

AGENCY FOR INTERNATIONAL DEVELOPMENT PROJECT DATA SHEET	1. TRANSACTION CODE <input type="checkbox"/> A = Add <input type="checkbox"/> C = Change <input type="checkbox"/> D = Delete	Amendment Number _____	DOCUMENT CODE 3
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2. COUNTRY/ENTITY Cameroon	3. PROJECT NUMBER 631-0023
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4. BUREAU/OFFICE Africa 06	5. PROJECT TITLE (maximum 40 characters) North Cameroon Seed Multiplication-II
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6. PROJECT ASSISTANCE COMPLETION DATE (PACD) MM DD YY 12 31 87	7. ESTIMATED DATE OF OBLIGATION (Under "B." below, enter 1, 2, 3, or 4) A. Initial FY 82 B. Quarter <input type="checkbox"/> C. Final FY 86
-----------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------

B. COSTS (\$000 OR EQUIVALENT \$1 =)						
A. FUNDING SOURCE	FIRST FY 82			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total	770	1,430	2,200	5,251	8,389	13,660
(Grant)	(770)	(330)	(1,100)	(5,251)	(2,789)	(8,040)
(Loan)	(-0-)	(1,100)	(1,100)	(-0-)	(5,600)	(5,600)
Other U.S. 1.						
Other U.S. 2.						
Host Country		809	809		5,100	5,100
Other Donor(s)						
TOTALS	770	2,239	3,009	5,251	13,489	18,740

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) FA	110	074	074	-0-	-0-	8,040	5,600	8,040	5,600
(2)									
(3)									
(4)									
TOTALS				-0-	-0-	8,040	5,600	8,040	5,600

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each) 101 103	11. SECONDARY PURPOSE CODE 119
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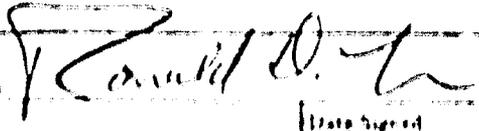
12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each) A. Code NA B. Amount	
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13. PROJECT PURPOSE (maximum 400 characters)

To create an institution which will multiply adequate quantities of improved peanut, corn, sorghum and millet seed for distribution to farmers.

14. SCHEDULED EVALUATIONS Interim MM YY MM YY Final MM YY 04 87 12 87	15. SOURCE/ORIGIN OF GOODS AND SERVICES <input checked="" type="checkbox"/> 000 <input type="checkbox"/> 241 <input checked="" type="checkbox"/> Local <input type="checkbox"/> Other (Specify) _____
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16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a _____ page PP Amendment)

17. APPROVED BY	Signature:  Name: Ronald D. Levin Title: Director, USAID/Yaounde	18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION MM DD YY 08 17 87
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AGENCY FOR INTERNATIONAL DEVELOPMENT
PROJECT IDENTIFICATION DOCUMENT
FACESHEET (PID)

1. TRANSACTION CODE
 A = Add
 C = Change
 D = Delete
 Revision No. 1

DOCUMENT CODE
1

2. COUNTRY/ENTITY
CAMEROON

3. PROJECT NUMBER
631-0023

4. BUREAU/OFFICE
AFRICA
A. Symbol AFR B. Code 06

5. PROJECT TITLE (maximum 40 characters)
North Cameroon Seed Multiplication - II

6. ESTIMATED FY OF AUTHORIZATION/OBLIGATION/COMPLETION
 A. Initial FY 8|2
 B. Final FY 8|6
 C. PACD 8|7

7. ESTIMATED COSTS (\$000 OR EQUIVALENT, \$1 =)
 FUNDING SOURCE LIFE OF PROJECT
 A. AID 13,640
 B. Other U.S. 1. 5,100
 2. 18,740
 C. Host Country
 D. Other Donor(s)
 TOTAL

8. PROPOSED BUDGET AID FUNDS (\$000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECIL CODE		D. 1ST FY		E. LIFE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
(1) FN	110			1,100	1,100	8,040	5,600
(2)							
(3)							
(4)							
TOTALS				1,100	1,100	8,040	5,600

9. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each)
101 103

10. SECONDARY PURPOSE CODE
119

11. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each)
 A. Code NA
 B. Amount

12. PROJECT PURPOSE (maximum 480 characters)

To create an institution which will multiply adequate quantities of improved peanut, corn, sorghum and millet seed for distribution to farmers.

