functional literacy program in place operating with typical materials genuine to project goals. Key staff and extension agents of OIV trained. An on-farm/village demonstration extension program begun/expanded. Basic health services focusing on disease-prevention as well as treatment of river-related diseases being provided.</p>	<p>Magnitude of Outputs:</p> <ol style="list-style-type: none"> 1. Irrigated polder rehabilitated and rice production therein increased over 300% to average 3 tons paddy/ha. 2. 8,000 people trained in functional literacy. 3. Key staff and a majority of field agents of OIV trained. 4. Data compiled from 120 on-farm/village demonstration plots. 5. Basic health services treating and attacking causes of river-related diseases being provided in most villages. 6. 300 km of roads and trails upgraded to all-weather condition. 7. A re-designed credit system in operation with a revolving credit fund and expanded farm offices operation, and agricultural production raised by 50% for 2,000 farm families (25,000 people). 		<p>Assumptions for achieving outputs:</p> <p>Personnel with basic skills is available for training and to field positions. Number of young people leaving the project area is reduced somewhat.</p>
<p>Inputs:</p> <ul style="list-style-type: none"> Technical Assistance Commodities Training Construction Credit Capital/Research Fund Studies/Evaluation Maintenance/Materials/Tools Contingencies (15 percent) <p>(Use Financial Details, Exhibit 2)</p>	<p>(con't)</p>		<p>Assumptions for achieving inputs:</p> <p>See p. 2</p>

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OUTPUTS CONTINUED

- in village along rivers.
6. Feeder roads/trails rehabilitated and improved.
 7. Credit system re-designed and operating and additional credit offices in operation, and farmers increasing agricultural production therefrom.
 8. Animal traction schools installed and in operation.
 9. Some local blacksmiths trained by OHV and providing services to farmers, making multicultivators/carts for OHV.
 10. First demographic/economic baseline survey in area completed by IER and project statistical evaluation plan written therefrom.
 11. OHV headquarters constructed and additional warehouses and field offices constructed.
 12. OHV auto garage staff trained and equipped and providing professional-level repair work on OHV vehicles.

MAGNITUDE OF OUTPUTS CONTINUED....

8. 8 animal traction schools in operation and 1,500 farmers/oxen team, trained.
9. 90 local forgers trained.
10. Statistical base and agricultural production inventory and forecasting system completed (probability area frame sample) and project evaluation plan written and published.
11. OHV headquarters constructed, four warehouses constructed, and OHV field office space expanded in 6 villages.
12. More than a dozen OHV mechanics trained and value of equipment more than doubled.

ASSUMPTIONS (INPUTS)

1. Qualified American technicians can be recruited and will be willing to work in Mali.
2. Contractor is capable of transferring technology to local counterparts
3. Vehicles, equipment and commodity can be procured and arrived on time.
4. Qualified Malians for training will be forthcoming.
5. Proper final designs are completed on time prior to construction.
6. The new design credit system will benefit the farmers of OHV.
7. GRM will continue to study and evaluate the progress of the project.

ASSURANCE

1. The GRM and people of Hauts Vallee want the project and are willing to work to make it a success.
2. Malians are willing to learn from the technical assistance program in all projects.
3. Shelter facilities will be made available for the people and workers of OHV.

D. Project Budget

OPERATION HAUTE VALLEE
SUMMARY FOR FIVE YEAR FUNDING (\$'000)

TABLE 1

	Animal Traction - Research		Administrative Support/OIV		Irrigation/Bancoumana		Agricultural Credit		Functional Literacy and Health		Link Roads/ Access Trails		TOTALS		
	AID	GRM	AID	GRM	AID	GRM	AID	GRM	AID	GRM	AID	GRM	AID	GRM	GRAND
Technical Assistance	668	-0-	1,251	-0-	380	-0-	367	-0-	-0-	-0-	434	-0-	3100	0	3100
Commodities	352	35	530	-0-	307	-0-	58	-0-	106	5	1455	-0-	2808	40	2848
Training	171	-0-	165	-0-	199	-0-	118	5	37	9	-0-	-0-	690	14	704
Construction	64	-0-	224	175	566	40	100	-0-	-0-	2,000	3,088	-0-	4,042	2215	6,257
Credit Capital/Research Fund	125	10	-0-	-0-	-0-	-0-	1,310	-0-	-0-	-0-	-0-	-0-	1435	10	1445
Studies/Evaluations	-0-	-0-	175	-0-	75	-0-	43	-0-	-0-	-0-	50	-0-	343	0	343
Maintenance/Salaries/Primes	332	599	357	989	124	328	325	325	-0-	211	-0-	236	1138	2688	3826
Contingencies (15%)	256	127	406	175	248	51	348	80	21	334	754	35	2033	802	2835
Compounded Inflation at 8%	277	158	349	246	244	83	557	131	8	453	871	77	2306	1148	3454
TOTALS	2245	929	3457	1585	2143	502	3226	541	672*	3012	6652	348	18395	6917	25312

*includes \$500,000 for health component, not broken down into cost categories.

II. PROJECT STRATEGY

A. Evolution of Project Strategy

Perhaps because of the complexity of the project, a project strategy was not clearly enunciated in the Project Paper. Seven project components were decided upon which were to be complementary in bringing about increased food production by largely subsistence farmers:

- animal traction - to increase productivity;
- improved irrigation (Bancoumana)--to increase rice production;
- credit - to expand access to basic agricultural technology;
- road rehabilitation and upgrading - to ensure that increased agricultural production could be marketed;
- disease control - to improve labor efficiency and the general welfare;
- functional literacy - to facilitate access to agricultural information and the general welfare; and
- support for OHV in crop research and administration.

While there was no project strategy per se, the project designers made clear that two components were critical to the achievement of the project's overall objectives: roads and credit. In addition, they cautioned that the project should avoid any grandiose schemes and build upon and improve existing practices that have already demonstrated success in Mali, e.g., use of an autonomous (actually only semi-autonomous) implementing agency (Operation Haute Vallee), irrigated rice production, use of animal traction, and an ongoing functional literacy program. The designers were concerned about the management burden being placed on OHV and the USAID, and urged a phasing of project activities and the tailoring of the level of assistance to the capacities of the farmers of the region and the OHV. Significant levels of management training and technical assistance were also recommended to deal

with the lack of management expertise. Flexibility was to be maintained because of the nature of the project, and in order to take advantage of the project's built-in research component. There was also concern about OHV's financial viability, and a study was planned to explore possibilities for increasing OHV revenues.

The project proposal submitted by the technical assistance contractor (Louis Berger International, Inc. --LBII) stated that management was not a major problem; rather, it was important to focus on the integration of activities. Acceptance of the contractor's proposal changed the focus of the project to some extent. The Contractor's first chief of party was critical of the Project Paper in his first monthly report (October 1979). He did, however, provide a focus for the project. In his view, the project had to be judged ultimately by whether or not the farmers made more money. For him, animal traction-based farm improvement was the only component that would make money for the farmers. Therefore, this became the focus--the project strategy. This component was centered on pilot farmers who would agree to follow OHV's agronomic and cultivation practices recommendations. In return, the farmer would be provided credit to finance the purchase of oxen and farm equipment as needed, as well as production inputs. The proposal in the Project Paper for utilizing animal traction centers was dropped--after four had been built. The integration of the activities on the animal traction centers with the pilot farm approach, while a concept of the designers of the project, was not articulated in the Project Paper nor understood apparently by OHV or the technical assistance chief.

The chief of party ignored some very cogent advice in the Project Paper about grandiose schemes and pushing too fast. His use of linear programming in most environments would not be considered grandiose, but it was in the Malian context--at least in the time frame in which he tried to carry it out. He tried too hard to make up for lost time (e.g., the year taken to get a contract negotiated and signed) by using non-Malian data in his computer program and trying to end run the OHV procurement system. He tried to do too much too fast. He was unable or unwilling to communicate his ideas to OHV senior staff. The result was that he was removed, and this brought discredit to his ideas, even the good ones.

After the removal of the first chief of party, there was a hiatus for a period of a few months. Gradually, the technical assistance team has begun to try to re-formulate a project strategy. There has been greater focus on management needs, and upon improving the credit program. There has been an attempt made by OHV and the contractor to maintain data on a reduced number of pilot farms, with a view to ensuring that the data obtained are reliable and consistently obtained. On-farm testing of research results has been increased. A number of technical papers for use of the extension services has been prepared. A plan for in-service training and monitoring of performance for extension has been prepared and adopted by the OHV Director.

Nevertheless, no project strategy has been articulated, let alone agreed to by OHV and USAID. One of the reasons for this lack of an agreed strategy is that the perceptions, and hence the objectives and priorities, of OHV and USAID have been different.

B. Reconciling Project Priorities

From the beginning of the project, OHV has had an overall objective of promoting the integrated development of its region. It has also had a responsibility to carry out the GRM policy of food self-sufficiency. Thus, it would seem that the interests of the two parties coincide. However, one must look at how OHV has earned its income.

OHV's main source of income has been, and continues to be, the fees it receives from other state enterprises for the commercialization of cash crops (cotton, tobacco and peanuts) and for the distribution of farm inputs. It also receives a fee for purchasing and delivering foodgrains to OPAM, another state enterprise. However, OHV has been unable to market a significant quantity of food grains (see Table 2) primarily because of the low controlled price set by the GRM. There are many consumers of food grains, so there are also many intermediaries in their marketing. There is, however, a single ultimate buyer of cotton, a state monopoly. This is largely true for tobacco also. There is a GRM parastatal for the purchase of peanuts also, but being a food crop, peanuts are also marketed through various channels as well as consumed on the farm. Thus, OHV's primary interest has been to promote the production of cotton, the only crop it could be sure of marketing at harvest time.

OHV also has earned money from distributing farm inputs. However, this depends upon having a source of credit available for the farmers; otherwise, the amount sold would be minimal. The source of credit was SCAER, the parastatal responsible for the purchase and distribution of farm inputs. If one is to provide credit, one must be sure that there will be a chance of repayment, i.e., the farmer needs a cash crop. Hence, one is led once again to cotton, the one cash crop whose marketing OHV can be sure of controlling. OHV can recoup its loan when it purchases the farmer's cotton, minimizing the risk of default on the loans extended.

Given the foregoing situation, why would the OHV want to take on a project that was dedicated to promoting food crop production when its own income

TABLE 2

OHV MARKETING

CROP	QUANTITY MARKETED (TONS)			RATIO MARKETING/PRODUCTION (%)			AVERAGE RATIO 78/79 - 80/81
	1978/79	1979/80	1980/81	1978/79	1979/80	1980/81	
Millet/Sorghum/Maize	-	120	84	0	0.30	0.16	0.15
Rice	-	-	6	0	0	0.07	0.02
Peanuts	129	60	43	1.20	5.20	0.35	2.25
Cotton	4,538	8,591	6,552	90.75	96.50	60.00	82.30

Source: Reports of the OHV Board of Directors for quantities marketed and for production data (Table 4) used to calculate the ratios.

structure dictated a need to promote cotton and other crops whose marketing OHV could control? Because some of the project components should result in improvements that could increase the production and facilitate the marketing of cotton and other cash crops, e.g., upgrading of roads and agricultural credit for farm equipment. Increased funding was also made available for OHV operations (vehicles, operating costs, construction of offices and warehouses). Construction of the Bancoumana polder was included in the project, and this was a high priority project for the GRM for political as well as economic reasons. In addition, the project would foster development in general in the region, which would redound to OHV's credit and possibly increase its income. In short, the project had much of general advantage to OHV, and a fair amount that could be utilized in a way to promote cotton production even more effectively.

Then one might ask why AID should have been interested in the project, since it should have been clear that the OHV would be pushing cotton production, which AID cannot support if there is a chance that it would adversely affect U.S. cotton exports. Although it is not documented, it would seem that the following reasoning might have prevailed. With good management, it should be possible to assure that AID's resources did indeed get used to support increased food production. Furthermore, virtually all farmers in the zone are small farmers (2 to 20 hectares) and there is no such thing as a cotton farmer per se. Rather, for security against capricious rainfall and other risks, farmers generally plant at least four different crops in the different parcels that they farm. Thus, cotton would be only one crop grown, and the area planted to cotton would be considered infinitesimal by U.S. standards. A 1977 study cited in the Stier technical paper¹ indicates that a farmer with as many as 19 hectares in crops would only have two hectares devoted to cotton. Even with the increases in hectareage devoted to cotton (Table 3), the average cotton hectareage in the 1980/81 campaign on the control farms (for comparison with the pilot farms) was 1.85 hectares. On the pilot farms, which received credit permitting the purchase of a full equipment package, the area planted

¹Reproduced in Volume II of this report.

TABLE 3
AREAS PLANTED - YIELDS
(Hectares - Kilograms)

CROP	1977/78		1978/79		1979/80		1980/81		Increase in Area 1978-81	Increase in Yield 1978-81
	Area	Yield	Area	Yield	Area	Yield	Area	Yield		
Millet/Sorghum	19,500	760	21,700	900	22,000	1,000	24,300	983	+ 25%	+ 29%
Maize	4,100	1,200	11,100	1,100	11,300	1,742	11,900	2,420	+190%	+102%
Rice	4,000	1,000	6,800	853	7,500	1,000	7,900	1,063	+ 98%	+ 6%
Peanuts	15,700	764	12,500	864	12,000	900	13,000	992	- 17%	+ 29%
Cotton	3,300	910	5,000	1,000	8,000	1,113	9,550	1,152	+189%	+ 27%

Source: OHV for areas planted. Yields calculated from production data (Table 3) and areas.

to cotton varied from 1.76 hectares in the Kati region to 3.65 in Kangaba. Thus, it appears that the increased hectarage has come from small increases by a lot of farmers, including the entry of new farmers into cotton production, rather than the development of large farms.

The project designers projected an increase in the area planted to food crops, particularly millet-sorghum and rice, and some increase in yields. Expanding the area farmed and obtaining higher yields increase the requirement for a greater investment in weed control. The Project Paper did not assume a labor constraint, presumably because it was assumed that there would be a considerable expansion of the use of animal traction for weeding. This in turn meant there was a need for credit to finance the purchase of oxen and small scale mechanized equipment. Given the existing system of credit in operation in OHV at the time, it would have made sense for cotton to be the cash crop that would facilitate the expansion into other crops. Thus, some expansion in cotton production was probably seen as necessary at the outset of the project. However, the project had other elements that were designed to change the structure during the course of the project.

The Project Paper called for a credit specialist on the technical assistance team, and for the introduction of a revised credit system by the third year of the project. A further revision was projected in year four based on the results in year three. Thus, the opportunity was afforded to restructure the credit system away from a domination toward promoting cotton production. Potentially of even more importance was the plan to do a detailed study of OHV operations with a view to recommending a program for increasing OHV's revenues.

The road component was also expected to lead to improved access to markets by the farmers--free markets where the farmer could expect to obtain higher prices and become more independent of OHV marketing arrangements and GRM price policies.

Thus, while there were conflicting priorities at the outset of the project, there were also activities built into the project that were designed to bring each party's objectives more in line as the project progressed. Furthermore,

OHV was not against promoting increases in food production, it was just that it needed to use increases in the production of cotton as the vehicle for bringing about increased food production. It has promoted corn production, in part through the dissemination of improved seeds. Crop rotation recommendations have also resulted in increased yields in food crops because of residual fertility from use of fertilizer on cotton--although not as much increase as would result from direct fertilizing. It can be seen from Table 3 that the acreage planted to corn between 1977/78 and 1980/81 has increased slightly more than the increase in cotton. Furthermore, corn yields increased over 100 percent, while cotton yields only increased 27 percent. Even sorghum yields increased slightly more than cotton yields. Corn production increases (Table 4) were even more dramatic, rising by 476 percent during the same period. This reflects, in part, a low starting base. Nevertheless, corn production in 1980/81 surpassed sorghum production by nearly 6,000 tons.

The foregoing suggests that even greater increases would have been possible if agricultural extension and credit programs had not been structured so much in favor of cotton. It also illustrates how quickly farmers can respond when market conditions are right. The potential benefits from the project probably were considerably under-estimated in the Project Paper, since the calculations were based almost entirely on increases in sorghum production resulting primarily from increased acreage. These changes in the relative importance of different crops in the OHV region, and the increasing availability of technological interventions, suggest that the proposed project activities can increase food production substantially and make a major contribution to the development of the region--particularly if reinforced with improved project implementation, some policy changes, and a harmonization of priorities by OHV and USAID.

Some recent events would seem to increase the chances of a further harmonization of project objectives. For a variety of reasons, cotton plantings were seriously reduced this year, and it is not certain that continued expansion of cotton acreage is feasible--even if deemed desirable. Thus, OHV needs to reduce its dependence on cotton. In addition, OHV now has the responsibility for commercializing vegetables--in part for export. SCAER

TABLE 4
PRODUCTION
(Tons)

	LEVEL OF PRODUCTION				% Increase in Production 1977/78-80/81	Avg. Nat'l Production 1978/79-80/81	Average OHV 1978-79	Avg. Ratio OHV/Nation %
	1977/78	1978/79	1979/80	1980/81				
Millet/Sorghum	14,800	19,500	22,000	23,000	55	999,775	36,245	3.5
Maize	5,000	12,200	19,600	28,800	576			
Rice	4,000	5,800	7,500	8,400	110	199,525	6,425	3.2
Peanuts	12,000	10,800	11,700	12,900	7.5	131,750	6,975	5.3
Cotton	3,000	5,000	8,900	11,000	266	125,225	11,850	9.5

Source: OHV and five year plan 1981/85 for levels of production.

went out of business in November 1980, so OHV has lost a source of income, has even less control over the supply of production inputs and has lost a source of short term production credit. The foregoing would be sufficient reason for some re-thinking by OHV. However, recent GRM policy pronouncements and actions also can have a major impact on OHV operations.

Policy statements in the new 5-year plan indicate that there is going to be increasing reliance on private enterprise and more liberal market arrangements. The GRM has initiated the process of de-controlling cereal prices. It has already abolished some parastatals and taken steps to convert others to mixed private-government ownership. With IBRD/IDA financing, the GRM is launching a six-month study of all of the "Operations" to determine whether and how they can become self-supporting organizations--if there is a rationale for their continued existence.

The recent policy changes of the GRM and the study of the Operations make it imperative that OHV do some re-thinking about its role and its structure, especially if it wants to influence the outcome of the study. Because of the importance of AID's financial support to OHV, and OHV's central role in the implementation of the \$18 million AID project, USAID should be a participant in that re-thinking process and be in a position to make its own input to the study of the Operations. Furthermore, the project cannot achieve its potential without clearer lines of policy, a good implementation strategy, and improved long and short term planning.

RECOMMENDATION

- (1) That OHV and USAID, with the participation of the contractor, establish long term project goals and develop a medium term strategy for the project and a medium term implementation plan, i.e., to the end of the current phase of the project.

C. Developing a Project Strategy

1. Long Term Priorities

Since there appeared to have been very little strategic thinking prior to the arrival of the Evaluation Team, and there is limited capability in OHV, USAID and LBII for organizing and carrying out the proposed planning, the Team offers some ideas below on elements of a medium term project strategy and plan plus suggestions on how to organize and conduct the planning process to develop a more operational plan.

Before suggesting elements of a project strategy, it is necessary to look first at the project's implementing organization and make some assumptions about its future. As a first step in suggesting the outline of a future for OHV, it is necessary to look at what OHV is now doing and expects to be doing the next few years. The following list may not be complete, but it seems sufficient for our purposes:

- Provider of production inputs to farmers (fertilizer, herbicides, etc.);
- Provider of oxen to farmers;
- Provider of agricultural equipment to farmers;
- Provider of equipment for blacksmiths/metal workers;
- Provider of credit for financing of the above items;
- Provider of technical assistance to blacksmiths/metal workers;
- Provider of extension services to farmers;
- Purchaser of cotton and occasionally other products;
- Coordinator of functional literacy program;
- Coordinator of cooperatives development;
- Coordinator of secondary road improvements/road maintenance; and
- Coordinator of community development activities.¹

¹Community development was mentioned in the OHV Director's letter to the Coordinator of the Evaluation Team, but OHV's probable role was not clear.

As indicated previously, GRM policy pronouncements, and some actions, indicate a movement toward encouraging private initiative and freer marketing. In addition, the GRM has already established a national agricultural bank which presumably will eventually take over the provision of the bulk of agricultural credit. Given the foregoing, it is suggested that items 1 through 4 in the above list should have been taken over in the longer term by the private sector to a considerable extent, if not totally in one or more regions. In addition, the provision of agricultural credit should have become the responsibility of the new agricultural bank (BNA). Provision of technical assistance to blacksmiths probably would have become unnecessary. Thus, OHV's operational activity would have decreased. Concurrently, however, it should have increased its planning capability and its coordinating and support functions. From the foregoing, it follows that OHV's primary activities in the longer run would be:

- (a) Provision of extension services, including on-farm testing of research results (agronomic and cultivation practices);
- (b) Some residual delivery of production inputs;
- (c) Coordinating, monitoring and/or supporting the provision of credit and the services of the Livestock Ministry;
- (d) Coordinating activities that relate directly to the effectiveness of extension services, e.g., functional literacy, creation of village associations and cooperatives, other community development activities;
- (e) Planning the economic development of the region and preparing programs, or insuring their preparation, for implementing the plans, e.g., in such areas as secondary and tertiary road rehabilitation or construction, road maintenance, health, literacy, etc.

2. Focus of a Medium Term Strategy and Plan

If one accepts the foregoing as the likely OHV priorities three to five years from now, there are implications for a medium term project strategy. Specific ideas and suggestions for priority activities for the medium term follow.

OHV should begin looking for means to promote the delivery of production inputs and agricultural equipment to farmers through the private sector.

This might be initiated through supply contracts, either for the provision of specific items region-wide or for the provision of a number of items in a specific region--or some combination thereof. Bamako wholesale producers could be encouraged to set up local distributors in the more accessible towns. The credit fund might be used to facilitate such actions. As a supplement to the foregoing, plans should be developed for assisting interested villages, particularly in the more rapidly modernizing areas, to establish their own local storage facilities for inputs. Establishing more village storage points under the control of the village is also important for assuring the timely availability of production inputs. Again the credit fund could be used to facilitate this.

Movement of blacksmithing/metal working activity to the private sector has been initiated, but the various reports reviewed do not indicate that it has been consistently successful. It is suggested that a special review of the program be carried out with a view to strengthening it and making it even less dependent on OHV for its success. The result should be the manufacture in the towns of the region of some of the simpler equipment, as well as equipment repair and the manufacture of spare parts. Some specialization might be arranged among the different manufacturers. The credit program could be used imaginatively to support this activity.

The likelihood of turning the credit program over to the BNDA within the next two or three years will require a re-vamping of the structure of the system (see III.C. below). Furthermore, as indicated in the previous paragraphs, there is need for a more innovational use of credit to increase private sector activity in support of development in the OHV area. In addition, there should be an increase in the financing of oxen and equipment for other than pilot farmers and producers of cotton.*

*Although it generally is not feasible to provide credit to villages rather than individual farmers, an effective village credit system should be a goal of OHV's medium term plan.

At the present time, OHV is broadly judged in the villages on its delivery of inputs and the timeliness of its purchase of cotton (and occasionally other crops). If, in the longer term, these functions are taken over by the private sector, the quality, quantity and attentiveness of the extension agents will become the primary basis for judgment. This suggests the need to insure that the extension service is of the highest quality. Even at the present time, the extension service is the most effective catalyst under OHV's control for increasing production because the service is responsible for the delivery of production inputs, agricultural machinery and related technology as well as the functioning of the credit system. Therefore, an important element of a medium term plan should be the development of a program to up-grade the extension service. This would involve augmenting substantially the quantity and quality of extension agents, training, developing incentives for improving their performance, improving their supervision and up-grading the level and quality of support available from headquarters.

Although it will be necessary to have agents throughout the region, production goals are more likely to be achieved with a certain amount of concentration of agents. This is particularly true at present where the extension agent is a vital link in the placement of production inputs. Where the production potential is seen as large, and there are new technological inputs to be introduced, there should be some concentration of agents to expedite the adoption of new techniques and to provide extra guidance during the first year or two. Presumably this concentration would coincide with the placement of pilot farms, which particularly need a closer level of supervision as well as more collection of data. More direct involvement with the pilot farms could serve as training. After a couple of years, a lower level of supervision should be possible and agents regrouped to give a push to another area. The faster agents can be taken out of the business of supplying inputs and being involved in the credit program, the quicker the level of extension services can be improved throughout the area.

The foregoing suggests the need to classify the OHV region into zones according to their development potential, and to prepare more comprehensive sector (Secteur) plans than previously done. Such plans would indicate cropping priorities for the different zones, i.e., what are the crops that hold the greatest potential for the next few years taking into account soil types, rainfall patterns, level of sophistication of the farmers, etc. This does not mean trying to go to a monocultural arrangement in any zone, as that would not be satisfactory to farmers, but it does imply that the primary cash crop could vary from zone to zone. Developing cropping priorities in certain areas could permit greater specialization and depth of training for extension agents, and generally facilitate a closer linkage between research, on farm testing and extension services.

The foregoing proposal assumes the existence of technological interventions ready for application. This is true, but there are even greater possibilities needing to be tested at the farm level (see Annex B). This suggests the desirability of accelerating the dissemination of research results to farmers. One action needed is to expand the number of on-farm testing activities, e.g., (a) by extending the present SAFGRAD sponsored activities into the regions not yet participating (Kati and Oulessebouyou); and (b) by increasing the number of farm participants in the Bancoumana and Kangaba regions. Such an expansion would permit a greater variety of tests, i.e., involving a larger number of crops or potential crops, and the expansion could be obtained with minimal investment.

In recommending priorities for research and deciding upon priorities for on-farm testing, there are a couple of underlying principles that must continually be kept in mind. They are given much lip service, but the Evaluation Team's observations indicate that frequently they are not the basis for policy or action. In whatever way OHV and AID may formulate their objectives, neither will be successful if they do not keep their focus on the individual farmer and his/her needs. The overriding objective should be the maximization of the farmer's income and security. Both cash and food crops are essential. The cash crop can provide income and can give some security, but security in the final analysis requires food crops. Yet, the cash crops are essential to finance the investments needed to give greater security in the production of food crops--as well as cash crops.

If one accepts that maximization of the farmer's income and security is the primary focus of project activity, it follows that there must be more farm level analysis (economic and social) and farmer participation. Not only is there a need for different technical intervention in the various zones; there is also a need for special consideration of smaller farmers (i.e., those with less than six hectares of crops) who cannot yet afford the 500,000 plus franc package offered to the pilot farmers. In attempting to look at these special needs, it should be easier to see where to give priority in the other activities OHV attempts to coordinate: functional literacy, cooperative development, community development.

While more farm-level analysis seems necessary, this will have little value unless there is more communication with the individual farmer--two-way communication. OHV is there to serve the farmers, not the other way around. Examples are plentiful, from Mali and many other countries, of extension services and foreign advisors promoting activities that clearly were not in the best interest of the farmers they were supposed to be helping. A recent study prepared as a part of the USAID evaluation of the Operation Riz Sorgho project illustrates the point beautifully. It is reproduced as Annex C and is recommended as required reading for all OHV management personnel and all foreign technical experts supporting the project. While the physical situation may be different in the two zones, the approach needed to insure the validity of recommendations should be the same.

In focusing on farm-level needs and possibilities, a new look is needed at the possibilities of animal traction--in terms of increasing yields, expanding hectarage planted and facilitating marketing. Similarly, livestock raising as a "cash crop" also needs a more intensive review. Animal traction is discussed further in Section III. B below.

The literacy program needs to be integrated more effectively into OHV activities. It could be very supportive in promoting village credit, in distributing the results of on-farm trials, disseminating information on input and output prices, etc. See also Section III. F below.

Medium term planning also needs to concern itself with roads maintenance (see III. D below) and with the improvement of tertiary roads and trails. The latter was included in the project, but effectively has been dropped. It is worthy of review, but it should be done with the villagers to get a good sense of their needs, priorities and possibilities. It should not be reviewed simply as a trail improvement activity, but rather as an effort to find the best ways of helping the villagers get their produce to an all-weather road. Trail improvement may be needed to meet the problem, but it may not be sufficient. For example, availability of credit for the purchase of carts may also be necessary.

The most pressing need for Bancoumana is to resolve immediate operational problems/issues (Section III. G below). However, medium term planning should also receive attention when time permits. In particular, additional study needs to be undertaken on means to extend the properly irrigated area from 100 to 550 hectares on a cheaper basis than the current 100-hectare operation is likely to be.

Two things are going to be essential to make any project strategy and plan effective: an improved OHV financial picture (more resources and better financial management) and improved management and general efficiency of OHV. The two elements are inter-related: they both must be a part of any medium term strategy and plan for the Haute Vallee project. Management improvements are discussed in Section IV below. Some thoughts follow on the OHV revenue situation; hopefully, they will encourage an intensive exploration of alternatives.

The principal source of earned revenue for OHV has been the fees received for the purchase and delivery of cash crops, particularly cotton. Presumably, this could continue for some time. However, this is not sufficient; furthermore, it would be more supportive of project objectives if OHV could be involved in the marketing of other commodities. In time, this probably will also be taken over by the private sector. However, OHV's continuance in the market might be justified for some time just to insure that competition was really working in the market, i.e., to insure that the farmer was not being unduly gouged.

As the GRM gradually lets grain prices seek their market level, there should be no reason why OHV could not buy cereals as well as cotton and other traditional cash crops. In the meantime, OHV, with USAID support, might request the GRM to permit OHV to offer to buy part of a village's production at the official price and part at the going market price. A split of 1/3 official, 2/3 free market might well be interesting to the farmer since OHV would be there anyway buying other crops, and the farmer would not have to worry about getting his produce to market. This probably would mean that the government would get more grain than usual at the controlled price--certainly from the OHV area. OHV should also look at the possibility of renting storage space, or paying farmers to store grain on the farm, so that it could hold the grain for sale later in the year when prices rise.

3. Organizing the Planning Process

It is important to recognize at the outset that planning cannot be a one-time thing; rather, it should be a continuous process. In addition, OHV is already overloaded and has a number of crucial operating problems to resolve before the start of the next campaign, e.g., finding a source of funding for production inputs, establishing with USAID the credit terms for the coming campaign, meeting USAID conditions precedent for starting construction at the Bancoumana polder, organizing an expansion of the distribution of rock phosphate, finding means for expanding on-farm field trials, etc. Given the foregoing, it is essential that the medium term planning process be carried out in stages. There follow some suggestions on how to organize the planning process and on which activities to give priority.

