

UNCLASSIFIED

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47027

SEMI-ARID TROPICS CROPS RESEARCH PROJECT

PHASE II

PROJECT NO. 688-0226

Project Paper Supplement: Phase II Extension

USAID/Mali

PROJECT DATA SHEET

1. TRANSACTION CODE

C A = Add
C = Change
D = Delete

Amendment Number
ONE

DOCUMENT CODE
3

2. COUNTRY/ENTITY
Mali

3. PROJECT NUMBER

688-0226

4. BUREAU/OFFICE
AFR

06

5. PROJECT TITLE (maximum 40 characters)

Semi-arid Tropics Crops Research II

6. PROJECT ASSISTANCE COMPLETION DATE (PACD)

MM DD YY
09 30 90

7. ESTIMATED DATE OF OBLIGATION

(Under "B:" below, enter 1, 2, 3, or 4)

A. Initial FY 81

B. Quarter 3

C. Final FY 87

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

A. FUNDING SOURCE	FIRST FY 81			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total						
(Grant)	(130)	(220)	(350)	(3,549)	(4,201)	(7,750)
(Loan)	()	()	()	()	()	()
Other U.S.						
1.						
2.						
Host Country		91	91		464	464
Other Donor(s)						
TOTALS	130	311	441	3,549	4,665	8,214

9. SCHEDULE OF AID FUNDING (\$000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH CODE		D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
(1) SH	110	080		3,750		4,000		7,750	
(2)									
(3)									
(4)									
TOTALS									

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

11. SECONDARY PURPOSE CODE

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

A. Code
B. Amount

13. PROJECT PURPOSE (maximum 480 characters)

To develop a series of technical packages from adaptive research in sorghum, millet and certain grain legumes in the 400 -- 1200 mm rainfall zones and to make them available through extension agencies to small farmers and herders; and to strengthen the Government of the Republic of Mali's research capability in the semi-arid rainfall zones.

14. SCHEDULED EVALUATIONS

Interim MM YY MM YY Final MM YY
08 83 08 87 08 89

15. SOURCE/ORIGIN OF GOODS AND SERVICES

000 941 Local Other (Specify)

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

This PP supplement provides for an extension of the subject project, through an increase in LOP funding and an extension of the PACD from 9/30/86 until 9/30/90 (see above). The project's goal and purpose remain unchanged. Some changes are made in the SOW for the Grantee, ICRISAT, for the extension period to take account of experience and success during implementation to date (as documented in 1983 evaluation and in the attached PP supplement).

17. APPROVED BY

Signature

Eugene R. Chiavaroli

Title Eugene R. Chiavaroli
Mission Director, USAID/Mali

Date Signed

MM DD YY
09 11 86

18. DATE DOCUMENT RECEIVED IN AID/F, OR FOR AID DOCUMENTS, DATE OF DISTRIBUTION

MM DD YY

SEMI-ARID TROPICS CROPS RESEARCH PROJECT
PHASE II PROJECT NO. 688-0226

PROJECT PAPER SUPPLEMENT: PHASE II EXTENSION

TABLE OF CONTENTS

PROJECT DATA SHEET	
EXECUTIVE SUMMARY	
PROJECT AUTHORIZATION AMENDMENT MEMORANDUM	
PROJECT AUTHORIZATION AMENDMENT	
LIST OF ABBREVIATIONS AND ACRONYMS	
I. PROJECT DESCRIPTION (Amended)	1
A. Project Goal and Purpose	1
B. Project Objectives	2
C. Project Background	2
D. The Phase II Extension Proposal	5
1. Plant Breeding Program	5
2. Agronomy Program	7
3. Technology Transfer	9
4. Development of Research Infrastructure and Personnel	10
5. Support to the Regional Sorghum Program	10
E. Coordination with Other Research Projects	12
F. Project Inputs	12
G. Budget and Financial Plan	13
1. USAID Grant	13-14
2. Malian Government Contribution	15
II. IMPLEMENTATION PLAN AND ARRANGEMENTS	15
III. REVIEWS AND EVALUATION	16
A. Project Reviews	16
B. Reporting Requirements	16
C. Evaluation	16

IV. PROJECT FEASIBILITY ANALYSES	17
A. Technical Feasibility	17
B. Economic and Social Analyses	18
C. Financial Analysis	18
V. ANNEXES	
A. Detailed Budget Projections	19
B. Mid-Term Evaluation: Status of Implementation of Recommendations	22
C. GRM-ICRISAT Agreement	28
D. Logical Framework (Amended)	33
E. Draft Grant Agreement Amendment	
F. Host Country Request for Project	37
G. FAA Section 611(e) Certification	38
H. Initial Environmental Examination (for Extension only)	40
I. Statutory Checklists	43
J. Draft Congressional Notification	65
K. Ad Hoc Delegation of Authority	70

EXECUTIVE SUMMARY

This proposed Amendment No. 1 to the Semi-Arid Tropics Research Project is a continuation of the original grant for four plus years, to September 30, 1990. The project is a joint undertaking between USAID/Mali and the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT). The ICRISAT/Mali program began in 1976 with a one-year grant from the Ford Foundation. This was followed by four years of AID bilateral funding, the first two under Operation Mills Mopti and then a separate two-year activity, Phase I of the current project (688-0219).

An evaluation of Phase I was carried out in November 1980 and its results were extremely positive. Based on these findings, a four-year Phase II activity (688-0226) was established in 1981 with a life-of-project funding of \$3,750,000. A nine month and then a three month extension was granted by the Mission to extend the original PACD from September 30, 1985 to September 30, 1986.

Under the current Phase II project, ICRISAT is developing a series of technologies for increasing production of sorghum, millet and certain grain legumes in the 400-1200 mm rainfall zone of Mali while strengthening the GRM's research capability in the Semi-Arid Zones. The focus of this project is threefold: Crop Improvement through the development of improved sorghum and millet varieties, development of appropriate agronomic practices which best exploit the semi-arid conditions in the 400-1200 mm rainfall zone, and strengthening GRM research capability through training and infrastructure development.

Under this proposed project amendment, the project's goal and purpose will remain unchanged. The Project amendment will expand the project's scope by utilizing extension agencies to make technical packages developed under the project available to small farmers, in particular by cooperating closely with the activities to be carried out under the Farming Systems Research and Extension project authorized in FY 85. Other important modes of technology transfer will be intensive training, both on-the-job and formal courses in the U.S. and third countries, and seminars and workshops conducted in Mali.

Following the recommendations of the in-depth mid-term evaluation conducted in October and November 1983, the proposed amendment calls for the modification or termination of selected activities already in progress. Under the crop improvement component of the project, the plant breeding program will continue along the same lines as the ongoing Phase II project but will also focus on the field testing of genotypes to assess their adaptability into the local cropping systems. The agronomy program will bear most of

the modifications. While intercropping and pigeon pea agronomy will continue, the animal traction equipment and techniques activity will be modified to include greater employment of animal traction in experimentation concerning initial tillage, land preparation, and weeding operations. Also, the extended phase will afford collaboration with appropriate agencies in testing mutually complementary equipment for tillage operations. Activities under this component that are to be dropped are fallow period management, forage production, Tilemsi natural rock phosphate exploitation, and watershed management. As under the current project, the extension will continue to support both the national and regional sorghum programs. On the national basis, support activities include commodities (research and laboratory equipment), vehicles, animal traction equipment, construction (building maintenance and minor additions to existing facilities where needed), and operating costs.

At the regional level, the project will provide financial support (up to \$1,000,000) for infrastructure development of ICRISAT/International's Regional Sorghum Research Center, to be sited close to Bamako.

This project is in conformance with USAID's overall assistance objective in Mali -- improving the production, productivity and incomes of rural households. A major component of the Mission strategy is to concentrate investment in agricultural research on food crops such as millet, sorghum and cowpeas.

Because a large proportion of its arable lands lies in the semi-arid tropical zone, Mali depends heavily for its food grains on the crops targeted by this project. As a result, the potential direct beneficiaries include at least 65% of Mali's population (more than five million people); the project ultimately will benefit Mali's entire population and, has the potential to benefit large segments of Sahelians in other countries living this zone.

ACTION MEMORANDUM FOR THE DIRECTOR, USAID/MALI

FROM: DEO/PROG: Zach Hahn *L.J. Sumner*

SUBJECT: Semi-Arid Tropics Crops Research -- Phase II
Project Authorization (Project 688-0226)
Amendment No. 1/Project Paper Supplement

I. PROBLEM

You are requested to amend the authorization for the grant to the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) by increasing it by \$4,000,000, from the currently authorized amount of \$3,750,000 to a new amount of \$7,750,000. This grant will be made from the Sahel Development Program (SDP) appropriation for Mali. It is planned that \$2,000,000 will be obligated in FY 1986.

II. DISCUSSION

A. Project Description

This proposed Amendment No. 1 to the Semi-Arid Tropics Research Project is a continuation of the original grant for four plus years, to September 30, 1990. The project is a joint undertaking between USAID/Mali and the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT). The ICRISAT/Mali program began in 1976 with a one-year grant from the Ford Foundation. This was followed by four years of AID bilateral funding, the first two under Operation Mills Mopti and then a separate two-year activity, Phase I of the current project (688-0219).

An evaluation of Phase I was carried out in November 1980 and its results were extremely positive. Based on these findings, a four-year Phase II activity (688-0226) was established in 1981 with a life-of-project funding of \$3,750,000. A nine month and then a three month extension have been granted by the Mission to extend the original PACD from Sept. 30, 1985 to September 30, 1986.

Under the current Phase II project, ICRISAT is developing a series of technologies for increasing production of sorghum, millet and certain grain legumes in the 400-1200 mm rainfall zone of Mali while strengthening the GRM's research capability in the Semi-Arid Zones. The focus of this project is threefold: Crop Improvement through the development of improved sorghum and millet varieties, development of appropriate agronomic practices which best exploit the semi-arid conditions in the 400-1200 mm rainfall zone, and strengthening GRM research capability through training and infrastructure development.

Under this proposed project amendment, the project's goal and purpose will remain unchanged. The Project amendment will expand the project's scope by utilizing extension agencies to make technical packages developed under the project available to small farmers, in particular by cooperating closely with the activities to be carried out under the Farming Systems Research and Extension project authorized in FY 85. Other important modes of technology transfer will be intensive training, both on-the-job and formal courses in the U.S. and third countries, and seminars and workshops conducted in Mali.

Following the recommendations of the in-depth mid-term evaluation conducted in October and November 1983, the proposed amendment calls for the modification or termination of selected activities already in progress. Under the crop improvement component of the project, the plant breeding program will continue along the same lines as the ongoing Phase II project but will also focus on the field testing of genotypes to assess their adaptability into the local cropping systems. The agronomy program will bear most of the modifications. While intercropping and pigeon pea agronomy will continue, the animal traction equipment and techniques activity will be modified to include greater employment of animal traction in experimentation concerning initial tillage, land preparation, and weeding operations. Also, the extended phase will afford collaboration with appropriate agencies in testing mutually complementary equipment for tillage operations. Activities under this component that are to be dropped are fallow period management, forage production, Tilemsi natural rock phosphate exploitation, and watershed management. As under the current project, the extension will continue to support both the national and regional sorghum programs. On the national basis, support activities include commodities (research and laboratory equipment), vehicles, animal traction equipment, construction (building maintenance and minor additions to existing facilities where needed), and operating costs.

At the regional level, the project will provide financial support (up to \$1,000,000) for infrastructure development of ICRISAT/International's Regional Sorghum Research Center, to be sited close to Bamako. Funds for the construction of the Regional Sorghum Center will be obligated in FY 87. Prior to that obligation plans and specifications will be reviewed to provide 611 (a) Certification.

This project is in conformance with USAID's overall assistance objective in Mali -- improving the production, productivity and incomes of rural households. A major component of the Mission strategy is to concentrate investment in agricultural research on food crops such as millet, sorghum and cowpeas.

Because a large proportion of its arable lands lies in the semi-arid tropical zone, Mali depends heavily for its food grains on the crops targeted by this project. As a result, the potential direct beneficiaries include at least 65% of Mali's population

(more than five million people); the project ultimately will benefit Mali's entire population and, has the potential to benefit large segments of Sahelians in other countries living this zone.

B. Financial Summary

The total cost of the project is estimated at \$8.214 million, of which A.I.D. will contribute \$7.75 million, and the Government of the Republic of Mali (GRM) will contribute \$0.464 million. The total cost of this proposed amendment is \$4,146 million of which A.I.D. will contribute \$4.0 million and the GRM \$0.146 million. The budget for the project is set out below, column "A" showing the amounts from the start of the Phase II project in mid-1981 through June, 1986 and column "B" showing that for the extension from July, 1986 through September, 1990.

	A. I. D.		GRM		TOTAL	
	A	B	A	B	A	B
Technical Assistance	1,160	1,156	-	-	1,160	1,082
Training	351	301	-	-	351	323
Construction (and Station Development)	750	1,037	93	24	843	1,058
Commodities	512	108	-	-	512	133
Operating Costs	921	1,263	225	122	1,146	1,415
Evaluation	56	135	-	-	56	135
<hr/>						
TOTALS	3,750	4,000	318	146	4,068	4,146

Notes: Amounts in \$000's. Line items for extension period include 10% for contingency and 5% per annum for inflation.

C. Socio-Economique, Technical and Environmental Description

The project paper and the project paper supplement include appropriate technical, financial, economic, administrative and social analyses to support the acceptability and feasibility of a project extension. Such analysis is strongly supported by the project's history of almost 10 years of successful implementation as documented by evaluation reports.

With regard to environmental considerations, on-going project activities have been given a "categorical exclusion" because they are research efforts. For the Regional Sorghum Research Center,

the Mission has performed, and you have approved, an Initial Environmental Examination, which concludes that as was the case with the Cinzana Research Station, a "negative determination" is warranted, and this has been occurred in by the Africa Bureau's Environmental Officer (see Annex V.H.).

D. Implementation Plan, Conditions and Covenants

The implementation plan set out in the project paper supplement is based on the almost ten years of previous project experience and as such it is judged to be extremely realistic. With regard to the proposed contribution of \$1,000,000 for construction of certain facilities as part of ICRISAT's Regional Sorghum Research Center, the necessary FAA Section 611(a) Certification was executed on March 3, 1986 (see Annex V.G) and we have been informed that the Assistant Administrator for the African Bureau has taken it into consideration and approved it.

The Financial Analysis (Section IV.C) contains an analysis of the projects' cost.

The statutory checklists have been satisfactorily completed and are included as Annex V.I.

One additional condition precedent has been included in the project amendment authorization. This concerns the proposed contribution to the construction of ICRISAT's Regional Sorghum Research Center in Mali and required a written agreement between the Government of Mali and ICRISAT concerning the terms and conditions under which ICRISAT will build and utilize this center, the submission of plans for design of the center and contracts for construction supervision and construction and a financial plan for the center's construction. In addition, a covenant has been added pledging ICRISAT to use its best efforts to maintain continuity of staffing.

E. Responsible Office

USAID/Mali will provide a project manager experienced in agricultural research management for overseeing implementation of the project. AFR/PD/SWAP will be responsible for AID/W backstopping.

III. JUSTIFICATION TO CONGRESS.

A Congressional Notification (CN) was forwarded to the Congress on May 21, 1986 and the waiting period expired on June 27, 1986. A finding has already been made for this project that the determination set out in FAA Section 121 (d) is not required since SDP funds will not be made available to the Government of Mali.

IV. GRAY AMENDMENT OBJECTIVES.

This project will finance continuation of an ongoing grant for an agricultural research program in Mali which was originally awarded to ICRISAT, a major international agricultural research institution, over ten years ago. ICRISAT's continuing effective implementation of the program precludes consideration of a change to another implementing entity at this time.

V. RECOMMENDATION.

The Project Committee recommends that you sign the attached Project Authorization Amendment, thereby increasing life-of-project funding by \$4,000,000 to a new total of \$7,750,000. You have been granted and ad hoc delegation of authority to sign this amendment by the Assistant Administrator for Africa on June 30, 1986 (State 207,161 dated July 1, 1986).