13. RESOURCES REQUIRED FOR PROJECT DEVELOPMENT

Staff:

Seed Production Specialist, Seed Processing Specialist, Team Leader

Funds

PDS \$40,000

14. ORIGINATING OFFICE CLEARANCE

Signature Richard D. L.
 Title Director, USAID/Yaounde
 Date Signed MM DD YY
1 2 1 7 8 1

15. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION
 MM DD YY
 | | |

16. PROJECT DOCUMENT ACTION TAKEN
 A = Approved
 S = Suspended
 D = Disapproved
 CA = Conditionally Approved
 DD = Decision Deferred

17. COMMENTS

18. ACTION APPROVED BY

Signature
 Title AA/AFR

19. ACTION REFERENCE
State 066893

20. ACTION DATE
 MM DD YY
0 3 1 8 7 9

INSTRUCTIONS

- Block 1 - Enter the appropriate letter code in the box. if a change, indicate the revision number.
- Block 2 - Enter the name of the Country, Regional, or other Entity.
- Block 3 - Enter the Project Number assigned by the field mission or an AID/W bureau.
- Block 4 - Enter the sponsoring Bureau/Office Symbol and Code. *(See Handbook 3, Appendix 3, Table 1, Page 1 for guidance.)*
- Block 5 - Enter the Project Title *(stay within brackets; limit to 40 characters).*
- Block 6 - Enter the estimated Initial (A) and Final (B) FY of the Authorization/Obligation, and Project Assistance Completion Date (PACD) (C).
- Block 7 - Enter the information taken from the 'Estimated Cost Table' in the PID.
- Block 8A. - Use the 'Alpha Code'. *(See Handbook 3, Appendix 5B, Table 2, Page 2 for guidance.)*
- Block 8B. - See Handbook 3, Appendix 5B for guidance.
- Blocks 8C., D., & E., - Enter all amounts in thousands of U.S. dollars.
- Blocks 9 & 10 - See Handbook 3, Appendix 5B for guidance.
- Block 11 - Enter the code and amounts attributable to each concern for 'Life of Project'. For coding see Handbook 3, Appendix 5B, Attachment C.
- Block 12 - Enter the 'Project Purpose' from the PID. If more than one (1), list each one (1) in order of priority *(stay within brackets; limit to 480 characters).*
- Block 13 - Summarize any planning resources needed to develop the project in terms of staff and funding required. For staff, indicate whether direct hire or contract staff. Indicate the established amount and source of funding required (operative expenses or Mission funds).
- Block 14 - This block is to be signed and dated by the Authorizing Official of the originating office. The PID will not be reviewed if the PID Facesheet is not signed and dated. Do not initial.
- Block 15 - This date is to be provided by the office or bureau responsible for the processing of the PID.
- Block 16 - This block is to be completed by the authorized representative of the office or bureau responsible for the processing of the PID.
- Block 17 - Enter any comments on the action taken.
- Block 18 - This block is to be signed and dated by the Approving Official. Do not initial.
- Block 19 - Identify the action document i.e., memorandum, cable.
- Block 20 - Enter the data of the action document.

ACTION MEMORANDUM FOR THE ASSISTANT ADMINISTRATOR FOR AFRICA

FROM : AAA/AFR/DR, John W. Koehring

SUBJECT : North Cameroon Seed Multiplication Project, Phase II, (631-0023)

I. Problem: Your approval is requested to execute a grant of \$8,040,000 and a loan of \$5,600,000 from the Foreign Assistance Act, Section 103, ARDN appropriation, to the Government of the United Republic of the Cameroon (GURC) for the North Cameroon Seed Multiplication Project, Phase II (631-0023). It is planned that \$2,200,000 (\$1,100,000 grant, \$1,100,000 loan) will be obligated in FY 1982.

II. Discussion:

A. Project Description: The purpose of the project is to assist the GURC to create an institution which will produce adequate quantities of improved peanut, corn, sorghum, and millet seed for distribution to farmers. The project is a second phase activity to the previous North Cameroon Seed Multiplication Project. Two seed farms will be further developed to provide high quality seed for distribution. Two seed processing plants and seed storage units will be constructed at the farms, as well as office and housing units. In order to verify the physical and biological quality of the seed before distribution, a regional seed testing laboratory will be constructed. One seed cold storage unit will be constructed at the Institute for Agricultural Research (IRA) in order to maintain breeder seed viability over five growing seasons. In addition, a training program to train the trainers of extension agents will be established.