A first step would be a meeting to obtain agreement on the proposed long term priorities and to establish a work plan for initiating the medium term process. Since acceptance of the proposed long term priorities has implications beyond immediate OHV operations, the Minister of Agriculture should be represented. Since the GRM Five Year Plan is not yet promulgated and OHV's proposed five year plan is still being considered in the GRM planning process, representation from the Planning Ministry probably would

be necessary. Even if there was not consensus on all of the proposed priorities, the meeting should establish a work plan for initiating the medium term planning that would flow from the priorities on which agreement was reached plus establish a plan for further study of any unresolved issues related to the proposed long term priorities.

In the meeting to discuss long term priorities and to establish a work plan for the medium term planning process, particular attention should be given to the adequacy of information available on which to base decisions. If there are information gaps, steps should be taken to organize appropriate surveys or studies. A particular area that comes to mind is farmers' attitudes toward credit, on-farm testing, pilot farms, extension activities, transportation and marketing difficulties, possible role of the private sector (merchants from Bamako, local merchants, village organizations).

Concurrent with organizing a meeting to discuss long term priorities, other actions should be initiated to implement recommendations in the draft evaluation report which were generally accepted in principle and which will be supportive of or provide input to the medium term planning process. For example, the technical assistance contractor could be requested to:

- (a) initiate recruitment of the long term credit advisor;
- (b) bring in a team of short term experts to develop a plan for improving OHV administrative efficiency, focusing on logistics planning, financial management and support to field offices;
- (c) bring in a short term expert to study ways of increasing OHV revenues;
- (d) bring in a planning team to develop a plan for a more concentrated and more integrated development effort in one of the regions, e.g., Bancoumana; and
- (e) organize a series of meetings to review the accomplishments of the animal traction and blacksmithing program and make recommendations for re-structuring the program to make it more effective (see Section III. B below).

It is recommended that the contractor be given primary responsibility for organizing the above actions, because OHV has a limited staff available for

such purposes. However, OHV's planner should participate in the organization of the planning process, and OHV personnel should be involved in all of the activities proposed. The interaction of local staff and expatriate expert should be beneficial to both.

The foregoing activities will take time to carry out. Then it will be necessary to approve (perhaps with modifications) the different groups' recommendations. Realistically, most of the activities will not be completed in time to be integrated into the planning for the 1982-83 campaign. Therefore, it is important to provide the planners of the 1982-83 campaign with some guiding principles suggested in this report which generally have been accepted, e.g., improved integration of functional literacy activities with the credit and extension activities, concentration of resources to ensure that some economic impact from the project can be demonstrated by the end of the first phase of the project.

A second order of priority of planning activities would be the development of a viable road maintenance program for the secondary roads being constructed (see Section III. D below). The possibilities for reducing costs and maximizing villager participation in the further rehabilitation of the Bancoumana polder also should be studied, drawing on the experience gained in the construction, leveling and putting into production of the first 100 hectares planned for spring 1982.

Once the results of the foregoing activities are available and generally approved, there will be a need to integrate the various activities into a medium term plan. It is only at this point that it will be possible to determine definitely that the necessary personnel and funding resources will be available to carry out all of the individually proposed activities. This plan should establish time-phased physical targets as well as funding levels and assign action officers for each major component. Such action officers may need assistance in preparing more detailed work plans to ensure that proposed targets can be met.

It has been suggested that the technical assistance contractor should be responsible for recruiting a number of experts to facilitate the planning process and to organize a number of the activities. If the contractor is not able to do all of the actions proposed in the time required, some of the tasks probably could be carried out efficiently by use of personnel from some of AID's Indefinite Quantity Contractors.

III. PROJECT PERFORMANCE AND PROGRESS

This section provides an overview of project achievement plus a discussion of the seven components of the project as set forth in the Project Paper and the Project Grant Agreement. There is a short review of progress and/or evolution of each activity, followed by comments and recommendations. Further details on the activities can be found in the working papers prepared by members of the Evaluation Team covering all components except OHV Support. The working papers were individually distributed and are being bound in a separate reference volume for the Project Director, Project Officer and the LBII Chief of Party.

A. Overview

The Project Grant Agreement was signed within the same month the project was approved (September 1978), but virtually nothing has been on time since. Most proposed activities are one to two years behind schedule due to various factors: AID red tape and procurement delays; inadequately trained OHV managers, exacerbated by an insufficient use of technical assistance; poor contractor performance; deviations from project design; grossly inadequate project management by USAID, reflecting in part AID/Washington (AID/W) inability or unwillingness to provide qualified personnel; and faulty assumptions in the Project Paper.

Some work oxen have been distributed under the animal traction program, but little has been achieved in relation to the Project Paper's concepts. The changes in credit terms and interest rates that were to take place in the first year of the project were not even attempted until the third year, and then were done so poorly that the net result was negative. Construction of farm-to-market roads is over one year behind schedule, due largely to delays in arrival of equipment, but the activity shows promise of good progress from now on. The concept of trail improvement has been dropped.

The health component has still not been submitted for GRM or AID/W approval; and it is not clear whether it will be initiated during this project period. The establishment of functional literacy centers is ahead of schedule, but a

number of centers have since closed. Furthermore, goals of the literacy program for providing greater support to OHV extension and credit activities and increasing classes for women have not been achieved. The Bancoumana polder rehabilitation is also behind schedule; furthermore, project goals will not be attainable because of faulty assumptions in the Project Paper.

Delivery of equipment and vehicles for OHV administrative support was delayed but generally has been accomplished. Building construction is about two years behind schedule. The technical assistance contract was not signed until a year after the Project Grant Agreement was signed, and the technical assistance was limited in its effectiveness during the first year by the approach and attitudes of the first chief of party of the contract group.

In spite of the foregoing, there have been some positive developments. There has been a substantial increase in cereals production in the region, particularly of corn. The principal catalyst to this development has been the level of prices available to the farmer on the parallel market. Nevertheless, OHV activities supported by the project have made some contribution and could make an even greater contribution in the future if a number of the recommendations in this report are implemented.

The policy outlook has improved considerably. The GRM is reducing its intervention in the market and planning to offer the private sector a more important role. The controlled prices on cereals will gradually be phased out over a five-year period.

In summary, there have been disappointing results to date, but the potential is still there and realizable. The key is management, management, management.

B. Animal Traction

1. Project Paper/Project Grant Agreement

The Project Grant Agreement calls for the construction of eight animal traction centers over the five years of the project and names the towns in which they should be located. The program proposed for the centers is discussed also. In addition the Agreement specifies that a blacksmith shop should be part of each center. Two hectares were to be set aside for applied research, involving both cultural practices and animal traction. The Project Paper indicated that the centers should be built at two a year during Project Years 2 and 3, three in Year 4 and one in Year 5.

2. Progress/Evolution

OHV built four centers in the first year of the project, two of which were in relatively remote areas -- contrary to the advice in the Project Paper. Furthermore, only one of the four was on the jointly approved list in the Grant Agreement. The Director of OHV subsequently concluded that it was not feasible to utilize the centers as planned. Apparently none of the centers was ever staffed and no attempt was made to have them function in the manner intended. In any case, their only function at the moment is a holding ground for oxen being placed with farmers. In most cases this involves the center being used one day a year. There has been some discussion of using the centers for collecting animals for more expeditious execution of animal health activities.

3. Comments

- a. The Project Agreement provides that changes in project plans should be documented by Project Implementation Letters. However, none was issued regarding the animal traction activities.
- b. There is no documentation in USAID that gives the rationale for building four centers in the first year. Neither is there official documentation giving the rationale for concluding that the centers were inappropriate or for approving the decision to build so many centers or subsequently to

abandon the program. An OHV report states that farmers would not come to the centers for ten days for the proposed training. While this may well be true, that was only a small element of the program proposed for the center and in itself does not offer sufficient justification for abandoning the centers.

- c. An effective animal traction program can result in increasing both areas and yields of food crop production by small farmers. Yet, there is not a cohesive well-implemented animal traction program at this time. The program for the purchase and distribution on credit of work oxen needs to be managed better and probably re-vamped. The only useful training being given in the field in animal traction appears to be that given by the LBII animal traction expert, but it is not clear that the trainers (extension agents) are yet able to pass on anything useful to farmers. The blacksmith program needs to be up-graded to small-scale metalworking and to be expanded and more fully supported. Veterinary services need to be improved. The problem of animal nutrition during the dry season needs to be given increased attention. The idea of the animal traction centers serving as a relatively convenient location for integrating the provision of farm support services needs to be reviewed.

RECOMMENDATIONS

- (2) That, as part of the development of a project strategy and medium term plan (Recommendation (1)), an integrated animal traction program be prepared, including suggestions for the use of the already constructed centers.

It is suggested that the following be invited to participate in, or make inputs to, the definition of a useful and feasible animal traction program: a representative from the Division de Machinisme Agricole; Robert Shulman, author of Strategy for the Advancement of Animal Traction in Mali; Glenn Anders, REDSO regional agricultural engineer who is familiar with a number of animal traction programs in West Africa; Jerry Johnson of SAFGRAD and Phil Serafini of ICRISAT, who participated in the formulation of the original project design; and Jerry Cashion, the rural sociologist of the USAID -- as well as field personnel of OHV and LBII experts.

Of even greater importance than the views of the experts are the views of the farmers. A survey should be made of the status of all animals distributed under the program to date and of the extent to which the receiving farmers are using the oxen for carrying out improved practices. The foregoing should be supplemented by a survey of farmers' views of: (a) the need for additional oxen; (b) OHV credit terms; and (c) the most important needs of the farmer to support the oxen and to utilize them effectively.

C. Credit

1. Project Paper/Project Grant Agreement

A brief description of the system existing at the start of the project was included in the following paragraph from page 8 of the Project Paper:

"In Mali, the purchase of farm inputs (fertilizers, chemicals and small farm equipment) is the monopoly of SCAER, which acts primarily as a supply agency for the different Government Operations. SCAER's function in the project area is performed by OHV, which receives a 5 percent commission for each input. The unit prices for different items are fixed by the Government each year and are in general lower (20 to 30 percent) than SCAER's calculated cost prices. This subsidy is partially (if not completely) offset by the taxes levied on every ton of seed cotton and peanuts marketed. Fertilizers, seeds and chemicals are sold on short-term credit (less than one year) and no interest is charged. Small farm equipment is sold for cash or on maximum three-year credit at about three percent interest, but a one-third down payment is required. Loans for motor pumps are made on a maximum five-year basis. There are no loans for purchasing work animals. The system operates simply since no money passes hands. The only other sources of credit in the Haute Vallee are local traders and relatives."

The credit system was not considered adequate because: (a) SCAER did not always supply OHV with agricultural implements in a timely fashion; (b) maturities were not considered by the farmers to be long enough to acquire more expensive equipment; (c) no credit was available for the purchase of work oxen; and (d) SCAER's low interest rate of 3.1 percent would not provide for a self-sustaining credit program.

The Project Paper proposed that the project build upon the existing credit system, modifying its most deficient aspects during the first three years. Before the project's third crop season, a U.S. credit design specialist, with the assistance of the long-term credit specialist, would make a detailed five-month study of the credit program with GRM officials, and made recommendations for a new credit system.

The principal changes that were to be made right away in the existing program were as follows:

- a. allow for longer repayment schedules (five years) for specific farm implements.

- b. permit loans for the purchase of work oxen.
- c. introduce an insurance program for the oxen purchased on credit which would insure traction animals at 100 percent of their value against death from any cause except slaughter. Ten thousand dollars was to be deposited in the insurance account at the outset, separately accountable.
- d. make loans available for necessary land-leveling at the Bancoumana polder.
- e. increase the current interest rate for all commodities purchased on credit as follows in order to ensure a viable credit program from the outset:

<u>COMMODITY</u>	<u>INTEREST RATE</u>	<u>DOWN PAYMENT</u>	<u>REPAYMENT SCHEDULE</u>
Work oxen	12% incl.ins.	25%	5 years
Implements	6%	0	5 years
Fertilizer	6%	0	1 year
Seeds, supplies	6%	0	1 year

In addition, the GRM was to be requested to give OHV the right to purchase implements directly from suppliers -- including from local blacksmiths, thereby encouraging the development of the incipient small scale agricultural implement industry in Haute Vallee and enabling OHV to overcome SCAER's delivery shortcomings.

Loans were to continue to be made to villagers or associations, making responsibility collective. Villages would not receive loans the following year until all outstanding installments had been paid as provided in the loan agreement.

Significant Assumptions

The Project Paper recommended building upon the existing credit system. Underlying this were four assumptions: (1) the demand for credit in the Haute Vallee would not rise greatly for several years; (2) it would not be possible to design a credit system to meet the needs of the area until U.S. technicians had been in-country for some period of time -- a long-term credit specialist was to have been part of the technical assistance team; (3) villages or village associations were collectively responsible for loan repayments and the threat to cut off credit to everyone in the village the following year would insure repayments; i.e., as it was being applied in Gao

where the repayment rate had remained at 100 percent; and (4) the loan processing system was working satisfactorily.

The Grant Agreement generally carried over the provisions of the Project Paper, including covenants for increasing interest rates and for revamping the credit system in the third year. However, the specific changes in interest rates were not carried into the Grant Agreement.

2. Progress/Evolution

There appears to have been no change in the credit system during the 1979-80 campaign (roughly April or May through January or February). In the 1980-81 campaign, five-year loans were provided for the purchase of work oxen, although this was generally limited to the pilot farmers. Proposals for some additional changes to become effective with the 1981-82 campaign were prepared by OHV and the Louis Berger team and submitted for USAID approval in November 1980. One important change was for AID to finance production credit as SCAER had gone out of business. USAID in turn prepared its own guidelines for revision of the system and submitted them to OHV as Implementation Letter (PIL) No. 4 of March 23, 1981. In undated PIL No. 5, the USAID indicated its concurrence in the provisions made by OHV to implement the system as modified by PIL No. 4.

OHV's instructions to its field personnel do not correspond to PIL No. 4, and in the field the reality does not correspond even to OHV's instructions. Furthermore, Note de Service No. 144 of 16 June 1981 which gave the price schedule has confused matters further. The Note gave the prices for cash sales, for five-year credit sales for equipment, the annual payment for five-year sales and campaign credit prices for production inputs, including seeds. The five-year credit price was generally 38.7 percent above the cash sale price. No mention was made of prices for three-year loans, and the Chefs de ZER interviewed had interpreted the Note to mean that all equipment was to be provided on five-year loans. In July 1981, USAID apparently agreed informally to modifications of some of the more onerous provisions of PIL No. 4.

3. Comments

- a. There is a very large demand for credit for purchase of oxen on present terms. The demand for farm equipment, fertilizer, and probably insecticides and fungicides, would also rise if those inputs applicable for cereals and truck gardening were made available through the program.
- b. There is no feasible alternative source of credit at this time. The newly-created agricultural development bank (BND) is not yet functioning and probably is not an alternative before the end of this phase of the project.
- c. The production goals of the credit program are so heavily oriented toward the production and commercialization of cotton that AID should consider terminating support to the credit program if this orientation is not modified.
- d. The credit system is not solvent. While the intent of USAID's PIL No. 4 was to move toward a more solvent system, it was not thought through sufficiently and was based on false assumptions about field conditions. Its issuance so late in the season further complicated things, and OHV was unable to deliver needed production inputs and traction equipment on a timely basis. Improved performance for the next credit season will require strong, positive (albeit somewhat drastic) action.
- e. The system of management of the credit program is grossly inadequate -- in Bamako and in the field. The warehousing system is inadequate, the information system does not provide information appropriate for good planning of purchases or field distribution of commodities, there is no central record of borrowers, the system for loan placement is open to abuse, the process for loan recoveries is inadequate. The system is over-burdened with paperwork designed to establish controls; yet, it does not provide an adequate system of control. No reflows have yet been put in the special credit account, and it is not clear that the credit records in Bamako are good enough for OHV to determine the amounts due to the special account.

- f. Personnel in the field have not had adequate training in warehousing and credit administration. They are not provided with adequate supplies and equipment to do an efficient job.
- g. USAID should never have agreed to drop the Agricultural Credit adviser from the Technical Assistance team. It should have arranged for the study of the system called for in the Grant Agreement.

RECOMMENDATIONS

- (3) That USAID do a financial review or request an audit of the use of agricultural credit funds.
- (4) That USAID make no further funds available for the Credit Fund until the following actions have been taken:
 - a. Agreement is reached on interest rates, down payments and repayment terms for oxen and equipment loans for the coming campaign and on initiating the work oxen insurance program. The foregoing should be incorporated in a new Implementation Letter and PIL No. 4 should be canceled.
 - b. Agreement is reached to recruit a short-term logistics planning advisor to review the OHV system for planning, purchasing and distributing production inputs, agricultural equipment and work oxen.
 - c. Agreement is reached on the recruitment of a long-term credit advisor for a tour of at least one year.
 - d. Agreement is reached on increasing the amount of credit available to producers of cereals, even if they are not producers of cotton.
 - e. A procedure is agreed to for determining the amount due to the special credit account and for establishing loan records that will become the basis for the new credit system.
- (5) That arrangements be made to do a survey of the availability of Commissions de Vulgarisation, village associations, etc., and the feasibility of their use in the administration of the credit program. The survey should identify other possible ways of involving the villagers directly in the administration of the program. The survey should be initiated in time to put its recommendations into effect for the 1983/84 campaign.

- (6) That the long-term Credit Advisor work with appropriate officials of OHV, USAID, the Technical Assistance team and research organizations in the area to develop means of using credit to foster small-scale private enterprise activity in the region which would improve services to the farmer (e.g., equipment repair or fabrication) and/or lead to increased production either through farming larger areas or obtaining higher yields (e.g., tractor rental or other equipment rentals).

- (7) That the long term Credit Advisor and his OHV counterpart maintain close contact with BNDA so that the system evolving in OHV is as compatible as possible with BNDA's to facilitate the transfer of the administration of the OHV credit system to BNDA at an appropriate time.

D. Farm-to-Market Roads

1. Project Paper/Project Grant Agreement

The Project Grant Agreement describes the activity in Annex 1:

"...the project will finance the construction of 398 km of existing roads and tracks in the project area. Two-hundred and three (203) will be improved to Class B all-weather standards, including laterite surfacing; the remainder will be graded and improved by installation of drainage structures. Construction will begin in the project's second year and is expected to terminate by the project's fifth year. Short-term engineering consultants will be provided. The equipment for constructing the roads financed by the project will be given to OHV which will contract with Travaux Publics and make such equipment available to construct the roads and trails. The equipment for maintaining the roads will be given directly to Travaux Publics for the purpose of maintaining these roads..."

The Project Paper provides a listing of the roads to be improved and a scheduling by year. The criteria used for road selection were:

- (1) population served;
- (2) market production;
- (3) existing road structure;
- (4) geographical considerations (stream avoidance and river flooding);
- (5) location of animal traction/credit centers.

The Project Grant Agreement had a Condition Precedent related to the procurement of the road-building equipment because it was assumed that the GRM would procure the equipment. A decision was made subsequently to have AID do the procurement, but this was not documented by use of an Implementation Letter.

To ensure timely completion of the roads and their subsequent maintenance, a number of covenants were included in the Grant Agreement:

(h) With respect to the road building components of the Project the Cooperating Country shall agree to the following:

- (1) A special brigade will be created by Travaux Publics, the Public Works Department of the Cooperating Country ("TP") which will construct, improve and maintain the roads financed under this Grant;
- (2) TP shall provide to the special brigade a sufficient number of adequately trained technicians and supervisory and support personnel as

may be required to construct approximately 203 kilometers of Class B roads and 195 kilometers of trails in the project area and to maintain such roads and the equipment financed under the Grant;

- (3) Except as AID may otherwise agree in writing, road construction and maintenance equipment financed by AID under the Grant shall be assigned by the Cooperating Country as follows:
 - (i) road construction equipment, for the life of the project, to OHV which shall make such equipment available to the special brigade for the construction or improvement of roads in the project area;
 - (ii) road maintenance equipment to TP which shall make such equipment available, both during this project and after it is completed, to the special brigade for the purpose of maintaining the roads which are constructed or improved in the Project area under this Grant;
 - (iii) road construction equipment, upon termination of the Project, to TP which shall make such equipment available to the special brigade for the purpose of maintaining and upgrading roads in the Project area.
- (4) The construction and improvement of roads in the Project area by the special brigade shall be supervised by TP but shall be under the direction of OHV.
- (5) TP and the special brigade shall have the responsibility to maintain each road constructed or improved under this Project as soon as construction or improvement of each road is completed, and maintenance costs shall be financed by the Cooperating Country. Within one year after execution of the project agreement, the Cooperating Country shall identify a satisfactory source of funding from its revenues for such costs.

2. Progress/Evolution

a. Design Standards

In the initial implementation of the road design, the decision was made to modify the original planning in that minimal improvement of access trails would be dropped and all roads would be constructed to a modified Class B Standard. This decision was based on the following:

- (1) the Travaux Neufs (TN, the road construction unit of Travaux Publics) has been improving secondary roads to one uniform standard, type B, which provides all-weather access for traffic volumes of 2,000 to 5,000 tons per year, which is equivalent to a range of five to 15 vehicles per day;

- (2) the narrowness of the trail (4m) would not accommodate passing of two trucks, particularly in the rainy season;
- (3) the soil conditions prevalent in much of the Project area is highly friable and subject to heavy erosion, particularly on fill slopes of the roadbed, which erodes inward and decreases even further the effective useable roadbed width.

This decision was not documented by use of a Project Implementation Letter.

b. Construction

The first project year's activity was confined to topographical studies and equipment procurement. Construction progress during this last season (1980-81) has been complicated and difficult due to late and piecemeal delivery of AID financed equipment and materials. Construction work started in November 1980 with the limited amount of equipment that had arrived. Although work did progress slowly as new equipment was received, work was continually delayed for various reasons: mechanical problems with, and lack of spare parts for, the IH trucks; delays in receiving advances of funds from USAID; and lack of culvert pipe for drainage structures. In spite of all the problems, Travaux Neufs was able to construct about 45 kms equivalent of road during the season before rains arrived and stopped work. The 60 kms of road worked on, however, are not complete and TN will have to install drainage pipe and structures and perform finish work on the laterite surfacing of all three roads when work commences again in October. These roads are:

- Bancoumana - Sibi	21.7 km
- Bancoumana - Somona	5 km
- Bancoumana - Karan	<u>33.3 km</u>

The first two of these roads was scheduled in the project Paper for the second year of construction; the third was not included in the Project Paper listing at all. No implementation letter has been prepared to provide a current list of the roads planned for construction nor to explain the changes in priorities.

As of August 1981, nearly all of the AID financed equipment has been received, hopefully in working order, and the culvert pipe ordered for the drainage had also arrived.

c. Equipment Procurement

The Project Paper recommended two sets of equipment, one for construction and one for maintenance. The two sets of equipment have been mixed operationally at this point. The Director of OHV states that he does not intend to turn over the maintenance equipment to Travaux Publics, or the construction equipment at the end of the project, because he has no assurance of getting his roads maintained. The GRM has not complied with the covenant in the Project Grant Agreement regarding a funding source for road maintenance.

In implementing the project, USAID/Mali was unable to order the entire equipment requirements at once due to a reduced budget for the first year's operations. Also due to equipment supply unavailability and specification preferences, there were substitutions and some deletions from the Project Paper listings. One lowbed tractor trailer is still in the pipeline.

Another change from the PP equipment planning was the deletion of the requirement for furnishing an initial supply of spare parts with the equipment. This was changed by USAID on the rationale that too often the spare parts delivered by the suppliers are not the ones needed or even useable, and such a large supply requires an adequate storage facility with trained personnel, etc., which are not available under this project. It was therefore decided to require the equipment suppliers to have a local dealer representative in Bamako, and this local dealer would be charged with stocking an adequate supply of spare parts for the equipment.

d. Equipment Maintenance and Repair

The maintenance and routine repairs of construction equipment and vehicles is accomplished at the construction base camp at Bancoumana.

Because of limited shop facilities and tools, and lack of spare part storage, all major repairs and overhauls are sent to the equipment dealer representative's shops in Bamako. Only a limited quantity of high use spare parts are kept at the camp. The local equipment dealer in Bamako is depended on to stock and supply needed spare parts. This system seems to be working well as far as the Caterpillar equipment is concerned. However, a major problem has occurred with the IH equipment. The local representative does not stock any spare parts and in spite of an agreement by IH representatives in Europe to remedy the situation, no improvement has taken place so far. Some parts have been on order since December 1980 and still have not arrived.

Compounding the problem, the large number of IH trucks and scouts furnished to the project have not been built for the kind of usage and conditions in Mali. All the trucks had to have modifications to the radiator mounts and new heavy duty air filters installed. They are subject to frequent breakdowns. The hydraulic pump on the dump truck hoist is poorly designed and located such that dust quickly enters the gears and wears out the shaft and bearings. One dump truck has been deadlined since May, and the dealer has not been able to furnish the required replacements.

It is understood that IH does not manufacture parts for their equipment; rather, they have to be obtained from independent suppliers. The trucks are usually constructed from components of other brands. For instance, the water trucks have Elliott (Galion) tanks and related equipment. Luckily, all the trucks furnished on this order were equipped with Caterpillar engines, so at least parts for them can be obtained through the local Caterpillar dealer.

As can be seen, a major problem is evident and will require immediate and rapid efforts to resolve before the coming construction season. If more of the IH trucks are put out of service for lack of parts, it could affect the entire construction effort. The USAID procurement office is attempting to locate suppliers in the U.S. from which parts can be ordered directly. He also proposes to request IH/Brussels to inspect the vehicles.

e. Road Maintenance

The Project Grant Agreement provided that Travaux Neufs would accomplish all required maintenance of roads constructed under the project. This maintenance was to have been done through use of the maintenance equipment unit funded by the GRM. To assure that maintenance would be accomplished, a covenant in the Grant Agreement required the Government to indicate an acceptable source of funds for the maintenance within one year of signature of the Agreement. To date, there has been no such indication that a source of funds is or will be available.

As far as maintenance requirements on OHV project roads are concerned, there will be no requirement for maintenance during this next construction season as the construction unit must complete the roadway surfacing and drainage structures on all the three roads before going on to other new construction. With only two construction seasons remaining under the Project, maintenance funds will not be required until the following or final year of the Project. However, it is necessary to prepare a plan now for how the maintenance unit will accomplish its task. It will require a division of labor forces and equipment and accounting procedures. Planning for project road maintenance must go hand-in-hand with the GRM funding search.

3. Comments

- a. There have been changes from the Project Paper and/or Project Grant Agreement in design standards, construction priorities, and equipment procurement. While all may have been rational, none have been properly documented (i.e., by PIL) and it is not clear that the implications of the decisions were thoroughly thought out.
- b. The most important cause of delays in the implementation of the road rehabilitation activity has been the delays in equipment procurement (an AID responsibility) and the inadequacy of the IH equipment and back-up support for the equipment.

- c. Inadequate planning may well be a cause of future delays if immediate action is not taken soon. For instance, 300 meters of culvert pipe was ordered from the States for the entire project. It did not arrive in time for use last construction season. It is now learned that of the 300 meters ordered, 225 meters will be necessary for the 60 km. of road already constructed, leaving only 75 meters left on hand. It is projected that the road Nyenhema to Sandama (40 km.) will require about 550 meters of culvert pipe alone. Unless more pipe is obtained soon, construction will again be held up this next construction season for lack of drainage pipe. With only two seasons left in the current project, it is imperative to have firm priorities on which roads will be constructed and make sure all materials are obtained ahead of time.
- d. Another potential cause for future delays is an inadequate supply of spare parts, especially for the IH vehicles and equipment. Since spare parts procurement is included in the Louis Berger contract, it is not clear why they have not been carrying out this responsibility. The proposal that USAID continue this role, while perhaps giving some training to someone in OHV does not seem to take into account the load already placed on the USAID procurement office. Also, given the management overload at OHV, it does not seem appropriate to plan to shift offshore procurement to OHV. Better would be to increase the pressure on U.S. firms, through AID and LBII channels, to beef up their local capability to support their vehicles and equipment.
- e. Two years after the deadline established in the Covenant on road maintenance, there is no indication of serious high level discussions with the appropriate GRM ministers on the subject of the organizational arrangements and source of funding for the maintenance of the roads being rehabilitated. The OHV Director's proposed solution of keeping the road equipment so he can do the maintenance is not viable. His organization has neither the technical capability nor the funding possibilities to undertake this responsibility even if he had the authority.
- f. Implementation has been delayed at times because advances of USAID funds to the TN brigade have not been made on a timely basis. There is a risk

that this will happen again because the USAID requirement for a separate account for AID funds has not been resolved.

- g. Clear responsibility for the supervision of the construction has not been established, although signature of the OHV-TP contract should clear the way for this role to be assumed by the LBII road engineer. The signature of this contract should not be delayed because of a debate over future ownership of the equipment. That should be left for a future decision after the GRM has taken appropriate decisions on the general problem of primary and secondary road maintenance. In the meantime, it is assumed that both construction and maintenance units could be used in the road rehabilitation effort this coming season.
- h. The USAID engineer is about to depart post, and no replacement is planned. This seems flawed on two counts. It is no doubt assumed that coverage by REDSO engineers will be adequate. REDSO personnel are already being pushed to the breaking point and possibly beyond and they cannot now meet all the demands being placed on them. Neither of the REDSO engineers assigned to this evaluation was able to stay in Bamako long enough to complete his assignments. It is recognized that the USAID Director is also an engineer but he has more than a plateful of Director's level problems to solve. As far as the project is concerned, not one of the activities with an engineering component is running smoothly. As indicated above, this roads activity has plenty of pending actions that need to be monitored and pushed. There is also the long-delayed up-coming construction of the Bancoumana polder. Then there is the construction of the new OHV headquarters, the OHV garage and a number of buildings scattered in the four sectors. The headquarters building contract is finally signed, but the garage contract is yet to be let. The location, type of construction, method of contracting, and procedures for contract supervision for the buildings in the field are all still up in the air. And that's without looking at engineering requirements in other projects. Surely \$4 to 5 million in construction activity would justify one USAID engineer position.