APPROVED: _____

Reginald Akpan

DISAPPROVED: _____

DATE: _____

July 11, 1986

PROJECT AUTHORIZATION AMENDMENT

COUNTRY: Mali

PROJECT: Semi-Arid Tropics Crops Research -- Phase II
Amendment No. 1

NUMBER OF PROJECT: 688-0226

1. Pursuant to Part 1, Chapter 121 of the Foreign Assistance Act of 1961, as amended ("the Act"), the Semi-Arid Tropics Crops Research Project (Phase II) for Mali, was authorized on June 2, 1981. Pursuant to the same authority, the Project Authorization is hereby amended as follows:

- a. Paragraph No. 1 of the original authorization is amended by increasing the authorized life-of-project funding by \$4,000,000, from \$3,750,000 to \$7,750,000. In addition, the following sentence is added to the end of the paragraph: "Except as A.I.D. may otherwise agree in writing, the termination of project assistance (the Project Assistance Completion Date) shall be September 30, 1990."
- b. Paragraph No. 2 is amended by deleting the following words at the end of the paragraph: "and to strengthen the research capability within Mali to perform such research" and replacing those words with the following: "and to strengthen the capability within Mali to perform research, through training and infrastructure development, including construction of selected facilities for a regional sorghum research program."
- c. Paragraph 3.a is deleted in its entirety and the following is substituted therefor:

"a) Source and Origin of Commodities, Nationality of Services.

Except as A.I.D. may otherwise agree in writing:

(1) Commodities financed by A.I.D. under the project shall have their source and, except for motor vehicles, their origin in Mali or in countries included in A.I.D. Geographic Code 941.

(2) Motor vehicles shall have their origin in the United States.

(3) Except for ocean shipping, the suppliers of commodities or services financed by A.I.D. shall have Mali or countries included in A.I.D. Geographic Code 941 as their place of nationality.

(4) Ocean shipping financed by A.I.D. under the Project shall be financed only on flag vessels of the United States, other countries in Geographic Code 941, and Mali.

d. A new paragraph 3.d is hereby added with the following text:

" d) CONDITIONS PRECEDENT FOR ICRISAT REGIONAL SORGHUM RESEARCH PROGRAM.

Prior to the disbursement of funds under the amended project for assisting ICRISAT with the infrastructure development for the establishment in Mali of its Regional Sorghum Research Program for West Africa, or the issuance by A.I.D. of documentation pursuant to which such disbursement will be made, ICRISAT shall, except as the parties may otherwise agree in writing, furnish to A.I.D., in form and substance satisfactory to A.I.D., (i) a letter or memorandum of understanding between ICRISAT and the Government of the Republic of Mali stipulating the terms and conditions under which the facilities will be constructed and operated by ICRISAT; (ii) plans and specifications required for the construction of the facilities and executed contracts for construction and construction supervision services with firms acceptable to A.I.D.; and (iii) a financial plan for construction of the facilities."

e. A new paragraph 3.e, is hereby added with the following text:

"e) COVENANT.

ICRISAT will use its best efforts to insure that the project is staffed at all times with qualified and experienced researchers (a sorghum breeder and an agronomist) such that continuity of effort is maintained to accomplish long-term goals and objectives."

2. The Project Authorization cited above remains in full force and effect except as hereby amended.


Eugene R. Chiavaroli
Director, USAID/Mali

Date: July 11, 1986

LIST OF ABBREVIATIONS AND ACRONYMS

CAA	Centre d'Apprentissage Agricole
CMDT	Compagnie Malienne pour le Développement des Textiles
CRSP	Collaborative Research Support Program
DMA	Division du Machinisme Agricole
FCFA	Franc de la Communauté Financière Africaine (350 F CFA = US \$1)
FSR/E	Farming Systems Research and Extension
GRM	Government of the Republic of Mali
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IER	Institut d'Economie Rurale
ILCA	International Livestock Center for Africa
INRZFH	Institut National de la Recherche Zootechnique, Forestière et Hydrobiologique
INTSORMIL	International Sorghum Millet CRSP
IPM	Integrated Pest Management
IPR	Institut Polytechnique Rural
ODEM	Opération pour le Développement de l'Élevage - Mopti
OHV	Opération Haute Vallée
OMM	Opération Mills Mopti
ORM	Opération Riz Mopti
ORSTOM	Organisation de Recherche Scientifique des Territoires d'Outre-Mer
PSTC	Program for Science and Technology Cooperation
SAFGRAD	Semi-Arid Food Grains Research and Development
SRCVD	Section de Recherche sur les Cultures Vivrières et Oléagineuses
TROSOILS	Tropical Soils CRSP

SEMI-ARID TROPICS CROPS RESEARCH PROJECT, PHASE II (688-0226)
PROJECT PAPER SUPPLEMENT

PHASE II EXTENSION, JULY 1, 1986-SEPTEMBER 30, 1990

I. PROJECT DESCRIPTION (Amended)

The project presented in this project paper supplement will provide for an extension of the ICRISAT activities in Mali which were funded, until June, 1986, under the Semi-Arid Tropics Crops Research Project, 688-0226. The extension will terminate on September 30, 1990.

The project goal and purpose will be the same during the period of extension as they were in in the 1981 to 1986 period. They are reiterated in Section A which follows. While they have been accomplished in part through project activities to date, the Mission is aware that sorghum and millet technology package developments are unlikely to be fully attained even at end of the proposed extension period. The improvement of agricultural productivity is a constant process of innovation and change. It is the research efforts of organizations such as the Malian agricultural research organization, the Institute for Rural Economy (IER), and international agricultural research centers (ICRISAT) which keep the dynamic research processes alive.

The goal and purpose remain strategically relevant to AID's program of assistance to Mali and to the development objectives pursued by the Government of the Republic of Mali (GRM). The GRM has reaffirmed the priority of food security and the importance of agriculture as the motor for the overall development of Mali. USAID/Bamako continues to identify agricultural research as the key to agricultural growth in Mali and to increasing rural production, productivity, and incomes -- the strategic objective expressed in the CDSS. The way in which the adaptive research approach supports the attainment of these objectives is reiterated in Section B.

A. Project Goal and Purpose

The project goal is to improve the productivity of small farmers and to increase their incomes.

The purpose of the project is twofold:

1. To develop a series of technical packages from adaptive research in sorghum, millet and certain grain legumes in the 400-1,200 mm rainfall zones and to make them available through extension agencies to small farmers and herders*; and

* Note that the words "through extension agencies" in this statement have replaced "through crop operations and livestock projects" in the original purpose statement. This change reflects the current situation more accurately in that extension is being performed by a wider array of entities than just the extension services of "crop operations and livestock projects." The additional extension agencies include most notably SAFGRAD and the FSR/E project.

2. To strengthen the Government of the Republic of Mali's research capability in the semi-arid rainfall zones.

B. Project Objectives

On both sectoral and national levels, the project serves GRM and USAID development objectives. The GRM's long range national objective is the achievement of self-sufficiency in basic cereals; by helping to increase farmers' capacity for growing the staple cereals of Mali, the project will have a direct and specific impact on the total Malian population. The project, therefore, will also contribute to the achievement of the strategic objective for AID's bilateral assistance program to Mali: increasing rural production, productivity and incomes.

The project also responds to the GRM's long-standing desire to improve national agricultural research capacity in the semi-arid rainfall zone. Both the GRM and USAID/Mali continue to assign this objective high priority because, as described above, it is seen as critical to sustaining a continuous process of technology development and transfer. The focus of the project is on developing adaptive research capacity; it is felt that adaptive research results can find their way into farmers' fields quickly as a result of established linkages and can be obtained at a nominal cost. They are thus consistent with Malian research objectives and means.

C. Project Background

The ICRISAT/Mali program began in 1976 with a one-year grant from the Ford Foundation. Following a proposal from ICRISAT, USAID provided funding for the years 1977 and 1978 through one of its bilateral projects, Operation Mils-Mopti (688-0202). In June 1979, as a result of another proposal received from ICRISAT, direct bilateral funding for the ICRISAT/Mali program began with the approval by USAID of a two-year (1979-1981) project. The period 1977-81 has been termed, somewhat retrospectively, the Semi-Arid Tropics Crops Research Project - Phase I (688-0219).

Based on the results of Phase I evaluation conducted in November 1980, USAID funded a five-year Phase II Semi-Arid Tropics Crops Research project. This Phase was planned to run from June, 1981, to September 30, 1985. The Phase I evaluation was very positive, noting that a national adaptive research program had been well begun and that ICRISAT was doing an effective job. Two system problems were identified in Phase I: lack of adequate research facilities for testing sorghums and millets and inadequately trained national personnel. In addition, a series of promising lines for continuing research inquiry were identified. The design of Phase II thus laid out an ambitious program to be carried out over the five-year period. The program had four principal components: crop improvement (essentially plant breeding activities); an agronomy research program; the development of research infrastructure and personnel; and dissemination of results (technology transfer).

In outline form, Phase II was to carry out the following activities in each project component:

1. Crop Improvement/Plant Breeding Program
 - a. Drought tolerance
 - b. Food quality
 - c. Resistance to pests and diseases
2. Agronomy Program
 - a. Intercropping
 - b. Fallow period management
 - c. Forage production
 - d. Tilemsi natural rock phosphate
 - e. Pigeon pea agronomy
 - f. Watershed management
 - g. Animal traction equipment and techniques
3. Development of Research Infrastructure
 - a. Research site network development
 - b. Semi-arid crops research center - Cinzana
 - c. Training
 - Short courses at ICRISAT/Center
 - University level -- M.S.
 - Fourth year thesis students from IPR/Katibougou
 - On the job training by the TA staff
4. Dissemination of Research Results and Technology Transfer
 - a. Participation in research meetings
 - b. Offering short courses for agricultural trainees, pre-extension workers, and seed production agents

Considerable emphasis was placed in the Project Paper on coordination with other research efforts in Mali (SAFGRAD and CRSPs) and with implementing a "feedback" mechanism as the key to adaptive research.

An in-depth evaluation of Phase II activity was conducted in August-September, 1983. The major conclusion of this evaluation was that ICRISAT/Mali should "...maintain its overall general course ..[but] make specific changes [outlined in detailed recommendations]...If substantial progress can be made.. a very strong basis exists for some type of Phase III project funding."

The detailed recommendations and the actions which were taken midway through the Phase II program in response to these recommendations are outlined in Annex V.B.

In late 1984 and early 1985, USAID/Mali made the basic decision to support a five-year extension of the project, from October 1, 1985, through September 30, 1990. A number of considerations led to this decision. First, there was the recommendation of the evaluation team, already noted. ICRISAT/Mali took the recommended program modifications seriously and, in the opinion of the Mission, confirmed the view of the evaluation team that successful implementation of these modifications would provide a strong basis for continued

funding. Second, recognition of the long-range nature of the research efforts and investments required to generate improved agricultural technologies in the semi-arid tropics. Finally, the decision reflected the need to consolidate the substantial progress already achieved in the two major activities of the project (viz., progress towards the development of technologies for sorghum and millet-based cropping systems and toward strengthening the GRM's research capability through training and research infrastructure development).

As a first step in the extension process, in June 1985, USAID extended the project's PACD for nine months (September 30, 1985 to June 30, 1986), with no increase in life-of-project funding, thanks in large measure to a more favorable exchange rate during Phase II than had been used in planning. This short PACD/no fund extension permitted completion of this project paper supplement including actions required for the extension of the ICRISAT grant.

On numerous occasions, discussions were held between USAID, ICRISAT and GRM agricultural research officials about the scope of Semi-Arid Tropics Crops Research Project activities. On the basis of these discussions and the observations made in the process of implementing this project, USAID management reached the following conclusions:

1. The scope of work as proposed in the Phase II Project Paper was too extensive and ambitious for a two-member technical assistance team and certain elements of the research program proposed were beyond the skills available in the team.
2. The recommendations made by the mid-term evaluation team to focus the scope of work more and to concentrate on the development of technologies for sorghum and millet based cropping systems were correct; all parties (GRM, ICRISAT, USAID) have been satisfied with the progress made in this direction during the last two years.
3. Certain elements of the Phase II research program could be eliminated from the ICRISAT/Mali scope of work and transferred by GRM to other units within the Malian national agricultural research system.
4. Now that the Cinzana station is fairly well-established and Malian researchers are in residence there, ICRISAT/Mali should not involve itself in further major construction and station development activities for the national agricultural research system. Instead, the emphasis should be on research, reflection and writing. This conclusion was further reinforced by (a) ICRISAT/Mali management's unwillingness to involve itself in station development and/or extensive construction activities since such activities involve additional management and logistical burdens on the researchers and thus cut down on the efficiency of research activities, and (b) the host country collaborating institution's (that is, IER's) unwillingness to increase the expatriate component of the

program to include a full-time manager for the Cinzana research station.

In view of the above conclusions, USAID developed an amended scope of work for the Phase II extension presented here with an emphasis on improved program management and increased research efficiency.

D. The Phase II Extension Proposal

The following elements of the Phase II scope of work will be definitively dropped from the scope of work to be followed during the Phase II extension period: fallow period management, forage production, Tilemsi natural rock phosphate, watershed management, and animal traction equipment and technique (design and development of equipment aspects). Furthermore, ICRISAT/Mali will not play any role in research site network development for the national system during this extension period. ICRISAT/Center, however, will work with IER in infrastructure development in Mali as part of the development of the regional sorghum program if the decision is made to headquarter this program in Mali.

The main lines of activity conducted in Phase II will, however, be continued in this Phase II extension period: the crop improvement program; the agronomy program; development of research infrastructure (training and the ICRISAT Regional Sorghum Research Center - see preceding paragraph and below); and dissemination of research results (here termed "technology transfer"). The specific activities described in this section will be performed during the Phase II extension period by an ICRISAT/Mali two-member technical assistance team in collaboration with host country counterparts. Only one activity in the area of research site network development will be provided limited support during the extension phase i.e., development of a facility to serve as the headquarters of a regional sorghum program to be implemented by ICRISAT/center in collaboration with IER and the Government of the Republic of Mali (GRM). As explained in Section E-5 below, it is felt that this activity will complement the ongoing ICRISAT/Mali effort and strengthen the Malian national sorghum research program. Following, is a description of each of the major areas of project activity which will be pursued during the extension of Phase II.

1. Plant breeding program

1.1. The plant breeding program will continue essentially along the same lines as in Phase II, emphasizing development of genotypes (principally sorghum) based on the following characteristics:

- drought tolerance at different stages of growth
- seedling vigor
- photoperiodism
- grain and food quality
- insect resistance (sorghum: midge and head bugs; millet: stemborer, head borer)

- disease resistance (sorghum: charcoal rot and leaf diseases, millet: downy mildew)
- striga resistance

These are the characteristics which have been identified in earlier selections as important to Malian producers and production conditions.

- 1.2. ICRISAT/Mali will continue to support both upstream and downstream breeding activities of the national sorghum/millet programs.
 - a. The upstream activities will include:
 - The maintenance and exploitation of local and introduced collections;
 - The constant improvement and diversification of breeding stocks through population improvement and pedigree crosses;
 - The use and refinement of critical screening tests for preliminary selection;
 - The systematic computerized storage of data.
 - b. The downstream activities will include:
 - Effective multilocal screening of early generation selections to reduce selections to manageable numbers;
 - The multilocal preliminary yield testing of advanced selections. Critical agronomic and food quality evaluations will be performed concurrently with yield testing;
 - Frequent interactions with on-station and pre-extension programs to assure the transition of varieties from station to farm.
- 1.3. Increased efforts will be devoted to ensuring on-farm testing of promising genotypes/cultivars. Such on-farm testing apart from assessing agronomic and production parameters will also assess how well the genotypes are adaptable into the local cropping systems.
- 1.4. The plant breeding program will continue and/or initiate collaboration with appropriate programs within and outside the Food Crops Research Section (SRCVO) such as soil-water-plant research, entomology and pathology and Intsormil programs.
- 1.5. Support and direction to the cereal technology program of the SRCVO will be continued to assure sustained evaluation of new breeding materials for Malian food systems and to

encourage experimentation with new food processing systems for sorghum/millet and other crops (pigeon pea).

- 1.6. The adaptability of pigeon pea will continue to be tested; appropriate zones for adaptation and improve food processing and preparation techniques will be identified. ICRISAT/Mali and IER/SRCVO will reach an understanding regarding the introduction of this crop and the direction of R & D work to be done.