The agricultural sector strategy, stated in the CDSS, includes enhancing small-farmer income through self-sustained, real growth in agriculture production. The approved strategy will be achieved by increasing productivity through:

- (1) strengthening the ability of adaptive research organizations to develop low-cost technological packages — including improved seed varieties — as well as those institutions which produce resources required by the rural agriculture sector; and
- (2) strengthening and expanding the role of existing extension services and reinforcing their linkages to research institutions.

The primary beneficiaries of the project will be 163,000 farm families of the region. Farmers in the area grow the following crops: sorghum; millet; peanuts; corn; vegetables; legumes; and cotton as a cash crop. Both husband and wife(ves) work on the farm to produce food for their family and for income.

B. Financial Summary:

The total cost of the project is \$18,740,000. Of this amount, A.I.D. will be providing \$13,640,000 (\$8,040,000 grant, \$5,600,000 loan) over the five year life-of-project. The remaining \$5,100,000 will be contributed by the GURC.

The overall dollar breakdown of the funds is presented in the table below.

	<u>First Year</u> (\$000)	<u>LOP</u> (\$000))
Technical Assistance	441	4,275
Commodities	329	1,962
Training	-0-	1,208
Construction	1,100	5,600
Other Costs	330	595
Total FX	770	5,251
Total LC	1,430	8,389
Grand Total	2,200	13,640

C. Socio-economic, Technical and Environmental Description:

1. The Project Committee found the project to be socially and economically acceptable.
2. The project was reviewed and cleared with respect to human rights.
3. This Phase II project is based upon recommendations from two evaluations carried out under Phase I of the project. The Cameroon Mission has reviewed the project and concluded it is technically sound. The Project Committee concurs with this finding.
4. The Initial Environmental Examination (IEE) recommends a negative/resolved determination. The IEE has been reviewed and approved by the Office of the General Counsel and the Bureau Environmental Officer. Therefore, no further environmental analyses are necessary.

D. Conditions and Covenants:

In addition to standard conditions precedent such as legal opinion, specimen signatures, and designation of authorized representatives, additional conditions precedent concerning architectural and engineering services, construction services, commodities and the availability of an adequate supply of water and electricity at the construction site are included to ensure that appropriate GURC management attention is focussed on these elements which are deemed important to project success.

Covenants include 1) the establishment of intra-governmental linkages between the Institute of Agricultural Research and the extension agency and the project implementation agent, the Food Development Authority, thus strengthening the links of the seed flow chain from research to the farmer; and 2) the establishment of an evaluation program as part of the project.

E. Section 611(n) of the FAA:

The USAID/Yaounde General Engineering Officer has prepared an engineering technical paper on the construction component of this project. He has

determined that engineering, financial and other plans necessary to carry out the project, as well as a reasonably firm estimate of the cost to the U.S. Government have been completed.

F. Implementation:

The implementation arrangements described in Section V of the Project Paper were carefully reviewed by the Project Committee and found to be both realistic and sufficient to carry out the project over a five year life-of-project period.

As Administrator McPherson expressed special interest in this project and the involvement of the private sector, the AID Mission to Cameroon has confirmed that every effort will be made to line up a private U.S. seed producing firm to implement the Project. Contacts have been made with several such firms and requests for proposals will be sent to some twenty companies. The expertise of these firms will be most useful in the development of seed marketing, above and beyond the assistance for seed production.

The Food Development Authority (MIDEVIV) and the Institute for Agricultural Research (IRA) are the GURC implementing agencies for the project.

G. Waivers:

Approval of the following waivers is requested:

- a) proprietary procurement and waiver from Codes 000 and 941 to Code 935 for Massey Ferguson, Hudson, Tecoma and Nodet Gougis farm equipment including spare parts, with an approximate cost of \$191,000;
- b) proprietary procurement of Lilliston, Peerlers, Hobbs and Clipper farm equipment including spare parts with an approximate cost of \$237,000;
- c) a waiver of Section 636(i) of the Foreign Assistance Act, a source/origin waiver from Codes 000 and 941 to Code 935 and a proprietary procurement waiver for three 7-9 ton Toyota flatbed trucks including spare parts, with an approximate cost of \$130,000; and
- d) a source/origin waiver from Codes 000 and 941 to Code 935 for the purchase of construction commodities with an approximate cost of \$1,000,000.