RECOMMENDATIONS

- (8) That the decision to drop the engineer position be reconsidered and postponed for at least a year.
- (9) That USAID-OHV-LBII management give urgent attention to ensure that immediate decisions and actions are taken that are necessary to assure that road construction starts as soon as the rains permit and will continue without interruption throughout the dry season. This would include at least the following:
 - a. Expediting the signature of the OHV-TP contract.
 - b. Settling the funding control and accounting issues.
 - c. Establishing clearly (i.e., in writing in appropriate documentation) that the LBII engineer is responsible for construction supervision and that LBII is responsible for spare parts procurement).
 - d. Reviewing the plan for the coming construction season to ensure its feasibility and to preclude ending up at the end of the season with partially complete road segments that will have to be re-worked the following season. This may mean changing road priorities to fit the available material; e.g., drainage material.
- (10) Within the next three to six months, USAID management should initiate a dialogue with the GRM ministers of TP, Plan and Finance (at a minimum) about possible solutions to the road maintenance problems and suggest a special conference to deal with the problem. In preparation therefor the following actions are recommended:
 - a. Meet with other donors who are financing road construction in Mali with a view to (1) developing information on various types of primary and secondary road maintenance programs that have been established in other countries in West Africa or elsewhere with similar conditions; and (2) developing support for the special conference with the GRM to develop a long term road maintenance strategy and plan which the donors would be prepared to support.
 - b. Request AID/W Office of Evaluation and the Development Information Service to provide information on decentralized road maintenance programs. Specific attention should be paid to the USAID project in West Cameroon in the early 60's and to the possibilities of the use of animal traction as practiced in the U.S. some 45 years ago -- see Roush to Eldredge and Anders cable of 8/31/81 (Bamako 5350).

c. Request the assistance of REDSO engineers in analyzing the information received and participating in the proposed conference if the GRM accepts the proposal.

(11) That no road construction be financed in 1983 if a road maintenance strategy and plan has not been developed prior to that time.

E. Disease Control

1. Project Paper (PP)

The major design element of the PP health component was to call for a detailed design for a "limited health intervention" (page 15 of the PP) in the OHV project zone.

2. Progress/Evolution

The design of a health component was completed in February 1981 and is referred to as the Duffy proposal ("The Health Component of the Operation Haute Vallee," M. Duffy, February 9, 1981). The evaluation team was asked to evaluate the managerial and organizational feasibility of the Duffy proposal. The health specialist on the team recommended some modifications of the Duffy proposal to eliminate any management workload on OHV and the OHV Project Officer in USAID. The proposal was found technically feasible, and the needs were evident. Therefore, it was recommended in the Draft Evaluation Report that the modified proposal be submitted to the GRM Ministry for Health for its approval and be implemented if approved by the Ministry and AID/W.

In discussions of the draft Evaluation Report, the USAID took the position that even the modified Duffy proposal would require a great deal of effort by the USAID Health Projects Officer to ensure that the health activity was properly launched, and he did not have sufficient time to devote to it. Furthermore, some of the other project components have exceeded or will exceed their budgets. It seemed prudent, therefore, to postpone funding the health component until it could be assured that already initiated activities would be adequately funded. Finally, it was suggested that the health activity, even if quickly approved, would probably have little or no impact during the project period because of the late start and the lead time for obtaining commodities.

3. Comments

- a. The USAID position is understandable and reasonable, given project implementation difficulties with its other projects and with the various components of this project.
- b. On the other hand, USAID is funding the rehabilitation of the Bancoumana polder to permit proper irrigation of 100 hectares of rice, and it is planned to expand the area eventually. It seems important, therefore, that there be close monitoring of the health of the farmers that will start irrigating this season. Furthermore, there may be some concentration of OHV and USAID project resources in the Bancoumana area and a relatively small investment in health might well be justified as a part of that effort. The need for wells, for example, was stated in the Project Paper, and the OHV Director mentioned the need in his letter to the Coordinator of the evaluation team.
- c. One way of reducing the USAID administrative workload would be to provide a grant to a private voluntary organization (PVO) operating in Mali to carry out the health component. USAID agreed to this possibility if the program were scaled down somewhat, and it is checking with U.S. PVOs.

RECOMMENDATIONS

- (12) That a decision on the modified Duffy Proposal be postponed pending a review of the interest of U.S. PVOs in implementing the activity.
- (13) That USAID explore means of gathering information about the health of irrigation farmers at Bancoumana.

F. Functional Literacy

1. Project Paper/Project Grant Agreement

The description of the functional literacy (FL) component of the project in Annex 1 of the Project Grant Agreement follows:

The project will assist OHV to establish functional alphabetization centers (CAFs); the number of such centers is expected to reach 100 by the end of the project. The program will be modeled largely on that now operated by the government's peanut operation in collaboration with the National Center for Functional Literacy and Applied Linguistics (DNAFLA). In addition, \$20,000 of the project's credit fund will be earmarked for the CAFs to serve as an incentive for these centers to start their own group agricultural projects. All centers will have access to these funds and the technical assistance of OHV on the condition the OHV be repaid the full amount of the loan plus interest at the end of each project, so as to maintain the fund. These plots will also help defray the villagers' significant expenses in operating these centers. To ensure the participation of women, it is anticipated that at least 25 of these centers will offer classes for women only. Finally, materials used in the centers will be on agricultural and health themes suggested by OHV agents. This will assure that the information imparted at these centers to the farmers will be directly applicable to the project's purpose of increasing food crop productivity, production and marketing.

As pointed out in the Project Paper, the literacy rate in Mali is only about ten percent, and less than that in rural areas such as the Haute Vallee. Illiteracy was considered a constraint to achievement of the project's purpose in two principal ways. First, illiteracy limits farmers' ability to communicate with OHV's extension agents and to utilize agricultural extension materials. Second, illiteracy restricts the farmers' participation in non-village-centered activities; e.g., obtaining credit, marketing of the farmer's production. The CAF, the basic unit of the FL program, is established in a village upon the request of the villagers. The village is responsible for providing the classrooms and desks. The village council or specially appointed literacy committee chooses one or two literate volunteers (animateurs/animateuses) to conduct the classes. These animateurs are trained at the regional level by DNAFLA and then return to their village with the necessary instructional materials to begin actual classwork.

A controlled experiment was to be undertaken as the project was expanded. Six elements were to be included in the expanded program:

- a. Training of teachers;
- b. Redesigned reading material dealing with agriculture, health, etc.;
- c. Essential commodities -- lanterns, blackboards, pens, pencils, etc.;
- d. Annual evaluations;
- e. Materials in Bambara-Malinke; and
- f. Linking the program strongly with OHV.

2. Progress/Evolution

In terms of the projected number of centers and participants, general quantitative targets planned have been met.^{1/} That is, by the end of the third project year, 136 functioning centers are in existence out of a targeted 120 (60 supported by USAID) and include 3,762 participants of the 3,000 targeted (1,500 for USAID). The Project Paper called for an evaluation after the creation of 100 USAID-financed centers to determine whether the program should be continued. This planned evaluation has not been undertaken; the present OHV evaluation can provide a partial assessment on which to make decisions for the future of the program.

No information is available on the achievement levels of the participants (animateurs/animateuses), the quality of training of animateurs, etc. However, DNAFLA identified animateur weaknesses in subject matter during its 1980 evaluation of the OHV FL program.

The LBII technical assistance team has provided documents for translation in Bambara on "Embouche Paysanne" (livestock activity) and on technical details about some OHV crops (cotton, peanuts, cassava, millet, soybean) and agricultural equipment. Final documents have not yet been prepared, however, nor has there been a concentrated effort to initiate and coordinate planning for project activities between the coordinator and other project component chiefs.

In regard to the progress of linking the program to OHV, ZER chiefs are requested to report on FL activities in their monthly reports to the Direction through sector chiefs. One sector chief has complained that ZAF chiefs

^{1/}Although targets for the creation of centers have been met, a number of centers have closed. About 83 percent of created centers are still functioning. This rate does not compare well with a similar FL program in Operation Mil-Mopti where the continuation rate is 98 percent.

do not keep him informed of their activities. FL training was provided initially for all OHV agents to provide them with basic language skills. However, ZER chiefs indicate the need for further training or information which would enable them to support and assess the progress of FL implementation in their areas.

Although DNAFLA assigned a woman as assistant coordinator for OHV women's FL activities, the project has not been able to establish the targeted number of centers with programs for women (25% of the total indicated). The assistant coordinator is well-trained and knowledgeable of the problems of motivating women. With better coordination of vehicles and of the program in general, she could very likely achieve better results.

In spite of the fact that the potential for using literacy skills has not been fully realized in many villages to date, requests for the opening of new centers continue to be received. This suggests that some villagers are realizing benefits and value the program.

Unfortunately, the program has not been realizing its potential. DNAFLA evaluated the program at the end of the 1979-80 campaign. The evaluation identified many weaknesses. The USAID monitor of the program met with DNAFLA personnel and the OHV coordinator in March 1981 to prepare a plan to resolve the weaknesses. By August 1981, only three out of 14 remedial steps had been taken by the OHV coordinator.

3. Comments

- a. Neither OHV nor USAID management have devoted sufficient attention to functional literacy to ensure that it was adequately administered or effectively integrated with other project elements.
- b. The OHV system of distribution of materials has not permitted adequate control of distribution.
- c. Little has been done to increase the participation of women in the program.

- d. Numerous trained instructors have become discouraged or left villages because of a lack of rewards for their efforts. This may in turn reflect their ineffectiveness because of inadequate support.
- e. In sum, DNAFLA expressed dissatisfaction with the OHV FL program in its 1980 evaluation, the OHV FL coordinator has done little in the way of corrective action and the group evaluating the FL component heard numerous complaints during its field visits about the functioning of the program.

RECOMMENDATIONS

- (14) That USAID suspend its support to the FL component at the end of the 1982 campaign unless action is taken in the meantime to:
 - a. Improve the management of the OHV FL program;
 - b. Improve the OHV-DNAFLA coordination and cooperation in field activities;
 - c. Account for the FL commodities provided under the project and establish a reliable system for distribution of needed materials to the villages on a timely basis; and
 - d. Provide a work plan and budget for translating into Bambara and distributing to the villages in the FL program technical materials that support the extension service and the provision of credit to the villages.
 - e. Provide a work plan and budget for intensifying FL activity in a designated geographic area as part of an OHV area concentration effort.
- (15) That more linkage be established between USAID, DNAFLA and OHV; e.g., establish regular meetings for planning, monitoring and supporting the component. Particular emphasis should be placed on finding ways to make the program more responsive to villagers' needs and more easily supported by the villages. The group should also focus on other recommendations in the FL working paper such as focusing on quality rather than quantity, insuring adequate vehicle support for the OHV coordinator and his assistant, instituting a data collection system for evaluating benefits of the program, improving the women's program, developing a system for establishing unit costs and other administrative improvements.

There is a functional literacy issue that goes beyond the Haute Vallee project. Some villagers are reported to have indicated a greater interest in having a literacy program in French than in local languages, because the ability to use French would help in dealing with government agencies. If the GRM wishes for political and/or cultural reasons to continue the literacy program in local languages, then it should find additional ways of making written Bambara and other languages more useful to villagers. One possibility would be to put widely used government forms in both French and Bambara, and possibly other languages. Government decrees and regulations from the Ministry of Agriculture and perhaps other ministries or directorates could be published in local languages as well as French.

G. Irrigation Improvement and Polder Rehabilitation at Bancoumana

1. Project Paper/Project Grant Agreement

The following is from the Project Paper:

"The Bancoumana polder irrigation system, located in the flood zone of the Niger River about 60 km from Bamako, was initially developed, along with six other polders, in the mid-1960's. It is farmed by 160 farm families and supports 2,000 people. The polder was poorly designed, and water levels are unequal in its existing 540 hectares. As a result, good water management has been next to impossible and yields are poor (only 0.8 tons/hectare). Average yields of 3 tons per hectare should be obtainable after land leveling, with complete water control, use of Asian irrigated rice varieties, and weed control.

Plans call for extension of the system by an additional 100 hectares, increasing its full potential to 640 hectares. The activities necessary for rehabilitation and extension of the polder system are:

- repair and reconstruction of the perimeter dike to the necessary crest level of 20 cm. above the estimated 100 year flood level;
- repair and reconditioning of all control gates;
- cleaning and shaping of canals; and
- cleaning and extension of the drainage system.

During the first project year, one hundred hectares will be leveled and rehabilitated and will serve as a demonstration area on which U.S. technical assistance, on-the-job technical training and farmer training will be concentrated. Water-user organizations will be formed and farmer leaders trained in management and maintenance of the system. Expatriate technical assistance will be provided to supply necessary expertise in civil engineering, water management and improved rice cultivation. In addition there will be other short-term consultants on call.

The low water-use efficiency in the Bancoumana polder area, estimated at 10 percent, points to the need for training programs for OHV technicians and intensive education and extension information for participating farmers. The project provides for third country training for OHV personnel and intensive on-polder training for them and the polder farmers.

Use of the village structure is important to the long-term effectiveness of the irrigation system. Participating farmers must feel a certain village pressure to cooperate in their use of their system. A "Cahier de Charges" will be developed, similar to those in use elsewhere in Mali, which will explicitly outline the duties of both the polder farmers and OHV.

Effective management of the activity, special training of the extension agents, and an intensive farmer education program are critical to the success of the project. All persons involved will be well acquainted with the recommended technology, timing, and importance of the program. The project area will be constantly monitored for rice pests and diseases. Farmers will have very close supervision and technical assistance available at all times for initial land preparation through the harvest period. Selected interval deep-plowing will be done to control or eliminate wild rice before and after the cultivation period. All leveling work not done by oxen-pulled scrapers will be done on a contractual basis with Genie Rural, using its own equipment."

The Project Grant Agreement, Annex 1 description of the activity is consistent with the Project Paper. Conditions precedent to providing funds for the reconstruction of the polder require AID approval of the "Cahier de Charge" and the general arrangements to assure adequate maintenance and proper management of the polder after rehabilitation.

It should be noted that the Project Paper proposal was based on a technical assumption that is now agreed by the experts to have been invalid. It was assumed that the leveling and rehabilitation of the individual farm plots and the rehabilitation of secondary and tertiary canals could be carried out by the farmers themselves using animal traction. Thus, the project was to rehabilitate the main canal and to level and rehabilitate only 100 hectares of farm area which could be used as a demonstration area. Funds from the Credit Fund were to be used to help the farmers finance the purchase of oxen and equipment needed to develop the other 540 hectares. (This also was an incorrect assumption, since only 550 hectares can be reclaimed, not the 640 assumed in the Project Paper.)

REDSO Engineer Glenn Anders has explained the circumstances which mitigate against using animal traction (ANTRAC) earthmoving at Bancoumana:

"(a) The small size, weight (approx. 760kg) and pulling force (approx. 250 kg max.) of N'Dama oxen: In general N'Dama have about two-thirds the strength of Asian breeds. In reality, their strength is further reduced due to poor nutrition and bovine diseases prevalent in tropical West Africa.

(b) The hydromorphic gleysoils in the folder: These heavy soils (20-50 percent clay) are characteristically slick and soft when wet, yet hard and cemented when dried. Earthmoving operations in these soils require large, well-adapted animals with wide hooves such as the Asian buffalo, B. Bubalis.

(c) The relatively low cost of land levelling: Approximately one third (FM 850,000/HA) of total cost of bringing one additional hectare into irrigated system is due to binding and levelling operations. The major part of cost is due to secondary and tertiary layout, gates, spillways and canals which require skilled labor and machine excavation and compaction.

In sum, farmers who do not as yet have animals and equipment, nor mastery of ANTRAC cultivation techniques and animal care, will have the greatest difficulty undertaking 80,000 cu mtrs of physically demanding, if not impossible, earthmoving operations with their oxen teams. These farmers will be well occupied with other agricultural work: Approximately 200 hours of labor will be necessary for the cultivation of each hectare of irrigated rice, even with animal traction, due in part to difficult soil conditions. More critical to maximizing polder farmers' productivity would be intensive ANTRAC training and agricultural extension, while leaving construction to qualified and equipped contractor."

2. Progress/Evolution

There has been extensive delay in the planning of this activity. However, as of August 1981, final engineering plans were almost completed. The OHV contract with OTER, a GRM construction agency, had been drafted. A start of construction was planned for January 1982 with 50-100 hectares to be ready for farming by May 1982. The "Cahier de Charge" and a maintenance and management plan for the polder had been submitted to, and commented on, by USAID.

The LBII agronomist specializing in rice production arrived over three months ago. He has been studying the activity at Farabana for possible lessons to be incorporated in the Bancoumana planning.

It has been determined that the supply of irrigation water will be about one-half that estimated in the Project Paper. Nevertheless, the GRM Genie Rurale (Rural Engineering) office has undertaken detailed studies of stream flow data of two parallel streams, and these studies indicate that there should be a sufficiency of irrigation water except in the most severe of droughts. The adequacy of water in the stream was questioned very early in the project, but no action was taken to initiate stream measurements of the river that will be the source of water for the Bancoumana project. Rather, the USAID Project Manager commented that it was better "to let this sleeping dog lie":

3. Comments

- a. The delays in the design work appear to be largely a result of the project designers of the various donors all assuming that the government design office could do their job. No one ever looked to see how many others were operating under the same assumption. Responsible and effective project management on the part of either USAID or OHV could have realized this early on and made alternate arrangements; e.g., asked the technical assistance contractor to bring in experts.
- b. The issue of whether animal traction was feasible for the leveling has been around for some time, but without adequate focus and decision-making. Now, when construction is about to begin, the USAID and OHV are faced with a large portion of the project's funds being required to rehabilitate the polder, but only 100 of the 550 hectares of farm land being put into cultivation. Apparently, no funding is in sight for the leveling and preparation of the other 450 hectares, because no one focussed until recently on the fact that the assumption of using animal traction was not valid. Thus, the demonstration effect of improved farming methods on the first 100 hectares will be minimal if the farmers on the remaining 450 hectares do not have leveled fields and the same access to irrigation water as the farmers on the first 100 hectares.
- c. Although the planning for the construction activity is complete, there is little evidence to date of planning for the agricultural side of the activity. Few of the farmers in the area have the necessary oxen and equipment to carry out the improved practices that will become feasible. Since they do not now have the equipment, they obviously need to be trained on the equipment.
- d. As the Project Paper indicates, effective management of the activity, special training of the extension agents and an intensive farmer education program are critical to the success of the project. The Evaluation Team finds little evidence of any of the foregoing or of even preparing a plan for training the extension agents and working with the farmers.

- e. Although the "Cahier de Charge," which establishes the fees that the farmers will pay, has been prepared, as well as the plan for management and maintenance of the polder, neither of these has been discussed with the farmers at Bancoumana. This came out in a meeting between members of the Evaluation Team and the village leaders at Bancoumana. They realize that they must maintain their own fields and the ditches leading to their fields, and they must help pay for the overall system, but they could still have objections to the specific terms of the proposed OHV contract.

RECOMMENDATIONS

- (16) That the USAID Director not approve the contract for the construction work at the Bancoumana polder until:
 - a. OHV has submitted a satisfactory plan for implementing the agricultural activities at Bancoumana, covering the points raised below by Anders; and
 - b. USAID has established that the farmers at Bancoumana understand fully, and are in agreement with, the plans for the rehabilitation and subsequent management and maintenance of the polder, including their roles and responsibilities.
- (17) That OHV request LBII to provide a work plan (including time table and budget) by July 1982 for completing the rehabilitation of the Bancoumana polder.

A more complete report on Bancoumana was prepared by Glenn Anders, REDSO engineer, and is included in Volume II of this report. Excerpted below are his suggestions for a revised set of inputs:

1. Technical Assistance: The focused services of the rice production specialist will be necessary until the end of project. He must have increased responsibilities beyond his present duties: monitoring and assisting initial construction, developing an appropriate agricultural program, setting up intensive training and extension sessions, organizing a water management system, and facilitating the timely and adequate delivery of credit equipment and agrochemicals. USAID/Mali must ensure and support this mandate to make the Bancoumana polder productive as an example to both farmers and OHV. The USAID regional engineer and agronomist familiar with the project must provide technical support as necessary.

Short-term assistance will be necessary to conduct a survey of affected farmers in order to pinpoint (and eventually overcome) their individual agricultural constraints. Short-term health assistance will also be required to set up a program to monitor the incidence of schistosomiasis.

2. Commodities: OHV does not have enough agricultural equipment in stock to assure the provision on credit of complete sets of animal traction equipment (tool bar, plow, cultivator, and seeder). The purchase of 25-30 complete sets with oxen teams is necessary to insure maximum productivity in the rebuilt polder. All construction work and initial deep plowing will be done under contract. Tools for maintenance can be purchased from irrigation fees. Additional farm tractors and pumps will not be necessary.
3. Training: Intensive training is sorely needed. Three technicians are receiving a short three-month course at WARDA and the Genie Rural has chosen an engineer, Chief of Section, for a six-month work-study program in land reclamation in the USA. However, more technical training, as outlined in the PP, is needed. Specifically: at least two agricultural technicians should be sent to the annual, bilingual rice production course at IITA in Nigeria. IRRI in the Philippines offers short irrigation engineering courses in English to which the project should send one or two engineer-technicians. Longer-term training is, at this point, counter-productive due to the GRM's limited pool of technical manpower. An intensive, on-site training program is imperative. Topics for the extension agents and the irrigation managers include system operation and maintenance, record and stock keeping, animal traction techniques, animal health and nutrition, and rice cultivation. Farmers need to learn the techniques of animal and equipment use and care, rice cultivation practices, and basic water management. The LBII rice production specialist can develop this program.

H. Administrative Support to OHV

1. Project Paper/Project Grant Agreement

The Project Paper states the following:

"The success of the project is dependent to a great extent on (a) the effectiveness of OHV's technical staff and (b) its capacity to handle the anticipated increase in its supply and marketing activities on which its financial viability hinges. Accordingly, the project will assist OHV through the following activities:

- (a) Training and Technical Assistance;
- (b) Construction of additional field office space, a new headquarters building, and warehouses;
- (c) Additional trucks and staff vehicles;
- (d) \$15,000 in equipment for the OHV vehicle garage; and
- (e) A socio-economic base line survey of the Haute Valle to provide a solid foundation for project planning and evaluation."

In addition, a detailed training plan was given, and a listing of the technical assistance personnel that should be provided to ensure project success.

The Project Grant Agreement provides the following:

"The project will assist OHV in a number of ways so that its effectiveness as a conduit of improved technology will be greatly enhanced. This assistance will be in several forms: (1) training abroad and in-country for numerous OHV agents; (2) provision of long-term expatriate specialists in credit, crops, animal traction, rice production, financial management and administration; (3) provision of five 10-ton trucks; (4) construction of a headquarters building; (5) a minimal expansion of six field offices; (6) construction of four small warehouses; (7) provision of equipment and technical advisors to OHV to improve the operation of the vehicle garage; (8) an increase in the number of OHV's vehicles; and (9) provision of mobyettes for field agents, the cost of which will be repayable to OHV so as to ensure the replacement of their mobyettes."

A financial plan has been attached to each amendment to the Project Grant Agreement. That financial plan includes components for technical assistance, training, equipment (includes vehicles), building construction,

studies/evaluations and maintenance, salaries and "primes" (performance bonuses).

Because of the multiplicity of component sub-activities in this component, the structure of this section will be modified from that of other project component sections. For ease of presentation, the progress/evolution, comments and recommendations subsections will be repeated with each sub-activity where applicable.

2. Building Construction

a. Progress/Evolution

i. Headquarters Building

The original site proposed for the headquarters building was very small, so a two-story design was made. Subsequently, the site has been changed twice, the last time to a larger site on the outskirts of Bamako. However, because of the long delays in initiating the construction (it was supposed to have begun in the first year of the project), it was decided to go ahead with the original design. This has meant a much more expensive building, and a substantial overrun on this component -- \$600,000 vs. \$193,000 budgeted in the Project Paper for a simpler one-story building. The contract for the construction of the building was signed in August 1981 and the contractor is in the process of mobilization and preparing working drawings.

ii. Garage

The first choice of site for the office building was the present site of the OHV garage. Since the existing garage is totally inadequate anyway, it was decided to build a new garage at a site in Faladie, just outside of Bamako. It was considered a very high priority, even after the decision was made not to use the site of the existing garage for the office building. There was considerable delay in getting the plans done, in part because of an overloaded Genie Rurale, in part because of relooking at building priorities. Bids have been let

for the construction of the garage, and a contract for construction should be let within the next month or two.

iii. Field Warehouses and Field Offices

The Project Grant Agreement called for minimal expansion of six field offices and construction of four small warehouses. However, in the August 1980 review of building priorities, the OHV director stated his requirements as:

- | | |
|---------------------------|--|
| In Bancoumana Cercle: | 1 office
2 expatriate houses
1 generator house
1 hangar (covered area for rice storage)
2 vaccination parks in nearby villages |
| In Kangaba: | 1 renovation of guest house
1 warehouse
1 office (ZER)
3 vaccination parks nearby |
| In Siby Cercle: | 2 offices (ZER) |
| In Kati Cercle: | 1 office/house (SDR)
1 office (ZER)
3 vaccination parks |
| In Ouelessebouyou Cercle: | 1 office/house (SDR)
3 office/house (ZER) |

Various other construction in "Banco" for livestock sector chiefs at five OHV sectors.

Plans have been prepared for two expatriate houses and a generator house at Bancoumana, renovation of a guest house and construction of a warehouse in Kangaba, but approval of any building construction in the field was put in abeyance until after the project evaluation.

b. Comments

- i. The changing of sites and changing of priorities does not reflect well on OHV or USAID management.

- ii. There is a condition precedent in the Project Grant Agreement which calls for USAID approval of plans, specifications, and bid documents and contract for the office building construction. No project implementation letter was found in the files indicating USAID approval. Similarly, no PIL was found in the files covering the addition of the OHV garage to the list of buildings approved for construction.
- iii. The evaluation team did not have time to look at the relative priorities of the proposed construction in the field. Team members did see the conditions in the field and can attest that the office space and warehouse space is badly needed. However, the proposed construction of expatriate houses in Bancoumana should be dropped because the road construction personnel for whom the houses were to be built will have moved on to a different location by the time the houses would be available. In the meantime, trailer houses have been provided.
- iv. The decisions that have been made with regard to the construction seem to reflect a total disregard for the funding implications of the decisions. There appears not to have been any weighing of the opportunity costs involved; e.g., if building costs go up dramatically, what is going to be cut back? It seems to have been assumed that the funding in the project could always be increased.

RECOMMENDATIONS

- (18) That no field construction be approved until there has been a complete review of the project budget, and priorities have been established for the balance of the project, taking into account commitments already made, likely expenditure rates, the maximum pipeline level that will be acceptable to AID/W, etc.
- (19) That any field construction be in improved "banco" so that whatever money is available can go as far as possible. Further, that such construction be done with local contractors or chefs de chantier who are familiar with banco construction. Further that LBII hire a local engineer with similar experience to supervise the activity.

3. Equipment

The evaluation team did not have time to review all of the equipment purchases for OHV support, which is essentially complete. We are aware, however, of extreme delays in procurement, particularly of vehicles for the contractor. Also, the AID/W insistence on buying the International Harvester vehicles has been very costly -- in money terms and in terms of the efficiency and effectiveness of the project. Some suggestions for reducing the delays in procurement for projects in Mali was provided in the Roush report on USAID technical assistance in Mali.^{1/}

Mobylettes were purchased and provided on credit to OHV field agents, but repayments have not been deposited to a special account to fund replacements.

4. Technical Assistance

a. Progress/Evolution

The contract with LBII was not signed until approximately one year after the signature of the Project Grant Agreement. Most of the team who were to arrive early were on board before there was adequate housing, office arrangement or vehicles. The delays in the availability of adequate support contributed to low morale and reduced performance for a number of months.

The first chief of party had his concepts of what the project should be and tried very hard to carry them out. In the process, he did not attend sufficiently to his duties as chief of his team. Neither was he able to establish good working relations with his counterpart, the Director of OHV. He was removed as chief of party in August 1980, approximately one year after the signature of the contract. The administrative officer was

^{1/}Roush, James L., Development is a Joint Effort: Discussion Paper on Improving the Effectiveness of USAID-Funded Technical Assistance to Mali, USAID/Mali, December 15, 1980.

made acting chief of party and has remained so -- although the Director of OHV requested that he be made permanent chief of party and that a senior agricultural officer be recruited to serve in a new technical coordinator position which would replace one of the agronomist positions.

The Project Agreement called for long term experts in credit, crops (agronomist), animal traction, rice production, financial management and administration (chief of party). Although included in the Request for Proposal, the credit advisor was dropped by the Director of OHV in the contract negotiations. Included elsewhere in the agreement was the provision of an engineer and an equipment maintenance/spare parts expert for work on the road construction activity. There has been dissatisfaction expressed by the Director of OHV with various members of the LBII team, and an agronomist and an engineer have been replaced -- as well as the first chief of party.

In April 1981, the Director of OHV advised LBII of his revised requirements for technical assistance personnel:

Chief of Party (current Acting COP) -- to end-of project

Technical Coordinator (would replace current agronomist (crops) position) -- until end of the 1982 season (December 1982)

Animal Traction Expert -- until December 1981

Rice Agronomist -- to December 1982

Financial Expert -- end of project

Road Engineer -- end of construction season 1983

Road Mechanic -- same

Mechanic (for OHV garage) -- end of project (coming on duty in September 1981)

b. Comments

- i. The utilization of the contract team by OHV has not been optimal. This appears to reflect a lack of experience by the Director in using technical assistance, the unfortunate situation revolving around the first chief of party, and inadequate support, guidance and monitoring

by USAID. Since the departure of the first chief of party, relationships have gradually improved, and there is greater use being made of the team. However, the team needs to be more effectively integrated into the OHV operation. This will be difficult until the team's offices can be co-located with the rest of OHV.

- ii. The contractor's performance has been disappointing in terms of the initial disregard for the approved project design, the capabilities and attitudes of some of the personnel recruited for the project and the paucity of assistance provided to OHV in general planning and management improvements. The latter has been increasing in recent months, particularly in the financial management of AID resources, but will continue to be limited until the Chief of Party position is filled with a highly qualified, experienced executive and greater use is made of short-term technical assistance. The effectiveness of the contractor's team could have been enhanced by greater OHV receptivity and greater USAID interest and support.

RECOMMENDATIONS

- (20) That the following changes be made in the composition of the technical assistance team:
 - a. The chief of party position should be filled by an experienced executive with successful experience in agribusiness or with an agricultural cooperative or in managing development activities in developing countries or areas, especially in agriculture or rural development.
 - b. The administrative officer position be retained and up-graded and the incumbent (acting chief of party) be given responsibility for coordinating the planning and implementation of management improvements within OHV.
 - c. The agricultural credit position be reinstated and filled as soon as possible.
- (21) That OHV make greater use of short-term technical experts; e.g., as discussed in Section II, C. and Section IV.
- (22) That OHV request the contractor's Chief of Party to report on the progress and problems of all project components, not just the ones for which the contractor has specific contractual responsibilities.

NOTE: It is recognized that it may take some time to recruit a fully qualified Chief of Party. This, however, is no excuse for not trying. Furthermore, the attempt to recruit a new Chief of Party should not be used as an excuse for not carrying out other recommendations in this report, particularly with regard to developing a medium-term project strategy and implementation plan. Short-term experts can be used to strengthen the planning capability of the LBII team. In fact, LBII may be able to find potential Chiefs of Party to take on the short-term assignments in planning and management improvements, thereby giving the OHV Director and the candidates an opportunity to evaluate compatibility and suitability.