2. Agronomy program

During the Phase II extension, the agronomy program will focus on the following:

2.1. Agronomy of improved cultivars:

As improved genotypes and cultivars become available through the breeding program, they will be evaluated both on the stations and on farmers' fields as research-managed trials to assess the performance of improved cultivars:

(a) under different levels of management, fertility, density and soil-water management techniques; and

(b) regarding their adaptation to, and suitability, for mixed or intercropping systems.

In evaluating the performance of improved cultivars under different levels of management, special attention will be given to performance at lower levels of fertilizer application, including the use of improved formulations now becoming available. Past experience in Mali shows a tendency to conduct trials at levels of fertilizer application far above the doses farmers are willing (either for lack of resources or due to climatic uncertainties) to apply to sorghum and millet crops.

2.2. Agronomy of sorghum and millet based cropping systems:

Mixed cropping and intercropping will continue to be major aspects of crop production systems in Mali. Two different strategies will be followed in approaching the cropping systems improvement work:

(a) improving the existing cropping systems; and

(b) designing and evaluating alternative cropping systems based on newly available cultivars and/or new crop introductions such as pigeon pea.

During the last five years, considerable effort has been devoted to the improvement of maize-millet mixed cropping systems in southern Mali. Results have been encouraging from the point of view of both farmers and extension agencies.

Efforts will be continued to fine-tune the maize-millet cropping system either directly or in cooperation with SAFGRAD, the FSR/E Project, and/or extension agencies in the target area. Similarly, first year results of the sorghum-peanut mixed cropping system have been encouraging. This line of work will be continued during this phase.

As new cultivars with shorter maturities and more stable yields become available through the crop improvement program work, there will be greater opportunities for improving the existing cropping systems and developing alternate cropping systems using shorter duration component crops so that entire growing season could be exploited by the farmers. Cropping systems based on short-duration cultivars (possessing acceptable grain quality and significantly high yield stability) offer possibilities for escaping or bypassing a late season drought. The introduction of new crops also has some potential for improving cropping systems. Pigeon pea, for example, has given good results in pure stands and presents several advantages as a mixed or intercrop as well: it is leguminous, offers minimum competition with the cereal intercrop either for fertility or for radiation, and the tap root penetration improves soil characteristics and precipitation absorption. Crop residue components could be used for fodder, thatching and fuel. Processing and food preparation aspects of this introduced crop are presently being examined and research needs to continue to ensure consumer acceptability as well as agronomic desirability.

Design of alternate cropping systems will also take into consideration the feasibility of incorporating perennial species into the system and the constraints faced by the farmers.

The contribution of perennial species in terms of improving soil structure and fertility, production of fodder and soil erosion should be examined. This is relatively a new approach with potential positive benefits for overall resource management. This aspect of the agronomy program will be developed in agreement with IER.

Well known constraints faced by the farmers are family labor and capital to invest in fertilizer, equipment and hired labor. Greater understanding of the nature and magnitude of these and other constraints is expected to be available in the near future through the FSR/E Project.

2.3. Soil and crop management

Better soil and crop management is critical for improved crop production both under sole and mixed cropping systems. Key aspects of soil and crop management of immediate concern in Mali are: soil fertility, seedling establishment, and

soil moisture management (improved water holding capacity and infiltration rate and management of precipitation run-off). In spite of the significance of these factors for crop production, very little emphasis has been placed on this area to date. The agronomy program will collaborate with Tropsoils and other relevant programs in advancing research in this area to help improve the productivity of sorghum and millet based systems.

2.4. Tillage - animal traction

The project will continue to emphasize and promote the use of animal traction on the stations where it is involved, although as noted above, no work will be done on design or adaptation of farm equipment per se. Increased efforts will be made to employ animal traction in the conduct of experimentation both for initial tillage, land preparation and weeding operations.

This project will also collaborate with appropriate agencies to the extent possible in the testing of mutually complementary equipment for tillage operations.

3. Technology Transfer

During this Phase II extension, ICRISAT/Mali will undertake technology transfer activities in three distinct ways:

- 3.1 The transfer of research capacity to Malian scientists and research staff.

This will take place through on-the-job training of inexperienced and young research staff and collaborative working with counterpart Malian scientists as well as through formal training programs.

- 3.2 The transfer of technologies developed in the project and made available to SAFGRAD and Farming Systems Research and Extension programs for large scale testing on farmers' fields under farmers' management.

- 3.3 Seminars/workshops conducted in Mali to share and exchange information about emerging technologies with research and extension agencies.

In order to facilitate dissemination and sharing of research information, ICRISAT/Mali will prepare or cause to be prepared at least three to four research reports focussing on specific research topics pursued under this grant. These research reports will be in addition to routine annual reports which describe the whole gamut of research and other activities implemented under the project.

4. Development of Research Infrastructure and Personnel

ICRISAT/Mali will continue to foster training and professional interaction between Malian researchers and ICRISAT Center, ICRISAT Sahelian Center and West African sorghum/millet regional networks. In pursuance of this, the project will provide opportunities for long-term and short-term training as well as for participation of Malian researchers in regional and international conferences. The project will provide funding for four (4) researchers to be provided long-term graduate level training at the overseas institutions and for two Malians (per year) to undergo short-term training. In addition, funds will be provided for two to three researchers per year to participate in research networks in the region. The role played by ICRISAT/Mali thus far in Phase II in facilitating resource and information exchange as well as the participation of Malian researchers in research networks and conferences will continue to be an important aspect of support to the national program during the extension period.

During the Phase II extension of this project, funds will be provided in support of the national research program along lines established earlier during Phase II. These funds will cover technical assistance, commodity and operating cost needs of the sorghum, millet, and agronomy programs of counterpart sections supported under the Phase II extension. Technical support to the national program will involve short-term technical assistance both from the project resources and non-project resources available thru ICRISAT's central and regional programs. Commodity and operating costs will extend to specific activities/items as detailed in the budget (Annex V.A.), including such items as research and laboratory equipment, a vehicle for Cinzana, animal traction equipment for research, building maintenance and minor additions to existing facilities where needed, and operating expenses associated with research supplies and inputs; temporary support staff and farm labor for research, maintenance of draft animals, gasoline and oil and domestic travel for Malian researchers.

5. Support to the Regional Sorghum Program

The development of appropriate research infrastructure, including site development throughout the network of IER stations where ICRISAT works, is an integral part of the project. In the 1981-85 phase, Cinzana (in the 700 mm zone) was the station which received principal attention; and in the 1986-1990 extension phase, the ICRISAT Regional Sorghum Research Center at Samanko (in the 1000 mm zone) will be developed. The original Project Paper recognized that "there are critical interventions which may be made in these stations that will greatly improve their ability to deliver important and relevant information to the farming community."

The mid-term evaluation recommendations on infrastructure development supported continued effort in this component. However, the report cautioned against the TA scientists having to take time away from their research to administer future site development. The extension phase incorporates these recommendations in the plan to focus on the development center at Samanko. This has been possible to do because Mali has been tentatively selected as the site for the headquarters of

an ICRISAT regional sorghum program. While the agroecology of Mali is an important factor in this decision, the GRM and IER have shown great interest in hosting such a regional program and have agreed to provide land and certain other facilities to ICRISAT should the final decision be taken to locate in Mali. The GRM is not, however, in a position to provide all infrastructure. ICRISAT has, therefore, requested USAID/Mali support for infrastructure development.

USAID/Mali, after examining the issue in the context of the project and of its bilateral program, concluded that:

- Supporting such a program would be in line with the Mission's development strategy of investing in agricultural research and technology generating programs on a long-term basis.
- The regional sorghum program, if located in Mali, would benefit the national agricultural research system on a long-term basis and would complement the ICRISAT/Mali bilateral program directly. Thus, ICRISAT/Mali bilateral efforts funded by USAID would receive a great boost during the Phase II extension period.
- By 1990, USAID will have financed about 15 years of sorghum and millet R & D work in Mali under the aegis of ICRISAT, built research infrastructure and developed a cadre of trained personnel. The presence of the ICRISAT regional sorghum center and the resources the center will bring to Mali are expected to help maintain the national research momentum built up through USAID financing even if USAID were to cease financing the ICRISAT/Mali bilateral program in 1990.

It was decided, therefore, to include financial support for the establishment of ICRISAT's regional sorghum program, that is, for the development of certain infrastructure required for the program. This will be one-time-only support and will be limited to the amount specified in the budget (\$1,000,000). These funds will be granted to ICRISAT as part of the overall grant to ICRISAT/Mali and will be accounted for through the same procedures as those used by ICRISAT/Mali.

Implementation of this construction will be the sole responsibility of the ICRISAT regional sorghum program staff and will not involve the ICRISAT/Mali staff. The regional program is expected to be staffed with a five-member expatriate research team and to include separate administrative and logistic support. Since ICRISAT/Mali will not be responsible for any infrastructural research development activities to be undertaken in the activity, there should be no dilution of efforts. The addition of this new activity does not, therefore, in any way contradict the recommendations of the mid-term evaluation team.

E. Coordination with Other Research Projects

Since the beginning of Phase II of this project, a number of research projects and programs directly involved in or related to sorghum and millet research and development have started their research operations in Mali. The problems addressed by these projects are complementary to the research conducted under this project. Therefore, this project will collaborate with appropriate programs and projects in researching problems of common concern. A list of projects and programs and their major research concerns are presented below.

- Intsormil: drought tolerance, food quality of sorghum and millet.
- Tropsoils: crust formation and seedling emergence, soil erosion and run-off.
- Integrated Pest Management: diseases, insect pests and weeds on sorghum and millet and cowpeas.
- Program for Science and Technology Cooperation (PSTC) Grants: physiology of drought tolerance of sorghum and millet (expected to be operational by 6/86).
- Farming Systems Research and Extension Project: sorghum and millet based cropping systems - production constraints.
- ILCA-Mali Livestock Sector Farming Systems Program: on-farm feeding of livestock through production of fodder crops in intercropping context.
- Forestry Sector Development Project: agro-forestry (alley cropping), soil conservation and watershed management.

The extent of collaboration and coordination and the ways and means of implementing this collaboration will be decided by the TA team and their counterparts on a case-by-case basis, depending on resources available and the extent of research contributions expected to be received from those projects and programs.

F. Project Inputs

To accomplish the amended scope of work for this Phase II extension, USAID/Mali will provide financing for the following inputs (see Annex V.A. for details):

Technical Assistance (\$1,156,219)

- Long-term: Plant Breeder, 4.25 person years
Agronomist, 4.25 person years
- Short-term: (non-allocated): 12.0 person months

Training (\$300,412)

- Long-term: 4 candidates MS/PhD
- Short-term: 2 candidates per year
- Seminars/conferences: 2 to 3 candidates per year
- In-country workshops: 1 per year

Infrastructure: Construction and Maintenance (\$1,037,250)

- Maintenance
- Minor additions
- Regional Sorghum Program
(2 laboratories, layout of research fields, irrigation system for drought and disease screening and off season nurseries.)

Commodities (\$107,998)

- Vehicles
(3 replacement vehicles for ICRISAT team)
(1 replacement vehicle for Cinzana)
- Research-laboratory equipment
- Office equipment

Operating costs (\$1,263,411)

- ICRISAT/Mali
- National program support
- Travel-transportation

Evaluation and Reviews (\$134,710)

G. Budget and Financial Plan

1. USAID Grant

Annual expenditure projections are based on the CY 1986 cost and budget estimates in local currency (FCFA) and converted into U.S. dollars based on an exchange rate of FCFA 325 per U.S. dollar.

The summary budget is presented below and detailed annual expenditure projections are indicated in Annex V.A. In all budget line items, a factor has been included for 5% inflation per annum (except for FY 86); hence, there is no separate line item for inflation.

SUMMARY BUDGET
USAID GRANT

	FY 86 7-9/86	FY 87 10/86-9/87	FY 88 10/87-9/88	FY 89 10/88-9/89	FY 90 10/89-9/90	TOTAL
TECHNICAL ASSISTANCE						
Long-term	48,000	227,200	238,560	250,488	263,012	1,027,260
Short-term	10,000	27,600	28,980	30,429	31,950	128,959
TRAINING	-	69,700	73,185	76,842	80,685	300,412
CONSTRUCTION	-	1,017,500	-	19,750	-	1,037,250
COMMODITIES	-	31,625	-	69,797	6,576	107,998
OPERATING COSTS						
ICRISAT (M) 1/	3,650	31,112	32,666	34,299	36,013	137,740
NPS - Sotuba 2/	13,590	124,035	130,234	136,745	143,581	548,185
NPS - Cinzana	8,315	91,205	96,851	100,551	106,792	403,714
Travel - Transport.	12,146	37,500	39,375	41,342	43,409	173,772
EVALUATION AND REVIEWS	-	46,679	-	88,031	-	134,710
TOTALS	95,701	1,704,156	639,851	848,274	712,081	4,000,000

1/ ICRISAT (M) : ICRISAT/Mali
2/ NPS: National Program Support.

2. Malian Government Contribution

Malian Government direct contribution to the project is estimated to be about \$27,500 per year (8,940,000 CFA F or \$122,000 over the period of the project extension). This contribution is mainly in the form of salaries of about twenty research personnel assigned to work with ICRISAT and payments towards electricity for the ICRISAT office. The cost of the land which will be donated by the GRM for the proposed ICRISAT Regional Sorghum Research Center is estimated at \$24,000. It should be noted that the modest figure is the result of a salary structure which is considered inadequate even by Sahelian standards.

II. IMPLEMENTATION PLAN AND ARRANGEMENTS

The Project Paper contains detailed descriptions of the roles and responsibilities of all parties concerned in implementation of Phase II. By and large, these roles and responsibilities will remain the same for the Phase II extension. Key points are summarized below.

1. The Grantee, ICRISAT/Center, will be responsible for overall project implementation as it has been thus far in Phase II.
2. Methods of accounting for project funds and reporting procedures in force during the present Phase II will be continued during the period of the Phase II extension unless USAID is notified, in writing, of changes to be made and agrees, in writing, to accept them.
3. Procurement of goods, services and commodities as well as training will be the responsibility of ICRISAT/Mali and/or the Grantee. Procedures and approval processes followed so far in Phase II will be in force during the period of extension unless USAID is notified otherwise in writing.
4. Organizational responsibilities of the Grantee, the host country cooperating agency (GRM/IER), and other donor agencies (CIBA-GEIGY Foundation) will continue to be along the same lines during the Phase II extension period as has been during Phase II to date.
5. USAID will assign a project officer who will supervise the implementation of the project by the Grantee and the ICRISAT/Mali team. The USAID project officer will be the point of contact and liaison between the Grantee, its representative and USAID.

III. REVIEWS AND EVALUATION

A. Project Reviews

Quarterly implementation reviews will be held by USAID and ICRISAT/Mali to resolve any implementation problems and outstanding issues.

Annual technical reviews will be carried out based largely on the annual reports prepared by ICRISAT/Mali and submitted to USAID, GRM and ICRISAT. These will be detailed reports focussing on major activities and will include research plans and results and accomplishments during the year and plans for the following year. These reviews will be held each year soon after the Malian specialized technical commissions' review of agricultural research in Mali.

B. Reporting Requirements

ICRISAT will provide monthly expenditure reports separately for local currency expenditures and dollar expenditures. Detailed annual reports will be presented to enable USAID to conduct annual technical reviews as noted in para (A) above.

At the end of this grant period (September 30, 1990), ICRISAT will submit the following three reports, not later than 60 days after the termination of the grant:

- A comprehensive report synthesizing the sorghum-millet research in Mali (both plant breeding and agronomic aspects) during the ten years of Phase II;
- A detailed (final) report identifying the overall contribution of ICRISAT/Mali to the Malian national program in terms of enhancing the capacity to conduct sorghum and millet research and development; this will include both quantitative and qualitative aspects of training, development of research facilities, contribution to the establishment of collaborative relationships between the Malian agricultural research system and regional and international research institutions in agriculture.
- A detailed inventory of goods, equipment and physical infrastructure procured and/or developed through project funding as of September 30, 1990.

C. Evaluations

An internal evaluation (or review) will be conducted during or directly after the crop season 1987 and an in-depth final evaluation during the crop season 1989. The terms of reference for any evaluations undertaken will be developed by AID and submitted to ICRISAT and IER for their comments. Evaluators to conduct, or assist

with, any evaluations will be selected by AID on the basis of discussions with ICRISAT and IER. Funds for these evaluations are provided in the budget.