Justifications for these waivers are appended to the authorization.

H. Congressional Apprisement:

A Congressional Notification was submitted January 27, 1982. The expiration date for this notification was February 12, 1982.

All necessary clearances have been obtained.

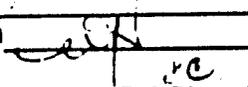
Responsible Officers

The officer responsible for backstopping this project in AID/W is Mr. Sidney A. Chambers (AFR/DR/CCWAP). The officer responsible in USAID/Yaounde is Mr. Gary Bittner.

III. Recommendation:

That you sign the attached Project Authorization, and thereby approve 1) life of project funding of \$8,040,000 in grant funds and \$5,600,000 in loan funds; and 2) the waivers as described in the memorandum and the appendices to the authorization.

Clearances:

AFR/DR/CCWAP:LBond 
 AFR/DR/SDP:BBoyd (draft)
 AFR/DR/ARD:CFields (draft)
 AFR/DR/EHR:HSteverson (draft)
 SER/COM/ALI:WGill (draft)
 AFR/DR/ENGR:ATummarello(draft)
 AFR/CA:KShafer (draft)
 GC/AFR:EDragon
 AFR/DP:DWilson (draft)
 AFR/DP/PPEA/E:HMiles (draft)
 AFR/DR:NCohen
 DAA/AFR:WHNorth 

Drafted by:AFR/DR/CCWAP:Schambers:cel:11/27/81.

PROJECT AUTHORIZATION

Name of Country : Cameroon

Name of Project : North Cameroon Seed Multiplication Phase II

Number of Project : 631-0023

1. Pursuant to Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the North Cameroon Seed Multiplication Project - Phase II for the United Republic of Cameroon (GURC), "Cooperating Country" involving planned obligations of not to exceed \$8,040,000 in grant funds and \$5,600,000 in loan funds over a five-year period from date of authorization, subject to the availability of funds in accordance with the A.I.D. OYB/allotment process, to help in financing foreign exchange and local currency costs for the project.
2. The purpose of the project is to assist the cooperating country to create an institution which will produce adequate quantities of improved sorghum, peanut, corn and millet seed for distribution to farmers. The project consists of the provision of technical assistance, participant training, commodity procurement and construction of seed processing centers for two seed multiplication farms.
3. The project agreement, which may be negotiated and executed by the officers to whom such authority has been delegated in accordance with A.I.D. Regulations and delegations of authority, shall be subject to the following essential terms and covenants and major conditions, together with such other items and conditions as A.I.D. may deem appropriate.

a. Interest Rate and Terms of Repayment

The Cooperating Country shall repay the loan to A.I.D. in U.S. dollars within forty (40) years from the date of first disbursement of the loan, including a grace period of not to exceed ten (10) years. The Cooperating Country shall pay to A.I.D. in U.S. dollars interest from the date of first disbursement of the loan at the rate of (a) two percent (2%) per annum during the first ten (10) years, and (b) three percent (3%) per annum on the outstanding disbursed balance of the loan and on any due and unpaid interest accrued thereon.

b. Source and Origin of Goods and Services

(1) Goods and Services Financed Under the Loan

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

(2) Goods and Services Financed Under the Grant

Goods and Services financed by A.I.D. under the grant, will have their source and origin in the United States and the Cooperating Country, except as A.I.D. may otherwise agree in writing. Ocean shipping financed by A.I.D. under the grant shall, except as A.I.D. may otherwise agree in writing, be financed only on flag vessels of the United States.

c. Conditions Precedent

The Project Agreement shall contain in addition to the standard Conditions Precedent (legal opinion, specimen signatures, designation of authorized representatives), the following clauses:

I. Construction

Prior to disbursement of the assistance for each construction activity, or to the issuance of documentation pursuant to which disbursement will be made with respect thereto, the Cooperating Country will, except as the Parties may otherwise agree in writing, furnish to A.I.D. with respect to such construction activity, in form and substance satisfactory to A.I.D.:

- (a) An executed contract for engineering or other services with a firm acceptable to AID;
- (b) Plans and specifications, bid documents and time schedules for such construction activity;
- (c) An executed contract acceptable to A.I.D. with a firm acceptable to A.I.D. for construction supervision services of such construction activity;
- (d) An executed contract for construction services for such activity with a firm acceptable to A.I.D.; and
- (e) Evidence that an adequate supply of water and electricity is available for each of the project construction sites.