5. Socio-Economic Base Line Survey

a. Progress/Evolution

A Malian firm was contracted to undertake a socio-economic base line survey in the OHV project area and this report was submitted in 1980: Etude Agrosocio-economique, Statistique de Base; Operation Haute Vallee -- Rapport Sociologique and Rapport Agronomique plus an annex, Bureau Africain de Recherches Appliques (BARA).

Dr. Frances Stier, REDSO anthropologist, reviewed the report and suggested in her report (reproduced in Volume 2 of this report) that the terms of reference for the study were somewhat inadequate for obtaining the base line information needed. For example, subsequent to the study, it was determined that a larger sample was needed to ensure the reliability of some of the data.

Later in 1980, the USAID contracted with BARA's successor, Bureau d'Etudes, de Conseils, et d'Interventions au Sahel (BECIS), to undertake a study of the marketing of cereals in the OHV area. In carrying out this study, BECIS has a number of field survey personnel gathering data on cereals marketing but also on other farm operations. Since the sample is larger, it is possible that the data collected will make up for some or all of the deficiencies of the first report. BECIS's final report on cereals marketing is due December 15, 1981.

b. Comment

It is not clear the extent to which which the base line data are adequate to measure the economic and social impact of the OHV project.

RECOMMENDATION

(23) That USAID and OHV arrange for a review of the base line data available in relation to that needed and arrange for any additional studies that might be needed to fill the data base.

6. Training of OHV Personnel

a. Progress/Evolution

There is indicated below the training proposed in the Project Paper, annotated to show accomplishments to date.

Training Proposed

Accomplishments

Two-Year Master Level Training

One in management
Two in agronomy
One in credit management

Two have gone for M.Sc. in Agronomy, one in Ag. Extension and one in Ag. Economics. All departed in 1980, at least one year behind schedule.

One-Year Academic Training

One in management
Two ag. extension
One statistician
Two in finance

None have been sent although eight personnel are in English language training in-country. Some are being proposed for four-year training for Bachelor's degrees. Data on proposed academic disciplines for these eight are not available to the team. In addition, one trainee for ag. statistics and one for ag. engineering are in English training. Neither have degrees, and the latter is expected to go for two-three years to obtain a Bachelor's degree.

Six-Month Training

Three mechanics
Five credit specialists
One water management engineer
Three rice production

Three went to a rice production course in Monrovia in April 1981, three went for mechanics training in Lome in October 1981, and one went for an accounting course to Paris in September 1981 (but for one year or more).

Three-Month Training

Eight in crops/management
One in marketing management
Three in animal traction
One in functional literacy

None of these have gone, although potential candidates have been named for various short-term training, some of it for six months, some longer.

b. Comments

1. There have been serious delays in sending personnel for training, in part because of a lack of English proficiency among potential candidates.
2. It was not anticipated that personnel would be sent for undergraduate degree training, and it does not appear appropriate for this project.
3. It was unrealistic to expect that the OHV would be able to provide a sufficient number of qualified candidates for training and still have an adequate pool of qualified personnel to carry out the project.
4. The limited amount of short-term training would appear to reflect inadequate planning and insufficient attention being given to training by OHV management, USAID and the technical assistance contractor.

RECOMMENDATIONS

- (24) That a revised training plan be prepared for the project taking into account the recommendations in this report and the medium-term project strategy and implementation plan to be developed.

It is suggested that long-term training in the U.S. probably should not be a priority under this project, and the focus should shift to short-term in-country and

regional training -- in French to the maximum extent possible. It is also suggested that USAID and LBII personnel participate with OHV management in the selection of participants.

There is a large body of technical literature available in English, a good portion of which should be of value to OHV personnel. Training of selected personnel in English might be justified just to ensure that this literature can be culled and useful data introduced into OHV. For example, some publications might be translated into either French or Bambara for use of the extension service. This may be an activity that USAID should consider as a general program consideration rather than as a specific project activity.

IV. PROJECT MANAGEMENT

The previous section reviewed the results obtained in the various project components in comparison to the progress anticipated in the project planning documents: the Project Paper and the Project Grant Agreement. This section will look at the effectiveness of project management in general and in relation to the progress achieved in meeting project objectives. Particular attention will be given to project planning, to the management and monitoring of project implementation, and to the budgeting, controlling and accounting of project funds. Consideration will also be given to the collaboration and communications between the principal participants in the project: OHV, USAID, LBII, GRM Ministry of Agriculture (formerly Rural Development) and the farmers.

In USAID funded projects in Mali, the Project Director is the Malian who is in charge of the implementation of a designated project. The Project Manager is the AID officer responsible for monitoring project implementation and arranging for needed USAID or AID/Washington support to the project. This section of the Evaluation Report will review both OHV project direction and USAID project management as used in the Malian context.

A. Project Implementation

As indicated in Section III above, each of the project components is behind schedule, some considerably so. The immediately obvious reasons for the delays were given in the Section III presentations. This section will analyze the more fundamental problems or issues underlying those reasons and make suggestions and recommendations for improving project implementation in the future.

Some of the more basic problems contributing to poor project implementation performance include the following:

- 1) Frequent deviations from original plans;
- 2) Inadequate and ineffective planning;

- 3) Insufficient use of technical assistance;
- 4) Inadequate and ineffective systems for monitoring project performance;
- 5) Poor collaboration and communication; and
- 6) Lack of training and orientation in effective management techniques.

1. Deviations from Project Plans

When decisions are made to deviate from original project plans, project implementation delays usually result. Deviations from plans usually require some additional planning, frequently re-programming of funds and sometimes re-orientation and possibly training of project personnel. In spite of the inherent delays in project implementation from deviations from plans, such deviations may be necessary. This is particularly likely when the project design was based on invalid assumptions.

Even if it appears that it is necessary to modify project plans, there are certain actions that can be taken to minimize implementation delays. The most important step is to analyze why the project plan seems faulty, explore alternatives and do a careful analysis of the implications of the most promising alternatives in terms of their impact on the total life of the project and on the project budget. A significant extension of the period of implementation of the project can have a very serious impact on the project budget. This in turn can have a seriously adverse effect on the effectiveness of other project components.

There have been a number of deviations in project plans, e.g., animal traction, roads, building construction, credit. In addition, there has been delayed action or inaction in disease control, functional literacy and Bancoumana rehabilitation. In none of these cases does it appear that the kind of analysis discussed in the previous paragraph preceded the decision to modify original project plans. In some cases, it appears that decisions were unilateral. In any case, they were not properly documented.

Proper documentation would explain the necessity for deviating from project plans and provide a summary analysis of the impact on the project of the changes in project plans. Documentation would provide a record of agreement to the changes by the appropriate GRM and USAID officials. This record is important to ensure that subsequent project directors or project managers do not re-open already settled issues. In addition, a written record ensures that project evaluators do not misinterpret motives for changing project plans or judge decisions without adequate background information.

Proper documentation for modification of the project description and implementation plan set forth in the Project Grant Agreement is the Project Implementation Letter (PIL). The appropriate GRM and USAID officials to sign such PILs are the Minister of Rural Development (now Minister of Agriculture, although not formalized in a PIL), and the Director, USAID/Mali (Sections 2.1(b) and 7.2 of the Project Grant Agreement). Only six PILs have been issued. However, a number of changes have been made by the OHV Director, either unilaterally or with the concurrence or acquiescence of the USAID Project Manager, and some changes have been made by USAID, possibly with the concurrence of the OHV Director.

As a result, there has been considerable modification of the original project, apparently without the concurrence of the responsible parties, the GRM Minister and the USAID Director. At best, this reflects sloppy management practices; at worst, it has caused delays in project implementation and risked the achievement of project objectives. Possibly it would have been avoided with proper management supervision, particularly on the part of the USAID.

RECOMMENDATIONS

- (25) That PILs be prepared to document significant changes that have taken place in the project strategy and in the project implementation plan, e.g., the road construction program (road standards and specific roads), building construction, animal traction, Bancoumana, credit.
- (26) That any future changes in the project strategy or the project implementation plan be made only after thorough analysis of the consequences of the changes, and after both parties have concurred in the changes and set forth their concurrence in an appropriate document.

2. Inadequate and Ineffective Planning

In his report on the USAID technical assistance program in Mali ¹, Roush suggested the need for three types of project planning: pre-project planning, review of the project plan at project initiation and in-progress planning. The review of this project verifies the need for such planning.

a. Pre-Project Planning

There appears to have been little, if any, real collaboration in the design of the project. The design team did have the benefit of the advice of expatriates who were resident in Mali and who were conversant with Malian conditions. This is no substitute, however, for collaboration in project design with the senior personnel of the organization who will have responsibility for implementing the project. Furthermore, the project as designed was modified in negotiations with AID/Washington, negotiations in which only USAID personnel took part.

¹Ibid.

Specific issues that appear not to have been jointly addressed, or at least about which there was no meeting of the minds, include the following:

- 1) The role and importance of the animal traction centers;
- 2) The need by OHV for technical assistance in the general area of management and specifically in the administration of credit; and
- 3) A general project strategy.

Certain administrative arrangements also should have been clarified before the Project Grant Agreement was signed:

- The types of AID regulations with which OHV would need to comply -- contracting, procurement, control and accounting for funds, etc.;
- The role of the Project Paper, particularly in project evaluation by AID; and
- The importance of the provisions of the Project Grant Agreement, especially the conditions precedent and the covenants, and the procedure for modifying the provisions of the Project Grant Agreement.

The number of assumptions in the Project Paper that have turned out to be invalid also suggest inadequate pre-project planning. Examples of invalid assumptions include: 1) the nature and the adequacy of the OHV credit system; 2) water and land availability and ability to use animal traction for leveling at Bancoumana; and 3) the amount of time required to procure equipment and vehicles.

b. Review of Project Plan at Project Initiation

There was appended to the Project Grant Agreement an implementation plan for the first year. This became out of date very quickly, and apparently was never up-dated. It would have been particularly appropriate to have had sessions to review the project strategy and implementation plan, as discussed in the Roush report,¹ at the time the first members of the LBII technical assistance team arrived. It

¹Ibid, p. 21-2.

would also have been useful to have had OHV-USAID-LBII sessions at selected field sites to discuss project components designed to help members of the local community. No information was found indicating that either of these types of sessions was ever held.

The chief-of-party of the LBII technical assistance team, in his first monthly report, laid out his ideas on project strategy and presented a short run implementation plan. This appears, however, to have been unilaterally prepared. Certainly, there is no indication that it was a result of OHV-USAID-LBII discussions nor reflected a consensus of the three parties. Furthermore, not all project activities were covered.

c. In-Progress Planning

An effective project implementation system would involve the preparation of annual implementation plans and budgets, frequently supported by quarterly plans and budgets. The only joint annual implementation plan appears to have been that attached to the original Project Grant Agreement, which was drawn from the Project Paper. Semi-annual work plans were prepared by LBII and discussed by OHV and USAID. However, in one case the plan was not approved by USAID and the OHV Director disassociated himself from the work plan. In effect, the LBII reports reflected more the chief-of-party's planning than joint project planning. There have been attempts by the contractor within the last year to introduce within OHV quarterly plans and budgets for AID-funded activities, but the effort has met with limited success.

A regular planning activity of the OHV is the preparation of an annual campaign plan setting forth acreage, production and commercialization targets by sector. The sectors allocate the targets by ZER, the ZERs allocate by Secteurs de Base, and the Chef, Secteur de Base allocates the targets by village. Most of the end of campaign reports show a wide divergence between the targets and the end results. In part, this reflects unpredictable weather. However, it also appears desirable to review and revise the planning methodology.

For the annual campaign plan to be a more realistic and adequate planning document, there should be a presentation of previous years' results with an analysis of the conditions that led to the results. In addition, the estimates of potential production by Secteur, ZER, and SB should be accompanied by an analysis of the needs (input and output prices, production inputs, oxen, equipment) to achieve the potential. In short, there appears to be insufficient planning and analysis. It is largely a top-down allocation exercise with little resemblance to reality because there is virtually no input from or communication with those ultimately responsible for the production results: the farmers.

RECOMMENDATIONS

- (27) That the preparation of annual and quarterly work plans be instituted immediately for all of the project components and that the quarterly work plans be the basis for, and prerequisite to, the approval of quarterly budgets.
- (28) That OHV management request short term assistance under the LBII contract to assist OHV in improving its planning capabilities in AID funded activities, in OHV's annual campaign planning and in other areas where planning is needed but not taking place.

3. Insufficient Use of Technical Assistance

Frequently the donor and the recipient of assistance have entirely different perceptions of the role of, or need for, technical assistance. AID, like a number of other donors, strives to ensure that its assistance is used effectively and that verifiable progress for the intended recipients has resulted from the aid provided. It has learned from

experience that this is more likely to occur if technical assistance personnel are assigned to the project. These personnel are expected to be familiar with U.S. technological and/or management concepts and should be able, therefore, to understand better the logic of the project design. In addition, the sole responsibility of the technical assistance personnel is to ensure a successful outcome of the project. USAID also usually relies, to a considerable extent, on the chief of the technical assistance team to keep it informed of the project's progress and any problems that arise. AID generally prefers to have a long term technical assistance expert assigned for each major project activity or technical discipline.

A Malian project director, on the other hand, sees the high cost of U.S. technical assistance. The educational level of the technical assistance experts proposed for assignment frequently is no higher than that of the Malian organization's own senior personnel. Thus, it is easy to conclude that the technical assistance will provide little benefit to the organization, particularly if the director has not had a positive experience with a technical assistance-supported activity. The goal of the project director, therefore, becomes one of reducing the amount of funds devoted to technical assistance in the hopes of shifting funds to activities or expenditures considered of higher priority by the director.

Generally, AID will insist on maintaining the level of technical assistance as provided in the project design. This is facilitated when AID does the contracting for the technical assistance. In the case of the Operation Haute Vallee project, however, the USAID director continued a policy of letting the host country do the contracting. Even with a host country contract, AID reserves the right to approve the request for the proposal (RFP), contract, and the contractor. USAID was in a position, therefore, to insist that the GRM contract for the technical assistance component as planned.

An RFP was issued for the full technical assistance component, but in the contract negotiations, the number of technical assistance personnel was

reduced. In addition, the proposal chosen took issue with the Project Paper and in effect presented the contractor's own ideas for a project. Little provision was made in the contract for short term technical assistance, even though such use had been foreseen in the Project Paper.

The USAID did not analyze OHV's capability to select and supervise the contractor, which it should have done before opting for host country contracting. It said nothing when the proposal selected was inconsistent with the Project Paper, nor when the amount of technical assistance was reduced. It made minimal effort to ensure that the contract team could be effective in carrying out the project. The USAID made little effort to convince the OHV Director of the importance of having a fully qualified chief-of-party.

Elsewhere in this report it has been recommended that OHV and USAID jointly develop a project strategy and implementation plan. It has also been recommended that a highly qualified executive be recruited as chief-of-party of the contractor's technical assistance team. The contract team, preferably including the new chief-of-party, should participate in the proposed planning activities. As a part of the proposed planning activities, a revised scope of work should be developed for the contractor. Since the effectiveness of much of the AID-funded activities depend upon the effectiveness of OHV, the contractor's team and scope of work should be modified as necessary to support general OHV operations. Particular emphasis should be placed on planning, monitoring of project performance, improved financial management and other modern management techniques.

RECOMMENDATIONS

- (29) That the contractor's scope of work and team composition be reviewed and revised as part of a general review of project strategy and the preparation of an implementation plan for the duration of the project.

(30) That OHV and USAID agree on some principles governing the supervision of the contractor along the lines set forth in the previously cited Roush report, pp. 43-4. This would include a procedure for joint evaluation of the contractor's performance (Roush report pp. 47-8).

4. Inadequate and Ineffective Project Monitoring

Effective project monitoring involves the preparation of implementation plans with time-phased performance targets, the establishment of information systems based on the implementation plans and the periodic systematic review of progress against targets. The primary responsibility for project implementation and monitoring lies with OHV, with strong support from the contractor. USAID, however, should also have a monitoring system, preferably based on the OHV system. USAID should review and approve implementation plans, ensure the adequacy of information systems and participate in the periodic reviews of project progress.

The inadequacy of project planning has been discussed above. Without good plans, it is difficult to devise a useful information system. Thus, it is not surprising that the information system is inadequate, hardly worthy of being labeled a system. The primary reporting on AID-funded activities has been the contractor's monthly, more recently quarterly, reports. These did provide some reporting of progress in comparison to targets. However, some of these reports appear to have been overly optimistic and self-serving. In any case, they appear not to have been used by OHV or USAID to improve project operations or the contractor's performance. Moreover, the contractor's reports did not cover all project activities, only those of interest to the contractor's chief-of-party or those for which the contractor had contractual responsibility.

OHV requires a monthly report from its sector chiefs and heads of offices in Bamako. However, these do not report performance against previously established targets, except for crop production targets which have been

affected only marginally by OHV action. These reports cover some AID-funded activities, e.g., functional literacy, pilot farm activities, animal traction, pilot farm activities, animal traction demonstrations. Again, there is usually no comparison with previously established targets. OHV also prepares an annual report on the USAID - funded activities, as well as an annual campaign report giving production data for the region and summarizing OHV's activities. The separate report for USAID-funded activities is largely descriptive, with little analysis or comparison of actual performance with targets.

There do not appear to have been any systematic reviews, joint or unilateral, of project performance in relation to targets. There have been periodic, at times regular, OHV-USAID meetings. However, these usually involved current operational problems or requests for AID support of new activities or other changes in the project. They have not dealt with general OHV operations.

The officials ultimately responsible for the success of the Operation Haute Vallee project are the Minister of Agriculture (replacing the Minister of Rural Development cited in the Project Grant Agreement) and the Director of the USAID Mission. It would seem appropriate, therefore, that they should review periodically the progress of the project. Not only should they be concerned about progress, they are in a better position to resolve problems whose solution is not within the power of the OHV Director or the USAID Project Officer. It is important, therefore, that the project's management information system provide for the Minister and USAID Director to be alerted when it appears likely that critical performance targets will not be achieved on time. In addition, a periodic review of project progress and plans should be held at least annually, preferably semi-annually given the delays already encountered. This would provide an opportunity to invite the participation and promote the support of other agencies contributing to the project, e.g., Travaux Publics, DNAFLA of the Ministry of Education, Elevage, etc.

RECOMMENDATIONS

- (31) That the OHV Director request the contractor to develop a project monitoring system for the Director, based on a revised implementation plan for the duration of the project, and assist subordinate OHV officials in preparing more detailed activity work plans.¹
- (32) That USAID establish a project monitoring system.
- (33) That OHV, USAID and LBII hold regular meetings, at least quarterly, to review:
- a. Implementation progress against previously established targets;
 - b. The implementation management system employed by activity managers; and
 - c. The information system supporting activity managers and the Project Director.
- (34) That the Minister of Agriculture and the USAID Director periodically hold joint reviews of project progress and project impact.

5. Poor Collaboration and Communication

Previous sections have given illustrations of a lack of collaboration between OHV and USAID and between OHV and the contractor. This section will discuss briefly some of the apparent causes of poor collaboration and communication and suggest some remedial action. A separate section is devoted to this topic because positive collaboration and good communication are essential to the success of any joint project involving the participation of two or more organizations, especially when the organizations are composed of people from different nationalities and cultural backgrounds.

¹ The Evaluation Team Coordinator has provided the contractor's acting chief-of-party with documentation on the Project Performance Tracking system developed in AID to serve program managers.

One of the principal obstacles on the USAID side to collaboration has been the practice of almost unilaterally designing AID-assisted projects. Then, illogically, USAID/Mali under its concept of host country contracting has turned the project almost totally over to Malian officials to run, even permitting them to ignore the basic project design if they wish. On the Malian side, there has been a reluctance to accept technical assistance and to demonstrate personal and national independence. This has been reflected particularly by treating the technical assistance personnel as employees of the Malian organization and subject to the desires of the Project Director rather than as co-partners in a joint development effort. For an elaboration of some of the USAID and Malian attitudes, and a response thereto, see the previously cited Roush report on technical assistance in Mali, pages 10-14.

This rather unfavorable environment for collaboration is complicated further by the lack of understanding by both Americans and Malians of each other's cultural patterns, work habits, values and life styles. Recruitment of USAID and contractor personnel without proficiency in French and/or not providing them with project or country orientation further exacerbates the problem.

The chances of project success would have been enhanced if the Project Director had had the opportunity to visit (a) some successful cooperatives or private agricultural marketing firms in the U.S. using good management techniques and (b) a reasonably successful technical assistance project elsewhere in West Africa or other French-speaking country (e.g., North Africa, Haiti). In addition, the project design should have provided for in-country management training. The foregoing actions are still possible. In addition, there are a number of activities which USAID, OHV and the contractor could sponsor either individually or collectively which could foster improved understanding and a spirit of cooperation and collaboration. An illustrative list of such activities is provided on pages 15-17 of the Roush report.

The ultimate success of this project depends upon the response of the farmers of the Haute Vallee region to the various project activities, as well as other non-project stimuli and deterrents to increased productivity and production. The farmers' response to project activities will depend heavily on the extent to which those activities are structured and administered to meet the farmers' needs and problems. The activities will be appropriately structured and administered only if there is good communication with the farmers and a concentrated effort made to involve them in the on-going planning, implementation and evaluation of project activities.

RECOMMENDATION

- (35) That OHV and USAID make a greater effort to foster a spirit of cooperation and collaboration and to improve communications among the participants in the Operation Haute Vallee project, including the farmers of the area who should be involved to a greater degree in the planning, implementation and evaluation of project activities.

6. Lack of Management Training/Orientation

The Project Paper stated that implementation of the various activities proposed in the project would strain the already limited management resources of OHV. Two remedial actions were proposed: management and related training in the U.S. for senior OHV personnel and the recruitment of a chief-of-party of the technical assistance team with strong management experience. Unfortunately, the latter did not take place. Furthermore, the training was delayed and only one participant has gone for management training. Given the paucity of qualified managers in OHV, it would have been better to have arranged for short term management orientation abroad for the Project Director, as discussed in the previous section, and provided for in-country management orientation and training for senior and middle-level OHV personnel.

In the previously cited report on USAID/Mali's technical assistance activities, reference was made to a draft proposal of the Denver Research Institute for Management Training program in Mali. The report supported the proposal and urged USAID to finance a management training program in Mali to support all USAID funded projects (see Roush, pp. 24-29). The Evaluation Team's findings validate the need for such training to support the Operation Haute Vallee project.

RECOMMENDATION

- (36) That USAID support the establishment of an in-country management training program along the lines of the Denver Research Institute proposal and authorize project funds to finance the participation of OHV personnel in such a program.

B. Financial Management

This section will deal with the management of both AID and non-AID financial resources available to the project. The financial viability of OHV is essential to the success of the project as it has been designed. Furthermore, there are indications that OHV has used AID resources to cover periodic shortfalls in its current operating funds. It is appropriate, therefore, to comment on and make recommendations about the management of non-AID financial resources as well as AID funds.

Members of the Evaluation Team were able to assess the management of the credit program and to review financial procedures generally in use in OHV. A separate more detailed report on the credit program is included in Volume 2. A summary of the findings and recommendations on the credit program are found in Section III. C. above. References to the credit program are made herein only to the extent that they relate to or are illustrative of general financial management procedures.

A good financial management system will include the following:

- Procedures for establishing annual and quarterly budgets and monitoring adherence to the budgets;
- Procedures for controlling the flow of funds (receipts and disbursements) and the control of commodities purchased by or donated to the organization;
- An accounting system for the receipts and disbursements of funds which supports the budgeting and funds control sub-systems; and
- A financial management information system based on the foregoing sub-systems which provides management with periodic reports to guide its financial decisions.

1. Budgeting

Quarterly budgets are prepared for the use of AID funds. However, there frequently has been a considerable divergence between the amounts budgeted and actual expenditures. Effective October 1980, the OHV Director delegated to the LBI financial advisor the authority to disburse AID funds provided to OHV. With this authority, the financial advisor has improved the funds control system, thereby forcing greater discipline in following the quarterly budgets. The improved accounting procedures which have been instituted should facilitate the preparation of improved budgets. However, the quality of budgets in the final analysis is a function of the quality of planning of physical progress. As indicated in A.2. above, planning needs to be improved substantially.

There appears to be minimal budgeting, if any, of non-AID funds at OHV's disposal. The accounting procedures, funds control system and information system are all inadequate for even the most elemental financial management. They cannot provide the data needed for reliable budget estimates or for monitoring adherence to budgets.

2. Control of Funds and Commodities

As indicated above, a reasonably effective funds control system has been functioning since October 1980 for the receipt and disbursement of AID funds. However, the Financial Management member of the Evaluation team in his report has suggested some improvements. A particular concern is the current procedure for receipt of commodities which can result in the accounting office paying invoices even though not all of the commodities invoiced were received.

The system of inventory control is unsatisfactory for both AID and non-AID funded commodities. A driver may pick up commodities and deliver them to the central warehouse, but neither the driver nor the warehouseman knows

what is supposed to be received. Until early September 1981 there were no inventory cards available to the warehouse. When the cards were delivered, no instructions were provided on how to prepare or maintain them.

As indicated in the credit report, the situation is not much better in the field warehouses. There are generally documents accompanying commodities, but only part of them have control numbers. There is no current inventory card system. The warehouseman at the ZER visited by Evaluation Team members had had no instruction in warehouse operations and inventory control procedures.

Non-AID receipts of OHV include commissions on commercialization purchases of cotton and other commodities for other GRM enterprises, cash sales of production inputs and farm equipment, down payments on farm equipment sold on credit, and repayments of loans. At least the last three of these items will usually be received in Bamako as cash transmittals from the Chefs de Secteur. These funds are put in a petty cash account instead of being deposited immediately to the OHV bank account. Disbursements from the funds are recorded in a cash book without any reference to source documentation.

The receipts from the field are not always accompanied by documentation that permits proper accounting. Furthermore, there is no way to verify that the amount transmitted is the amount that should be sent without going to the field -- and even then it may not be possible. The Chef de Secteur cannot verify the validity of receipts from the ZER without visiting the ZER and the ZER chief cannot verify receipts from the Chef Secteur de Base without having the detailed records of the Chef SB.

A normal financial control system would require at least a monthly reconciliation of all bank accounts. The OHV procedure, however, only calls for a reconciliation at the end of each campaign. However, the last reconciliation of the regular OHV bank account was March 1980. That is, the 1981 reconciliation was not yet accomplished six months after the end of the campaign.

The system for the control of receipts and disbursements of non-AID OHV funds and for controlling commodity inventories is at the same time burdensome and ineffective. There are all kinds of time-consuming verifications required, but they are really meaningless as adequate controls.

In short, an efficient meaningful system of funds and inventory control is badly needed.

3. Accounting System

The LBII financial advisor has established an accounting system for the AID funds made available to OHV that generally meets USAID's and the Project Director's needs. The accounting for other OHV funds is not timely and is not prepared in sufficient detail to provide the information needed for efficient and effective management of OHV's resources. This appears to reflect a lack of awareness on the part of the Project Director of the type of information needed for effective management. In addition, the chief accountant has insufficient education and experience to advise the Director about the needs for adequate data. Some indications of informational needs are presented in the next section.

4. Information System

The first step in establishing a good financial management information system is to determine the kind of reports that management needs to: (a) do effective planning; (b) control the utilization of the organization's resources; (c) maintain a good liquidity position; (d) determine the profitability (or lack thereof) of the different activities of the organization; and (e) prepare meaningful financial reports for the OHV Board of Directors.

Illustrative of the type of report or information which is needed and which generally is not available or is inadequate include the following:

- Projections of quarterly and annual non-AID income by source, e.g., commercialization receipts, cash sales, loan repayments (including interest estimates) by source of funds (SCAER and AID) and by sector;
- Annual and quarterly projections of expenditures by principal expenditure category and by sector;
- Consolidated inventory reports that can provide a more rational basis for the planning of the purchase and distribution of production inputs and agricultural equipment as well as an analysis of commodity losses by ZER;
- Monthly cash flow reports;
- Quarterly reports of actual vs. projected income and expenditures by sector with explanations of major deviations;
- Annual reports (end of campaign) on the profitability of various OHV potentially income-earning activities, e.g., distribution of oxen, distribution of production inputs, distribution of agricultural equipment, credit program, commercialization (by commodity); and
- Annual consolidated profit and loss statements and balance sheets.

The foregoing will require a substantial improvement in OHV accounting, including the introduction of some cost accounting. It also requires a major overhaul of funds and inventory control procedures and reporting and a major modification of the administration of the credit program. The foregoing changes will require additional technical assistance, hiring of one or two more qualified and/or more dedicated senior personnel, substantial orientation of senior management personnel and a fairly extensive training program in Bamako and in the field at sector and ZER level -- some at Secteur de Base. However, the benefits from improved financial management should be substantial - certainly more than the incremental costs. Furthermore, if there is not a substantial improvement in financial management, there would seem to be no justification for AID assistance to project activities which rely on or support OHV, i.e., most project activities.

RECOMMENDATIONS

- (37) That OHV request, with USAID concurrence, that the technical assistance contractor provide the following short and long-term assistance:

- a. A short-term financial management expert (probably 30-60 days), to be supported by the LBII long-term financial expert, to develop for OHV an accounting system and a financial information system, setting forth the personnel, training, equipment, and current operating cost implications of adopting the proposed system. Potential benefits would also be enumerated and quantified to the extent feasible. After the proposed system had been reviewed and adopted, the expert would return for another extended visit to help install the revised system and train personnel in its use. The current system for managing AID funds should be integrated into the overall OHV system as soon as practical, permitting the long-term financial expert to monitor and advise on the performance of the overall system.
- b. A long-term (at least a year) credit expert to help develop and supervise the initial implementation of a new credit system, including training personnel in its use.
- c. A short-term logistics planning expert to develop improved procedures for procurement planning and to assist in installing an improved system for purchasing, distribution and inventory control of commodities, especially production inputs and agricultural equipment.¹
- d. A short-term expert or team to study ways of increasing OHV revenues.

(38) That OHV assign to work with the technical assistance team on a full time basis a well qualified finance officer with a strong accounting background who would become the chief financial officer of OHV when the revised financial management system is adopted and would have primary responsibility for supervising the installation of the new system.

¹Every effort should be made to ensure that all three short-term experts are in-country concurrently (preferably the short-term planner too -- Recommendation 28) so they can work as a team. All three of the activities are inter-related, and a fully integrated financial management system should be the result of their work.

USAID should assist in the financing during 1982 of any additional operating costs that the installation of the new system will entail, provided that USAID concurs in the adequacy of the proposed system and finds the proposed new financial manager qualified for the position.