As to the final evaluation, it is anticipated that it will be undertaken by a team composed of a plant breeder, an agronomist, an agricultural economist and an extension/organization specialist. It also is anticipated that the final evaluation will focus on the following:

- (a) progress made in the development of sorghum and millet crop production technologies and constraints blocking progress (if any) including an assessment of the breeding and agronomic strategies followed and their appropriateness (bio-technical, social and economic);
- (b) transfer of technologies (developed in this project) to the farmers and farmers' response to these technologies, including an assessment of economic feasibility of adoption of these technologies by farmers and evaluation of GRM's system of getting research results to the farmers;
- (c) institutional strengthening aspects: training, development of research facilities, development of linkages between various Malian agricultural research institutions and within different units of IER;
- (d) administrative-organizational aspects of the project: assignment of counterpart staff by IER, administrative and technical backstopping by ICRISAT and USAID management;
- (e) feasibility of host country institutions' continuing and carrying forward the research momentum generated during Phase II in terms of availability of trained personnel, ability to plan and organize sorghum-millet research and ability to absorb and/or maintain research investments, including suggestions for possible continued participation of ICRISAT and USAID in research efforts.

IV. PROJECT FEASIBILITY ANALYSES

A. Technical Feasibility

The decision to limit the scope of work to be carried out during the Phase II extension was based upon a re-assessment of the technical feasibility of carrying out the project as described in the original Project Paper. As already discussed above, experience has shown that a two-member technical assistance team can be effective only if their work plan is more carefully targeted at key problems of crop improvement and agronomy. The revised scope of work described in Section I.D. continues this refocusing of the Phase II activity which was begun after the mid-term evaluation conducted in 1983. Equipment and supplies needed will be the same in the extension period as they have been to date in Phase II. Implementation techniques will be

roughly the same, with greater emphasis given to the adaptation of technologies to farmers' conditions and the technology transfer process. The completion of Cinzana station construction has freed up the time needed for the technical assistance team to effect this latter increase in emphasis.

The personnel (technical assistance, counterparts, and support personnel) will be largely the same as in earlier stages of Phase II. The ICRISAT cereal breeder who has been associated with the project since its early days will be leaving at the beginning of the Phase II extension period but will be replaced by a scientist with similar qualifications.

B. Economic and Social Analyses

These remain as relevant to the Phase II extension as they were at the time the Project Paper was written.

C. Financial Analysis

The grant process has shown itself to be a cost-effective method of project implementation. ICRISAT/Center will continue to be responsible for the financial management of the project and, through its designated representative in Mali, will be responsible for all grant funds expended on the project. Payments from AID to the Grantee will be made by the direct reimbursement method, under which the Grantee will submit vouchers with documentation (invoices, receipts, etc.) to the AID project manager, upon whose approval and certification a check will be requested for reimbursement. Such vouchers will continue to be submitted monthly. No AID money is being channeled to the GRM for this project. The GRM financial responsibilities are limited to the provision of local currency salaries and benefits for counterpart staff as detailed in the original accord between the GRM and ICRISAT (Annex I of the original Phase II Project Paper and Annex V.C. of this Project Paper Supplement.)

The assumption by the GRM of the recurrent costs of the project and the transfer of some staff currently employed by ICRISAT to the civil service of Mali were issues raised in the Project Paper for consideration in the mid-term project evaluation (1983). Due to the extreme budget austerity conditions now being experienced by the GRM, it is not possible at this time to mandate an increase in the GRM's and IER's financial responsibility for project activities. The recurrent cost issue should be re-examined in the evaluation projected for 1989, by which time the scale and nature of regional sorghum program activity will be more clearly delineated and the possibilities for sharing recurrent costs between IER and ICRISAT will be clearer.

SEMI-ARID TROPICS CROPS RESEARCH PROJECT, PHASE II EXTENSION (07/86-09/90)
PROJECT NO. 688-0226

DETAILED BUDGET PROJECTIONS 1/

	FY 86 7-9/86	FY 87 10/86-9/87	FY 88 10/87-9/88	FY 89 10/88-9/89	FY 90 10/89-9/90	TOTAL
1.0.0 TECHNICAL ASSISTANCE						
1.1.1 Plant Breeder	24,000	113,600	119,280	125,244	131,506	513,630
1.1.2 Agronomist	24,000	113,600	119,280	125,244	131,506	513,630
1.1.3 Short-term	10,000	27,600	28,980	30,429	31,950	128,959
Sub-total	58,000	254,800	267,540	280,917	294,962	1,156,219
2.0.0 TRAINING						
2.1.1 M.S./Ph.D (4)	-	46,700	49,035	51,486	54,061	201,282
2.1.2 Short-term (2)	-	6,900	7,245	7,607	7,987	29,739
2.1.3 Seminars/conferences	-	6,900	7,245	7,607	7,987	29,739
2.1.4 In-country workshops	-	4,600	4,830	5,071	5,325	19,826
2.1.5 IPR trainees	-	4,600	4,830	5,071	5,325	19,826
Sub-total	-	69,700	73,185	76,842	80,685	300,412
3.0.0 CONSTRUCTION						
3.1.1 Building maintenance	-	6,000	-	6,750	-	12,750
3.1.2 Minor construction	-	11,500	-	13,000	-	24,500
3.1.3 Regional Sorghum Program infrastructure dvlp.		1,000,000	-	-	-	1,000,000
Sub-total		1,017,500	-	19,750	-	1,037,250

Note:

1/ Each line item (except for FY 86) includes an amount for 5% inflation (per annum).

	FY 86 7-9/86	FY 87 10/86-9/87	FY 88 10/87-9/88	FY 89 10/88-9/89	FY 90 10/89-9/90	TOTAL
4.0.0 COMMODITIES						
4.1.1 Vehicles - ICRISAT (3)	-	11,500	-	44,016	-	55,516
4.1.2 Pick-up - Cinzana (1)	-	-	-	10,061	-	10,061
4.1.3 AT equipment	-	2,875	-	3,144	-	6,019
4.1.4 Research equipment	-	11,500	-	12,576	-	24,076
4.1.5 Office equipment	-	5,750	-	-	6,576	12,326
Sub-total	-	31,625	-	69,797	6,576	107,998
5.0.0 OPERATING COSTS						
5.1.0 ICRISAT (M) ORGANIZATIONAL 2/						
5.1.1 Secretary	1,150	4,350	4,567	4,795	5,035	19,897
5.1.2 Office operations	1,100	13,612	14,292	15,007	15,757	59,768
5.1.3 Shipping	450	4,850	5,092	5,347	5,614	21,353
5.1.4 Telex, telephone, etc.	350	3,500	3,675	3,858	4,051	15,434
5.1.5 Computer maintenance	350	3,600	3,780	3,969	4,167	15,866
5.1.6 Vehicle repairs, insurance	250	1,200	1,260	1,323	1,389	5,422
Sub-total	3,650	31,112	32,666	34,299	36,013	137,740
5.2.0 NPS - SOTUBA 3/						
5.2.1 Allowances - Primes	2,135	21,015	22,065	23,169	24,327	92,711
5.2.2 Contractual employees	3,875	35,500	37,275	39,138	41,095	156,883
5.2.3 Temporary labor	4,115	33,750	35,437	37,209	39,069	149,580
5.2.4 Cold storage maintenance	350	3,500	3,675	3,858	4,051	15,434
5.2.5 Traction animal maintenance	425	4,850	5,092	5,347	5,614	21,328
5.2.6 Fertilizers	510	5,750	6,037	6,339	6,656	25,292
5.2.7 Research exp. supplies 4/	1,750	14,800	15,540	16,317	17,132	65,539
5.2.8 Research costs - Food Tech.	225	2,560	2,688	2,822	2,963	11,258
5.2.9 Tractor rental	205	2,310	2,425	2,546	2,674	10,160
Sub-total	13,590	124,035	130,234	136,745	143,581	548,185

Notes:

2/ ICRISAT (M) = ICRISAT/Mali

3/ NPS: National Program Support.

4/ Research expendable supplies such as pollination bags, storage bags, staplers, batteries, etc.

	FY 86 7-9/86	FY 87 10/86-9/87	FY 88 10/87-9/88	FY 89 10/88-9/89	FY 90 10/89-9/90	TOTAL
5.3.0 NPS - CINZANA						
5.3.1 Gasoline, oil	4,615	49,450	51,922	54,518	57,244	217,749
5.3.2 Labor - contractual	2,350	27,050	28,402	29,822	31,313	118,937
5.3.3 Labor - off-season	715	8,600	9,030	9,481	9,955	37,781
5.3.4 Animal maintenance	385	4,950	5,197	5,457	5,730	21,719
5.3.5 Vehicle maintenance	250	1,155	2,300	1,273	2,550	7,528
Sub-total	8,315	91,205	96,851	100,551	106,792	403,714
5.4.0 TRAVEL, TRANSPORTATION						
5.4.1 ICRISAT staff - international	9,846	14,500	15,225	15,986	16,785	72,342
5.4.2 ICRISAT staff - domestic	1,150	11,500	12,075	12,678	13,312	50,715
5.4.3 Malian staff - domestic	1,150	11,500	12,075	12,678	13,312	50,715
Sub-total	12,146	37,500	39,375	41,342	43,409	173,772
6.0.0. EVALUATION 5/	-	46,679	-	88,031	-	134,710
TOTAL	95,701	1,704,156	639,851	848,274	712,018	4,000,000

Notes:

5/ Amount shown for FY 87 is for assistance with USAID internal evaluation.

**MID-TERM EVALUATION RECOMMENDATIONS
AND STATUS OF IMPLEMENTATION AND/OR RESPONSES**

**RECOMMENDATIONS FROM THE 1983
EVALUATION OF PHASE II ICRISAT
PROJECT (Summarized)**

RESPONSES TO EVALUATION RECOMMENDATIONS

A. With regard to General Findings

- | | |
|---|--|
| <p>1. "...Maintain overall general course ..[but] make specific changes as in recommendations. If substantial progress can be made...a very strong base [would] exist for some type of Phase III project funding.</p> | <p>1. General course maintained. Principal changes involved: concentration of activities; increased training efforts; and increased interaction with ICRISAT/Center and ICRISAT Sahel Center (ISC)/Niamey.</p> |
|---|--|

B. With regard to Objectives

- | | |
|--|--|
| <p>2. Revise logical framework analysis.</p> | <p>2. Log frame revised as part of PP Amendment process. Output targets for both breeding and agronomy programs tightened; more attention directed to ensuring the interface with users of research results (on-farm researchers, extension agencies, farmers).</p> |
| <p>3. Elaborate a "realistic, written agricultural technology development and transfer strategy for semi-arid Mali."</p> | <p>3. Not carried out. Mission strategy, already described in CDSS, was thought to provide adequate basis for continuing AID investment in agricultural technology development and transfer. As far as GRM strategy is concerned, it is planned to initiate and support the process of developing research/extension strategy through the FSR/E project. ICRISAT will be involved.</p> |

C. With regard to Sorghum-Millet Breeding Program

- | | |
|---|---|
| <p>4. Continue breeding programs essentially in same manner as present (minor modifications indicated in report).</p> | <p>4. Elements continued: population breeding technique (sorghum); recurrent selection (millet). Modifications made: greater coordination with ICRISAT Center for sorghum; assistance requested and received from ICRISAT/Center and ICS on screening techniques for drought, downy mildew, and sorghum head bugs; five Malian researchers trained in these techniques; food technology group</p> |
|---|---|

strengthened.

5. Increase exchange of information with millet breeders in ICRISAT/Niamey and national program and with sorghum breeders at ICRISAT Center.
 6. Strengthen food technology group "by increasing laboratory space and equipment and by training personnel."
- D. With regard to the Agronomy Program
7. Focus agronomy program on two major objectives: (a) development of improved management technology packages for testing by other organizations; and (b) supporting millet/sorghum breeding program in development of varieties which can benefit from improved management technology.
 8. Develop improved cultural techniques emphasizing animal traction, weed control, surface water management; improve collaboration with Cultural Techniques Unit and other Malian organizations.
 9. Emphasize sole cropped millet and sorghum; intercrops with cowpeas.
 10. Recruit senior agronomist to replace present one.
5. Several sorghum breeders from ICRISAT Center and ICRISAT/Ouagadougou participated in the regional sorghum workshop held in Bamako (October, 1985). Similarly, several millet breeders from ICRISAT/Niamey and /Center participated in a Regional Millet Workshop and Tour (3 days in Mali and 3 in Niger) in September, 1985.
 6. One technician was sent to Texas A&M for an M.S. in cereals technology. Construction on a food technology laboratory will begin at Sotuba in March/April, 1986.
 7. Refocussing implemented in the 1985 season. The maize-millet intercrop series was drawn to a close; cereal-groundnut intercropping replaced it in 1985. The Summary Annual Report for 1985 presents more detail.
 8. Following programs have been implemented: weed control experimentation in collaboration with Integrated Pest Management (IPM) project; surface water management trials with Cultural Techniques Unit; animal traction used in on-station experiments; long-term (4 yr) cropping systems studies involving cereal-legume rotations, tillages, traditional vs. deep tillage (both animal and tractor), and incorporation of residues.
 9. Done.
 10. ICRISAT research agronomist with experience in India and northern Nigeria began work in June, 1984.

11. Recruit agro-physiologist to work at Cinzana on systems for screening for resistance to drought and disease.

11. GRM did not agree with recommendation perhaps due to anticipated (Dec., 1980) return of IER staff plant physiologist from advanced training. This scientist has returned and is stationed at Sotuba but will also work at Cinzana.

12. Continue to provide modest funding of botanical observations trials of A. A. Sow.

12. Done.

13. Finish research on maize/millet intercrop, pigeon peas, Eleusine coracana systems; increase amounts of seed where necessary; encourage other organizations to conduct wider-scale on-farm testing.

13. Maize/millet intercrop pre-extension trials were begun by SAFGRAD in 1984. CMDT has also taken up larger-scale promotion of this intercrop. On-station trials of pigeon pea variety IEP-148 have been widely conducted and found adaptable into existing Mal cropping systems. Sufficient seed quantities (e.g., 600 lbs of pigeon p available from ICRISAT/Mali for pre-extension trials. A brochure has been published with ICRISAT/Center. This program will be moved into pre-extension stages in the near future. Eleusine research has been terminated, due to susceptibility to bacterial blast and the need to concentrate research efforts of the two-member technical assistance team on developing improved sorghum-millet based cropping systems.

E. Socio-Economic Feasibility of Agricultural Technology Transfer

14. Complete analysis of 1982/3 Cinzana FSR studies; design new set of more focussed farm-level investigations for four Cinzana villages for the 1984 production season.

14. Analysis of the 1982/3 studies is being completed as Malian researcher responsible for field work is currently in M.S. degree training at Michigan State University and will use data in this analysis. Some follow-up field work also planned to be conducted in the summer of 1986 (with ICRD funding) and will be incorporated into the analysis. Due to the current lack of an agricultural economist, further studies have not been undertaken by the ICRISAT/Mali team.

15. Urge GRM/IER to seek improved research/extension coordination mechanisms.

15. USAID/Mali rather than ICRISAT/Mali has taken additional steps to implement this recommendation. Negotiations of the FSR/E project have involved much discussion of improved research/extension coordination and various pre-activities (meetings, seminars, field

trial collaboration) will be funded t
that project. USAID has also funded
the position of a research coordinato
at the Operation Haute Vallee, a regi
extension agency.

16. Pursue a regional-level research
approach to maintain a "problem-
oriented" focus.

16. Again, USAID/Mali has implemented thi
recommendation with the launching of
the FSR/E project.

17. With respect to proposed FSR
project:

17. The FSR/E project:

- scale it down; concentrate
on reinforcing linkages to
agricultural research;

- has as one of its major objectives
the building of strong linkages no
only to ICRISAT/Mali but also to
various other research projects
(IPM, SAFBRAD) and institutions
(INRZFH, DMA, IPR, CAA) and other
extension agencies (OHV, CHDT,
and possibly OMM, ORM, or ODEM).