II. Commodity and Equipment Procurement

Prior to disbursement of the assistance for procurement of commodities and equipment from the United States (except procurement of commodities and equipment by the technical assistance contractor), or to the issuance by A.I.D. of

documentation pursuant to which disbursement will be made with respect thereto, the Cooperating Country will, except as the Parties may otherwise agree in writing, furnish to A.I.D., with respect to each such commodity and equipment purchase, in form and substance satisfactory to A.I.D.:

- (a) Detailed specifications for such commodities and equipment; and
- (b) An executed contract or other suitable arrangements, with a firm acceptable to A.I.D. for the services of a procurement services agent to purchase such commodities and equipment on behalf of the Cooperating Country.

d. Covenants:

The project agreement shall contain covenants providing in substance that:

- 1) Within one year from the date of this Agreement, the Government agrees to cause to be negotiated and executed, and furnished to A.I.D. in form and substance satisfactory to A.I.D., firm agreements between IRA and MIDEVIV and between SODECOTON and MIDEVIV, establishing the institutional linkages between these respective organizations and governing the procedures by which the Project actions described in this Project Paper will be carried out.

2) Project Evaluation:

The Parties agree to establish an evaluation program as part of the Project. Except as the Parties otherwise agree in writing, the program will include, during the implementation of the project and at one or more points thereafter:

- a) Evaluation of progress toward attainment of the objectives of the project;
- b) Identification and evaluation of problem areas of constraints which may inhibit such attainment;
- c) Assessment of how such information may be used to help overcome such problems; and
- d) Evaluation, to the degree feasible, of the overall development impact of the Project.

e. Waivers:

Notwithstanding paragraph b. above, the following waivers are hereby approved:

- 1) A source/origin waiver from Geographic Codes 000 and 941 to Code 935 and a proprietary procurement waiver, based upon the justification set forth in Appendix A, attached hereto, to permit the procurement of Massey Ferguson, Hudson, Teenoma and Nodet Gougis equipment and spare parts, already standard to GURC operations, with an approximate value of \$191,000. It is hereby determined that exclusion of the procurement of the construction commodities from Free World countries other than the Cooperating Country and countries included in Code 941 would seriously impede attainment of

U.S. Foreign policy objectives and the objectives of the foreign assistance program.

- 2) A vehicle procurement source/origin waiver from Geographic Codes 000 and 941, to Geographic Code 935, and a waiver of Section 636(i) of the Foreign Assistance Act of 1961, as amended, and a proprietary procurement waiver for the purchase of three 7-9 ton Toyota cargo trucks with platform beds and side racks, and related spare parts with an approximate value of \$130,000, based on the justification set forth in Appendix B, attached hereto. It is hereby determined that exclusion of the procurement of the vehicles from Free World countries other than the Cooperating Country and countries included in Code 941 would seriously impede attainment of U.S. Foreign policy objectives and the objectives of the foreign assistance program, and that special circumstances exist which justify a waiver of the requirements of Section 636(i) of the Foreign Assistance Act of 1961, as amended.
- 3) A proprietary procurement waiver in the amount of \$237,000 for Lilliston, Peerlers, Hobbs and Clipper farm equipment based on the justification set forth in Appendix C, attached hereto. This waiver is essential because of the superior designs, capacities, durability and cost, to successful project implementation under the conditions which exist in North Cameroon, and for standardization by the GURC. A list of the equipment is attached hereto.
- 4) A source/origin waiver from Codes 000 and 941 to Code 935 for the purchase of construction commodities with an approximate value of \$1,000,000, based on the justification set forth in Appendix D, attached hereto. It is hereby determined that exclusion of the procurement of the construction commodities from Free World countries other than the Cooperating Country and countries included in Code 941 would seriously impede attainment of U.S. Foreign policy objectives and the objectives of the foreign assistance program.

Date _____

F.S. Ruddy
Assistant Administrator
for Africa

APPENDIX A

Justification for a source/origin waiver from Codes 000 and 941 to Code 935 and a proprietary procurement waiver for procurement of select farm equipment.