V. VALIDITY OF PROJECT DESIGN

A. Overview

This section will provide some observations regarding the likelihood that project outputs will be obtained and that the project purpose will be achieved. An opinion will be offered on whether shortfalls are because of faulty design, not following design or poor implementation performance. The internal logic of the design (inputs to outputs to purpose) and the validity of assumptions will also be reviewed. The other sections of this chapter will critique the economic, technical, social, administrative and financial feasibility analyses of the Project Paper.

1. Project Outputs

On the following page is a tabular listing of the projected outputs listed in the Logical Framework of the Project Paper. Entries are annotated, where applicable, to indicate any omissions or modifications of the outputs made in the Project Grant Agreement (PGA).

Probable shortfalls in the achievement of outputs which stem from faulty technical assumptions or inadequate attention to design include Bancoumana polder rehabilitation, training to some extent and the overhaul of the credit system -- the designers assumed that a better credit system existed than was the case, and assumed that it was primarily a village-based system.

The basic design was not followed in the following activities: literacy (on the qualitative side), road rehabilitation (i.e., trails improvement was dropped), animal traction. Other activities showing shortfalls reflect primarily poor implementation. Poor implementation is also evident in the other activities, but in those activities it appears not to have been as critical to lack of progress as faulty design or disregard of design.

Implementation shortfalls reflect management weaknesses in OHV and USAID, particularly the lack of management information systems, and problems

TABLE 5

PROJECTED OUTPUTS/PROGRESS TO DATE

- | | |
|--|--|
| a. A fully irrigated polder rehabilitated and rice production therein increased to average 3 tons/ha. | Only 100 of 640 ha. likely to be rehabilitated. Yield even on the 100 ha. unlikely to reach three tons by 1983. |
| b. An expanded functional literacy program operating with typical materials germane to project goals; 8,000 people trained. (PGA: 2,500 people trained, 100 centers in operation, of which 25 with classes for women only, and most offering post-literacy courses.) | Program has been expanded and can obtain PGA quantitative goals. However, development of germane materials lagging, classes for women lagging and minimal post-literacy courses are anticipated. PGA targets still achievable with improved management of program and increased OHV-USAID support. |
| c. Key staff and majority of OHV agents trained. | Quantitative targets may be reached, although delayed later than anticipated. Quality of training and caliber of trainees less than desirable. |
| d. On-farm/village demonstration-extension program begun/expanded -- data compiled from 120 demonstration plots. | Data being collected from 20 pilot farms and on-farm field trials by SAFGRAD are being done on another ten farms. If the expansion of field trials recommended by SAFGRAD is approved, targets could be met. |
| e. Basic health services for treating and attacking causes of river-related diseases being provided in most villages. | It is uncertain whether there will be any project-supported health activities. |
| f. 398 km. of roads and trails upgraded to all-weather condition. (PGA: and a maintenance operation will be functioning). | Because of a loss of 1+ years of construction and the dropping of trail improvement, the total number of km. improved will probably be 150-175 km. Hopefully, the maintenance operation will be functioning, but it is uncertain at this point. |
| g. Credit system redesigned and operating. Additional field credit offices in operation. 2,000 farm families will have increased productivity and production by 50%. (PGA: and earning cash incomes and marketing most of their increased produce). | Redesigned system will have one year's operation at maximum rather than three years planned. Shortfall in farm families reached likely. Shortfall could be reduced if revised system provides for credit to villages rather than to individual farmers. |

- | | |
|---|--|
| h. Eight animal traction schools in operation and 1,500 farmers/oxen teams trained. (PGA: Centers will be charging for services and will be viable, with each school training 100 teams per year.) | Number of centers constructed on target, but none operational as schools for farmers or oxen. Viability might not be realistic, but no way to know if concept not given fair trial. |
| i. 90 blacksmiths/metal workers (forgerons) trained and providing services to farmers. | Less than ten trained. Viability of this activity probably dependent upon establishment of animal traction centers. |
| j. Demographic/economic baseline survey completed, providing statistical base and agricultural production inventory for forecasting system. Project evaluation plan written and published. (Not mentioned at all in PGA.) | Baseline survey undertaken. Marketing survey nearing completion. Improved forecasting system not in place. No project evaluation plan written and published. It is not clear that baseline survey gave results adequate for preparing evaluation plan. |
| k. OHV headquarters and additional warehouses and field offices constructed. (PGA: four small warehouses and six field offices.) | These were to have been completed by year two. Headquarters may be completed in year four. Not clear whether or when others will be completed. Garage has been added and may be completed in year four. |
| l. OHV auto garage staff trained and equipped and providing professional-level repair work on OHV vehicles. More than 12 mechanics trained; value of equipment more than doubled. | Vehicle fleet has been expanded. A technical assistance mechanic has been recruited. However, activity considerably behind schedule. New garage probably prerequisite to making high level of progress. |

resulting from invalid assumptions in project design regarding inputs: (a) vehicles, equipment and commodities could be procured and delivered on time; (b) qualified Malians for training would be forthcoming on a timely basis; and (c) proper final designs would be completed on time for construction activities.

2. Achievement of Project Purpose

The Logical Framework in the Project Paper lists two conditions for achievement of Project Purpose:

- a. One-eighth of the Haute Vallee farm families (2,000 families) will have been introduced to improved technology and will have increased food crop productivity, production and marketing; and
- b. Better support systems for agriculture, functional literacy, health and transport services and facilities will be in place.

Annex 1 of the Project Grant Agreement, on the other hand, states that the End of Project Status that will indicate that the Project Purpose has been achieved will be the obtaining of the outputs specified above for the following project components: animal traction centers, Bancoumana, credit system, roads and trails rehabilitation, health and literacy.

Neither formulation provides a particularly meaningful formulation of an End of Project Status that is directly relevant to the statement of Project Purpose: "Increase food crop productivity, production and marketing in the Haute Vallee". In calculating the Internal Rate of Return, the project designers made assumptions not only about the number of people that would benefit from the project, but how many additional hectares would be devoted to the production of millet/sorghum, how much the yield would be increased and what portion of the increased production would be sold. The results that flow from the above calculations would make a more relevant statement of conditions required to indicate that the purpose of the project had been achieved.

The formulation of the Project Grant Agreement provides more quantitative information, but it is not clear that all of the outputs specified really

are necessary conditions to the achievement of the project purpose. This, in fact, is one of the problems with the project design -- it is not clear just what level and formulation of outputs is really essential to achieving the project purpose. The Project Paper states that roads and credit are the most critical elements to project success, but goes on to state that others are also important.

Based on the results of this evaluation, it is suggested that the most crucial elements to project success are:

- a. A re-structured, liberalized and more efficient credit system;
- b. A substantially improved OHV performance, particularly with regard to: (1) the dissemination of test results of new technological innovations; and (2) the delivery of production inputs, agricultural machinery and work oxen (at least until these activities can be taken over by the private sector);
- c. A better OHV financial structure and improved financial management by OHV to ensure the foregoing;
- d. Improved marketing possibilities for farmers -- this includes road rehabilitation, but might also include increased sale of carts on credit, provision of loans or equipment to villages to improve roads, contracts with private truckers to pick up produce, improved OHV marketing capability and flexibility, etc; and
- e. Greater and better use of animal traction (large scale training of farmers and oxen may or may not be essential).

There is likely to be a shortfall in the achievement of the Project Purpose, regardless of whether the formulation chosen is from the Logical Framework of the Project Paper or the Project Grant Agreement. The shortfall will probably be greatest in relation to Grant Agreement targets. Ironically, as indicated in the following section, overall production of food grains in the Haute Vallee region is likely to exceed expectations. A portion of that gain can be credited to activities under the project, some of which are discussed in the Technical Feasibility section. Even more impressive gains are likely if OHV and USAID give high priority to the items listed above as the most crucial elements to project success and implement the recommendations in this report.

Looking forward to the design of a follow-on project, OHV and USAID should arrange for studies or analyses which will permit them to determine more clearly the need for, and potential of, such project components or activities as health, literacy, animal traction training and other activities which appear to be somewhat marginal to project success.

B. Economic Feasibility

The Project Paper included both a macro and a micro-economic analysis of the proposed project. The macro analysis involved the calculation of an internal rate of return, a look at the balance of payments impact of the project and an analysis of the impact of the project on the financial viability of OHV. The micro analysis was concerned with the feasibility of individual farmers being able and willing to borrow funds to purchase oxen and farm equipment which would be necessary for them to increase their productivity. The Evaluation Team has not attempted to re-calculate the internal rate of return and other calculations in the Project Paper. However, the basic assumptions underlying the calculations have been reviewed, so that it is possible to draw some general conclusions about the original analysis.

The internal rate of return (IRR) in the Project Paper was 8 percent. Three factors were cited in the Project Paper as accounting for the relative modesty of the IRR:

- (1) The terminal year for the analysis was year 15, although benefits after that period exceeded costs by \$900,000 discounted at 15 percent;
- (2) Values of assets (with the exception of oxen) were not added in as benefits in the final year; and
- (3) Projected yield increases due to improvements on unrested land was from 750 to 850 kilograms per hectare (i.e., 13 percent) for millet/sorghum.

There are some other assumptions (explicit or implicit) used in the Project Paper calculations that also tend to limit the projection of benefits from the project:

- (1) No increases in productivity were projected from new seed varieties;
- (2) No increases were projected in areas planted to rice, except for those being rehabilitated by the project in the Bancoumana polder;
- (3) No change was projected in the ratio between the prices of the farmer's production inputs and the prices of the products he sells; and
- (4) No increase in the production of maize (corn) was projected.

As indicated in Table 3, the area planted to millet/sorghum between crop years 1977/78 and 1980/81 increased 25 percent, and yields went up 29 percent. The

increase in area planted is due mostly to increases in the effective market prices for the grain, but a significant part of the increase in the yield is probably due to the increased cultivation of cotton and the establishment of crop rotation patterns which cause millet/sorghum to benefit from residual fertility from the fertilization of cotton. Improved sorghum varieties are likely to be introduced by the end of the project which could add substantially to the benefit stream during the balance of the IRR period. Even with present varieties, direct fertilization could increase yields significantly. Thus, it would appear that the benefit stream from millet/sorghum will be substantially greater than projected in the Project Paper.

The benefit stream from increased rice output will likely be less than projected for the Bancoumana rice polder because of the delay in initiating the rehabilitation of the polder (two years late) and because only 100 hectares of the planned 640 will be put into improved production. However, this reduction in benefit flow will likely be offset somewhat by increases in areas planted to rice outside the polder area. For example, Table 3 shows an increase in rice plantings of nearly 100 percent between 1977/78 and 1980/81. Improved cultivation practices with animal traction could lead to further increases in areas planted to rice as well as improved yields.

A particularly impressive gain which was not projected in the Project Paper is the increase in corn production. The acreage planted tripled between 1977/78 and 1980/81, and yields doubled. Thus, corn production, which was only one-third of millet/sorghum production in 1977/78, was 25 percent greater than millet/sorghum in 1980/81. Corn has benefited primarily from the greatly increased selling price on the parallel market, but also from the introduction of new varieties and from increased fertilization -- in part from the rotation with cotton, but probably from some sub rosa direct fertilization. It is anticipated that plantings of the new corn seed variety, tiemantie, will continue to increase until it is replaced by new varieties in two to three years that will out-produce Tiemantie by one ton per hectare, i.e. to nearly eight tons compared to current average yields of 2.4 tons.

While it may be difficult to agree on how much of the increased benefits from corn should be included in the benefit stream for calculating the IRR for the project, it is certainly obvious that the potentials of the project area are

substantially greater than one would have anticipated from reading the Project Paper. Much of the increases so far have resulted from freer prices and high demand. With substantial increases in production, prices may fall. At that point, the value of improved cultivation practices will likely become very important. The prices of inputs will also become crucial. The recently initiated production of rock phosphate in Mali should help to hold down the increase in the cost of fertilizer. The rock phosphate has proven to be just as economic as imported fertilizers and should not increase in price as rapidly as imported fertilizers.

On the cost side of the equation, the delays in project implementation will probably result in some reduction in the amount of project outlays during the project period. Thus, the IRR should be considerably more favorable than the conservative calculation included in the Project Paper.

With regard to the balance of payments impact, that also is likely to be more favorable than projected because of the larger than anticipated increases in corn, rice and millet/sorghum production. As indicated in the Project Paper, Mali's neighbors are grain importers, so substantial increases in production can lead to exports -- which in fact seems to have taken place already to some extent, although probably largely unrecorded. If OHV pushes the use of domestic rock phosphate, there will also be some foreign exchange savings.

The impact of these developments and other factors on OHV's financial position is discussed in the Financial Feasibility section below (V.F.).

The micro-economic calculations are more difficult to validate. However, the results to date on the pilot farms generally are favorable. Furthermore, there continues to be a strong demand to purchase oxen. FAO estimates that a 100 percent return on investment is needed to ensure that farmers will borrow to utilize production inputs such as fertilizer. In on-farm field trials, SAFGRAD has obtained yields using rock phosphate on local cereals that provide a return on investment from 137 to 158 percent. Thus, it appears that direct fertilization of cereals would be profitable, at least if good weeding practices are followed; i.e., generally where animal traction is used.

Farmers generally have been responsive to recommended improvements in cultivation practices where the positive results can be seen. However, the limitation of credit almost exclusively to farmers who were growing enough cotton to repay the loans being provided has limited the number of farmers that could initiate new practices. Thus, if OHV implements the recommendations in this report with regard to opening up the credit fund and improving the credit terms, the micro-economic picture will improve considerably for a large number of farmers. With such improvements and a stronger animal traction extension program, it should be possible for an even larger number of farmers to participate in the program even if grain prices fall somewhat from their current high levels.

Some people interviewed during the evaluation felt that there should be a stronger element of micro-economic analysis built into the project. On the other hand, one expert suggested that such analysis should be left to the farmer. The experts should demonstrate new techniques, new varieties, etc. and leave it to the farmer to decide on the economics. The situation discussed in Annex C supports his thesis. Furthermore, it should be noted that those who presumably are doing the micro-economic calculations in Mali are the government economists who establish the controlled prices. Where those prices are effective; e.g., cotton, production went down in 1981, and where government prices could be circumvented, e.g., corn and sorghum, production went up substantially.

Some generalized micro-economic analysis by the researchers to help them establish priorities in their research program probably can be helpful. However, even there, one should leave allowance for the farmer's need for security in food crops. Thus, the analysis is not micro-economic but agrosocial-economic. Can anyone other than the farmer really perform this analysis? In short, if there has to be a trade-off between resources devoted to micro-economic analysis versus those for improving or expanding on-farm field trials or pilot farm activities, priority should be given to the latter activities.

C. Technical Feasibility

In the Project Paper, the technical analysis covered eight subjects: agronomic, agriculture credit, engineering, animal traction, health, functional literacy, irrigation at Bancoumana and roads. The validity of the design, as well as the extent to which design has been followed, was discussed for all of the foregoing subjects, except agronomic, in Section III. Therefore, this section will be limited to a short discussion of agronomic factors.

One of the questions posed to the evaluators was whether there was really a "technical package" to distribute to the farmers. In pursuit of the answer to the question, one is led to question the concept of a technical package. At any given time, there should be, as there are, a number of different technological innovations being tested at various levels (experiment station, on-farm testing) -- some individually, some in conjunction with other innovations. Such "innovations" of course may be new to one region (e.g., OHV) and not in another (e.g., CMDT) or even be an innovation in only one Haute Vallee zone. Adaptation of a "technical package" implies a static situation which does not and should not exist. The more basic question to ask, therefore, is whether there is a system for the development, diffusion and support of technological innovations of value to the target farmer.

With regard to the development of new technological innovations, there is a great deal of research being carried out by Mali, much of which is based upon and tied into research going on in regional and international research centers. Some information on these activities is provided in Annex B. The research is administered at research stations and on the farm -- at the pilot farms started under the auspices of the Haute Vallee project and in on-farm field trials sponsored and technically supported by SAFGRAD (Semi-Arid Food Grains Research and Development program). Information on the applied research being carried out by or for OHV on its Samanko station plus information on the activities on the pilot farms and SAGFRAD on-farm field trails are provided in a memorandum by the acting chief of the technical assistance team submitted in response to a request by the Evaluation Team coordinator (Annex D).

As indicated in the Economic Feasibility section above, the results being reported from research stations and on-farm trails indicate an extremely

favorable situation -- particularly when compared to the presentation in the Project Paper. The latter was assuming dissemination within the Haute Vallee project area only of innovations already tested out in the CMDT zone in southern Mali. In addition, the project designers proposed that OHV undertake some applied research on the animal traction centers. The potential results from SAFGRAD, ICRISAT (International Center for Research in the Semi-Arid Tropics) and other research activities coordinated or carried out by the GRM's Institute of Rural Economy (IER) were minimized.

Because the development of new technological innovations is proceeding so rapidly, the importance of dissemination and support become especially crucial. The pilot farms and the on-farm field trials are the bridge between development and dissemination. That is, they reflect the final stage of development and at the same time the first stage in dissemination. The initial OHV decision to establish 80 pilot farms was too ambitious and was costly to the program in terms of credibility and results. Currently, about 20 pilot farms are being closely monitored. Under the SAFGRAD on-farm field trials activity, there was a more modest beginning. Trials were carried out last crop year in only two OHV sectors (secteur) and the number of types of trials was fairly restricted. SAFGRAD is convinced that the program has been sufficiently tested to warrant a substantial expansion -- to the other two sectors of the project plus more farms and a greater variety of trials in the Bancoumana and Kangaba sectors where the trials are on-going.

The next step in the process is the broader dissemination of results obtained on the pilot farms and in the on-farm trials. The extension service should play the major role. Recent plans adopted by OHV provide time for training extension agents and provide for closer monitoring of the performance of extension agents. This is a step in the right direction, but a major effort is needed to develop and implement appropriate training programs and to provide meaningful incentives to agents. Furthermore, there should be an exploration of more innovative ways of disseminating information, e.g., utilizing existing village structures, fairs, inter-village visits, audio-visuals (including movies with farmers and their families in the movies), functional literacy programs, "best farmer" or "best farm" prizes, etc. Obviously, discussions with farmers can help select the ways most likely to be successful in the short run.

Dissemination of research results will be of little value unless farmers can get needed inputs, and on a timely basis. OHV's record in recent years in this regard is not very good. The potential of this project cannot be achieved unless there is a marked improvement in OHV's implementation capability or greater encouragement given to the distribution of production inputs by the private sector. In either case a more efficient and more flexible credit system will be needed.

In summary, the technical feasibility of the project remains valid. However, some improvements in the system are needed. There needs to be improved coordination of the research effort, and some contractual arrangements between OHV and the research organizations would permit OHV to discontinue its own research activities and concentrate on expanding and properly supporting on-farm field trials and pilot farm activities. A review of the relative costs and benefits of the pilot farm approach and the on-farm field trials should be undertaken. Even if both serve a useful purpose, there is need for a rational basis for establishing the level of funding and the utilization of limited technical manpower that should be allocated to the two activities. Considerably more efficient project management and implementation and more sophisticated planning will be essential if the support systems are going to become adequate to translate the very positive research results into increased production and increased income for the farmers and OHV.

D. Social Soundness

In the general comments included in the sociological analysis in the Project Paper, the following are particularly relevant:

"The society and culture of the people of the Haute Vallee area are changing. The impact of Bamako and western culture appears to be a cause of this change. While the OHV organization is seeking to improve conditions, the traditional culture still forms the matrix within which it must operate if it is to be successful. It is, therefore, obligatory that in the course of introducing innovations that the village and family potential for development not be stifled or discarded. Indeed, they provide an existing structure through which OHV can operate. It is especially important for the OHV to be continuously aware of the impact of its innovations on the core of community life and its institutions. So this is why an anthropologist is needed for the project during several short-term periods."

Although individual extension agents are in frequent touch with villagers, the Evaluation Team coordinator did not get the feeling that OHV managers, particularly in Bamako, take seriously the advice in the above paragraph. For instance, one high official stated that farmers do not know how to plan. Another made fun of the idea that an extension agent could possibly take advantage of a farmer in the handling of credit. The extension agents interviewed in the field indicated that all OHV planning comes from the top down; they are never encouraged to develop plans locally with villages or villagers.

The Evaluation Team was told in Bamako that credit was distributed through village agricultural extension committees, but in the field the team found only one such committee in 12 villages and none being used as Bamako had said. Even though the team only visited 12 villages in doing the credit survey, those villages were in three sectors. Furthermore, the team talked with Sector and ZER chiefs and thereby obtained information about a larger area than that actually surveyed.

In general, the team found no evidence that farmer input is sought by OHV leadership when developing its plans, apparently because it is seen of no value. The team was not aware of any call being made by OHV or LBII for short term services of an anthropologist as suggested in the Project Paper. USAID clearly has not made appropriate use of its rural sociologist, because he was not even consulted when USAID prepared its ill-conceived Implementation Letter No. 4 on the administration of agricultural credit.

In the sociological analysis in the Project Paper, there were also short discussions on the Barcoumana polder, credit, animal traction and functional literacy and health. The statements therein, which attested to the feasibility of the design, still seem valid except as they relate to credit. It was assumed that a village credit system was prevalent throughout the valley. This probably was not true at that time; it certainly is not now. If it existed, it has atrophied from lack of use. Nevertheless, it appears that such a system is feasible and desirable, and it has been recommended elsewhere that the situation be surveyed with a view to implementing such a village-level credit system.

Two activities of the project have the potential for impacting favorably on women: animal traction and functional literacy; health could have had a favorable impact if it had been implemented. The use of animal traction eases women's burdens in two ways: (1) it potentially reduces the requirement for hand weeding on the family fields which is largely done by women and children; and (2) the women's smaller gardens which are usually farmed exclusively by the women can be prepared by animal traction, thereby saving women's labor and probably increasing yields. The functional literacy program calls for 25 centers providing classes exclusively for women. This has the potential for improving their status, improving the health standards in the families from which participants come and offering women possibilities for personal or family economic gain.

Neither of these two activities are achieving their targets, but the reason appears to be largely, if not exclusively, faulty implementation. The next evaluation should attempt to verify that women participating in special classes for them are indeed realizing benefits from the classes. It would be well to compare their gains with those of women who participated in mixed male-female classes.

In sum, the project design appears to be socially sound. However, this evaluation focused almost exclusively on the efficiency of project implementation and very little on the effectiveness of the project, i.e., the impact of the project on the intended recipients. Increased attention should be included on the

latter in the next evaluation. In addition, project planning and implementation needs to be much more farmer and village-oriented; i.e., farmers and village organizations need to play a much more significant role in both project planning and implementation.

E. Administrative Feasibility

The Project Paper stated that OHV was financially in relatively good shape and that the financial future looked very promising. It would appear that the project designers had overlooked the importance of the contribution of the European Development Fund to OHV's financial solvency during the period preceding AID funding. The adequacy of financial management was also probably overestimated. Exogenous factors which could not have been foreseen have also contributed to OHV's financial problems. At this time, OHV financial viability is probably the most crucial element impacting on project feasibility. It is discussed further in the Financial Feasibility section which follows.

The Project Paper also stated that management expertise was lacking in every OHV department, but this was being adequately addressed through training and technical assistance. It is doubtful that the training and technical assistance projected would have been sufficient, particularly the training which was largely off-shore. However, the situation has been exacerbated by the fact that the training has not taken place as projected, and the technical assistance accepted by OHV was less than anticipated. Furthermore, the approach and activities of the first chief of party did little if anything to strengthen OHV's management capability in any department. The result of the foregoing is that the administrative efficiency and effectiveness of OHV administration is the second most critical factor in the success of the project -- after OHV financial viability. The project is administratively feasible, but the results will be considerably less than the project's potential unless the recommendations herein for strengthening OHV performance are implemented.

F. Financial Feasibility/Budgetary Analysis

There are two principal issues involved in validating the financial feasibility of the project design: (1) the financial viability of OHV; and (2) the adequacy of AID and OHV budgetary allocation.

1. OHV Financial Viability

As indicated in the Administrative Feasibility section above, OHV financial viability is probably the most crucial element impacting on project feasibility. Continuation of the current revenue-generating structure would make it extremely difficult for OHV to modify the present operating policies and procedures which are geared so overwhelmingly to fostering the production of cotton. Without a change in these policies and procedures, the full potential of this project cannot be realized. Furthermore, without an improvement in the financial situation, OHV's continued existence becomes questionable. To keep afloat, OHV has been forced to utilize AID funds in ways that were not intended. The loss of the SCAER credit funds particularly weakened OHV's financial position. Because of these problems, a poor financial management system has been further weakened and distorted, and top management devotes its time to trying to solve liquidity crises rather than looking to the long term future of the organization.

Suggestions for modifying the income structure of OHV were offered in Section II.C. Recommendations for improving financial management and for carrying out the study of OHV finances which was recommended in the Project Paper were included in Section IV.B. An early implementation of these recommendations and the recommendation in Section III.C on credit is considered vital to project feasibility and an essential condition to continued AID support.

2. AID Contribution to Project Budget

A detailed presentation of the original project budget is presented in Table 1 in Section I.D. The evolution of the principal categories of that budget and utilization of the budgeted funds is shown in Table 6 on the following page.

TABLE 6

BUDGET ANALYSIS -- OPERATION HAUTE VALLEE PROJECT
(U.S. \$1,000)

Project Components	Adjusted Original Budget ^{1/}	Revised Budget 7/31/81 ^{2/}	Obliga- tions 9/30/81	Earmarked 9/30/81	Expend- itures ^{3/} 9/30/81	Pipe- line ^{4/} 9/30/81
Technical Assistance ^{5/}	4,229	3,662	2,023	2,733	1,778	245
Training	851	692	480	261	85	395
Equipment/Commodities	3,453	3,793	3,793	3,771	3,439	354
Construction	4,977	5,100	2,950	578	139	2,811
Roads	(3,797)	(2,900)	(950)	NA	NA	NA
Buildings	(485)	(1,000)	(1,000)	NA	NA	NA
Bancoumana polder	(695)	(1,200)	(1,000)	NA	NA	NA
Ag. Credit	1,757	1,767	1,169	644	--	1,169
Maintenance/Salaries/ Primes	1,396	1,765	865	1,613	1,430	(565)
Health	616	500	87	<u>7/</u>	<u>7/</u>	<u>7/</u>
Contingencies/Inflation	<u>1,116^{6/}</u>	<u>1,116</u>	<u>545</u>	<u>7/</u>	<u>7/</u>	<u>7/</u>
TOTAL	18,395	18,395	11,912	9,600	6,870	5,042

Percent of Budget obligated -- 65%; earmarked -- 52%; expended -- 37%

^{1/}Approved budget adjusted to include pro-rated portion of that part of contingencies and inflation category which had been utilized by 7/31/81.

^{2/}Attached to Project Grant Agreement Amendment No. 7 of 7/31/81.

^{3/}Liquidated obligations plus accruals.

^{4/}Obligation minus expenditures.

^{5/}Includes studies.

^{6/}Original budget was 4,339 -- 24 percent of total budget. The difference (3,223) has been distributed proportionately to other categories.

^{7/}Not available. Amounts, if any, are included in Maintenance, etc.

Some project components are presently budgeted considerably higher than in the original project budget, but there are likely to be shortfalls in other categories. In addition, there is still \$1.1 million remaining in the budget for covering contingencies and inflation. Therefore, it appears that the total funds budgeted will be sufficient to carry out what is physically feasible in the remaining two years of the project.

Although total funding appears adequate, the way the funds have been reallocated during the course of the project reflects some of the implementation problems and may have some implications for the level of physical accomplishments that can be expected during the balance of the project.

- a. Maintenance/salaries/primes -- The revised budget is 25 percent higher than the original estimate. Furthermore, earmarkings at the end of September 1981 were 90 percent of the revised budget. This no doubt reflects the OHV financial crisis. It also indicates the likelihood of an extreme situation if USAID does not agree to a further increase in the budget allocation for this category. It also illustrates why USAID must insist on a drastic improvement in financial management in OHV and on priority attention being given by other GRM offices as well as OHV to finding means of increasing OHV's sources and level of income in ways that are compatible with the objectives of the project.
- b. Construction -- Construction, which accounts for 28 percent of the project budget, has been extremely slow-moving -- only 58 percent of the budget has been obligated and only one-fifth of that has been earmarked according to USAID figures. Furthermore, the allocations to building construction (OHV office building, OHV garage, field warehouses and offices) have more than doubled, and the allocation for Bancoumana is up 73 percent. Thus, the amount allocated for roads, one of the two most important project components according to the project designers, is budgeted at the original figure without any adjustment for inflation or contingencies; i.e., the roads component is now budgeted at 16 percent of the total budget compared to 21 percent originally.
- c. Agricultural credit -- The other project component which was considered by the project designers to be crucial to the success of the

project is lagging badly. While two-thirds of the budget had been obligated, only 36 percent had been earmarked as of September 30, 1981. It is doubtful that much, if any, of the funds will be utilized this coming crop year given the need for time to implement the recommendations made herein.

Another aspect of the budgetary situation which potentially can create implementation problems is the size of the pipeline. It was over \$5 million at the end of September 1981, i.e., 42 percent of obligations and 27 percent of the overall budget. Unless the pipeline is reduced, it will be extremely difficult to get additional funds from AID/Washington, especially given the overall AID budget difficulties. This suggests that USAID and OHV should give high priority to expediting implementation actions so that the pipeline can be drawn down substantially in the coming fiscal year.

Concurrently, the budget should be reviewed with a view to shifting funds among project components so that the project can maintain momentum with a minimum obligation of funds in FY 1982.

For planning purposes, USAID has considered closing off the project at the end of FY 1983 and starting a new project in FY 1984. While there are many variables that may subsequently affect what decision on this is ultimately made, it seems appropriate to ensure that USAID considers some of the recommendations in this report. For example, it has been recommended that LBII recruit an experienced chief-of-party. This will be extremely difficult if the person cannot be recruited for at least two years. This means that the contract would need to be funded at least six months into FY 1984.

In addition, the road program is just beginning its first year at something close to maximum performance. In terms of project objectives, it is very important to maintain the momentum that presumably is about to be achieved in this activity. Consideration should be given, therefore, to funding in FY 1983 road construction activities to be carried out in FY 1984 -- this also implies continued funding of the technical assistance contract. Similarly, if the credit program has been overhauled and is functioning well, it would be desirable to obligate funds in FY 1983 for the FY 1984 agricultural campaign. In short, if USAID decides to support a follow-on project,

it should be very careful to avoid the kind of situation that developed in the funding for Mali Livestock II while a follow-on project was being developed.

3. Malian Contribution to Project Budget

The Malian contribution to the project was shown in the Project Paper and the Project Grant Agreement as \$6.9 million -- 27 percent of the total budget. This contribution consisted of cash and in-kind contributions by OHV, and contributions by villagers -- see summary below.