- target the Cinzana, Bara-
mandougou, and Koporo
areas;

- is beginning with a focus on the
OHV area rather than the ones
recommended. USAID/Mali has an
extension-oriented interest
in the development of the
higher-rainfall Operation Haute
Vallee region. A second phase
of FSR expansion is envisioned
for the Fifth Region, in which
Cinzana, Baramandougou, and
Koporo lie, for 1989 or 1990.

- furnish a streamlined experi-
mental agricultural extension
outreach system.

- Effective extension techniques
are part of the FSR/E and OHV
project objectives.

F. Development of Malian Research Stations

18. Ensure continued development
of Cinzana (including station-
ing at least two senior
scientists there).

18. A senior scientist has been named
the Director of the Cinzana station;
about 15 research and support staff
are now in permanent residence at the
station. Advice and support for
continued station development is prov
on an ongoing basis by Ciba-Geigy;
one mechanic funded by C-6 is residen
Cinzana and will be there for a year
upgrade and assure the sustainability
of a maintenance system. ICRISAT/Mal
provides additional consulting servic
when requested by the GRM.

19. Develop land-use plans for Cinzana and Baramandougou (especially with regard to prevention of soil erosion).

19. A specialist in erosion, Dr. Eric Roo of ORSTOM, was requested by ICRISAT/Mali in March, 1985, to recommend measures to control soil erosion at Cinzana and Baramandougou. On the basis of his recommendations, permanent contour bands were installed in Cinzana and planted with annual grasses to as permanent erosion control and soil stabilization. A program of field compost has been started, using crop residues, manure from the station animals, and other by-products. Five years will be composted. Lack of research time prevented application of recommendations at Baramandougou; TropSoils has been requested to assist at Baramandougou.

20. Continue use of animal traction of station soil preparation as part of reoriented agronomy program.

20. Done.

21. Develop irrigation system at Cinzana.

21. Four ha. are now fully irrigable at Cinzana. This area serves the need for off-season nurseries and for drought and mildew screening. The INTSORMIL CRSP assisted in upgrading the seedling drought screening procedure.

22. Request funding for Baramandougou and Koporo-Keniépe research infrastructure.

22. Koporo: The FSR/E project will provide for further development of this station, starting in late 1986. ICRISAT has already installed a pumping system and water tower. More funding may still be required to install full-scale mildew screening system at Koporo.

Baramandougou: TropSoils request has already been noted (see # 19).

G. Training

23. Continue training activities in current major orientation.

23. Done. See # 4, # 6, and # 14. Three researchers funded for advanced training by ICRISAT are now returned to Mali: one plant physiologist trained at Nebraska; one oil seed researcher trained at Andhra Pradesh University; and one at North Carolina State in agronomy.

24. Coordinate training component with an overall manpower training strategy as this is developed by GRM/IER.

24. Coordination with GRM/IER continues. Long-term training strategy not developed by IER. ICRISAT has recently requested permission from AID to upgrade ITA-level staff to the B.S. African universities.

H. Project Administration and Institutional Relationships

25. Request ICRISAT/Hyderabad to provide TA in budget planning.

25. Not done. It is felt that budget planning presently offered by ICRISAT Center and USAID/Mali is adequate. G (IER/SRCVO) input is also taken into account.

26. Study integration of ICRISAT/Mali personnel into Malian civil service.

26. Not done. Present restrictions on overall GRM civil service expansion make it unlikely that integration will be accomplished in near future.

27. Develop prioritized list of short-term TA needs.

27. In process.-

28. Improve reporting: more complete, more synthesis and description of project evolution and accomplishments.

28. In process.

29. Transfer burden of looking after teams of scientists from other USAID-funded projects back to USAID.

29. USAID has assumed greater responsibility for USAID visitors.

30. Request ICRISAT/Hyderabad and /Niamey to provide more systematic administration, review, and planning assistance.

30. ICRISAT/Center and ICRISAT/Niamey have been providing better administrative guidance and closer supervision since 1984.

31. Explore use of project microcomputers for administration, accounting research data processing, and report preparation.

31. Two Rainbow microcomputers have been installed. They are completely compatible with ICRISAT/Center computers and equipped with a wide range of software. Local consultants were hired to work with ICRISAT staff on developing both accounting and research data handling procedures; a full-time Malian has been brought on-board to continue system operation.

ANNEXE I
MINISTRE DU DEVELOPPEMENT RURAL
INSTITUT D'ECONOMIE RURALE

REPUBLIQUE DU MALI
Un Peuple - Un But - Une Foi

ACCORD ENTRE LE GOUVERNEMENT DU MALI
ET L'INSTITUT INTERNATIONAL DE RECHERCHE AGRONOMIQUE
DANS LES ZONES TROPICALES SEMI-ARIDES

PREAMBULE :

Les populations vivant dans les régions sahéliennes et sahélo-soudanaises sont très fortement dépendantes pour leur subsistance des cultures de mil, de sorgho et de légumineuses alimentaires. Les conditions de cultures dans ces régions sont difficiles en raison de l'irrégularité et l'intensité des pluies, de la fertilité souvent médiocre des sols et enfin des faibles possibilités d'investissements des paysans.

Le Gouvernement de la République du Mali et l'Institut International de Recherches Agronomiques dans les zones Tropicales Semi-Arides (ci-dessous désigné ICRISAT) sont mutuellement concernés et préoccupés par les problèmes de production végétale du monde rural.

Les parties contractantes de cet accord s'engagent à travailler (d'accord parties) sur des problèmes d'études, de recherches et leurs applications en vue de l'amélioration de la production agricole dans les zones concernées et ce, dans le cadre de programmes présentant un intérêt commun pour le Gouvernement de la République du Mali et pour l'ICRISAT.

A cette fin, les projets associés devront être approuvés par les représentants appropriés du Gouvernement de la République du Mali et de l'ICRISAT. Ces projets devront être suffisamment détaillés et spécifiques de manière à prendre aux buts principaux énoncés dans le programme général annexé au présent accord et dont il fait partie intégrante.

Le Gouvernement de la République du Mali et l'Institut International de Recherches Agronomiques dans les Zones Tropicales Semi-Arides désireux de coopérer dans le but de rechercher des solutions aux problèmes de la production agricole présentant un intérêt commun pour les deux parties:

Sont convenus de ce qui suit:

Article I:

1. L'ICRISAT se conformera, pour les conditions d'emploi pour les membres du personnel de l'ICRISAT au Mali, aux bases internationales, sans aucune discrimination de nationalité ou d'origine ou de toute autres considérations que celles basées sur les qualifications et l'expérience, ainsi qu'il est nécessaire pour embaucher du personnel très qualifié et obtenir un travail de très haute qualité.

Le choix du personnel scientifique dans le cadre de la collaboration avec la République du Mali se fera selon les recommandations de l'ICRISAT qui prendra particulièrement en considération les candidatures d'experts de nationalité malienne, étant entendu que toute proposition d'affectation de personnel expatrié sera soumise à l'approbation du Gouvernement de la République du Mali.

Pour le personnel d'exécution et à qualification égale, la priorité sera donnée au recrutement du personnel malien.

2) Les procédures d'entrée ou de sortie du Mali pour le personnel du projet et d'encadrement, pour les stagiaires, les étudiants et les visiteurs concernés par les programmes se feront conformément aux lois d'immigration et d'émigration au Mali.

3) Le Gouvernement de la République du Mali accordera l'autorisation de mouvement pour des matériels végétaux à l'entrée et à la sortie du Mali, matériels pouvant être nécessaires à l'ICRISAT soit pour ses programmes au Mali, soit pour ses programmes associés dans d'autres parties du monde.

Ces mouvements seront assujettis aux lois et réglementations du Gouvernement de la République du Mali sur l'inspection, la quarantaine et la circulation de tels matériels, notamment de manière à éviter l'introduction ou l'exportation de maladie.

Le Gouvernement de la République du Mali convient d'assurer l'inspection la plus rapide possible pour tous ces matériels et d'en réduire au maximum les délais de livraison.

4) La publication et la dissémination par l'ICRISAT des résultats de ses recherches se feront de commun accord avec les institutions maliennes compétentes.

DISPOSITIONS PARTICULIERES

Article II:

Pour faciliter la conduite des projets associés tels que actuellement agréés par les parties contractantes de cet accord, le Gouvernement de la République du Mali accordera à l'ICRISAT et à son personnel les facilités, privilèges et immunités suivants, analogues à ceux des institutions spécialisées des Nations Unies :

1) L'ICRISAT jouit de l'immunité de juridiction pour la protection légale de ses biens, fonds et avoirs.

2) L'ICRISAT, ses biens, fonds et avoirs seront exonérés de toute imposition directe à l'exception des charges émises en fonction des services publics rendus.

3) L'ICRISAT sera exonéré des droits et taxes sur les importations et réexportations de ses publications.

4) Les revenus éventuels provenant de la vente de matériel (y compris matériel végétal) acquis dans le cadre du projet conjoint seront réutilisés par l'ICRISAT pour son programme au Mali.

5) Le Gouvernement de la République du Mali accordera à l'ICRISAT toutes les facilités de communications nécessaires à l'accomplissement de sa mission.

6) Le matériel scientifique et de laboratoire ainsi que les moyens de transport et tout autre équipement importés destinés à l'usage officiel de l'ICRISAT, sont exempts de tous droits de douane, étant entendu qu'en cas de vente du matériel ou de véhicules à un tiers ne bénéficiant pas des mêmes privilèges, ils seront soumis au paiement des droits et taxes dans les conditions prévues par la réglementation en vigueur au Mali.

7) La contre-partie du Gouvernement de la République du Mali consistera:

a) à la mise à la disposition de l'ICRISAT de terrains convenables destinés :

- aux recherches sur le mil, le sorgho, l'arachide, le pois d'angol et d'autres légumineuses nécessaires à l'augmentation de la ration en protéines des populations.

- L'édification des bâtiments (bureaux, laboratoires, logements, locaux de travail) nécessaires pour mener à bien les travaux de l'ICRISAT. Il reste entendu que l'ICRISAT avancera les fonds - pour ces investissements dans la mesure de son budget.

b) à l'assistance pour les arrangements nécessaires pour le logement du personnel expatrié, chargé du programme de coopération et affecté au Mali. Il reste entendu que l'ICRISAT prendra à sa charge les loyers et pourra financer la construction de maisons d'habitation dans la mesure où son budget le lui permet.

Après accord préalable, les maisons et bâtiments construits par l'ICRISAT reviendront au Gouvernement de la République du Mali lorsque le programme de coopération ou ses prolongements seront totalement terminés.

c) au détachement à l'ICRISAT du personnel nécessaire à la réalisation du programme conjoint et à la participation aux dépenses y afférentes.

d) à l'exonération de droits de douane et taxes pour les matériaux, équipements et fournitures importés au Mali, et utilisés uniquement pour la construction des installations de l'ICRISAT.

8) Tous les agents de l'ICRISAT (chercheurs-assistants de recherches, experts consultants adjoints administratifs) :

a) jouiront de l'immunité de juridiction pour les notes accomplis en leur qualité officielle, y compris leurs paroles et leurs écrits.

b) seront exempts ainsi que leur conjoint, et les membres de leur famille qui sont à leur charge, de l'application des dispositions limitant l'immigration et des formalités d'immatriculation des étrangers.

Le personnel de l'ICRISAT visé au paragraphe (b) de l'article précédent bénéficie de toutes les facilités d'entrée et de sortie en République du Mali.

c) seront exempts de toute obligation relative au service national.

d) jouiront des facilités monétaires et des facilités d'échange.

e) bénéficieront ainsi que leur conjoint et les membres de leur famille à leur charge des facilités au rapatriement en période de crise internationale.

f) seront exonérés de tous impôts et taxes sur les salaires et émoluments qui leur seront versés par l'ICRISAT.

g) jouiront du droit d'exporter sous le régime douanier de l'importation temporaire leur mobilier et objet personnel incluant un véhicule automobile lors de leur prise de poste en République du Mali ou dans les six mois après leur installation.

Le délai de validité de l'importation temporaire des véhicules appartenant aux agents de l'ICRISAT est de trois ans, renouvelables jusqu'à la ré-exportation ou à la mise en consommation desdits véhicules.

Le mobilier, les objets personnels et véhicules des agents en cas de vente à un tiers ne bénéficiant pas des mêmes privilèges, seront soumis au paiement des droits et taxes dans les conditions prévues par la réglementation en vigueur en République du Mali.

Article III:

1) les agents de nationalité malienne ou toute autre personne recrutée localement par l'ICRISAT, ne bénéficieront pas de facilités et privilèges tels qu'indiqués dans les sous-paragraphe b) à g) du paragraphe 8 de l'article précédent.

2) Le personnel d'exonération de nationalité malienne ou toute autre personne recrutée localement sera régi par la législation malienne du travail.

Article IV :

- 1) Le présent accord pourra être modifié ou complété à la demande de l'une ou l'autre des parties et d'un commun accord.
- 2) Tout différend relatif à l'interprétation ou à l'application du présent accord sera réglé par voie de négociations.
- 3) Le présent accord entrera en vigueur à la date de sa signature. Il demeurera en vigueur tant qu'il ne sera pas dénoncé par l'une des parties.

La dénonciation ne peut intervenir qu'après un préavis d'un an.

Additif

Une autorisation d'achat de carburant en exonération des droits de douane et des taxes d'entrée sera accordée à l'Institut International de Recherches Agronomiques dans les Zones Tropicales Semi-Arides (ICRISAT).

Fait à Bamako, le 22 Mars 1976

POUR L'INSTITUT INTERNATIONAL DE
RECHERCHES AGRONOMIQUES DANS LES ZONES
TROPICALES SEMI-ARIDES

POUR LE GOUVERNEMENT DE LA REPUBLIQUE
DU MALI
LE MINISTRE DES AFFAIRES ETRANGERES
ET DE LA COOPERATION INTERNATIONALE

AID 1989-20 (1-78)
SUPPLEMENT 1PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK(INSTRUCTION: THIS IS AN OPTIONAL
FORM WHICH CAN BE USED AS AN AID
TO ORGANIZING DATA FOR THE PAR
REPORT. IT NEED NOT BE RETAINED
OR SUBMITTED.)Life of Project: 9 years
From FY 1981 to FY 1990
Total U.S. Funding \$7,750,000
Date Prepared: 04 March 1986Project Title & Number: Semi-Arid Tropics Crops Research - Phase II (Amdt. No. 1)
(688-0226)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Program or Sector Goal: The broader objective to which this project contributes: (A-1)</p> <p>To improve small farmer productivity and increase their incomes.</p>	<p>Measures of Goal Achievement: (A-2)</p> <ol style="list-style-type: none"> 1. Improved varieties and cropping systems for increased production. 2. Farmer field testing of improved varieties and cropping systems. 	<p>(A-3)</p> <ol style="list-style-type: none"> 1. Government records/statistics and independent studies. 2. Station results. 	<p>Assumptions for achieving goal targets: (A-4)</p> <ol style="list-style-type: none"> 1. Adaptive research will lead to demonstrable methods for increased production. 2. Farmers need to increase sorghum/millet production. 3. Rainfall patterns will be relatively normal. 4. Price policy is not disincentive to increased sorghum/millet production.