- a) Cooperating Country : Cameroon
- b) Authorizing Document : Project Authorization
- c) Project : North Cameroon Seed Multiplication-II (631-0023)
- d) Nature of Funding : Grant

<u>e) Description of Goods</u>	<u>Quantity</u>	<u>Cost \$</u>
Massey Ferguson 290 tractor	3	55,200
Massey Ferguson 265 tractor	3	48,300
Massey Ferguson 21 Disc Harrow	2	7,400
Massey Ferguson 765 Disc Plow	2	6,100
Nodet Gougis pneumatic 11 planter	2	20,000
Tecnoma TS-400 22ft. sprayer	2	7,600
Hudson backpack sprayer	8	2,400
		<u>147,000</u>
SPARE PARTS 30%		44,000
Total		<u>191,000</u>

- f) Approximate Value : \$191,000
- g) Probable Source : Cameroon
- h) Probable Origin : United Kingdom, Canada, U.S. and France

Discussion and Justification

The following is a list of field equipment purchased during Phase I of the project by either AID or the GURC.

<u>Brand</u>	<u>Model</u>	<u>Description</u>	<u>Quantity</u>
Massey Ferguson	265	tractor	2
Ford	3000	"	1
John Deere	2010	"	1
Massey Ferguson	35	"	2
Massey Ferguson	21	disc harrow	2
Massey Ferguson	765	disc plow	2
Nodet Gougis	11	planter	2
Teenoma	TS-200	sprayer	1
Hudson	backpack	sprayers	3
Hunrd	24 blade	disc harrow	1
Gard	2 blade	disc plow	1
Ebra	4 row plate	planter	1

This waiver is needed to allow the grantee to procure equipment and spare parts that are already standard to their present operations. The Massey Ferguson (MF) 765 disc plows and MF 21 disc harrows were chosen over the Hunrd disc harrow and Gard disc plow because of durability. Project personnel experienced less breakdown time during the critical seed bed preparation period (2 - 3 weeks) with the MF 765 plow and MF 21 disc harrow. The MF 290 tractors were selected because 75 horsepower is required to operate the Lilliston 1580 peanut combine, and neither John Deere nor Ford has the appropriate size tractors available in country. In addition, long periods of back orders for spare parts have occurred when trying to get parts for the Ford and John Deere tractors. Three MF 265 tractors were chosen with the optional hydraulic lift for dumping seed from the Peckers wagons. In addition, the MF 265 tractors were chosen over Ford and John Deere because of less break-down time. The Nodet Gougis pneumatic planter was chosen over the Ebra model because the delicate peanut seed is handled by air rather than a turning metal plate which results in a higher seed germination. The Teenoma TS-400, 22 foot tractor mounted sprayers were chosen because parts are interchangeable with the TS-200 model and the tanks have a larger water capacity which is necessary for spraying pests quickly at very critical periods. The Hudson backpack sprayer has proven its durability and flexibility when disinfecting storage areas and equipment. It is expected that all the items in the waiver request will be purchased in-country from a dealer or dealers who have the service facilities and trained personnel to respond to recurring support needs. Local firms with repair parts and maintenance units in Yaounde, Douala, and Garoua will be favored for this procurement.

AID Handbook 11, Chapter 3, paragraph 2.4.2.b. allows proprietary procurement when justified in terms of one or more of the following factors:

- 1) Standardization which allows for economies in maintenance of spare parts and an increase in technical familiarity by operating personnel and mechanics; and
- 2) Compatibility with equipment on hand which has proven to be very economical, dependable, and durable under local conditions.

A.I.D. Handbook 1, Supplement B, Chapter 5B4b(7), permits a waiver of the authorized geographic code when circumstances are determined to be critical to the success of project objectives.

The seed multiplication farms at Guetele and Sanguere are located in an agriculture area where most of the labor is done manually. The two seed farms have not reached their full production due to the unavailability and unreliability of manpower resources at the critical times of seed bed preparation planting and harvesting. If the required equipment can be purchased locally, it will be available for the 1982 planting season which begins in April. If the request for a source/origin waiver is not approved, the time required for codes 000 or 941 procurement would cause the project to miss the 1982 planting season and thereby cause a one year delay in project implementation. Therefore, it is deemed urgent that the project be permitted to purchase the equipment of Code 935 origin.