TABLE 7

MALIAN CONTRIBUTION TO OHV PROJECT
((\$1,000))

OHV Cash Contributions	\$4,702*
Land for new OHV buildings	175
Expense to villagers for building and equipping literacy centers	2,000
Expense to Bancoumana farmers for land leveling	40
Total	<u>\$6,917</u>

*Of which, 1,950 for Contingencies/Inflation.

In the revised budget attached to Project Grant Amendment No. 7 of July 31, 1981, the cash contributions are shown as \$3.3 million (no contingencies allocation) and nothing is shown for the other categories. No data were obtained on actual obligations or expenditures by OHV. It appears obvious, however, that there has been a shortfall in OHV contributions. This illustrates once again the importance to OHV and the project of increasing OHV's revenue and improving OHV financial management.

VI. RECOMMENDED MANAGEMENT PRIORITIES

There are some 40 recommendations in this report for actions to be taken regarding the Haute Vallee project -- the recommendations in the Lessons Learned section are not numbered since they are not project specific. It obviously will not be possible -- nor desirable -- to implement all of these recommendations at once. The recommendations need to be classified into priorities 1, 2, etc., giving highest priority to items requiring immediate attention. Since the Minister of Agriculture and the Director of USAID are the signatories to the Project Grant Agreement, and thus ultimately responsible for the success of the project, they should participate in the establishment of management priorities and ensure that their decisions are implemented in an appropriate and timely fashion. The contractor, under supervision of the OHV Director and with the support of the USAID Project Officer, could do much of the preliminary staff work to prepare for such high level meetings.

RECOMMENDATIONS

- (39) That the GRM Minister of Agriculture and the Director, USAID/Mali convene a meeting to review the recommendations of this report, to establish Priority 1 actions, to assign action officers to implement Priority 1 recommendations and to assign an office or officer to monitor implementation and report progress periodically to the Minister and the Director, USAID Mali.
- (40) That the Minister and the USAID Director convene another meeting within 60 days of the first meeting to review the progress on implementing Priority 1 recommendations and to establish revised priorities, incorporating Priority 2 recommendations for action.

To facilitate implementing the foregoing recommendations, the Coordinator of the Evaluation Team has categorized below the recommendations and provided some comment where it seemed appropriate.

Priority 1

A. Immediate Implementation Problems of Critical Project Components¹

Planning for Bancoumana polder rehabilitation -- Recomm. No. 16.

Operational Plans for road rehabilitation -- Recomm. No. 9.

Revamp credit program -- Recomm. No. 4.

B. Critical Support Functions Needing Immediate Attention

Agreed project strategy and implementation plan -- Recomm. No. 1, 39, and 40.
(Initiation of process is priority 1, but it is recognized that the process will continue for some time.)

Initiate recruitment of technical assistance personnel -- Recomm. No. 20, 28, and 37.

(These recommendations include recruitment of both long and short term personnel. The latter are particularly important for recommending ways of improving the OHV financial structure, up-grading OHV financial management and planning and improving operational performance.)

Establish project monitoring system and improve project reporting -- Recomm. No. 31, 32, and 22.

Priority 2

A. Actions Needed to Support Priority 1B. Planning

Strengthen animal traction program -- Recomm. No. 2.

Long-term planning of credit program -- Recomm. No. 3, 5, 6, and 7.

Strengthen extension activities -- see V.C.

Obtain information on road maintenance -- Recomm. No. 10 a. b. and c.

Decide on health component -- Recomm. No. 12 and 13.

¹Some actions may already be completed in response to recommendations in the draft Evaluation Report.

Improve management and content of functional literacy program -- Recomm. No. 14 and 15.

(Some operational problems may deserve Priority 1 attention, but FL has been categorized Priority 2 because literacy, at least as operated to date, appears relatively marginal to project success.)

Review base line studies and determine any additional studies needed -- Recomm. No. 23.

(See also II.C.3 and III.B. -- 2nd comment after recommendation.)

B. Other Operational Decisions/Actions

Retain USAID Engineering position -- Recomm. No. 8.

Bring project documentation up to date -- Recomm. No. 25.

Establish principles for contract supervision -- Recomm. No. 30.

OHV recruit highly qualified financial officer -- Recomm. No. 38.

Develop in-country management training -- Recomm. No. 36.

Review Lessons Learned section.

Priority 3

A. Actions Which Flow from Priority 1B and 2A Planning

Work plan for balance of Bancoumana polder rehabilitation -- Recomm. No. 17.

Construction of buildings in the field -- Recomm. No. 18 and 19.

Prepare revised training plan -- Recomm. No. 24.

Revise contractor's scope of work -- Recomm. No. 29.

Prepare road maintenance plan and program -- Recomm. No. 10.

Cease road rehabilitation in 1983 if no maintenance program -- Recomm. No. 11.

Continuing Actions

Prepare annual and quarterly work plans -- Recomm. No. 27.

Have regular meetings to review project progress -- Recomm. No. 33.

Minister of Agriculture and USAID Director hold periodic joint reviews --
Recomm. No. 34.

improve OHV-USAID-LBII-Ministry of Agriculture-Farmers cooperation, collaboration and communication -- Recomm. No. 35.

Increased OHV use of short term technical assistance -- Recomm. No. 21.

Proper analysis and documentation of project changes -- Recomm. No. 26.

VII. LESSONS LEARNED

This section presents findings of the evaluation, or draws conclusions from the findings, which have relevance beyond the immediate project. Suggestions or recommendations may be addressed to the GRM, or an agency thereof, to AID/Washington or to the USAID in Mali. The proposals may relate to the implementation of similar projects or to particular implementation methods or systems, regardless of the type of project.

A. Improving Collaboration and Communication

1. In the Design Process

In both this evaluation and in the Roush report previously cited, the importance of greater host country participation in the project design process was stressed. This has been much easier for AID to accept in principle than to put into practice. Therefore, it seems appropriate to explore collaboration in project design in greater detail.

Improved collaboration in project design could be strengthened if USAIDs were more fully staffed and could take greater control of the design of projects. However, this does not appear likely in the near future; rather, there will continue to be a dependence upon external design teams. Greater participation by host country personnel in design teams would also be salutary. Again, however, there is reason to doubt that too much headway will be made. For example, there is usually a scarcity of qualified personnel, and since the design process is rather long and the result not always sure, priority is usually given by host country agencies to using such personnel on current activities.

Nevertheless, there are some things that should be feasible which could strengthen collaboration or compensate for less than desired host country inputs to the design process.

a. Design Team Composition

On the AID side, the composition of the design team could be modified to make up for the inadequate host country representation and focus more on implementation mechanisms. For example, in addition to the usual technical specialities, teams should also include someone with broad experience in project evaluation and someone with good training and experience in the management of international development activities, particularly with implementation experience. A financial expert should be included on the team if: (a) the project will have a credit component; (b) the host country will administer a significant portion of AID project funds; or (c) the success of the project will depend to a considerable extent on the efficiency of the host country financial system. Similarly, a logistics expert may be needed if the project will require the purchase, storage and/or distribution of significant quantities of commodities. One person may be able to fulfill more than one of the above functions. It may also be necessary to divide the design team into groups, with the logistics/finance/management group following the technical group to review the implementation feasibility of the technical program. If the feasibility should be questioned, a follow-up team visit might be necessary. This would still be cheap in relation to the overruns on projects which encounter serious implementation delays as a result of inadequate pre-project implementation planning.

On the host government side, higher priority needs to be given to project design and evaluation. Host governments need to realize that there will always be a high turnover in the expatriate personnel who come to participate in development activities in their country. Therefore, it will be host country personnel who are in the best position to profit from evaluations and to insure that lessons learned are incorporated into future project design. It probably will not be feasible to have design and evaluation units in all ministries for some time. However, it should be feasible to have at least one unit in the government, perhaps in the Ministry of Plan.

In Mali in particular, the Ministry of Plan has a responsibility for evaluating development projects. In addition, the Institute of Rural

Economy (IER) in the Ministry of Agriculture has an evaluation unit that is used for many, if not most, evaluations of rural development projects. It would seem desirable, therefore, that an individual from either or both of these units participate in the design team for new rural development projects as well as anyone that could be spared from the organization that would have responsibility for implementing the proposed project. Even if personnel constraints precluded putting someone on the design team, the government should insist on a review of the draft project proposal by those units as well as the implementing agency prior to giving preliminary government approval of the proposed project.

AID, in conjunction with other international donors and lenders as appropriate, should encourage host countries to establish design and evaluation units where none exist and should support such units as needed. For example, AID could provide support for the creation of services similar to AID's Development Information Service and the training of personnel in the design and evaluation concepts developed by AID and now used by many other donors. In addition, AID should insist that USAIDs seek out and incorporate in design teams host country personnel experienced in evaluation -- from either the private or public sectors.

b. A More Realistic Implementation Plan

It is usually fairly easy to obtain agreement between host country officials and USAID project design personnel on the general objectives of a project. Frequently, however, there is not a meeting of minds on how those objectives are to be accomplished--in part, because host country personnel generally make little input into the detailed implementation plan. While efforts should be made to have greater host country input in the early stages of design, it is quite likely that the most important input, that of the host country project director, will not be available because he may not even have been selected at the time of the project design team's visit. This is especially likely where there is a considerable time lag between the visit of the design team and the signing of a project agreement. Because of the likelihood of inadequate host country input into the implementation plan included in the Project Paper, AID should consider modifying its project design and approval process.

(1) Meaning of Project Approval

AID should make clear that its project approval is binding on the general objectives of the project, but it is leaving considerable latitude to the USAID and host country in terms of how the objectives are achieved--subject to the presentation of sufficient information to insure that the project can be carried out in the time frame proposed. To compensate for requiring less implementation detail at the time of project approval, AID should insist on improved USAID monitoring of project implementation--see A.2 and C. below.

(2) Revised Implementation Plan Before Project Signature

The implementation process should provide for the joint preparation at the time of, but prior to, the signing of the Project Agreement of a more detailed life-of-project implementation plan, with detailed work plans for the first year and procedures for reviewing and updating the plan. At that time, the host government should be (and must be) willing to give priority to working out implementation details. There are also rules of the game that must be established, and this should be done prior to the signature of agreements. Furthermore, agreement on the rules of the game does not guarantee that the rules can be followed even if there is a willingness to do so. Therefore, the detailed financial and other operational procedures, at least for the first project with an agency or organization, should be worked out, and tested for feasibility before the Project Agreement is signed -- not presented in the first Project Implementation Letter as is now the practice.

The foregoing implies that AID/Washington will cease and desist in its most consistent actions--actions that probably are the greatest contributors to poorly implemented projects: pressuring USAIDs for rapid development of new projects, speedy obligation of funds and early initiation of disbursements. It is well recognized that an extremely high pipeline can provide the Congress with an excuse for

reducing foreign assistance appropriations. It is suggested, however, that one of the most important contributors to AID's high pipeline is the obligation of funds before enough of the "hows" of implementing projects have been worked out collaboratively, and the foregoing pressures are the principal cause for such premature action. Therefore, it is important that AID accept the utility of allowing missions more flexibility in the timing of the signing of Project Agreements and explain to Congress the rationale for the change in the process.

c. Cultural and Social Factors

More attention needs to be given by AID planners to the interests and motivations of the project implementers and the factors in the cultural and social environment that may discourage initiative and encourage practices in resource management that are unacceptable to AID. For example, in some of the environments in which AID works, society expects members of an extended family to give their highest loyalty to support of that family and government salary scales are extremely low. These conditions often foster practices which are acceptable in the local society but which would be either frowned upon or considered illegal in the U.S.

AID's rhetoric also calls for the intended recipients of AID projects to participate in the design and implementation of proposed projects, but this seems to be the exception rather than the rule. Inadequate attention generally is given in Project Papers to the interests and motivations of the personnel of the implementing agency to determine whether they are likely to involve intended recipients in the project and, if not, whether such involvement is really feasible. If it is feasible and desirable, project designers should look for measures that could be incorporated in the project design to promote such involvement in a meaningful way.

To deal with the foregoing types of issues, AID might look at the approval process of individual projects and also undertake some research related to the general problem of dealing adequately with cultural and social factors. With regard to individual projects, there is need for

an analysis in Project Papers of the social/cultural/political problems directly impacting on the feasibility of project implementation. The Social Soundness analysis section of Project Papers usually deals only with the possibility of insuring that the intended beneficiaries of the project will indeed benefit from the project, and the Implementation section deals mostly with the quantity and quality of local personnel available and the structure and track record of the implementing agency. The weakness of these sections is probably attributable to a considerable extent to the need for an unclassified presentation. It is suggested, therefore, that AID provide for a classified presentation of cultural/social/political factors and any other issues that could impact seriously on the implementation of the project. This presentation should focus on local administrative practices and the institutional and personal relationships between the implementing agency and the intended recipients of project benefits. As a part of the foregoing, or as a supplement thereto, an analysis should be included of the implementing organization in relation to the institution building model developed for AID by Milton Esman, et. al. (see a summary presentation of the model in Annex E).

In terms of the broader problem, a comprehensive study of the principal types of social/cultural/political problems encountered in the implementation of international development projects is overdue.¹ It should be possible to identify the most persistent problems, evaluate the various means attempted to overcome or circumvent them and develop some guidelines for dealing with at least some of the problems. As a complement to the foregoing study, an effort should be made to identify any countries which have overcome the most serious social or cultural impediments to effective project implementation and determine the factors which appear to have contributed most to the changed situation. This might lead to new program or training activities or to the convening of seminars to discuss the findings. Collaboration in the foregoing with other donors/lenders would be desirable.

¹One attempt to classify and describe common problems of this type is contained in Dennis A. Rondinelli's article in Project Planning and Implementation in Developing Countries: A Bibliography on Development Project Management.

2. In Project Implementation, Monitoring and Re-Planning

Section IV provides recommendations for improving in-progress project planning, project monitoring and other actions for improving project implementation. Detailed suggestions are also included in the previously cited Roush report (Sections IV and V). It is suggested that it would be in the interest of the GRM to implement a number of those recommendations in other GRM development projects. In addition, it is suggested that AID incorporate the recommendations, as appropriate, in its Handbook chapters and training programs on project implementation. Furthermore, the Handbook chapter dealing with Project Agreements should require that Project Agreements include:

- those portions of the Project Paper that both parties agree are important to follow in project implementation;
- a requirement for joint reviews of project implementation and joint approval of annual work plans and budgets; and
- a provision that Project Implementation Letters will be the official project documentation and will be used specifically to formalize approval of annual work plans and changes in the overall implementation plan or annual work plans.

B. Making Project Management More Effective--the People Factor

A number of recommendations for improving project direction and management were made in Section IV above and in Section V of the previously cited Roush assessment of USAID-funded technical assistance activities in Mali. The latter section, especially, includes recommendations which have relevance for a number of USAID-financed activities and probably for non-AID financed projects in Mali as well. In addition, some of the recommendations are believed to have relevance for AID projects and programs in other countries, especially in French-speaking West Africa. It is recommended, therefore, that both the GRM and AID/Washington review the two sections for general applicability. The suggestions and recommendations in this section are designed to complement or elaborate upon the recommendations in the two Project Management sections cited above. Particular attention will be given to determining personnel needs, up-grading personnel skills and seeking ways to offset personnel shortages/inadequacies.

1. Analyzing Personnel Needs

Generally, the most crucial need for assuring good project management is for a sufficient number of appropriately experienced or trained personnel. Determining just how many of what types of people with how much training and experience is not a simple task. Project Papers do not generally deal adequately with the subject. The requirements for technical personnel may be dealt with reasonably well, but the need for support personnel (e.g., administrative, logistical, financial, planners, trainers, etc.) is usually ignored or underestimated. It is suggested that GRM and AID study the impact of personnel inadequacies (numbers and quality). Assuming the validity of the thesis that personnel inadequacies has contributed significantly to poor project management, AID and/or host countries could improve the chances of successful projects by including on project design teams a management-oriented person with experience in personnel planning and personnel development.

2. Overcoming Personnel Shortages/Inadequacies

Host country budgetary problems often necessitate the acceptance of less than optimal project staffing. Furthermore, the level of experience and

training often leaves much to be desired. Thus, a principal project component frequently is the up-grading of the skills of project personnel. There follow some thoughts on how to make such training most effective in the project context, plus some ideas on alternative approaches for compensating for personnel inadequacies.

a. Orientation and Training

It is very important that the project director have a full understanding of project objectives and of the personnel implications of the project implementation plan. Frequently, this can only be fully appreciated after exposure to a similar type project in another developing country or in the U.S. Sometimes someone from a budget bureau or an overall government personnel agency must also have full understanding of, and be in agreement with, project plans before it is possible to implement the project effectively. Often, therefore, one of the first project actions should be an orientation tour for the project director, and possibly other host country personnel.

Financial management is an area where it seems particularly important to provide orientation to host country project directors and USAID project officers. It is doubtful that much value will come from the proposed AID training in the Sahel in financial management if the training is geared just to accountants and to assuring proper control over the use of AID funds. To assure its effectiveness, such training must be preceded or accompanied by an orientation for project directors which helps them see how improved financial systems and reports can improve their effectiveness. This orientation will need to be followed up with help in financial management systems beyond just controlling the flow and use of funds.

Often project plans call for long-term training in the U.S. for senior project personnel, usually in technical areas. Mid-level training is seldom proposed to any considerable extent. Thus, senior personnel already in short supply are sent off for training, weakening overall project management capabilities because personnel going for training will generally be replaced by a less capable person or by a peer who will try

to administer both persons' functions. Furthermore, personnel sent for training often do not remain with the project long after their return from training--if the selection was good--but move on to a more important job.

It is suggested, therefore, that long term training abroad be done on a sector basis under a special training project rather than incorporated in an action project. Project training then would focus on short term courses or orientation visits abroad plus in-country training. Such in-country training should focus on management training for project managers and middle-level personnel as well as skills training at all levels. Project personnel could still be selected for long term training abroad, but they should be replaced by a qualified officer, preferably one that had already been for training.

USAID personnel also need additional orientation and training in management. The new course in Project Implementation that is now being given periodically in the regions is very helpful and long overdue. However, there is also a need for exposing more senior personnel to a number of management concepts so that they will at least recognize the need for improving management systems and have some idea of how to go about doing it. Thus, the Development Studies Program should include a management concepts component. Candidates for Director and Deputy Director who do not have a strong background in management concepts should be required to attend the Federal Executive Institute or a short management course prior to being assigned to their new position. AID/Washington officials also need greater exposure to management concepts -- in part to do a better job, in part to assure sympathetic responses to USAID requests for improving internal USAID management as well as assisting host country agencies which are implementing AID-funded projects.

b. Improving Productivity

Often project designs provide for increased agricultural productivity through the introduction of new plant varieties, improved cultivation practices or new technologies and/or more advanced equipment. All too often, however, these innovations are not proposed for the system of

administration of the implementing organization or for the delivery systems for the proposed new technologies. New equipment and new systems introduced into such fields as organizational administration, financial management, logistics planning and management, etc., can increase considerably the chances of implementing a complex project successfully. It would require additional training, usually largely in-country, but the result should be improved morale and increased efficiency in the offices involved and enhanced overall effectiveness of the project. In general, increased attention should be given to the non-technical needs of development projects.

c. Contracting

Most AID projects provide for AID to contract or finance contracts for technical assistance and for engineering and construction services. It is generally assumed that all other services will be provided by the host country implementing organization using its own personnel. Since projects usually provide for an increasing level of services to be provided to intended beneficiaries or intermediaries, the implication is that the host country organization will need to increase its staffing. This approach tends to foster a continuing expansion of governmental bureaucracies, which usually contributes to a declining level of efficiency. Furthermore, this approach usually means that it takes longer to implement development projects because of the necessity of developing and carrying out training programs, promoting new institutional structures, etc.

It is proposed that a much greater effort be made to structure development projects to make greater use of indigenous private sectors for providing the services that frequently, if not usually, are provided by government organizations. Where it is necessary to use a foreign firm, the firm's contract should require the firm to maximize the use of sub-contracts with local firms so that a local capability could be built up. Concurrent with trying to utilize more contracting with the private sector to implement development activities, it will be necessary to provide training to appropriate host country personnel in contracting and contract management.

Some activities are mentioned in Section II.C. of this report which could be shifted from OHV to the private sector. It should be noted also that some countries are experimenting with having agricultural extension services extended by the private sector. It can be argued that greater use of contracting will cost host governments more, even if it saves on numbers of government personnel. This might not be true, however, if there is a sufficiently large improvement in efficiency. Furthermore, it may be easier to shift some of the financing burden from the government to the recipients of the services when the distribution of the services is in the hands of the private sector.

d. Use of Technical Assistance

It was suggested in Sections III. H. and IV.A.3. that better use could have been made of the technical assistance contractor in meeting the objectives of the project. The previously cited Roush study found problems in contract management in a number of other USAID-financed projects. It is suggested that an appropriate agency of the GRM (perhaps the Ministry of Plan) undertake or arrange for a review of a number of foreign assistance projects involving technical assistance to determine what elements seem to be the most important in a successful technical assistance project in Mali -- e.g., type of contractual arrangement, relationship of contractor's team with host country organization and personnel, minimum language requirements, length of stay of technical assistance experts, amount of orientation and training given to foreign and Malian personnel about each other and about the objectives and planned implementation mode of the project, etc. Based on the results of the study, the GRM could issue general guidance to its agencies on the contracting for, and management of foreign-financed technical assistance.

GRM agencies are urged to review Section V.B. (Contract Management) of the Roush report, including particularly sub-section 5. on Host Country Contracting. It seems quite likely that the GRM review suggested in the previous paragraph would conclude that host country contracting is unnecessarily burdening GRM project directors with administrative problems and limiting the time available to them to devote to policy matters, planning and implementation supervision. Even if host country contracts should

be deemed desirable, implementation of a number of the recommendations included in Sections III.D. and V.B. of the Roush report should improve communications and contract management and should result in better results from the contracted technical assistance.

AID should insist that USAIDs review host country contracting capability before recommending host country contracts. Furthermore, USAIDs should be reminded that use of host country contracting does not reduce the USAID's responsibility for assuring that proper contracting procedures are followed and that project implementation is both efficient and effective; i.e., that AID funds are properly used.

C. Being Realistic About "Doing More With Less"

In Mali, and apparently elsewhere in the Sahel, AID has been trying to do more with less for a number of years, and the results are coming home to roost. There is now a mad scramble to initiate financial training programs as a means of ameliorating one of the most glaring and consistent problems raised in project evaluations and other assessments. There is a real danger that senior AID management will conclude that some financial management training for selected host country nationals and more Project Implementation courses in the field will largely solve the problems raised. While both of these training courses are badly needed, it is high time that AID administrators, Ambassadors, Directors of Budget and the Congress stop kidding themselves that efficient and effective aid programs can be run without people -- qualified people. Saving on staffing needs is possible, however, with some changes in personnel policies and changes in the way the Agency does its business. The first part of this section will deal with personnel policies and practices and the second part with some more fundamental issues (but still within the general framework of current AID programs and program administration).

1. Aid Personnel Policies and Practices and USAID Staffing

It has usually baffled field people just how AID/W decides on the size of a USAID, and how it decides when and how much to change the level of staffing. It appears that far too much attention is paid to the dollar amounts of programs than to the content of the program or the actual workload at post. Dollar values of programs and projects frequently have little relevance to workload. Furthermore, a new mission or a mission that is expanding its portfolio significantly needs an early influx of people during the project preparation and initiation stage, not after all of the funds have been obligated. Thus, adequate staffing levels generally tend to lag behind when a program is expanding, as was the case in Mali. This in turn causes those at post to be badly over-worked, resulting in a poorer quality of performance and frequently poor morale. This in turn creates problems in recruiting personnel for the post.

The number of projects in a mission is more meaningful in determining staffing needs than the value of a country program or of individual projects, but

it also has its drawbacks. First, which projects are you going to count? The usual tendency seems to be to look only at USAID-funded dollar projects and to ignore regional and AID/W-funded projects located in the country, local currency projects (from counterpart funds or P.L. 480 proceeds), Title II programs, etc. Secondly, many projects such as Haute Vallee, have a number of components, a number of which would be a separate project in another mission. Thirdly, one needs to include not only on-going projects, but those in the development stage -- frequently, the latter are the more time-consuming.

Another factor that impacts heavily on staffing needs is the local environment in which the USAID personnel must operate. Where logistical support is poor, climatic conditions are rough, qualified local nationals are difficult to find and hire, and host country project officers are poorly trained and/or have little management or technical experience, the USAID staffing should be relatively stronger -- in numbers and in experience. In addition, if the USAID program is largely located in the interior of the country, and it is relatively inaccessible, staffing requirements are likely to be greater.

Actual availability for work also needs to be factored into the calculation of staffing needs. For example, many hardship posts authorize R&R. There are also annual leave, sick leave (which may be greater in hardship posts), home leave, and training assignments. Allowance never seems to be made for training subordinates or interns (IDIs). Rather, interns are counted as staff (under MODE rules), which is unfair to the USAID, the intern and the AID foreign service.

Finally, the level of experience and training of those assigned to a mission affects the numbers required. In the case of Mali, most of the project managers were interns or had just finished their internship and their supervisors generally were relatively inexperienced in AID and without management and supervisory experience or training. Fewer, more qualified personnel could have done a better job.

As indicated above, it is especially important to have extra personnel on board during the buildup of a program or during the project development and project initiation stages. Thus, AID/Washington should assure that it can

provide USAIDs with quick and easy access to short term help for this purpose where field staffing is inadequate. Project budgets could have a line item for project start up costs which USAIDs could be authorized to obligate prior to the signature of the project agreement. AID/Washington could assure that one or more Indefinite Quantity Contractors would have the needed support capability to help launch the project efficiently. Particular areas of need are likely to be guidance, and possibly training, in financial management systems, procurement and logistics planning, management information systems (including networking), project management theory and practice.

Efficient and effective project implementation depends not only upon AID experience, but especially on experience in-country. Thus, it is very important to keep good performers for a longer period at posts. AID should be more diligent in insisting upon a minimum three-year assignment or back to back two-year tours at each post for most personnel. In addition, the policy of a two-tour maximum at post should be discarded. Instead of a mission having to justify why it wants to keep someone for a third tour, the reverse should be the case for middle and upper level personnel -- the USAID and the individual should have to justify transferring out before six years at post. This should save on operating costs as well as improve efficiency and program effectiveness.

2. Some Ideas for Alleviating Staffing Problems

Some ideas flow from the foregoing discussion; i.e., reduce the number of regional and centrally-funded projects or contract for their administration; expand and improve the training of AID personnel and their counterparts responsible for project implementation; do a more realistic job of estimating staffing requirements. Other ideas include:

- a. Fund projects in full. The annual funding of projects increases workloads because of additional paperwork and because funds frequently are not available when needed. Thus, efficient planning is not possible. This issue should be taken to the Office of Management and Budget and the Congress and authorization sought to carry this out as a one-time shot

or over a three year period. The funds needed should be shown separately and not be used for any other purpose.

- b. Develop local organizations to provide project implementation support. This could be handled as a separate project or financed from individual projects. The organization would give management training, but also provide consulting services to its graduates to facilitate their putting into place what they had learned. The organization could support USAID as well as host country project implementing agencies. In time, it might well be self-supporting through work for other donors, government agencies, local private sector, etc.
- c. Perform reviews of USAID internal management. Two types of review teams are needed, although the same individuals could perform both functions. In one case, AID/Washington could request a review of the internal management of a USAID, either because it felt that improvement was needed or as part of a regular, periodic inspection system. Secondly, it should be possible (and encouraged) for a USAID Director to ask for assistance in dealing with internal management problems or concerns without any report being produced to be circulated in Washington. Psychologically, such a review system will work effectively with positive results only if its mandate is to "help" mission management with its problems, not assess its performance in the audit sense.
- d. Make greater use of host country personnel in staffing the USAID. This implies giving local nationals more responsibility and better access to training opportunities in accordance with AID Handbook Circular - HB31 transmitted by Administrator's Memorandum of September 17, 1981.
- e. Re-organize USAID to increase the focus on project implementation and improved management. Often USAIDs end up with more U.S. personnel assigned to overall management, control, programming and general mission support than to the implementation of the mission's program. In addition, the traditional pyramid form of organization is not necessarily the most efficient. Technical personnel often waste much of their time on administrative matters in which they have neither an interest nor a bent. Until project officers are considerably up-graded, they will need the

support of other personnel in financial management, networking, planning, etc. Mission organization should conform to the needs of a specific program with given personnel, not to some pre-conceived management theory. AID/Washington should not arbitrarily rule out the possibility of combining the Management or Executive Offices with the Controller's Office or of letting a local national occupy those positions.

- f. Involve the U.S. private sector (profit and non-profit) or other U.S. government agencies more in program planning and administration. AID already provides a large grant to an umbrella private voluntary organization (PVO) which in turn distributes grants to member PVOs. Consideration should be given to using this concept for a country program, particularly in countries where major U.S. support to the development effort is not planned. A larger PVO might plan a program with the host government, perhaps in conjunction with other PVOs, and get full funding from AID. USAID staffing should be no more than one person and it might be possible for monitoring to be handled from a regional office, supplemented by periodic evaluations.

Consideration could also be given to AID participation in the financing of development activities that might be partially funded and fully managed by a U.S. business firm.

If a small program were concentrated in one technical field; e.g., agriculture, it would be feasible to let a USDA team fully plan and manage a country program (one or more projects).

D. Structuring Future Evaluations

As indicated in Section I.E, the preparation of this report was delayed. While some of the problems that contributed to this delay could not have been foreseen, the impact of these problems would have been considerably less if the evaluation had been structured differently. A number of suggestions have been made to the USAID Evaluation Officer which it is hoped will help make future evaluations both more efficient and effective. Some of the suggestions and some comments are set forth below in the hope that they might be helpful to others planning evaluations.

1. Size and Composition of Evaluation Team

A 13-person team is very unwieldy, especially when two or three nationalities are included and the team members are drawn from a number of organizations (five in this case). The task is further complicated if not all members can work in both French and English and rapid translation of documents is not available.

Suggestions

- a) Hold expatriate team size to five, preferably three. If highly technical inputs are needed, have the experts do their studies beforehand and leave written reports for the team.
- b) Draw the expatriate team from one organization if at all possible. Then, there is one organization that has clear responsibility to provide a report on time.
- c) Provide funding to the leader of the evaluation team for contracting with a local organization or government agency for host country inputs to the evaluation, or have a firm agreement with the appropriate agency so that the evaluation team leader will know exactly what local personnel will be available.
- d) Designate one individual as team leader and ensure that all other members of the team accept the designation.

2. Scope of Work for the Evaluation

An overly detailed scope of work can lead to excessive work in relation to the results achieved. An Evaluator may feel that it is necessary to cover every item mentioned in the scope, even though some items have marginal significance in terms of the overall findings of the evaluation. Furthermore, requiring individual working papers from each evaluator or group of evaluators magnifies the workload considerably, particularly if an attempt is made to let all team members comment on the paper and the logistical support for typing, translation and reproduction is weak. Given the variation in background, experience and training of potential evaluators, specifying the exact composition of the evaluation team by job title can lead to the fielding of a larger team than really required.