PROJECT DESIGN SUMMARY
 LOGICAL FRAMEWORK

Life of Project: 9 years
 From FY 1984 to FY 1990
 Total U.S. Funding \$7,750,000
 Date Prepared: 04 March 1986

Project Title & Number: Semi-Arid Tropics Crops Research - Phase II (Amdmt. No. 1) (688-0226)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Project Purpose: (B-1)</p> <p>To develop a series of technical packages with sorghum/millet and certain grain legumes in the 400 1200 mm rainfall zone and to make them available through the extension agencies to small farmers and to strengthen the GRM's research capability in the semi-arid rainfall zone.</p>	<p>Conditions that will indicate purpose has been achieved: End-of-Project status. (B-2)</p> <ol style="list-style-type: none"> 1. Technical packages or technologies tested on farmers' fields. 2. Continuous linkages between research, extension agencies and farmers. 3. Regional sorghum program operational. 4. Information on improved sorghum and millet cropping systems provided to extension agencies and farmers. 5. Body of literature on sorghum and millet improvement in Mali and related cropping systems. 	<p>(B-3)</p> <ol style="list-style-type: none"> 1. Site visits. 2. Station research literature. 3. Yearly reports. 4. Evaluation. 	<p>Assumptions for achieving purpose: (B-4)</p> <ol style="list-style-type: none"> 1. That the traditional varieties could be improved upon in this environment. 2. That some improved varieties from ICRISAT can be usefully adapted to the Malian environment. 3. That the traditional cultural practices and environmental exploitation can be improved upon in this environment. 4. Regional sorghum program located in Mali.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project: 9 years
From FY 1981 to FY 1990
Total U.S. Funding \$7,750,000
Date Prepared: 04 March 1986

Project Title & Number: Semi-Arid Tropics Crops Research - Phase II (Amdt No. 1) (688-0226)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Project Outputs: (C-1)</p> <p>1. Research results relevant to plant breeding: (a) selection of more efficient sorghum/millet cultivars which have better desert drought, insect and disease resistance and possess acceptable food quality. (b) Improved cultivars available for on-farm testing. (c) More refined methods of screening for food quality, drought, insect and disease resistance and better understanding of physiological mechanisms involved.</p> <p>2. Research results relevant to agronomy: (a) Improved sorghum and millet based cropping systems made available for on-farm testing. (b) The performance of improved sorghum and millet cultivars. (c) Improved techniques for soil and crop management under sole and mixed cropping systems.</p> <p>3. Increased numbers of trained personnel.</p>	<p>Magnitude of Outputs: (C-2)</p> <p>1. 4-6 improved sorghum and millet cultivars available for on-farm testing.</p> <p>2. 4-6 tests per year on evaluating agronomic performance of improved cultivars. 4-6 trials/yr on improved cropping systems. 4-6 trials/yr on soil and crop management.</p> <p>3. 4 Malian researchers sent for long term training 2 researchers/yr short-term training 2-3 research/yr attending seminars 1 in-country workshop/yr.</p>	<p>(C-3)</p> <p>1. Site visits. 2. Station records. 3. Literature checks.</p>	<p>Assumptions for achieving outputs: (C-4)</p> <p>1. There will be no natural catastrophe, major outbreak of disease or serious insect problem. 2. There will be continued GRM support to these activities. 3. ICRISAT central will continue its support. 4. Promising techniques developed elsewhere can be adapted to Malian environment. 5. The planned research program and the training of Malian counterparts will produce an institutional capacity to carry out on useful work in this field. 6. GRM will keep trained staff at post sufficiently long to realize benefits and pass knowledge to others.</p>

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Project Title & Number: Semi-Arid Tropics Crops Research - Phase II - (Amdmt. No. 1) (688_0226)

Life of Project: 9 years
From FY 1981 to FY 1990
Total U.S. Funding \$7,750,000
Date Prepared: 04 March 1986

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Project Inputs: (D-1)	Implementation Target (Type and Quantity) (D-2)	(D-3)	Assumptions for providing inputs: (D-4)
1. Technical Assistance 2. Commodities 3. Construction 4. Operating Costs 5. Training	1. Technical Assistance LT = 102 PM ST = 12 PM 2. Commodities (\$88,000) Vehicles (4) Research equipment 3. Construction (\$1,030,000) 4. Operating Costs (\$997,000) 5. Evaluation (\$70,000) 6. Training (\$240,000) Long-term - 4 persons (LOP) Short-term - 2 per year	1. PIO/Ts. 2. PIO/Cs, receiving reports 3. Site visits 4. ICRISAT records 5. USAID records.	1. That the Ciba Geigy Foundation will continue its support of the project. 2. That GRM will provide qualified personnel for the project. 3. ICRISAT is capable of transferring technology to local counterparts 4. Vehicles, equipment and commodities can be procured and will arrive on time.

Director
International Crops Research Institute
for the Semi-Arid Tropics (ICRISAT)
Patancheru P.O.
PIN Code 502 324
Andra Pradesh
India

Subject: Amendment No. 6 to Grant No. 688-0226-B-00-2001-01

Dear Sir:

Pursuant to the authority contained in the Foreign Assistance Act of 1961, as amended, the Agency for International Development (hereinafter referred to as "A.I.D." or "Grantor") hereby increases the amount of the subject Grant to the International Crops Research Institute for the Semi-Arid Tropics (hereinafter referred to as "ICRISAT" or "Grantee") by an amount of \$4,000,000, thus increasing the total obligation to an amount of \$7,750,000. The grant increase accorded herewith is intended to finance the extension of the project from July 1, 1986 through September 30, 1990. The budget for this extension period is Attachment 1.A. to this letter.

In addition, the following amendments are made to the subject grant:

1. The second paragraph of the original Grant, as previously amended, is hereby further amended by deleting the terminal date "June 30, 1986" and substituting therefore the date "September 30, 1990."
2. Attachment 1, "Program Description", is hereby deleted in its entirety and replaced with the Program Description (also labeled "Attachment 1") attached to this letter.

3. Attachment 2, "Standard Provisions", is hereby replaced with the Standard Provisions (also labeled "Attachment 2") attached to this letter.

Under the budget for the project extension attached to this letter, an amount of up to \$1,000,000 may be made available to assist ICRISAT with infrastructure development for the establishment in Mali of its Regional Sorghum Research Program for West Africa. Prior to the issuance by A.I.D. of documentation pursuant to which disbursement of the amount determined will be made, ICRISAT shall, except as the parties may otherwise agree in writing, furnish to A.I.D., in form and substance satisfactory to A.I.D., (i) a letter or memorandum of understanding between ICRISAT and the Government of the Republic of Mali stipulating the terms and conditions under which the facilities will be constructed and operated by ICRISAT; (ii) plans and specifications required for the construction of the facilities and executed contracts for construction and construction supervision services with firms acceptable to A.I.D.; and (iii) a financial plan for construction of the facilities.

In accepting this Grant Amendment, ICRISAT covenants that it will use its best efforts to insure that the project is staffed at all times with qualified and experienced researchers (a sorghum breeder and an agronomist) such that continuity of effort is maintained to accomplish long-term goals and objectives.

It is understood by ICRISAT and A.I.D. that \$134,710 of the \$4,000,000 increase authorized by this Amendment are reserved for expenditures for evaluations. The program description for the extension from July 1, 1986 to September 30, 1990 provides for an internal evaluation in 1987 and an in-depth final evaluation in 1989.

The terms of reference for any evaluations undertaken will be developed by A.I.D. and submitted to ICRISAT and the Malian Government's Institute for Rural Economy (IER) for their comments. Evaluators to conduct, or assist with, any evaluations will be selected by A.I.D. on the basis of discussions with ICRISAT and IER. All expenses incurred for evaluations will have the written approval of A.I.D.

This Amendment No. 6 is effective, and obligation is made, as of the date of this letter. All other terms and conditions of the Grant shall remain in full force and effect.

An authorized officer of ICRISAT should sign and return seven copies of this letter to acknowledge ICRISAT's acceptance of this Amendment No. 6 to the subject Grant.

Sincerely yours,

Grant Officer

Attachments:

1. Program Description
- 1.A. Budget for Project Extension from July 1, 1986 through September 30, 1990
2. Standard Provisions

ACCEPTED:

International Crops Research Institute
for the Semi-Arid Tropics

BY: _____

TITLE: _____

DATE: _____

Fiscal Data

Appropriation:

Budget Plan Code:

Allotment:

Project Number: 688-0226

This Amendment: \$4,000,000

Total Funding to Date: \$7,750,000

Drafted by: DEO/PROG:ZHahn:mmk:6/6/1986

Clearances:

DIR:ERChiavaroli_____

A/DD:WGThomas_____

PROG:RJSimmons_____

ADO:ESimmons_____

CONT:GRJenkins_____

40

ZS/Mme S.
 MINISTÈRE DE L'AGRICULTURE

REPUBLIQUE DU MALI
 UN PEUPLE - UN BUT - UNE FOI

INSTITUT D'ECONOMIE RURALE

DIVISION DE LA RECHERCHE
 AGRONOMIQUE

Bamako, le ...14 AVRIL 1986.....

00446

N°.....TIER - DRA ✓

RÉF: V/L du 3/04/86

*Le Directeur Général de
 l'Institut d'Economie Rurale*

OBJET: Prolongation du
 Projet ICRISAT/Mali du
 1er/7/86 au 30/9/90 et
 appui au programme ré-
 gional sorgho Afrique de
 l'Ouest.

à Monsieur le Directeur de l'US-AID.

-- B A M A K O --

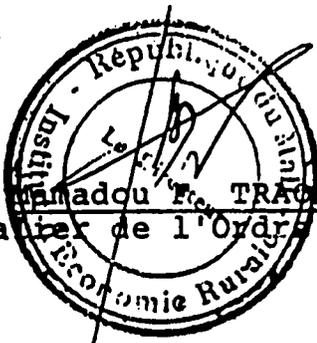
Monsieur le Directeur,

Suite à votre correspondance ci-dessus rappelée,
 j'ai l'honneur de vous notifier mon accord pour la prolongation
 du Projet ICRISAT/MALI du 1er Juillet 1986 au 30 Septembre 1990.

Je note avec satisfaction que vous acceptez financer
 ce programme bilatéral à un niveau légèrement supérieur et
 selon les mêmes procédures administratives qu'auparavant.

Concernant le Programme Régional sur le Sorgho en
 Afrique de l'Ouest que le Mali souhaite vivement voir ins-
 tallé chez lui, je vous serais obligé des dispositions utiles
 que vous voudriez bien faire prendre pour que votre Agence
 assure un appui bilatéral supplémentaire qui permettra son
 démarrage effectif.

Avec mes remerciements anticipés, je vous prie
 d'agréer, Monsieur le Directeur, l'assurance de ma considéra-
 tion distinguée.


 Chevalier de l'Ordre national



USAID/Bamako
B.P. 34
Bamako, Mali

USAID MALI
AMBASSADE AMERICAINE



Bamako (I.D.)
Dept. of State
Washington, D.C. 20520

CERTIFICATION PURSUANT TO SECTION 611(E) OF THE FOREIGN ASSISTANCE ACT, AS AMENDED

COUNTRY: Mali

PROJECT: Semi-Arid Tropics Crops Research -- Phase II
Amendment No. 1

NUMBER OF PROJECT: 688-0226

I, Eugene Chiavaroli, Principal Officer of the Agency for International Development in Mali, do hereby certify that, in my judgment, the Government of the Republic of Mali (GRM) will have the financial and human resource capabilities to maintain and utilize effectively the capital facilities provided under the first amendment to this project, in particular, the facilities to be constructed in Mali by the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) as part of the headquarters for its Regional Sorghum Program for West Africa. By agreement with the GRM, these facilities will be used by ICRISAT for an initial period after which they will revert to the GRM.

My judgment is based on (1) the high priority the GRM places on agricultural development in general and on agricultural research efforts in particular and (2) satisfactory past experiences with USAID project assistance to the GRM, including ICRISAT's effective implementation of the first phase of this project.

This certification takes into consideration the requirements placed on the GRM to maintain and utilize other projects previously financed or assisted by the United States.

Eugene Chiavaroli

Eugene R. Chiavaroli
Director
USAID/Mali

Date: *March 3, 1986*

ACTION MEMORANDUM TO THE DIRECTOR

FROM: DEO/PROG: Zach Hahn

SUBJECT: Initial Environmental Examination
 Semi-Arid Tropics Crops Research -- Phase II
 (Project No. 688-0226)
 Amendment No. 1

REF: AID Handbook 3, Appendix 2D

PROBLEM:

Your approval is requested for a threshold decision of "negative determination" for a new element to be included in the amendment to the subject project, i.e., assistance to International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) for construction of certain facilities as part of a research station to be developed near Bamako which will serve as headquarters for ICRISAT's regional sorghum research program for West Africa.

DISCUSSION:

The Mission currently is preparing a PP amendment for the subject project to increase its LOP funding by \$4,000,000 (to \$7,750,000) and to extend its PACD for four and one-quarter years (from June 30, 1986 through September 30, 1990). Basically, the amendment provides for continuation of activities described in the original PP and implemented by ICRISAT since the original project authorization signed on June 5, 1981. The one new element in the amended project will be provision of up to \$1 million to assist ICRISAT in the construction of certain facilities for the previously-described research station.

The facilities to be financed by the AID grant will include two laboratories, lay-out of research fields and access roads and small-scale irrigation facilities. ICRISAT will provide the financing for the rest of the facilities to include office buildings, storage facilities, hangars, etc. The research

station will be located about 15 kilometres southwest of Bamako in the vicinity of Samanko. Its total area will be approximately 40 hectares and it will be enclosed by a barbed-wire fence (the land will be made available to ICRISAT by the Government of Mali). Irrigation facilities to be established (on approximately five to eight hectares) will be used for raising off-season sorghum nurseries and for drought-screening purposes. Water will be pumped from the sources (bore wells) to the plots by means of easily transportable light aluminium pipes normally used in sprinkler irrigation systems. (Under the original project activities, a similar research facility -- the Semi-Arid Crops Research Station at Cinzana, 250 kilometres from Bamako -- was constructed by ICRISAT under the AID grant for the Malian National Research Program.)

The IEE approved by the Africa Bureau at the time of original project authorization provides us with a negative determination for the on-going project activities. With regard to the new project element which is the subject of this IEE, as described above, the facilities to be constructed are relatively limited, comprising the construction of two buildings, the layout of research fields and access roads and the installation of simple provisions for small-scale irrigation. These facilities will be sited on existing agricultural land. The implementing agency, ICRISAT, is an international agricultural research institute with 14 years of experience and with a known reputation for the professionalism of its research activities. A requirement for AID approval of specifications and plans prior to financing the proposed construction will be included as a condition precedent in the project authorization amendment and in the subsequent grant agreement amendment with ICRISAT. At the time these plans and specifications are examined for approval by an AID engineer, they will be scrutinized to insure that any negative impacts caused by the construction will be kept to a minimum. (The proposed AID financing will be used solely for financing of the construction of certain specific research facilities and no funds from this project will be used to support any operations of these facilities.)

Under the circumstances, the project committee conclude that the proposed action will not have a significant effect on the environment and recommend that a threshold decision of "negative determination" be made for the project element of assistance to ICRISAT for the construction of certain facilities for a research station for its regional sorghum research program in West Africa.

RECOMMENDATION:

That you make a threshold decision of a "negative determination" for the proposed new element of the subject project, as discussed above.

APPROVED: Eugene Chivawel

DISAPPROVED: _____

DATE: March 3, 1986

Concurrence by Africa Bureau Environmental Officer:

APPROVED: Bessie L. Boyd
Bessie L. Boyd AFR/TR/and

DISAPPROVED: _____

DATE: March 11, 1986

Clearance: GC/AFR: Buyan Bryant 3/13/86
DATE: _____

ZH
Draft: DEO/PROG: Zach Hann

Clearance: ADU : LKReddy (draft) } ZH
GDO/ENGR: LKoski (draft) }
ADO: WThomas (draft) }
PROG: RJSimmons (draft) }

5C(1) - COUNTRY CHECKLIST

Listed below are statutory criteria applicable generally to FAA funds, and criteria applicable to individual fund sources: Development Assistance and Economic Support Fund.