Recommendation: Based upon the justification provided above, that you:

- 1) approve a procurement source/origin waiver from AID Geographic Codes 000 and 941 to Code 935;
- 2) conclude that special circumstances exist requiring a waiver of the directives contained in Handbook 1, Supplement B, Chapter 5B; and
- 3) certify that exclusion of procurement of the above described commodities from Free World countries other than the cooperating country and countries included in Code 941 would seriously impede the attainment of U.S. foreign policy objectives and objectives of the foreign assistance program.

APPENDIX B

Justification for a waiver of Section 636(l) of the Foreign Assistance Act, a source/origin waiver from Codes 000 and 941 to Code 935, and a proprietary procurement waiver for procurement of three Toyota flatbed trucks.

- a) Cooperating Country : Cameroon
- b) Authorizing Document : Project Authorization
- c) Project : North Cameroon Seed Multiplication-II (631-0023)
- d) Nature of Funding : Grant
- e) Description of Goods : Three 7-9 ton Toyota cargo trucks with spare parts (30%)
- f) Approximate Value : \$130,000
- g) Probable Source : Cameroon
- h) Probable Origin : Japan

Discussion and Justification

Project implementation involves the transportation of equipment, fertilizers, construction material and seed to and from the project sites. Three 7-9 ton cargo trucks with platform beds and side racks are required to move these commodities on a timely basis. Transportation of these commodities must take place during the dry season as opposed to the wet season when the roads become slippery and impassable.

If the vehicles are not bought early, project implementation will be delayed by one year.

Two Toyota 9-ton trucks and three Toyota pick-up trucks were purchased under Phase I of the project. The GURC wishes to standardize the project fleet using Toyotas for the following reasons:

- 1) service and spare parts are available locally;
- 2) standardizing on Toyotas facilitates the maintenance of a spare parts inventory necessary to reduce breakdown time; and
- 3) project mechanics are already familiar with Toyotas.

Toyota cargo trucks of the required specifications are always in stock locally for immediate delivery to the project sites.

U.S. manufactured trucks of the required specifications are not available locally and cannot be procured in time for the current dry season. Moreover, under another project the same specifications were transmitted to a procurement services agent (AAPC) in an attempt to obtain U.S. trucks, but no U.S. manufacturer complied.

AID Handbook 11, Chapter 3, paragraph 2.4.2.b.(1) permits proprietary procurement when justified on the benefits to be achieved through standardizing on a particular type of vehicle.

A.I.D. Handbook 11, Chapter 3, paragraph 2.6.1.3.a(1) permits a change in the authorized geographic code when circumstances are determined to be critical to the success of project objectives.

It is considered urgent that the project be permitted to purchase the Toyota trucks locally. Otherwise, the project will face a one year delay in project implementation which will stifle project momentum and compromise project objectives.

Recommendation: Based upon the justification provided above, that you:

1. Approve a procurement source/origin waiver from A.I.D. Geographic Codes 000 and 941 to Code 935;
2. Conclude that special circumstances exist requiring a waiver of Section 636(i) of the Foreign Assistance Act; and
3. Certify that exclusion of procurement from Free World countries other than the cooperating country and countries included in Code 941 of the above described commodities would seriously impede the attainment of U.S. foreign policy objectives and the objectives of the foreign assistance program.

APPENDIX C

Justification for proprietary procurement of select farm equipment and spare parts.

- a) Cooperating Country : Cameroon
- b) Authorizing Document : Project Authorization
- c) Project : North Cameroon Seed Multiplication-II (631-0023)
- d) Nature of Funding : Grant

<u>e) Description of Goods</u>	<u>Quantity</u>	<u>Cost \$</u>
Lilliston 2000 series 4-row rolling cultivator	4	12,100
Lilliston 8100 series 2-row digger-shaker inverter	4	14,500
Lilliston 1580 peanut combine 540 RPM	4	54,000
Peerlers, 14 foot hydraulic drying wagons	12	40,500
Jet Dryer Peerlers swing arm mount 5 HP, 3 phase 50 cycle	6	17,700
Hobbs 488 complete peanut cleaner	2	37,000
Clipper 27 seed cleaner	2	6,000
		<hr/>
		181,800
Spare parts 30%		55,200
		<hr/>
TOTAL		237,000

f) Probable Source : U.S.

g) Probable Origin : U.S.

Justification:

The above equipment was recommended by Jim Beck, an agriculture machinery expert from Mississippi State University, during the design process. The project manager and Gary Ruesche from Mississippi State were able to see all the equipment in operation in the peanut production area of the U.S.