Suggestions

- a) Scopes of work should set forth clearly the scope of the project, including the activities to be reviewed, the principal purpose of the evaluation and the resources that will be made available to the evaluation team. Then, those proposing teams should be able to determine needs and put forth their recommendations for the size and composition of the team needed.
- b) Generally, working papers should not be required of team members. The team leader may wish individuals to produce draft sections of the evaluation report, but this would entail minimal logistical problems. Furthermore, the team should have the option of formulating their findings and recommendations and making oral presentations to the interested parties before putting anything in writing for circulation.

3. Advance Preparation

Advance preparation for an evaluation has many facets. One facet is advance logistical preparations to maximize the efficient use of the time of the evaluation team. Another facet is the arranging of field surveys or short studies by technical experts so that all the basic data needed for the evaluation will be available. Also important is arranging the scheduling so

that people with whom the evaluation team will need to talk will be available. Another aspect of scheduling is to ensure that the necessary USAID and host country personnel will be around at the end of the evaluation to interact with the evaluation team in the latter's initial presentation of their findings and recommendations and then be ready to take quick action on the final report -- or quick decisions not to act.

Suggestions

- a) That all of the foregoing aspects of advance preparation be considered in the scheduling of evaluations.
- b) That the leader of the evaluation team be given full information about the foregoing factors at the time a proposal is being prepared, even if some factors are not positive. The team leader may be able to suggest some slight modifications in approach to make up for the less than optimal conditions.

4. Joint Evaluations

Joint AID-host country evaluations are generally desirable, even if somewhat more time-consuming and difficult to manage. According to the Project Grant Agreement, the evaluation of the Operation Haute Vallee project was to be a joint evaluation, i.e., a joint USAID-GRM evaluation. However, the Malians had not participated in the preparation of the scope of work for the evaluation or in the formulation of the more detailed procedure for carrying out the evaluation. There was no agreement with the host country organization participating in the evaluation regarding the responsibilities of the organization or its participants on the evaluation team.

Suggestions

- a) The role of the joint evaluation organization should either be spelled out in advance and made known to the potential providers of the expatriate evaluation team, or the latter should be advised that the evaluation team leader will have to work out an arrangement after arrival in

country. In the latter circumstance, an idea should be given of any funding likely to be required.

- b) Host country participants can be particularly useful in field work where use of the local language often is essential for obtaining frank answers. It would seem appropriate, therefore, to plan for their participation in this way. However, at least one member of the host country group should be available to interact with other team members regarding findings and recommendations across the board.

- c) The schedule for the evaluation should allow time for local and expatriate evaluators to discuss thoroughly all aspects of the evaluation and to prepare jointly a detailed work plan, tentative outline of evaluation report, etc. Such team-building exercises will pay off even though they initially appear to be very time-consuming (hence, wasteful).

ANNEXES

SCOPE OF WORK

EVALUATION OF OPERATION HAUTE VALLEE PROJECT

A. Review of all Relevant Project Documents

This should include, but not be limited to, the following:

- Project Paper
- Project Grant Agreement
- Document of the proposed OHV Health Program
- Louis Berger Contract and Amendments
- BARA baseline study
- Meeting reports
- Other reports and relevant documents

B. Based on a review of these documents as well as initial interviews in Washington and the field, the team must prepare within the first week a list of potential issues which should be examined as the evaluation proceeds.

C. Review of Project Setting

Identify and discuss major changes in the project setting which occurred following the design of the project which may have had an impact on implementation, i.e., in the economic, social, administrative, institutional or political conditions which existed or were assumed to exist at the time of the project design. You should also identify their impact on project implementation.

D. Assess Project Implementation Performance and Progress

Having examined the Project Paper and related project design documents, the next task is to assess actual performance by USAID, GRM and contractor, and progress made toward achievement of outputs and purpose.

1. Assess the level of understanding of each party, i.e., GRM, USAID, Technical Assistance Team, concerning the project's objectives, outputs, linkages and implementation approach (Team).
2. Assess their understanding of their respective responsibilities and authorities (Team).
3. Assess the implementation performance of each in terms of:

a. Planning and administration (Mgmt. Info. Specialist)

- Overall communications among GRM, contractor and USAID personnel;
- Timely preparation and updating of high quality operational plans;
- Timely identification and communication of implementation problems and initiation of actions toward their resolution;
- Resource management and use;
- Utilization and support of contract personnel;
- Data collection, analysis and reporting; and
- Assess the rationale for and procedures followed in taking actions which represent a major departure from programs and approaches outlined in the PP and Pro Ag and the likely impact (positive and negative) of those actions.

b. Technical (Agromonist/Ag Planner)

- Assess the adequacy of operational plans prepared under the project for developing, testing and implementing the technical package, identifying the elements of the proposed technical package and the status of research on each including: (1) crops involved including those not contemplated in the project design, (2) animal traction and improved implements, (3) seed treatment, and (4) cultural practice (cultivation for weeding vs use of herbicides).
- Assess the quality of existing ag production program plan, focusing on whether the plan appropriately reflects actual technical resources available to the 'Operation', constraints faced by farmers, farmers' assessments of those constraints and their priorities for their removal, project resource limitations, the level of integration of research, extension and input delivery system.
- Assess the adequacy of the system for carrying out applied research on proposed agronomic interventions. Specifically, assess the pilot farmer research approach, including the validity of the pilot farmer selection system, the adequacy with which area specificity is being dealt with in crop research, etc.
- Assess the feasibility of switching from the pilot farmer to pilot village research and extension approach.
- Assess the probable impact of the use of animal traction on existing farming systems, e.g., intercropping.
- Assess the relevance and feasibility of the livestock feeding program.
- Assess the technical feasibility and operational plan for Bancoumana polder activity.

- Assess the adequacy of the system for coordinating with ICRISAT and SAFGRAD in carrying out research.
- Assess the adequacy of the program for training Malian researchers.
- Assess the adequacy of the OHV extension program in terms of the attitude of extension personnel regarding their relationship with farmers, the technical capacity of extension agents, actual relationship between agents and farmers, adequacy of information flows to and from the farmers.

c. Financial Analysis (Financial Analyst)

● Operations analysis

In the context of the current financial problems facing the GRM, the importance of developing adequate financial planning and management systems and achieving adequate levels of financial self-sufficiency for all production related activities or services being provided is evident. In this context the financial analyst will: (1) Assess the adequacy of financial record keeping in terms of detail, accuracy, availability of back-up documents (receipts, vouchers, etc.), coordination with inventory control system, breakdown of source use of funds, etc.; (2) Identify areas where recurrent costs can be reduced; and (3) Assess the prospects for generating sufficient resources to cover the recurrent costs of the project.

● Analysis of Credit Program

Based on experience to date, assess the efficacy of the credit program with respect to the:

- (1) Adequacy of credit program's administrative staff in terms of training and experience, understanding of the objectives and procedures of the loan program;
- (2) Adequacy of coverage vs individual farmer needs in terms of amount available and items covered;
- (3) Appropriateness of interest rates in terms of farmers' ability to pay, opportunity cost of capital, expected returns from investments;
- (4) Adequacy of the system for processing loans in terms of decisions regarding who gets loans, for what purpose, in what timeframe and through what procedure;
- (5) Adequacy of the insurance component in reducing risks faced by farmers;
- (6) Repayment system in terms of the timeframe for repayment, the method of repayment; and
- (7) Adequacy of the system of procurement in terms of the role of the farmer in that process vs that of the 'Operation'.

E. Assess the Continuing Validity of the Initial Project Design

In the context of (1) changes in the setting (conditions outside the control of the project) within which the project is to be implemented; (2) new information available concerning technical and socio-economic constraints and opportunities based on actual experience; and (3) the implementation performance of the GRM, the contractor and USAID, assess the continuing validity of the project design from the following points of view:

1. The logic and feasibility of the conceptual framework upon which the project is designed in terms of:
 - (a) The continuing viability of project objectives as presented in the purpose statement, i.e., to develop the capability of OHV to assist farmers in the project area to increase their productivity, production and marketing of food crops.
 - (b) The continuing validity of linkages implied at the input-to-output and output-to-purpose level, i.e., are inputs sufficient to achieve outputs and outputs to achieve purpose.
 - (c) The continuing validity of inputs-to-output and output-to-purpose level assumptions. Identify any major assumptions left unstated and their importance in terms of the feasibility of the project.
2. The adequacy and continuing validity of project implementation arrangements outlined in the PP giving special attention to:
 - (a) the adequacy of Implementation/Operations Planning (Mgmt. Info. Specialist)
 - (b) the adequacy of project organization and administrative arrangements (Mgmt. Info. Specialist)
 - (c) the extent to which the technical requirements of the project were adequately addressed (Agronomist/Agricultural Planner)
 - (d) the extent to which the financial planning, management and reporting requirements of the project were adequately addressed (Financial Analyst)
 - (e) the extent to which the planning and management requirements of the credit program were adequately addressed (Financial Analyst).

F. Recommendations (Team)

Summarize recommendations for improving the viability of the project. These recommendations should include but not necessarily be limited to the following:

1. Modifications in project design, including the logical framework.
2. Modifications in project planning/management procedures, responsibilities, inputs, and in management information flows.

3. Modifications of technical approach/package, including research, elements of technical package, extension, input delivery, etc.
4. Modification of economic or financial elements, including financial management, accounting and reporting, price and price policy, and credit policy, administration and procedures.

G. Unplanned Effects (Team)

Identify any unexpected results or impacts such as changes in social structure, environment, health, technical or economic situation. Do these appear to be advantageous or not? Do they require a change in project design and/or execution?

H. Lessons Learned (Team)

Give advice or recommendations concerning the design and/or implementation of a similar project in the future.

DISCUSSION PAPER: AGRONOMIC ACTIVITIES

P. Serafini, ICRISAT

A. Possible Technological InterventionsIntroduction

The effort to take technologies to the farmer should be viewed on two levels. In the first instance, there are certain techniques/strategies which are relatively certain to have the desired effect on yield. How they will fit into the farmer's socio-economic context is less certain. These technologies/strategies should be extended directly to farmers, and their impact measured with the pilot farmers. Credit should be extended to all those willing to follow the OHV guidelines. No effort should be made to stimulate adoption, except with pilot farmers, until the economic impact of the techniques has been measured on the pilot farms.

In the second instance, there are a number of input-strategy options which have not yet been sufficiently studied at the farm level to justify their immediate extension. These should be tried with the pilot farmers using an uncomplicated small plot experimental format (SAFGRAD type) with a high degree of supervision and control. Their technical validity, or lack thereof, should be clear in a relatively short period of time--one or two years--and those which are viable should be passed into the pilot farmer system to ascertain their economic impact.

With the exception of new AT equipment of marginal effectiveness, little new has been passed to the pilot farmers to date. There appear to be some likely techniques and strategies which can be tried through the pilot farmer system.

Rice

Irrigated rice, of the type practiced at the Bancoumana and Farabana polders, is the basis of rice production in the OHV. It is characterized by direct seeded rice with natural or partially controlled flood irrigation.

The situation with this crop is problematic. Weeds, especially wild rice (*Oryza perennia*), are very troublesome. Land leveling is mostly inadequate and expensive. Nevertheless, there are some agronomic techniques which are directly applicable and should have considerable effect. The easiest area to address would be seed quality and quantity. Closely supervised multiplication of foundation seed should be carried out with farmers who should be well paid for their efforts. Fungicide seed treatment, which is especially important for blast and leaf spot control, should be done before the seed is sold to farmers. The effect of high quality treated seed should be considerable, even with traditional cultivars grown at relatively low fertility.

Inasmuch as mechanical weeding is impossible with direct sown rice, one of the several relatively effective herbicides on the market should be used with pilot farmers.

Animal traction seeding and weeding are widely used elsewhere in Mali and should be tried with pilot farmers. Herbicides should enhance the effectiveness of these AT techniques. These techniques will not control wild rice. Control will be discussed in the "future research" section below.

Chemical fertilizers should be used to increase fertility moderately with the cultivars currently in use. To avoid stimulating weed growth, this should always be linked to some kind of herbicide program.

Emphasis should be placed on convincing farmers of the importance of timely cultural operations. The disastrously negative effects of late seeding and weeding is well documented in Mali.

Maize (corn)

Corn is a crop where the technologies and strategies necessary for high level productivity are well at hand. SAFGRAD has contrasted a hybrid (IRAT-81) with the selected local cultivar (Tiemantie) for two years in farmer yield tests. The hybrid clearly outperformed the local last year and appears to be performing similarly this year. There are also a number of synthetics and composites as well as hybrids from CYMMIT & IITA which are being tested by the National Research program which appears clearly superior to the local varieties, especially at high input levels. Thus, improved genetic material need not be a limiting factor.

Once again, AT mechanized seeding and weeding should have a positive effect on surface cultivated (area cropped) and yield. This should be enhanced with the use of herbicides, a number of which have been tested and used--especially in the CMDT zone. With the use of herbicides and appropriate AT equipment, high levels of fertility even with the local variety are appropriate. Even with the local cultivars, application rates between 100 and 200 kgs, depending on soil type, crop history, seeding density, etc. should result in yields in the three to five-ton range. With improved phenotypes, eight tons is not unrealistic. (SAFGRRAD had 1/3 ha test plot yields of eight tons in 1980 with IRAT-81 in the OHV.)

Cotton

Because of the rich experience and ongoing research and extension efforts of the CMDT, there is a rather coherent and effective "technological package" for cotton.

There are a number of farmer-tested varieties capable of yielding two to three tons of lint. The newest B163 is being tested and extended in the OHV. Ciba Geigy is marketing a very effective herbicide "Cotodon" which is gaining wide acceptance in the CMDT zone and is being tested in the OHV. It is particularly effective against sedges and grasses. Digitaria species, which is the nemesis of farmers in the West Africa wet/dry zone, is well controlled with the product. Mechanical seeding and weeding with animal traction equipment is already an important part of the extension effort and should have a positive effect on surface cultivated and have a complementary effect to the herbicide effect. De-limited seed and fungicide/insecticide seed treatment should be easy for the OHV to provide, and will probably have a positive impact. Insecticides are an important part of the existing program and synthetic pyrethroids have been tested and have shown their effectiveness.

There are recommended fertilizer rates which are in force and have a well developed track record in the CMDT and OHV area. Timely ground work (soil preparation), seeding, and other cultural operations are, of course, essential to a farmer's success. Farmers have been growing "hi-tech" cotton in the OHV project zone for a number of years.

Cattle Feeding

The importance of livestock enterprise to profitable farming systems is well known. The important role it can play in capital accumulation, especially in Mali, should not be underestimated. The fact that the AT component is probably not viable without a certain sophistication in the husbandry system should also be taken into account.

This activity must be based on agro-industrial by-product concentrate feeding. Adequate supplies of cotton process byproducts, seed and cake, as well as peanut cake, are available to the OHV organization. The viability of this approach has been adequately demonstrated in Mali by the Mali Livestock I, Embouche Paysanne program as well as the CMDT. Salt mineral blocks are a necessary adjunct to the concentrate feeding program. Fattening animals (slaughter animals), lactating cows and calves, and traction animals are the logical recipients of this feed.

Improved forage production is possible and desirable. More aggressive cutting, drying, and storage strategies for local grasses (especially anthropogone guyanas) need to be tried at the farmer level.

ICRISAT has shown that cowpea intercrop densities can be increased over five times local practice to about 20,000 plants/ha without reducing the main cereal crop (sorghum/millet) yields and give forage yields of three to four times the local practice yields. Peanut hay is also a logical forage source which needs to be aggressively preserved on the farm and used by the farmer. (The Bamako market competes with on-farm enterprises for legume hay.)

There are a number of health measures which may be taken to the farmers. Research by the TAMU team at CVL showed highly significant weight differences for animals treated with the tripanosomiasis prophylaxies treatment Tripimidium. This product should be systematically used for fattening traction and lactating animals. There are good internal and external parasite control products on the market, and these should be systematically used on all animals.

Pigeon Peas

In the first project year, ICRISAT provided 200 kgs of the widely adapted pigeon pea variety ICPI to the OHV. This seed was distributed to pilot farmers, many of whom had very positive experiences with the crop, obtaining yields of seed in the 1-2 tons range with no fertilizer or phytosanitary treatments. The crop seems to be spreading to other farmers and villages. There were more requests for seed to the OHV than they could satisfy with their multiplications at Samanko last year.

The present problem is at the consumer level. It is a new crop and complaints or questions about how to prepare the beans have been common. Training in the simple preparation steps has been arranged with ICRISAT/LBII/OHV staff.

B. Applied Research - Future Directions

Linkages

Strong linkages are needed between the OHV, LBI and the agricultural research branch of the Ministry of Agriculture: the Rural Economy Institute/Division of Agronomy Research so that OHV will be able to benefit adequately from the considerable expertise and experience available in the SRCVO (Food and Oil Crops Research Section) of which SAFGRAD and ICRISAT are a part, the SRCFJ (Cotton and Jute Research Section), and the DMA (Division of Agriculture and Mechanization).

Appropriate Applied Research Activities*

Cotton - All applied research and field testing should be carried out with the SRCFJ.

- A. Varietal testing (screening)
- B. Herbicides

Rice

- A. Representative soil type locations should be identified (SRCVO)
- B. Varietal testing (SRCVO)
- C. Herbicides (SRCVO)
- D. Mechanization - AT (Machinism Agricole)
 - 1. Seeders
 - 2. Weeders
 - 3. Leveling/earth moving equipment
 - 4. Threshing
- E. Mechanization tractor (Mechinism Agricole)
 - 1. Economics
 - 2. Land leveling and irrigation system maintenance
 - 3. Other equipment
- F. Rotations (SRCVO)
 - 1. Fallow
 - 2. Vegetable crops
 - 3. Corn/cotton with herbicide for perimeter wild rice where drainage is adequate.
- G. Soil additives (SRCVO)
 - 1. Tilemsi rock phosphate
 - 2. Lime
- H. Perennial wild rice control (WARDA)
 - 1. Repeated deep plowing at the end of the season
 - 2. Corn/cotton plus herbicide (see rotations - 3)
 - 3. Contact herbicides and others

*This outline list should be regarded as suggestive and not definitive.

Corn/Sorghum/Millet

- A. Varietal screening (SRCVO)
- B. Herbicides (SRCVO)
- C. AT equipment (Machinisme Agricole)
- D. High production fertilizers and density question (SRCVO)
- E. Farm level storage (Machinisme Agricole)
- F. Intercropping with cow peas or pigeon peas or corn or sorghum or millet.

Other Species

- A. Pigeon Peas (SRCVO)
 - 1. Preparation for local foods
 - 2. Varietal screening
 - 3. Agronomy, especially density and planting date
- B. Cassava (IITA)
 - 1. Varietal screening
 - 2. Fertility
 - 3. Intercropping
- C. Tubers
 - 1. Sweet potatoes varietal (IITA and others)
- D. Sesame
 - 1. Varietal
 - 2. Planting dates
- E. Vegetable Crops - irrigation gravitational
 - 1. Traditional crops
- F. Forage Crops
 - 1. Species
 - a. Stylo
 - b. Leucena
 - c. Local legumes and grasses
 - 2. Tilemsi phosphate
 - 3. Hay making technologies and strategies

Annex C
The Social Feasibility of the
Technical Package

Excerpt
Project Evaluation
Action Riz-Sorgho

April 23, 1981

D. Social

1. The Social Feasibility of the Technical Package

The technical package was assumed to be a good one that the farmers would accept.

We must, consequently, look at the various aspects of the technical package and examine them from the perspective of farmers' acceptance or rejection. The technical package can be laid out as follows:

- water control by the dikes and gates
- fish control by the screens
- selected, improved seed
- fertilizers
- fungicides
- transplanting
- change of agricultural calendar
- extension advice to farmers to help effect change via more productive techniques.

However, before discussing the technical recommendations as they might be accepted by farmers, we should take a brief look at the concerns of the farmers. The strategies he adopts may then be better understood. Some important concerns are:

- having access to enough labor --through family ties, alliances, village cooperative work groups, or financial or commodity resources to engage hired labor-- to keep dikes repaired, prepare fields, plant, maintain, and harvest;
- having enough land to plant; being able to spread the crop risk over several plots of different soil types and elevations;
- having enough seed to plant; different varieties for different locations and soils, with different flowering times and maturati
- timing the broadcasting with the onset of the rains in advance of the flood;
- hoping the rains will be sufficient to sustain the plants until the arrival of the flood and its rise into all areas of the perimeter;
- having additional seed to sow if the plants die from lack of moisture;
- slowing the rise of the flood in the perimeters by the water control devices --dikes and dike openings;
- hoping the dikes will hold;

- keeping predatory fish out of the rice field, or at least minimizing their destruction of the rice by such means as poison;
- harvesting the rice before the birds arrive in large numbers when it becomes impossible to control their destruction;
- harvesting before it becomes too cold to be constantly working in water;
- harvesting over a spread of time so that labor resources can be allocated over time;
- harvesting before it is time to plant the sorghum fields.

a. Water Control By Dikes and Gates

First, it must be pointed out that the dikes and gates did not assure complete water control but simply the entry, and, to some extent, the retreat of the flood. The farmers view the dikes as technically beneficial because they help assure that their plants will not be inundated and asphyxiated by fast-rising water. In addition, because the dikes are insubmersible and compacted, farmers feel reasonably sure that they will not be breached as is often the case with their hand-built, non-compacted submersible dikes. The dikes and water control gates assure that the flood can be controlled but they do not assure that the flood will arrive and be sufficient to reach all areas within the diked perimeter.

b. Fish Control By Screens

The fish grills keep large fish out of the perimeters but permit smaller fish to enter. These grow in size within the diked area and are damaging to the rice crop. However, reducing the size of the mesh of the grills has helped cut down on the damage.

c. Selected, Improved Seeds

The selected, improved seed sought from other areas of the country has not yet been shown to be better than local varieties, which have been adapted over many years by farmers who have ascertained that they suit local conditions and enhance farmers' risk minimization strategies.

The local agricultural calendar differs from that recommended in the PP. The farmer seeks to plant at the start of the rains for perhaps four reasons: he exploits part of the rainy season prior to the arrival of the flood; he hopes that the plant will be sufficiently vigorous and developed to grow faster than the rising flood; he hopes they will be vigorous enough to withstand inundation should a gate fail or a dike be breached, at least until repairs can be made. (In this regard, it is said well-developed plants can stand 2-3 days of inundation); and fourthly,

he hopes that the stems will be vigorous enough to withstand the rice-eating fish.

It is said that the plants need 35-45 days to reach this stage of development. The farmer's problem during this period is rainfall. It must come in sufficient quantity to nurture the plants. If it does not, he must replant. To replant he must have additional seed.

In his choice of seed, the farmer will plant late-maturing varieties in the lowest fields and also seed more densely because these places will be attacked by the fish earliest. He may likely sow some earlier varieties so that he can harvest some rice for immediate family consumption before the late varieties are mature. In addition, he will plant a different variety on the higher plots, if any, at his disposal. Sometimes he might even mix seed varieties with different water requirements on the same plant, thus again reducing the risk of total crop loss. The latter techniques would, of course, be anathema to the rice agronomist, particularly if he is trying to measure varietal yield and performance.

Elsewhere, what has been called the "patchwork quilt pattern" of exploitation of small, widely-scattered plots at various levels on the river plains has been mentioned. It was stated, in a brief discussion about land tenure, that this has resulted from decades, if not centuries, of the distribution of use right and inheritance customs. Yet, it is necessary to recognize the cultivation of non-contiguous parcels of land as simply one other aspect of the farmers' risks minimization strategy. Moreover, the distribution of rights for the exploitation of non-contiguous plots may be evidence as well of a certain, however limited, egalitarianism in the society, for the practice helps to ensure that in years of moderate rainfall and flood, most people, if not everyone, have access to land on which they can hope to harvest something --not all the plots should fail.

One must emphasize that the farmer knows what he is doing. Doubtless, most farmers can identify several varieties by the appearance of the seed. In this regard, we might note an early study of traditional rice farming methods in the delta. The author stated that some farmers had been able to identify as many as 41 different local varieties by mere eyesight alone, something many botanists could not do. We would thus have to take issue with personnel at ARSG who believe that farmers are not sufficiently instructed to be able to differentiate between varieties. On the contrary, we would conclude that local farmers could teach ARSG extension workers more about rice cultivation under conditions they face than the extension workers can teach the farmers. The argument presented by ARSG personnel against local, village management of seed granaries does not hold up.

In fact, it is the ARSG opposition to village seed granaries that puts the agency in such a bad light as far as farmers are concerned.

Earlier in this report it was mentioned that the harvest must be concluded before the weather gets too cold, before the birds arrive in great numbers, and before the planting of sorghum must be accomplished. At the same time, however, the harvest must be somewhat spread out because it is all done by hand and labor is necessarily spread thin. If the rice matures and goes unharvested, the rachis becomes brittle and the seed scatters. Further, no matter how insufficient the rainfall and flood, if the plant services, (assuming the species is Oryza glaberrima, the most traditionally cultivated floating species) its photoperiodicity means that it will flower, however much time has passed since germination, during those few days of specific duration of sunlight. Thus, the farmer must plant different varieties to spread out the harvest sufficiently to allow the limited labor at his disposal to get the harvest in. Then, of course, the rice must be transported, dried, threshed, and perhaps winnowed. The granaries must be stocked and next season's seed set aside. The better part of all this must be accomplished before the farmer puts in his sorghum crop. That the farmer would change his agricultural calendar to adopt the growing methods set forth in the project design is not likely and, indeed, would be an irrational act.

d. Fertilizer

It is clear that Oryza glaberrima does not significantly increase in yield with the application of chemical fertilizer. For Oryza sativa, fertilizer packages can improve yield but probably not more than 20% of seed planted in the ARSG area is of this species. And, as stated earlier, the varieties imported from elsewhere in Mali, even if they are received when needed, have not proved themselves in Gao.

e. Transplanting

At the same time, we would hardly expect farmers to nurse and transplant rice seedlings on all their plots, given their varying soil conditions and levels, and the labor effort and time necessary to do this. This is simply not the most practical thing to do, since it won't significantly increase yields. We cannot, therefore, be surprised by farmers' reluctance to do so. Were the perimeters enclosed by the dikes completely leveled, the methods suggested by the Project Design Team might be useful for farmers to try, but we can safely surmise that under present conditions they simply will not be adopted. Had the project designers been more steeped in local agricultural methods and farmers' strategies and reason for pursuing them, the design could have been more realistic.

f. Fungicides

Farmers do readily perceive the utility of fungicides and want them, but as Brahima Camara's report indicates, the fungicide available does not combat the disease most ravaging. Resistance to efficacious fungicides will not be seen, but we can expect sales of thioral to decrease since farmers may determine that it is not economically beneficial to use it.

One point might be raised here about weeding. Farmers do weed their fields, probably as much as they deem necessary in view of the total risk involved in getting a crop harvested. The wild rice, Oryza perennia, is considered a particularly bothersome weed by agronomists, but because it can sometimes be harvested and eaten when all other varieties fail, farmers may be reluctant to clear it completely from their fields.

Considering what the farmer must contend with, in particular his experience over the recent drought years when no crops were harvested, the uncertainty of rainfall in general, the lay of the land, and so on, we would conclude that the technical package recommended in the project paper was inappropriate for conditions as they existed. The farmer will follow the techniques he knows best, those that in his experience provide the best assurance of harvesting something -- again, those that minimize risks. Further, he will allocate time, labor, and any financial resources cognizant of various risks. The priority goal of the project should have been to help the farmer assure himself of harvest. It should have attempted, initially at least, to enhance his methods rather than change them, for only after he is reasonably assured of a crop over several seasons and has thus built up a security stock of both seed and food grain for consumption will he be amenable to try something new and accept the additional risk he perceives to be inherent in trying methods with which he has not yet had successful and satisfying experience.

2. Dike Construction

Because of the amount of funding provided under the grant agreement it was ascertained that the entire areas of flood plains which might have been enclosed by insubmersible dikes could not be. As a result the dikes were constructed, essentially following the contours of high ground at the interior of the plains of Gargouna and Tacharane, thus protecting a precisely-defined rice-growing area and some hectarage upon which recession sorghum is grown as the flood recedes. Much good, cultivable land lies outside the dikes, i.e., toward the major bed of the river. Some of this is enclosed by farmers' hand-built dikes. Needless to say, farmers were and are unhappy about this. They would have preferred the insubmersible dikes enclose all possible areas of cultivation at Tacharane and Gargouna. Nonetheless, they understand the cost constraint involved and are perhaps less angry about the dikes' location per se than they are about the fact that they were never consulted in the

design and planning process. In some places where the dike construction took place, a sorghum crop had been planted before construction got started. These crops were destroyed by the construction. Farmers believe that they could have been notified of the timing of the construction. Had this been done and the construction sites indicated, no sorghum would have been planted there. There are, too, those farmers who found the new dikes being built on their farm plots and who therefore lost some of the area they had been accustomed to farming.

People who farm the perimeters at Tacharane and Gargoune admit that some unforeseen benefits have been provided by the new in-submersible dikes. Most important among these is the security the dikes bring. At Tacharane in particular it was stated that farmers' dikes were breached in past years. This year for the first time in their memory this has not occurred. They attribute this to the insubmersible dikes which diminished labor requirements to the extent that all repair effort can now be concentrated on the hand-built, submersible dikes. Accordingly, those got the attention needed and were reconstructed well enough to completely survive the flood. Concomitantly, labor effort during the growing season that had been heretofore directed at the repair of breached dikes was now concentrated on field maintenance after planting. In the past when dikes were breached, labor -- family and other -- was mustered immediately and worked round the clock to repair the breach and prevent plants from drowning. Breaching prior to this year was frequent. Farmers appreciatively note that now they -- wives included -- get more more and regular sleep and their energies can be expended on the crop rather than the dikes. The insubmersible dikes, even though they are not as extensive as the farmers would like, are all in all highly praised by the people they serve.

3. Consulting the Beneficiaries: The Cooperative Movement versus Action Riz Sorgho Gao

The rhetoric of project blueprinting inevitably exerts designers to consult those for whom the project is being planned. This seldom happens. Occasionally, a cursory visit is made to a sampling of beneficiaries. This, however, is done not with a view of seeking input into the design, nor with the intent of seeking local grass roots expertise, experience, ideas, or viewpoints. It is done simply to satisfy the design guidelines, hence minimally. Design is still done from the point of view of the donors, or of technocrats who are convinced that what has worked in their own developed countries can work in less developed countries. Study after study has shown that this contributes regularly to dooming projects to failure from their beginning. In this light, we will examine the methods and procedures of the cooperative movement in Gao versus that of Action Riz Sorgho.