A. GENERAL CRITERIA FOR COUNTRY ELIGIBILITY

1. FAA Sec. 481(h)(1); FY 1985 Continuing Resolution Sec. 528. Has it been determined or certified to the Congress by the President that the government of the recipient country has failed to take adequate measures or steps to prevent narcotic and psychotropic drugs or other controlled substances (as listed in the schedules in section 202 of the Comprehensive Drug Abuse and Prevention Control Act of 1971) which are cultivated, produced or processed illicitly, in whole or in part, in such country or transported through such country, from being sold illegally within the jurisdiction of such country to United States Government personnel or their dependents or from entering the United States unlawfully? No
2. FAA Sec. 481(h)(4). Has the President determined that the recipient country has not taken adequate steps to prevent (a) the processing, in whole or in part, in such country of narcotic and psychotropic drugs or other controlled substances, (b) the transportation through such country of narcotic and psychotropic drugs or other controlled substances, and (c) the use of such country as a refuge for illegal drug traffickers? No

3. FAA Sec. 620(c). If assistance is to a government, is the government liable as debtor or unconditional guarantor on any debt to a U.S. citizen for goods or services furnished or ordered where (a) such citizen has exhausted available legal remedies and (b) the debt is not denied or contested by such government? No
4. FAA Sec. 620(e)(1). If assistance is to a government, has it (including government agencies or subdivisions) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities? No
5. FAA Sec. 620(a), 620(f), 620(D); FY 1985 Continuing Resolution Sec. 512 and 513. Is recipient country a Communist country? If so, has the President determined that assistance to the country is important to the national interests of the United States? Will assistance be provided to Angola, Cambodia, Cuba, Laos, Syria, Vietnam, Libya, or South Yemen? Will assistance be provided to Afghanistan or Mozambique without a waiver? No
N/A
No
No
6. FAA Sec. 620(j). Has the country permitted, or failed to take adequate measures to prevent, the damage or destruction by mob action of U.S. property? No

7. FAA Sec. 620(1). Has the country failed to enter into an agreement with OPIC? No
8. FAA Sec. 620(o); Fishermen's Protective Act of 1967, as amended, Sec. 5. (a) Has the country seized, or imposed any penalty or sanction against, any U.S. fishing activities in international waters? No
- (b) If so, has any deduction required by the Fishermen's Protective Act been made?
9. FAA Sec. 620(q); FY 1985 Continuing Resolution Sec. 518. (a) Has the government of the recipient country been in default for more than six months on interest or principal of any AID loan to the country? No
- (b) Has the country been in default for more than one year on interest or principal on any U.S. loan under a program for which the appropriation bill (or continuing resolution) appropriates funds? No
10. FAA SEC. 620(s). If contemplated assistance is development loan or from Economic Support Fund, has the Administrator taken into account the amount of foreign exchange or other resources which the country has spent on military equipment? N/A
- (Reference may be made to the annual "Taking Into Consideration" memo: "Yes, taken into account by the Administrator at time of approval of Agency OYB." This approval by the Administrator of the Operational Year Budget can be the basis for an affirmative answer during the fiscal year unless significant changes in circumstances occur.)

11. FAA Sec. 620(t). Has the country severed diplomatic relations with the United States? If so, have they been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption? No
12. FAA Sec. 620(u) What is the payment status of the country's U.N. obligations? If the country is in arrears were such arrearages taken into account by the AID Administrator in determining the current AID Operational Year Budget? (Reference may be made to the Taking into Consideration memo.) Mali is not known to be in arrears of any of its U.N. obligations
13. FAA Sec. 620A; FY 1985 Continuing Resolution Sec. 521. Has the President determined that the country (a) grants sanctuary from prosecution to any individual or group which has committed an act of international terrorism, or (b) otherwise supports international terrorism? Has the government of the recipient country aided or abetted, by granting sanctuary from prosecution to, any individual or group which has committed or is being sought by any other government for prosecution for any war crime or act of international terrorism? No
No
No
14. ISDCA of 1985 Sec. 552(b). Has the Secretary of State determined that the country is a high terrorist threat country after the Secretary of Transportation has determined, pursuant to section 1115(e)(2) of the Federal Aviation Act of 1958, that an airport in the country does not maintain and administer effective security measures? No

15. FAA Sec. 666. Does the country object, on the basis of race, religion, national origin or sex, to the presence of any officer or employee of the U.S. who is present in such country to carry out economic development programs under the FAA? No
16. FAA Sec. 669, 670. Has the country, after August 3, 1977 delivered or received nuclear enrichment or reprocessing equipment, materials, or technology, without specified arrangements or safeguards? Has it transferred a nuclear explosive device to a non-nuclear weapon state, or if such a state, either received or detonated a nuclear explosive device? (FAA Sec. 620E permits a special waiver of Sec. 669 for Pakistan.) No
17. FAA Sec. 670. If the country is a non-nuclear weapon state has it, on or after August 8, 1985, exported illegally (or attempted to export illegally) from the United States any material, equipment, or technology which would contribute significantly to the ability of such country to manufacture a nuclear explosive device? No

18. ISDCA of 1981 Sec. 720. Was the country represented at the Meeting of Ministers of Foreign Affairs and Heads of Delegations of the Non-Aligned Countries to the 36th General Assembly of the U.N. of Sept. 25 and 28, 1981, and failed to disassociate itself from the communique issued? If so, has the President taken it into account? (Reference may be made to the Taking into Consideration memo.) Ye
Yes, such action has been taken into account.
19. FY 1985 Continuing Resolution. If assistance is from the population functional account, does the country (or organization) include as part of its population planning programs involuntary abortion? N/A
20. FY 1985 Continuing Resolution Sec. 530. Has the recipient country been determined by the President to have engaged in a consistent pattern of opposition to the foreign policy of the United States? No

B. FUNDING SOURCE CRITERIA FOR COUNTRY ELIGIBILITY

1. Development Assistance Country Criteria

FAA Sec. 116. Has the Department of State determined that this government has engaged in a consistent pattern of gross violations of internationally recognized human rights? If so, can it be demonstrated that contemplated assistance will directly benefit the needy? No

2. Economic Support Fund
Country Criteria

FAA Sec. 502B. Has it been determined that the country has engaged in a consistent pattern of gross violations of internationally recognized human rights? If so, has the country made such significant improvements in its human rights record that furnishing such assistance is in the national interest?

N/A

5C(2) PROJECT CHECKLIST

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

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

A. GENERAL CRITERIA FOR PROJECT

1. FY 1985 Continuing Resolution Sec. 525; FAA Sec. 634A.

Describe how authorizing and appropriations committees of Senate and House have been or will be notified concerning the project.

Through submission of annual presentation and a project notification to Congress

2. FAA Sec. 611(a)(1). Prior to obligation in excess of \$500,000, will there be (a) engineering, financial or other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?

Yes

Yes

3. FAA Sec. 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of the assistance?

N/A

4. FAA Sec. 611(b); FY 1985 Continuing Resolution Sec. 501. If for water or water-related land resource construction, has project met the principles, standards, and procedures established pursuant to the Water Resources Planning Act (42 U.S.C. 1962, et seq.)? (See AID Handbook 3 for new guidelines.) N
5. FAA Sec. 611(e). If project is capital assistance (e.g., construction), and all U.S. assistance for it will exceed \$1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability effectively to maintain and utilize the project? Y
6. FAA Sec. 209. Is project susceptible to execution as part of regional or multilateral project? If so, why is project not so executed? Information and conclusion whether assistance will encourage regional development programs. No, because project purpose is to develop sorghum and millet varieties for the particular conditions of Mali. To the extent that research results can be used in other Sahelian countries, program might promote regional development and cooperation.
7. FAA Sec. 601(a). Information and conclusions whether projects will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; and (c) encourage development and use of cooperatives, and credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions. No direct effects except for (e) below; as agricultural research project, it will contribute to increased production (technical efficiency) of certain food grains in Mali (and perhaps in neighboring countries).

8. FAA Sec. 601(b). Information and conclusions on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise). Essentially through the procurement of U.S. supplies and equipment.
9. FAA Sec. 612(b), 636(h); FY 1985 Continuing Resolution Sec. 507. Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized in lieu of dollars. The Government of Mali is often unable to meet its current commitments; while AID is working with the GRM to change this situation, it currently precludes GRM support for contractual and other services for this project. There are no foreign currencies owned by the U.S. available to support this project.
10. FAA Sec. 612(d). Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release? No
11. FAA Sec. 601(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise? Yes
12. FY 1985 Continuing Resolution Sec. 522. If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity? N/A

13. FAA 118(c) and (d). Does the project comply with the environmental procedures set forth in AID Regulation 16. Does the project or program take into consideration the problem of the destruction of tropical forests? Yes
N/A
14. FAA 121(d). If a Sahel project, has a determination been made that the host government has an adequate system for accounting for and controlling receipt and expenditure of project funds (dollars or local currency generated therefrom)? No funds for this project are disbursed through the host government.
15. FY 1985 Continuing Resolution Sec. 536. Is disbursement of the assistance conditioned solely on the basis of the policies of any multilateral institution? No
16. ISDCA of 1985 Sec. 310. For development assistance projects, how much of the funds will be available only for activities of economically and socially disadvantaged enterprises, historically black colleges and universities, and private and voluntary organizations which are controlled by individuals who are black Americans, Hispanic Americans, or Native Americans, or who are economically or socially disadvantaged (including women)? None expected

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance
Project Criteria

a. FAA Sec. 102(a), 111, 113, 281(a). Extent to which activity will (a) effectively involve the poor in development, by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, spreading investment out from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using the appropriate U.S. institutions; (b) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and otherwise encourage democratic private and local governmental institutions; (c) support the self-help efforts of developing countries; (d) promote the participation of women in the national economies of developing countries and the improvement of women's status, (e) utilize and encourage regional cooperation by developing countries?

(a) Specific purpose of project is to develop, through research, sorghum and millet varieties which will be suitable for small farmers in Mali's semi-arid (400 - 1,200 mm of rainfall per year) zone and to get these varieties into the small farmers hands so that they can profit from them.

(b) No direct effect.

(c) If successful, this project will help to make Mali self-sufficient in food grains.

(d) No direct effect.

(e) It is possible that some of the varieties developed could be used in neighboring countries and this might encourage more regional cooperation to a limited extent.

- b. FAA Sec. 103, 103A, 104, 105, 106. Does the project fit the criteria for the type of funds (functional account) being used? N/A
- c. FAA Sec. 107. Is emphasis on use of appropriate technology (relatively smaller, cost-saving, labor-using technologies that are generally most appropriate for the small farms, small businesses, and small incomes of the poor)? Yes
- d. FAA Sec. 110(a). Will the recipient country provide at least 25% of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or is the latter cost-sharing requirement being waived for a "relatively least developed country)? N/A
- e. FAA Sec. 122(b). Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities and self-sustaining economic growth? Yes -- through the development of higher yielding food grains

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

Yes

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

Project attempts to produce sorghum and millet varieties responding not only to physical constraints of Mali's semi-arid zones, but also to cultural constraints, particularly with regard to preferred foods; project makes a strong effort to train Malian researchers who will be able to continue work when ex-patriate advisors leave; project provides no support to civil education and development of similar skills.

2. Development Assistance Project
Criteria (Loans Only)

a. FAA Sec. 122(b). Information an conclusion on capacity of the country to repay the loan, at a reasonable rate of interest. N/A

b. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete with U.S. enterprises, is there an agreement by the recipient country to prevent export to the U.S. of more than 20% of the enterprise's annual production during the life of the loan? N/A

3. Economic Support Fund Project
Criteria

a. FAA Sec. 531(a). Will this assistance promote economic and political stability? To the maximum extent feasible, is this assistance consistent with the policy directions, purposes, and programs of part I of the FAA? N/A

b. FAA Sec. 531(c). Will assistance under this chapter be used for military, or paramilitary activities? N/A

c. ISDCA of 1985 Sec. 207. Will ESF funds be used to finance the construction of, or the operation or maintenance of, or the supplying of fuel for, a nuclear facility? If so, has the President certified N/A

that such country is a party to the Treaty on the Non-Proliferation of Nuclear Weapons or the Treaty for the Prohibition of Nuclear Weapons in Latin America (the "Treaty of Tlatelolco"), cooperates fully with the IAEA, and pursues nonproliferation policies consistent with those of the United States?

- d. FAA Sec. 609. If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made? N/A

5C(3) - STANDARD ITEM CHECKLIST

Listed below are the statutory items which normally will be covered routinely in those provisions of an assistance agreement dealing with its implementation, or covered in the agreement by imposing limits on certain uses of funds.

These items are arranged under the general headings of (A) Procurement, (B) Construction, and (C) Other Restrictions.

A. Procurement

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

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

3. FAA Sec. 604(d). If the cooperating country discriminates against marine insurance companies authorized to do business in the U.S., will commodities be insured in the United States against marine risk with such a company? N/A

4. FAA Sec. 604(e); ISDCA of 1980 Sec. 705(a). If offshore procurement of agricultural commodity or product is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity? (Exception where commodity financed could not reasonably be procured in U.S.) N/A

5. FAA Sec. 604(g). Will construction or engineering services be procured from firms of countries which receive direct economic assistance under the FAA and which are otherwise eligible under Code 941, but which have attained a competitive capability in international markets in one of these areas? Do these countries permit United States firms to compete for construction or engineering services financed from assistance programs of these countries? No
N/A
6. FAA Sec. 603. Is the shipping excluded from compliance with requirement in section 901(b) of the Merchant Marine Act of 1936, as amended, that at least 50 per centum of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U.S. flag commercial vessels to the extent such vessels are available at fair and reasonable rates? No
7. FAA Sec. 621. If technical assistance is financed, will such assistance be furnished by private enterprise on a contract basis to the fullest extent practicable? If the facilities of other Federal agencies will be utilized, are they particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs? This is an amendment to extend a previous activity; as such, is judged not practicable at this time to attempt to provide technical assistance from private enterprise sources.
N/A

8. International Air Transportation Fair Competitive Practices Act, 1974. If air transportation of persons or property is financed on grant basis, will U.S. carriers be used to the extent such service is available? Yes

9. FY 1985 Continuing Resolution Sec. 504. If the U.S. Government is a party to a contract for procurement, does the contract contain a provision authorizing termination of such contract for the convenience of the United States? Yes

B. Construction

1. FAA Sec. 601(d). If capital (e.g., construction) project, will U.S. engineering and professional services be used? This is not a capital (construction) project per se. Up to \$1 million will be provided to ICRISAT as part of the financing for a regional research center to be built in Mali. The construction of this center will be tendered internationally.
2. FAA Sec. 611(c). If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable? Yes
3. FAA Sec. 620(k). If for construction of productive enterprise, will aggregate value of assistance to be furnished by the U.S. not exceed \$100 million (except for productive enterprises in Egypt that were described in the CP)? N/A

65

C. Other Restrictions

1. FAA Sec. 122(b). If development loan, is interest rate at least 2% per annum during grace period and at least 3% per annum thereafter? N/A

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

3. FAA Sec. 620(h). Do arrangements exist to insure that United States foreign aid is not used in a manner which, contrary to the best interests of the United States, promotes or assists the foreign aid projects or activities of the Communist-bloc countries? Yes

4. Will arrangements preclude use of financing:
 - a. FAA Sec. 104(f); FY 1985 Continuing Resolution Sec. 527. (1) To pay for performance of abortions as a method of family planning or to motivate or coerce persons to practice abortions; (2) to pay for performance of involuntary sterilization as method of family planning, or to coerce or provide financial incentive to any person to undergo N/A

- sterilization; (3) to pay for any biomedical research which relates, in whole or part, to methods or the performance of abortions or involuntary sterilizations as a means of family planning; (4) to lobby for abortion? N/A
- b. FAA Sec. 488. To reimburse persons, in the form of cash payments, whose illicit drug crops are eradicated? yes
- c. FAA Sec. 620(g). To compensate owners for expropriated nationalized property? Yes
- i. FAA Sec. 660. To provide training or advice or provide any financial support for police, prisons, or other law enforcement forces, except for narcotics programs? Yes
- e. FAA Sec. 662. For CIA activities? Yes
- f. FAA Sec. 636(i). For purchase, sale, long-term lease, exchange or guaranty of the sale of motor vehicles manufactured outside U.S., unless a waiver is obtained? Yes

- g. FY 1985 Continuing Resolution, Sec. 503.
To pay pensions, annuities, retirement pay, or adjusted service compensation for military personnel? Yes
- h. FY 1985 Continuing Resolution, Sec. 505.
To pay U.N. assessments, arrearages or dues? Yes
- i. FY 1985 Continuing Resolution, Sec. 506.
To carry out provisions of FAA section 209(d) (Transfer of FAA funds to multilateral organizations for lending)? Yes
- j. FY 1985 Continuing Resolution, Sec. 510.
To finance the export of nuclear equipment, fuel, or technology or to train foreign nationals in nuclear fields? Yes
- k. FY 1985 Continuing Resolution; Sec. 511.
Will assistance be provided for the purpose of aiding the efforts of the government of such country to repress the legitimate rights of the population of such country contrary to the Universal Declaration of Human Rights? No
- l. FY 1985 Continuing Resolution, Sec. 516.
To be used for publicity or propaganda purposes within U.S. not authorized by Congress? Yes

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FM AMEMBASSY BAMAKO
TC SECSTATE WASHDC 399E
BT
UNCLAS SECTION 21 OF * BAMAKO 01114

File
Project
688-0226
BI

CLASS: UNCLASSIFIED
CERGE: AID 02/19/86
APPRV: DIR: ECHIAVAROII
DRFTD: PROG: CROBERTSON:
CLEAR: 1. PROG: SJSIMMCNS
2. ADO: WTHOMAS (DRAF

AIDAC

E.O. 12356: N/A
SUBJECT: MALI PROJECT 688-0226 - DRAFT CN FOR SEMI-ARID
- TROPICS RESEARCH

- REF: A) STATE 237292
- B) BAMAKO 2666
- C) STATE 387894
- D) STATE 203280 (FY85)

1. A PP AUTHORIZATION AMENDMENT IS CURRENTLY UNDER REVIEW BY THE MISSION TO RAISE PROJECT LOP BY DOLS 4 MILLION, AND EXTEND FACD BY 5 YEARS. MISSION WILL TRY TO AUTHORIZED AND OBLIGATE AMENDED PROJECT BY 03/31/86.

2. BELOW ARE THE DRAFTS FOR THE REQUIRED ADVICE OF PROGRAM CHANGE AND THE CN ITSELF. REQUEST AID/W REVIEW AND CLEAR FOLLOWING DRAFT CN, AND SUBMIT TO HILL. IN RESPONSE TO REF A, SEPTEL WILL PROVIDE JUSTIFICATION FOR REQUEST FOR AD HOC ICA IN ACCORDANCE WITH APPROVAL GIVEN IN REF D

. ADVICE OF PROGRAM CHANGE

- COUNTRY: MALI
- PROJECT TITLE: SEMI-ARID TROPICS RESEARCH (PHASE II)
- PROJECT NO.: 688-0226
- FY 87 CP REFERENCE: ANNEX 1, AFRICA MAIN VOLUME (EXACT PAGE NUMBER UNKNOWN AS FINAL BOUND COPIES NOT YET RECEIVED BY THE MISSION).
- APPROPRIATION CATEGORY: SAHEL DEVELOPMENT PROGRAM
- LIFE OF PROJECT FUNDING: \$7,750,000
- INTENDED FY 86 OBLIGATION: \$2,000,000

THIS IS TO ADVISE THAT AID INTENDS TO INCREASE LIFE-OF-PROJECT FUNDING BY \$4,220,000, FROM \$3,750,000 TO \$7,750,000 AND TO OBLIGATE \$2,000,000 IN FY 86. IT IS ALSO INTENDED TO EXTEND THE FACD FROM JUNE 30, 1986 TO SEPT. 30, 1990.

AN EXTERNAL EVALUATION OF THE PROJECT WAS DONE IN FY85 WHICH NOTED THE EXCELLENT PROGRESS MADE TO DATE, AND RECOMMENDED CONTINUATION OF THIS PRIORITY AGRICULTURAL RESEARCH EFFORT. THE PROJECT CONCERNS SORGEUM BREEDING AND AGRONOMIC TECHNOLOGY IMPROVEMENTS WHICH ARE ESSENTIAL TO THE ACHIEVEMENT OF FOOD SECURITY IN MALI.

4. PLANNED PROJECT SUMMARY SHEET

PROJECT TITLE: SEMI-ARID TROPICS RESEARCH PHASE I:

NUMBER: 688-0226

FUNDING SOURCE: SH

PROPOSED OBLIGATION: FY86 - \$2,000

ESTIMATED COMPLETION DATE OF PROJECT

TOTAL OBLIGATION: FY 86 - \$2,000,0

ESTIMATED FINAL OBLIGATION: FY 87

INITIAL OBLIGATION: FY 86

LOP (AUTH.): \$7,750,000

GRANT OR LOAN: GRANT

NEW OR CONTINUING PROJECT: CONTINUING

PRIOR REFERENCE: (REQUEST AFR/SWA TO CHECK PREVIOUS
- REFERENCE).

A. PURPOSE.

THE PURPOSE OF THE PROJECT IS TO DEVELOP A SERIES OF TECHNOLOGIES FOR INCREASING PRODUCTION OF SORGHUM, MILLET AND CERTAIN GRAIN LEGUMES IN THE 400-1200 MM RAINFALL ZONE OF MALI AND TO STRENGTHEN THE GRM'S RESEARCH CAPABILITY IN THE SEMI-ARID ZONES.

E. PROJECT DESCRIPTION

THE FOCUS OF THIS PROJECT IS THREEFOLD: CROP IMPROVEMENT THROUGH THE DEVELOPMENT OF IMPROVED SORGHUM AND MILLET VARIETIES, DEVELOPMENT OF APPROPRIATE AGRONOMIC PRACTICES WHICH BEST EXPLOIT THE SEMI-ARID CONDITIONS IN THE 400-1200 MM RAINFALL ZONE, AND STRENGTHENING GRM RESEARCH CAPABILITY THROUGH TRAINING AND INFRASTRUCTURE DEVELOPMENT

CROP IMPROVEMENT WILL FOCUS ON DEVELOPING SORGHUM AND MILLET VARIETIES WHICH WILL HAVE A HIGH YIELD POTENTIAL, DROUGHT TOLERANCE, RESISTANCE TO INSECT-DISEASE COMPLEXES

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FM AMEMBASSY BAMAKO
TO SECSTATE WASHDC 4000
BT
UNCLAS SECTION 02 OF * BAMAKO 01114

CLASS: UNCLASSIFIED
CHRG: AID 02/19/86
APPRV: DIR: ECHI AVAROLI
DRFTD: PROG: CROBERTSON:AFM
CLEAR: 1. PROG: SJSIMMONS
2. ADO: WTHOMAS (DRAFT)

DISTR: USAID/AMEMB/CON
DCM/CHRON

AIDAC

E.C. 12356: N/A
SUBJECT: MALI PROJECT 688-0226 - DRAFT CN FOR SEMI-ARID

AND ARE OF ACCEPTABLE FOOD QUALITY. AGRONOMIC RESEARCH WILL FOCUS ON DEVELOPMENT OF APPROPRIATE CULTURAL AND TILLAGE PRACTICES UNDER VARYING LEVELS OF MANAGEMENT, EVALUATING THE PERFORMANCE OF THE VARIETIES UNDER FIELD CONDITIONS INCLUDING PERFORMANCE UNDER MIXED CROPPING PRACTICES. USE OF ANIMAL TRACTION IN VARIOUS CULTURAL AND TILLAGE PRACTICES WILL CONTINUE TO RECEIVE MAJOR EMPHASIS

IMPROVEMENTS IN GRM'S RESEARCH CAPABILITY WILL BE BROUGHT ABOUT BY LONG-TERM, SHORT-TERM AND ON-THE-JOB TRAINING, ENABLING MALIAN RESEARCHERS TO PARTICIPATE IN REGIONAL AND INTERNATIONAL NETWORKS, AND THROUGH IMPROVED RESEARCH INFRASTRUCTURE. UNDER THE EXTENSION OF PHASE II, FOUR MALIAN RESEARCHERS WILL RECEIVE GRADUATE LEVEL TRAINING IN U.S., FOUR RESEARCHERS WILL UNDERGO SHORT-TERM TRAINING IN ADDITION TO SEVERAL MALIAN RESEARCHERS PARTICIPATING IN SEMINARS, WORKSHOPS AND SORGHUM AND MILLET RESEARCH NETWORKS. THE PROJECT WILL CONTRIBUTE TO THE DEVELOPMENT OF RESEARCH INFRASTRUCTURE UNDER THE ICRISAT REGIONAL SORGHUM PROGRAM IN MALI AND WILL CONTRIBUTE TO MODEST ADDITIONS OF EXISTING INFRASTRUCTURE AT CINZANA - THE SEMI-ARID RESEARCH STATION DEVELOPED DURING THE EARLY PART OF PHASE II.

C. BACKGROUND AND PROGRESS TO DATE

INVESTMENT IN AGRICULTURAL RESEARCH IS A LONG TERM PROCESS. THE USAID BEGAN ITS PHASE ONE COLLABORATION WITH ICRISAT/MALI IN 1977 WITH LIMITED FUNDS. BY 1981 IT WAS EVIDENT THAT A PHASE TWO EFFORT WAS WELL JUSTIFIED AND \$3.750 MILLION WAS COMMITTED. AN IN-DEPTH EXTERNAL EVALUATION DONE IN FY 85 INDICATED THE SUBSTANTIAL PROGRESS BEING MADE, AND THAT THE INVESTMENT SHOULD BE EXTENDED FURTHER.

SATISFACTORY PROGRESS HAS BEEN MADE ON SEVERAL FRONTS. SUBSTANTIAL ACHIEVEMENTS HAVE OCCURRED IN THE DEVELOPMENT OF SORGHUM AND MILLET VARIETIES. FOUR SORGHUM VARIETIES HAVE BEEN RELEASED FOR LARGE-SCALE FIELD TESTING. IN TERMS OF STRENGTHENING THE CAPACITY OF NATIONAL AGRICULTURAL RESEARCH SYSTEMS, A SEMI-ARID RESEARCH STATION HAS

BEEN DEVELOPED UNDER THE PROJECT; SIX MALIAN SCIENTISTS ARE UNDERGOING GRADUATE LEVEL TRAINING IN THE U.S., AND ABOUT 35 MALIAN RESEARCH STAFF HAVE RECEIVED SHORT-TERM TRAINING OVERSEAS IN SORGHUM AND MILLET RESEARCH AND PRODUCTION TECHNOLOGY. IN ADDITION, NUMEROUS RESEARCHERS HAVE PARTICIPATED IN VARIOUS PROFESSIONAL WORKSHOPS AND SEMINARS.

F. RELATIONSHIP OF THE PROJECT TO AID COUNTRY STRATEGY

A KEY CONCERN OF USAID COUNTRY STRATEGY (CDSS, FY 1985), IS TO ASSIST THE GRM IN THE DEVELOPMENT OF VIABLE TECHNOLOGIES FOR MAJOR FOOD CROPS THROUGH LONG-TERM INVESTMENTS IN RESEARCH. THUS THE TWO MAIN OBJECTIVES TO BE UNDERTAKEN IN THIS PROJECT, RESEARCH ON SORGHUM AND MILLET IMPROVEMENT AND STRENGTHENING OF THE NATIONAL AGRICULTURAL RESEARCH SYSTEM, ARE CENTRAL TO THE LONG-TERM USAID FOOD SECURITY STRATEGY. THIS PROJECT IS ALSO CLOSELY RELATED TO ANOTHER MAJOR PROJECT, THE FARMING SYSTEMS RESEARCH AND EXTENSION PROJECT (638-0232) BEING IMPLEMENTED BY THE MISSION, WHICH IS AN IMPORTANT ELEMENT OF THE TECHNOLOGY DEVELOPMENT AND TRANSFER PROCESS. THE SEMI-ARID TROPICS RESEARCH PROJECT WILL FOCUS ON THE BIO-TECHNICAL CONSTRAINTS OF THE FOOD PRODUCTION SYSTEMS, WHILE THE FARMING SYSTEMS PROJECT WILL CONDUCT ON-FARM TESTING OF TECHNOLOGIES FLOWING OUT OF THE ON-STATION RESEARCH.

E. BENEFICIARIES

OVER THE LONG TERM A LARGE NUMBER OF MALIAN FARMERS WILL BENEFIT FROM THE STREAM OF IMPROVED TECHNOLOGIES RESULTING FROM THE PROJECT EFFORTS. IN THE SHORT RUN THE MALIAN AGRICULTURAL RESEARCH SYSTEM WILL BENEFIT FROM THE INCREASED FINANCIAL AND BETTER QUALITY HUMAN RESOURCES THAT WOULD BE AVAILABLE FOR CONDUCTING RESEARCH.

F. HOST COUNTRY AND OTHER DONORS

THE GRM WILL CONTRIBUTE IN-KIND IN THE FORM OF RESEARCH PERSONNEL ASSIGNED TO WORK AS COUNTERPARTS AND RESEARCH SUPPORT STAFF. APPROXIMATELY 16 RESEARCH PERSONNEL OF VARIOUS CATEGORIES WHO HAVE BEEN PROVIDED DURING THE PHASE II WILL CONTINUE TO BE PROVIDED DURING THE EXTENDED PHASE. OTHER IN-KIND CONTRIBUTION INCLUDES RESEARCH FACILITIES SUCH AS FIELDS AND LABORATORIES. THE CIBA-GEIGY FOUNDATION WILL PROVIDE A MAJOR PORTION OF OPERATING COSTS FOR THE SEMI-ARID ZONE RESEARCH STATION AT CINZANA (APPROXIMATELY \$100,000 PER YEAR), WHERE APPROXIMATELY 50% OF THE PROJECT COST

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RR RUEHC
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ZNR UUUUU 228
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TO SECSTATE WASHDC 4021
BT
UNCLAS SECTION 03 OF 03 BAMAKO 01114

CLASS: UNCLASSIFIED
CHRG: AID 02/19/86
APPRV: DIR: ECHEVAROLI
DRFTD: PROG: CROBERTSON: JM
CLEAR: 1. PROG: SJSTIMCNS
2. ADO: THOMAS (DR FT

DISTR: USAID AMB ECON
ECM/CHRON

AIDAC

E.O. 12356: N/A
SUBJECT: MALI PROJECT 688-0226 - DRAFT CN FOR SEMI-ARID

FUNDEL RESEARCH WILL TAKE PLACE.
G. MAJOR OUTPUTS

- RESEARCH RESULTS LEADING TO THE DEVELOPMENT OF IMPROVED
SORGHUM AND MILLET VARIETIES AND AGRONOMIC PRACTICES

- STRENGTHENED INFRASTRUCTURE FOR CONDUCTING SORGHUM-
MILLET RESEARCH AND DEVELOPMENT

- INCREASED PARTICIPATION OF MALIAN AGRICULTURAL RESEARCH
ERS IN REGIONAL AND INTERNATIONAL RESEARCH NETWORKS AND
RESEARCH INFORMATION EXCHANGE

- INCREASED NUMBERS OF MALIAN RESEARCHERS TRAINED AT
GRADUATE LEVEL AND RECEIVING SHORT TERM TRAINING.
H. AID FINANCED INPUTS

	CUMULATIVE
1. TECHNICAL ASSISTANCE	1,814,000
2. TRAINING	616,000
3. CONSTRUCTION	1,615,000
4. COMMODITIES	363,000
5. OPERATING COSTS	1,512,700
6. EVALUATION	120,000
7. INFLATION AND CONTINGENCY	1,709,300
-	-----
- TOTAL	7,750,000

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ANNEX K.

DD

ACTION: AID INFO: AME LCM ECON CERON

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INFO RUEFAE/AMEMEASSY ABIDJAN IMMEDIATE 5193

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ACTION TAKEN:
DATE:

LCC: 167
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CN: 27162
CERG: AID
DIST: AID

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ABIDJAN FOR REDSO/WCA/RCO EUCHAN

L.C. 12356: N/A

TAGS:

SUBJECT: MALI SEMI-ARID TROPICS RESEARCH PROJECT,
66E-022E

REF(S): (A) STATE 67035, (B) CANTELL/CHIAVAROLI
TELECON, 7/1/86

1. ACTION MEMORANDUM GIVING AD HOC DELEGATION OF
AUTHORITY TO THE MISSION DIRECTOR TO (A) EXTEND THE PACE
FROM JUNE 30, 1986 TO SEPTEMBER 30, 1990; (B) INCREASE
THE LOF FUNDING BY ICLS 3,750,000 TO DOLS 7,750,000;
AND, (C) TO INVITE AN APPLICATION FROM A SINGLE ENTITY
WHICH THE TECHNICAL OFFICE DEEMS UNIQUE WAS SIGNED BY
AA/AFR JUNE 30, 1986.

2. RE REF E, SWAF WAS ADVISED THAT REF A, DTD 3/5/86,
PROVIDED DOLS 2 MILLION TO MISSION FOR OBLIGATION.
THEREFORE, MISSION SHOULD PROVIDE ALLOTMENT,
APPROPRIATION AND OBLIGATION NUMBER TO REDSO.

3. COPIES OF ACTION MEMO FORWARDED TO USAID AND REDSO/RCO
7/1/86. SHULTZ

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TO	ACT	INFO
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