Action Riz-Sorgho Gao has been in virtual continuous conflict with the regional cooperative office. To resolve the conflict, ARSG and the Cooperation have held several meetings --November 1978, October 1979, February 1980, and others. ARSG has also submitted a proposal to the National Agricultural office in which is suggested how the two services might collaborate. Note that the cooperation enjoys excellent collaborative relations with the other regional services --functional literacy, livestock, health, waters and forests, hydraulic, and so on. The crux of the problem between ARSG and the cooperation seems to have two aspects -- vulgarization methodology and the distribution of seed, particularly rice seed.

Before discussing the conflict further, we must give a brief description of how the cooperation works. With a small amount of financing, the cooperation approaches villages with the idea of setting up a village-level cooperative to create a village store. This initial effort usually takes several visits during which cooperative personnel asks a gathering of villagers to explain their local concerns, their needs, and their own means and priorities for solving such problems. The Cooperation explains its own program, its ideas, and its procedures and discusses these at great length with the villagers. The basic idea is that the local cooperative, if indeed it is created, acts as a pole of attraction for development interventions. The first step, however, is to define the membership of the cooperative and set up an executive committee. Membership in the local cooperative is voluntary. Each member, however, does pay an annual membership fee of 250 FM. The membership at large elects the executive committee. This committee, in concert with the membership, then identifies no less than ten members of the cooperative who shall receive special training in the regional functional literacy unit in basic management techniques, account keeping, and such. At the same time, a potential village store manager is identified. He is also trained. Once necessary training is completed, a village store can be set up and stocked, either from the SOMIEX, from merchants, or elsewhere, with products and materials identified by the cooperative members. The store is designed to be a profit-making venture and prices are set accordingly, again by the members.

Selling prices must include a surcharge to cover all costs -- salaries, loss, theft plus an additional percentage which may be distributed yearly to the membership, depending on its decision. Usually, this percentage is reinvested. Funds for the original stock --2,400,000 FM-- plus 1,500,000 FM for building materials to construct the store are donated to the members of the local cooperative by the regional office, whose source of financing is Euro-Action Accord. Members themselves must provide all other construction materials and must construct the necessary building(s) or hire a mason to do so. A local agent of the Cooperative Service is assigned to the village cooperative to act as technical

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counselor only when his advice is sought. Once the village store is functioning, it may, as stated earlier, act as a catalyst for other development efforts. The membership, through the executive committee, can ask for further training in functional literacy, training for a health securist, for help from the forestry service to start a village tree nursery, and so on. It is worthwhile to note that the Regional Cooperative has helped 36 local cooperatives get started over the past five years. Each of the 36 has created a village store and only 2 of the 36 have failed, for extraordinary reasons. These two, at Kidal and Ansongo, have been restarted. Four additional points are worth noting. Where some of the village stores have been started, local merchants who were allegedly gouging the local population have been forced out of business. In these cases, it was stated that local merchants would buy food grains at low prices after the harvest when farmers need money and resell the grains later, often to many of the same farmers, at a 200% profit. The village cooperative stores buy grain from their members at official prices and resell, only to local villagers, at a cost 20% above purchase price. Thus, villagers not only acquire seed security but also have reasonably priced food grains available to them when they need it. Secondly, some stores are so well organized that their managers travel as far as northern Nigeria to purchase stock for their stores. One in particular at Bourem has been so successful that it has increased its operating capital to 8,000,000 FM. It will become completely independent this year. Finally, each store must recover its initial operating capital within three years of opening.

Returning to the conflict between ARSG and the Regional Cooperation, we must comment first on the differing methods of the two agencies. The Cooperation believes that the thrust for development must come from the people. The people -- farmers, livestock owners, fishermen -- must define their needs, problems, solutions to problems, and possible ways to implement solutions. ARSG has felt, to the contrary, that it has already come up with solutions to increase agricultural production and that farmers should be obliged to follow the advice of the ARSG technicians. Likewise, the Cooperation believes that farmers should control and manage development inputs while ARSG feels its personnel should exercise control and management over inputs.

The provision of rice seed to farmers is another source of dissonance between the two agencies. We must mention once again that having enough seed to plant when he needs it is an important concern of the farmer. This means having a sufficient amount to replant, should the first plants die from lack of moisture. Helping farmers procure rice is a concern of both agencies. ARSG seeks seed from the state reproduction farm at Babougou, from Operation Riz-Segou, or from Operation Riz-Mopti. The distance of those

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Locations from Gao presents the problem of timely liaison, coordination, and transport. This past growing season, for example, ARSG finally received its seed orders in August, too late to distribute to farmers. ARSG does distribute such selected seed, when it is available, to farmers on credit for the duration of the growing season. For each 100 kilos distributed on credit, ARSG demands 115 kilos of harvested rice. Only about 20% of the farmers in the ARSG area are using selected seed. Reasons for this low figure have been untimely availability and the experience of yields lower than those of local varieties. The latter is explained by the increased labor intensity needed to achieve higher yields or the inappropriateness of the selected seed for the Gao area. The rate of recovery of seed by ARSG over the last five seasons is about 15% (see Camara report annexed).

The Cooperation helps each local cooperative to seed up a seed granary in the village. From this seed granary, overseen by the local cooperative administration but managed by a designated member of the cooperative, members may borrow rice seed on credit. At the end of the harvest, for each 100 kilos given out on credit, the farmer is asked to pay back 150 kilos. Sagou Adama Ouologuem, regional director of the Cooperation when the evaluation team was at Gao, stated that each local cooperative recovers almost 100% of its loans. The reasons for this high repayment rate, he says, are clear. The seed does not leave the village, it is under the control and management of the cooperative members, it is available when needed, the 50% gross profit made on each loan ultimately benefits the members of the cooperative, and, perhaps most important, the farmers no longer need depend on an outside agency, governmental or other, to provide seed when they need it. The village seed granaries have made them self-sufficient.

These village seed granaries would seem to be a good idea. What then is the conflict between the Cooperation and ARSG? The reasons are these:

- ARSG believes that rural farmers do not have the capacity and are not sufficiently advanced technically to manage village seed granaries;
- ARSG feels that different varieties are mixed together in the village seed granaries since farmers are not aware of the technical importance of keeping them separate;
- Since ARSG and Cooperation policies differ in the matter of seed distribution and reimbursement, ARSG will not adopt the Cooperation methods;
- The text of the project agreement with USAID does not allow ARSG to set up village granaries either by simply giving out selected seed or by exchanging it for other varieties;

- There must be a firm delineation of geographical areas in which the two agencies work. Thus, the Cooperation must not work in any locations encadreured by ARSG.

Farmers interviewed by the evaluation team were aware of the ARSG arguments and did not agree with them. They are also aware of the differences between varieties and stated that it serves their interests to isolate different varieties since whatever might be repaid after one season could well be used the following year. They naturally want to know what they plant because they utilize different varieties in different locations, governed mainly by soil conditions and land level. The evaluation team visited one cooperative village granary and saw sacks clearly labelled with the names of the single variety contained in each sack.

ARSG personnel feel they are working at a disadvantage vis-a-vis the Cooperative because their financing includes no money to provide start-up funds to establish village stores/granaries. In this regard, they view the start-up funds given out by the Cooperative as out and out gifts. Farmers in ARSG villages are very knowledgable about the work of the Cooperative and the benefits that can be derived from setting up a local membership --notably the village store/granary.-- They also know that ARSG has attempted to prevent cooperatives from being set up where ARSG works and are resentful of this. In many villages along the Bourem-Ansongo corridor, therefore, ARSG is perceived as being opposed to the interest of the rural population.

Before leaving this discussion, additional activities of the cooperative movement must be listed. Besides setting up village stores and seed granaries, these include:

- technical support for crop diversification during the dry season, i.e., vegetable production;
- development of root crops and fruit tree plantation;
- organization of cooperative work groups for dike repair;
- provision of various types of small equipment to fishermen;
- the organization and start-up of a pirogue construction workshop;
- small hydro-agricultural works, i.e., dike openings, fish grills;
- teaching range management principles;
- setting up village nurseries for reforestation;
- training village health workers;
- training village para-veterinarians.

The success of the cooperative movement in the Sixth and Seventh Rgions is remarkable. The reason seems simple: The intended beneficiaries are completely involved in planning and management. They govern their own affairs.

Date: December 3, 1981

MEMORANDUM

To : James Roush
 From : Jeff Schmidt *JS*
 Subj : Applied Research and On-farm implementation in the OHV project.

The technical assistance team, since the departure of its first COP, has been slowly trying to resurrect ~~at~~ the more positive elements of the Project Paper along with incorporating presently approved research techniques.

OHV serves as a vehicle to deliver approved research practices to the farmer. At the same time, before major acceleration takes place, OHV and the technical assistance team have been executing applied research trials on farmer plots to assure farmer acceptance and technical control.

CROP PRODUCTION ACTIVITY

The base for crop production applied research has been the Samanko center. Here, over the past campaign, we have carried out the various trials :

CROP	SUPPORTING AGENCY	TECHNIQUE
maize	SAFGRAD	local variety strong fertilizer dosage (200 kg/ha complex, 150k/ha urea)
intercropping	ICRISAT	cereal/cereal cereal/forage
forage crops (pidgeon peas, cow peas)	ICRISAT	comportment, seed multiplication
manioc	IITA	segregating varieties
soy beans	SRCVO	comportment
gumbo	OHV	comportment
sesame	OHV	comportment

From the above list, we are simultaneously executing on-farm trials on the following crops :

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CROP	n° of farms
cowpeas	5
pidgeon peas	5
intercropping (maize/niebe)	30
soy beans	5

These trials are being carried out on our pilot farms.

At the same time, SAFGRAD is carrying out 25 maize variety trials, on their own pilot farms. These tests include:

variety	dose	average yield
IRAT 81	200 k/ha complex 150 k/ha urea	8 ton/ha
TIEMENTIE	(same)	3,5 ton/ha

OHV would like to capitalize on the encouraging results from the IRAT 81 but we are first monitoring whether the farmer can handle :

- 1) the increase in labor time needed for weeding and harvesting the IRAT 81.
- 2) The increase cost of the crop (i.e. transport, manual labor, seeds)

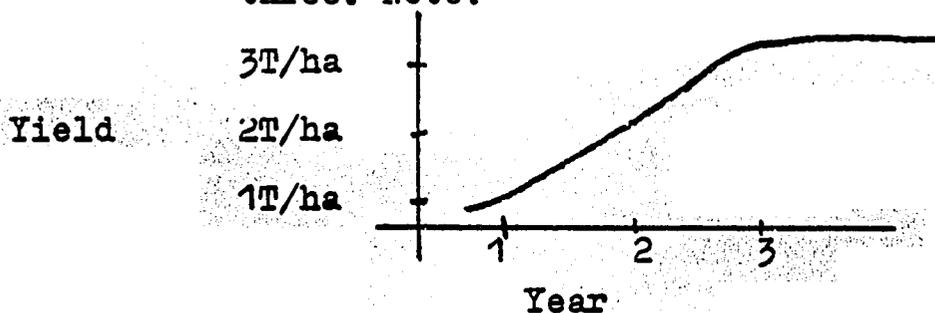
Fortunately, availability of seed is such that rapid acceleration is impossible.

SAFGRAD is also carrying out fertilizer tests, primarily with rock phosphate which is found in Mali. The tests include:

Fertilizer	dose
rock phosphate alone	300 kg/ha
rock phosphate/manure	300 kg/ha, 50 kg/ha
rock phosphate/urea	300 kg/ha, 90 kg/ha

For these trials, which will conclude this year, the following conclusions seem to surface :

- 1) Rock phosphate has appreciably improved soil quality, notably it neutralizes the excess acid;
- 2) Rock phosphate gradually increases yields up to year three. Note:



The reason being that the fertilizer does not completely decompose into the soil until year 3.

- 3) Calculating the exact dosage is a function of the localised soil composition, thereby hindering a uniform technical approach.

OHV has moved quickly to accelerate the distribution of rock phosphate by purchasing 60 TONS for the 81/82 campaign. The technical package recommended has been :

- 1) 300 kg/ha plus 50 kg/ha manure. This is a function of the manure's ability to decompose the rock phosphate more rapidly and achieve greater yields than the 2 other mixes mentioned.
- 2) Distribute the granular variety of rock phosphate to aid in the decomposition process.

SAFGRAD has proposed that OHV prolong credit on the fertilizer to match its lag in yield increases. This is to be decided.

TECHNICAL PACKAGE

OHV's technical package has not changed since the start of the project. The simple package is as follows :

- 1) Material
 - A) Multiculteur
 - B) Charrue
 - C) Semoir (monorang)
 - D) Charrette (optional : for larger or more advanced farms)
- 2) Pair of work oxen
- 3) Crop production techniques
 - A) Cotton (package developed by CMDT)
 - B) Maize (local variety with rock phosphate/manure application)
 - C) Millet/sorghum (intercropping)
 - D) Forage
 1. Maize/cowpea intercropping
 2. Pidgeon peas

Our main challenge above has been material usage. Much of LBII's initial energies were spent on trying to present new equipment innovations. Now, as is the case with crop research, we are leaving this task to national and international research organizations. (DMA and ICRISAT). Then, OHV serves as the vehicle for the accelerations. Our experts coordinate closely with these organizations, especially in the case of our animal traction expert and DMA.

We are striving to perfect the most optimal, yet simplistic package possible which should be :

- 1) Easy to finance
- 2) Technically efficient
- 3) Easy to provide spare sparts

The simple equipment mentioned above is produced locally at SMECMA which is the most appropriate material manufacturer existing in Mali. We have provided extensive training of field agents in order to improve equipment usage over the past year with much success.

FARMING SYSTEM ACTIVITY

Put it all together and you develop a farming systems package. Here OHV/LBII has been striving to further integrate livestock activity at the farm level. We have accelerated forage production while perfecting optimal feeding diets at the Samanko center.

Through two seasons of research, our conclusions point out that there is a necessity for industrial by-products in the oxen's diet. Cotton seed and cotton seed cake provide appreciable nutrition and weight gains for oxen, according to our results. These actions, at official prices, are quite cost effective in terms of the additional value obtained from weight gains. Daily oxen-diets which provide production targets for forage crops have helped us program the needs of the farming system. These diets are appropriate for on-farm feedlots and work oxen, who need the additional nutrition in preparation for the agricultural campaign.

On-farm feedlots provide incentives for farmers to adopt livestock integration practices (that also benefit their work oxen) and put the farmer in greater contact with ECIBEV and OHV agent. The revenue gain from such complementary farm activity nurtures positive attitudes of private enterprises, livestock integration use and care of livestock and farming systems management. It is wrong to view the activity simply for its profit value in isolation.

Coordinating the crop production results into a rational farm system rotation has also advanced in the past year. Cotton production has been the base of this action in the following ways:

- 1) Adding cash income to the farm.
- 2) Providing credit collateral for OHV (to purchase equipment inputs and work oxen).
- 3) Supplying fertilizer supplement to improve soil quality and increase yields of subsequent grain crops that follow in rotation.

The rotation of cotton before cereals has worked efficiently in the CMDT and has been adapted with success in the OHV. Farmer needs are a function of his ability to generate revenue and it is most easily executed by cotton production due to cotton's :

- 1) unquestionable marketability through official channels.
- 2) non-consumption nature.
- 3) non-risk production capability (almost always yielding over 650 k/ha if technical advice followed).

The farming system will also include vegetable production for off-season income on some farms. The program is not nearly as sophisticated as the livestock integration and crop rotation techniques mentioned above, but its nutritional and monetary potential has not been forgotten. The need to progress slowly overrides any immediate acceleration in this area.

THIS YEAR'S PROGRAM

This year will signal perfecting of the forementioned programs with some new twists. They include:

- 1) Integration of SAFGRAD/OHV pilot farmers controlled by OHV's research coordinator and our agronomist.
- 2) Further extension of rock phosphate program.
- 3) Introduction of the Bancoumana Polder program.
- 4) Defining agro-climatic regions and more appropriate, localized packages.

Obviously, the Bancoumana Polder will be the major activity of this year. The team hopes to :

- 1) Build an animal traction park at the site complete with :
 - A) Peace Corps intervention.
 - B) A blacksmith installation.
 - C) Work oxen/field agent training.
 - D) Technical Assistant in ANTRAC for 1 year.
- 2) Conduct rice variety trials to find a variety ~~that~~ with:
 - A) shorter cycle
 - B) resistance to diseases
 - C) favorable ecological reaction
 - D) high yield capability
 - E) ability to be used in ANTRAC system
 - F) favorable response to inputs.
- 3) Enforce technical package which includes :
 - A) 100% use of animal traction.
 - B) Seeding in rows.
 - C) Transplanting trials.
 - D) Fertilizer usage (250 kg/ha rock phosphate, 50 kg/ha urea).
 - E) Adherences to crop calendar.

- 4) Enforce strict maintenance of the polder.
- 5) Conduct studies on :
 - A) Research on new varieties (see above).
 - B) Weed control.
 - C) Optimal economic use of inputs.
 - D) Appropriate equipment research and development for rice

The work involved to obtain these goals is obvious and will be streamlined if required. It should be noted that WARDA data on the OHV region is out-dated and not sufficient.

The definition of agro-climatic regions and appropriate cultural practices will be aided through collaboration with the PIRT (Projet Inventaire des Ressources Terrestres) team. PIRT would provide OHV with soil, water and forage data on the regions in order to help our agronomist pinpoint more appropriate programs.

This data will also be used to determine the resource potential of the polder areas and new OHV regions.

Over the past years, OHV/LBII has operated effectively in introducing research-verified innovations at the farmer level. At the same time, they have provided the extension agent training needed to provide initial and continuous advice to farmers how to best manage his farm.

The task of LBII/OHV is to rationally coordinate and incorporate research into a farming system approach and then modify practice to meet local conditions. In Mali, research stations are not extensive enough nor do they have the manpower, to test out or apply these results throughout a region.

Therefore, such organizations as OHV execute this vital function. The task of the project is aid them in the execution.

From: Melvin G. Blase, Institution Building:
A Source Book, Midwest Universities
Consortium for International Activities,
Inc. for A.I.D., Contr. No. AID/csd-3392,
1973.

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The Essential Core of the Literature

Outstanding contributions to the literature on institution building are summarized below in one of two categories: manuscripts with an institutional-organizational focus or works dealing with phenomena beyond this micro orientation.

The literature with an institutional-organizational orientation resulted largely, but not exclusively, from the Inter-University Research Program in Institution Building (IRPIB). This multi-disciplinary program was undertaken by scholars from Michigan State University, Syracuse University, Indiana University, and the University of Pittsburgh, where the project's headquarters are located. This consortium program, financed largely by the Agency for International Development (AID) and the Ford Foundation, was the largest single source of the manuscripts reviewed in the preparation of this book.

Eight of the manuscripts nominated by professionals actively working in the field of institution building resulted directly from the IRPIB. In three others, the methodology developed in that program is used. Because these IRPIB contributions are consolidated in a recently published book of readings, that book is the source of most of the summaries of IRPIB contributions in this chapter. The one exception, however, is Milton Esman's manuscript, "The Institution Building Concepts--An Interim Appraisal." This manuscript is summarized in detail, rather than his shorter chapter in the book edited by Joseph Eaton, because it contains the important conceptual framework developed by him and others.

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ANNEX E

Although no one group of manuscripts dominates the macro oriented literature, a number of significant contributions have been made. Again, a recently published book - this one entitled *A Theory of Institutions* by John Powelson - is reviewed in detail. Likewise, the book of readings entitled *Modernization by Design* by Chandler Morse et al. is given considerable attention. An article by T. W. Schultz is reviewed in sufficient detail to indicate clearly its substantive contribution. Finally, attention is called to a bibliography that contains some references to macro oriented literature in the fields of technical assistance and institution building.

INSTITUTIONAL-ORGANIZATIONAL LITERATURE

- [1] ESMAN, Milton J "The Institution Building Concepts-An Interim Appraisal." Graduate School of Public and International Affairs, University of Pittsburgh, Pittsburgh, Pa., 1967. 66 pages. (Mimeographed. Part of Inter-University Research Program in Institution Building.)

Since much of the institution building literature refers to the framework conceptualized by Esman et al., it will be summarized first. Esman's manuscript contains not only basic concepts but also a partial evaluation of them on the basis of data obtained from the initial IRPIB case studies. These case studies were: the College of Education of the University of Nigeria, by John Hanson [12]; the Central University of Ecuador, by Hans C. Blaise and Luis A. Rodriguez [47]; the Institute of Public Administration of Thammasat, University of Thailand, by William Siffin [72]; and the Institute of Public Administration for Turkey and the Middle East, by Guthrie Birkhead [73].

Basic concepts

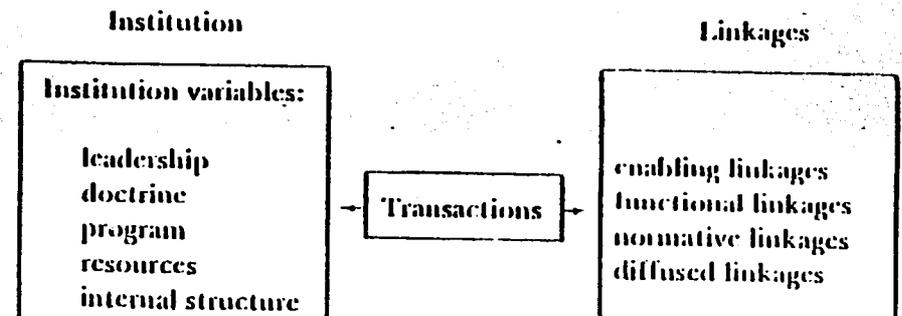
In the restatement of the basic concepts, Esman emphasizes that his approach has a pronounced bias toward social engineering that is based on the proposition that most significant, contemporary changes - especially in developing countries - are deliberately planned and guided. Further, the approach presupposes that the introduction of change takes place primarily in and through formal organizations. When these organizations are change-inducing, change-protecting, and formal, they are considered to be institu-

tions. These organizations and the new patterns they foster become institutionalized, e.g., meaningful and valued in the societies in which they function. This involves a complex set of interactions between the institutions and the environment. The latter varies in its readiness or resistance to change both over time and from place to place.

Basic to Esman's approach is the assumption that the efficient assimilation of new physical and social technologies requires that the environment provide supporting values, norms, processes, and structures which usually are not present when the new technologies are introduced. Changing the environment to complement or accommodate the new technologies is an integral part of development. Since these new technologies are primarily introduced in and through organizations, the supportive values, norms, processes, and structures must be institutionalized in and through these organizations; that is, normative relationship and action patterns must be established in and through organizations which incorporate, foster, and protect normative relationship and action patterns and perform functions and services that are valued in the environment. The results of analyses of these institutionalized changes can serve as guides to social action. Hence, the assumption has been made that institution building is a generic social process, i.e., a set of elements and actions can be identified which is relevant to institution building in general.

The three analytical categories upon which Esman's analysis is built are depicted in the accompanying figure from citation [2]. Institution variables are those elements thought to be necessary and sufficient to explain the systemic behavior in an institution.

The Institution Building Universe



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Leadership applies not only to people formally charged with the direction of an institution, but also to all others who participate in the planning, structuring, and the guidance of it. Within leadership, viewed as a unit, important factors include political viability, professional status, technical competence, organizational competence, role distribution, and continuity.

Doctrine, as the stable reference point of an institution to which all other variables relate, contains such characteristics as specificity, meaning the extent to which elements of doctrine supply the necessary foundation for action in a given situation; the extent to which the institutional doctrine conforms to the expected and sanctioned behavior of the society; and the degree to which the institution's doctrine conforms to the preferences, priorities, intermediate goals, and targets of the society.

Those actions related to the performance of functions and services constituting the output of the institution represent its program. Hence, important aspects of the program variable include its consistency with the institution's doctrine, stability of output, feasibility regarding resources, as well as complementary production of other organizations in the absorptive capacity of the society, and the contribution of the institution toward satisfying the specified needs of the society.

The inputs of an institution, here defined as resources, are important not only in quantitative terms, but also because of their sources. These sources and the ability to obtain resources through them affect decisions with regard to program, doctrine, and leadership. Hence, the two categories within this variable are availability and sources.

As both structure and process, the category of internal structure includes such things as the distribution of functions and authority, the processes of communication and decision making, and other relationship-action patterns. Consequently, it determines the efficiency and effectiveness of program performance. Components of this category include identification of participants within the institution, consistency of the structure with the institution's doctrine and program, and the structure's adaptability to shifts in program emphasis and other changes.

Every institution is dependent upon other organizations for its authority and resources; hence, its linkages with other entities

are vitally important. These linkages also include an institution's dependency on complementary production of other institutions and on the ability of the environment to use its resources. Finally, linkages are also concerned with and subject to the norms of the society. Through these linkages the institution maintains exchange relationships with its environment, an interdependent complex of functionally related organizations. The four subcategories of linkages are discussed briefly below.

In the initial stages of an institution's life, its prime target is developing its relationship with other entities that control the allocation of authority and resources it needs; this category is called enabling linkages. Developing relationships with such entities is important not only for obtaining authority and resources, but also because these are the same entities through which the institution's opposition seeks to withhold needed inputs from it.

Functional linkages relate the institution to (1) organizations which are complementary in a productive sense that is, which supply inputs and use the outputs of the institution; and (2) those organizations which constitute real or potential competition. Through functional linkages an institution attempts to spread its innovations as it embodies and promotes new patterns and technologies.

Both sociocultural norms and operating rules and regulations have important implications for institutions via normative linkages, through which the society places certain constraints on and establishes guidelines for institutions. The norms, rules, and regulations can either act as obstacles to or facilitate the process of institution building.

While these three categories of linkages refer to relationships of an institution with other specific institutions and organizations, diffused linkages refer to the relationship between the institution and public opinion and with the public in general. Thus, this category includes relationships established through news media and other channels for the crystallization and expression of individual and small-group opinion.

Through these four linkages, then, an institution carries on transactions with other segments of the society. These transactions involve not only physical inputs and outputs but also such social interactions as communication, support acquisition, and the trans-

fer of norms and values. More specifically, the purposes of transactions have been identified as (1) gaining support and overcoming resistance, (2) exchanging resources, (3) structuring the environment, and (4) transferring norms and values.

Institution building is a time-consuming process. During its initial phase certain values or goals are conceived by the change agents, and a strategy is determined for their attainment. Also during this period, support is sought for achieving goals and values, an effort is made to overcome resistances, and an attempt is made to acquire the necessary authority and resources for the establishment of the institution. Subsequently in the life cycle of the institution, different strategies and actions are required for executing the program, maintaining the institution, and facilitating the transfer of norms and values to other elements of the society.

Case studies

In reflecting on the four case studies, Esman attempts to (1) analyze and compare some of the researchers' most salient findings, (2) suggest implications for the program's general approach to the institution building process and to the basic concepts which were their common point of departure, and (3) indicate the future development of theory, methodology, and practical application toward which these studies point. Since these studies are summarized in [12], [47], [72], and [73], attention is now called to generalizations drawn from them rather than their individual findings.

Technical assistance in institution building

In all four of the cases studied, technical assistance staffs made up of foreigners to the country in question provided the main models for change and, in three cases, most of the impulse for action. However, even in these three cases, the staff members were unable to carry their local counterparts with them on significant issues. Although frequently disagreeing among themselves, their counterparts were committed to only a few of the specific changes that they endorsed. Local staff members frequently attached higher priority to protecting existing relationships than to

the changes proposed by technical assistance personnel, although they frequently agreed with the technical personnel about proposed goals.

In the instances studied, the technical assistance personnel were welcomed as suppliers of physical resources, as teachers, and, to some extent, as sources of technical ideas which would help the existing system do its old job better. But when viewed as a means of inducing new norms or action patterns within the institution itself or in transactions with linked client groups, they were threatening. These experiences suggest that congruence between the technical assistance personnel and indigenous institutional leaders over goals and tactics, as well as over the doctrine and the program of the subject institution, directly influences the effectiveness of foreign assistance. Without such congruence frustration is inevitable and even conflict may result.

On the basis of this admittedly small sample of four cases, several tendencies appeared to exist. One of these is that the doctrinal compatibility between the technical advisers and the institution's leadership cadre seemed to be more important than the formal positions of power that the technical assistance personnel occupied within the institution. Another is that technical assistance teams need to maintain a position that will enable them to capitalize upon changes in the external environment. A third is that technical assistance personnel tend to use mild and accommodating tactics rather than tension- or crisis-producing ones. Fourth, at the outset of a technical assistance project, leaders at the host institution are often uncertain of their goals, are more concerned with maintaining existing patterns and protecting their own interests within the present system than in fomenting changes, are unwilling to incur risks, and tend to be passive or inept in using the resources or the opportunities available. Fifth, in these situations institution builders must deploy a battery of survival and service tactics as well as change tactics. Sixth, the institution builder must be a manager par excellence, who can adjust to unplanned consequences of actions taken as well as to unanticipated contingencies, and who can attempt to create opportunities to facilitate his program goals. Finally, Esman concludes:

The most generalized proposition that seems to emerge at this stage of institution building research on the question of change tactics is that the institution building leadership should attempt in its transactions with each linked public to distribute or appear to be distributing a far greater volume of benefits than of costs. The margin of benefits over costs must be substantial because costs (dissatisfactions or threats) in status, respect, security, finance, or scope for action are usually perceived to be far more critical, triggering defensive action, than are anticipated benefits triggering supportive action. Where a wide margin of benefits over costs cannot be distributed, or where the organization appears to be under attack from a major linked institution, it must not hesitate to defer some of its activities which might be threatening to an external group. In such cases it must attempt to deal with a few negative situations at a time, must focus enough bargaining energy and resources on the potential conflict, and must be able to deploy enough power in that situation to be reasonably certain of a satisfactory outcome. This is simply the strategy of keeping one's opponents divided and dealing with them separately rather than allowing an effective coalition to mobilize. (p. 46)

Several strategies for institution building are suggested. One is that rather than creating an entirely new institution, an existing one should be strengthened, unless (1) important groups within the society perceive that the existing institution is discharging its functions inadequately or is neglecting activities which it should be performing, or (2) the original institution is not catering to emergent needs or demands within its field of jurisdiction. When the existing institution has a widely diffused internal power structure, the appropriate strategy would appear to be an attempt to create a new unit within the existing institution. In situations where both the leadership and environmental factors are favorable, a rational approach to timing is to give initial emphasis to building a solid and viable organization and then to construct reliable linkages within the environment. Only when these linkages have been established should the riskier and more difficult task of restructuring the environment and transferring norms to linked institutions be attempted. When the environment is especially receptive to change, a more apropos and certainly bolder strategy may be to foster changes within the environment before linkages have been firmly established and the basic organization built on a solid foundation.

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