A.I.D. Handbook 11, Chapter 3, paragraph 2.4.2.b. permits proprietary procurement when certain equipment provides substantial benefits in achieving project objectives. The following discussion details these benefits as determined by Mr. Beck, Mr. Reusche and the project manager. The justification will focus on these points: (1) standardization and compatibility with equipment on hand (Clipper 27); (2) proven economical performance under conditions similar to those in Cameroon; and (3) service availability, dependability and superior design features.

The Lilliston cultivator uses a slicer-tine spider for cultivating rather than the conventional shovel cultivators. The cultivator can be used on a wider range of soil conditions due to the speed at which it operates. The Lilliston digger-shaker-inverter was selected over other models because the windrows were laid into a neat perpendicular doublepile position with pods exposed to the sun and air for uniform drying. The Lilliston combine was selected over the Hustler model because of the balance of the machine's total weight, and 15 years of field performance. The Peerlers wagons and Jet dryers were chosen for their flexibility of plenum hook-up and the capacity of the hydraulic hoist. The Hobbs 488 cleaner was chosen for its large capacity of cleaning 7,500 to 10,000 pounds per hour and its accurate separation of seed from foreign material. Many other brands of U.S. manufactured agriculture equipment were considered during the selection process, but due to design features, capacities, durability and cost estimates, the above mentioned equipment is recommended for the Phase II project. The Clipper 27 was selected due to compatibility with other models currently being successfully used by the Grantee.

Recommendation: Based upon the justification provided above, that you approve the proprietary procurement of the farm equipment listed above.

APPENDIX D

Justification for a source origin waiver from Codes 000 and 941 to Code 935 for construction commodities.

- a) Cooperating Country : Cameroon
- b) Authorizing Document : Project Authorization
- c) Project : North Cameroon Seed Multiplication-II (631-0023)
- d) Nature of Funding : Loan
- e) Description of Goods :
 - 1. Reinforcement steel
 - 2. Electrical wires & fixtures
 - 3. Piping & plumbing fixtures
 - 4. Miscellaneous metal items (frames, handrails, etc.)
 - 5. Glazing materials (glass, caulking, etc.)
 - 6. Sundries
- f) Approximate Total Value : \$1,000,000
- g) Probable Source : Cameroon
- h) Probable Origin : France, U.K., Germany, Belgium

Discussion and Justification

A.I.D. Handbook 1, Supplement B, Chapter 5B4b(7) permits a change in the authorized geographic codes for purchases of commodities when circumstances are determined to be critical to the success of the project objectives.

None of the commodities listed above have their origin in Cameroon. Procurement of commodities from Code 941 countries other than the U.S. is also limited. There is no steel production in West Africa. Other construction commodities (e.g., electrical wiring and fixtures, plumbing, glass, etc.) are imported mostly from western European countries. The required commodities are available on the local market.

As the exact specifications for the commodities required can not be determined until the construction contractor is selected, the commodities can not be ordered from the U.S. and stocked for later use. By the time the construction contractor is selected, we will be approximately 12 months into project implementation. Ordering the commodities from the U.S. would require a minimum leadtime of 9 months. It is highly probable that this unacceptable delay would be even longer given the poor transportation links between the U.S. and the Cameroon. In addition, bid prices are likely to be higher given transportation costs and the probability of damage and pilferage would increase significantly.

The buildings to be constructed must be compatible with the existing buildings in the project area. The commodities listed above are in common use in the Cameroon and

can be more easily maintained than commodities from the U.S. as replacement parts or complete units can be purchased on the local market. There are no buildings built with American specified commodities in the Cameroon.

The required commodities are available on the local market in sufficient quantities so that procurement can commence immediately after the construction contract is signed, thus permitting the construction phase to begin without any delays.

Recommendation: Based upon the justification provided above, that you:

- 1) approve a procurement source/origin waiver from AID Geographic Codes 000 and 941 to Code 935;
- 2) conclude that special circumstances exist requiring a waiver of the directives contained in Handbook 1, Supplement B, Chapter 5B; and
- 3) certify that exclusion of procurement of the above described commodities from Free World countries other than the cooperating country and countries included in Code 941 would seriously impede the attainment of U.S. foreign policy objectives and objectives of the foreign assistance program.

North Cameroon Seed Multiplication Project (Phase II)
631-0023

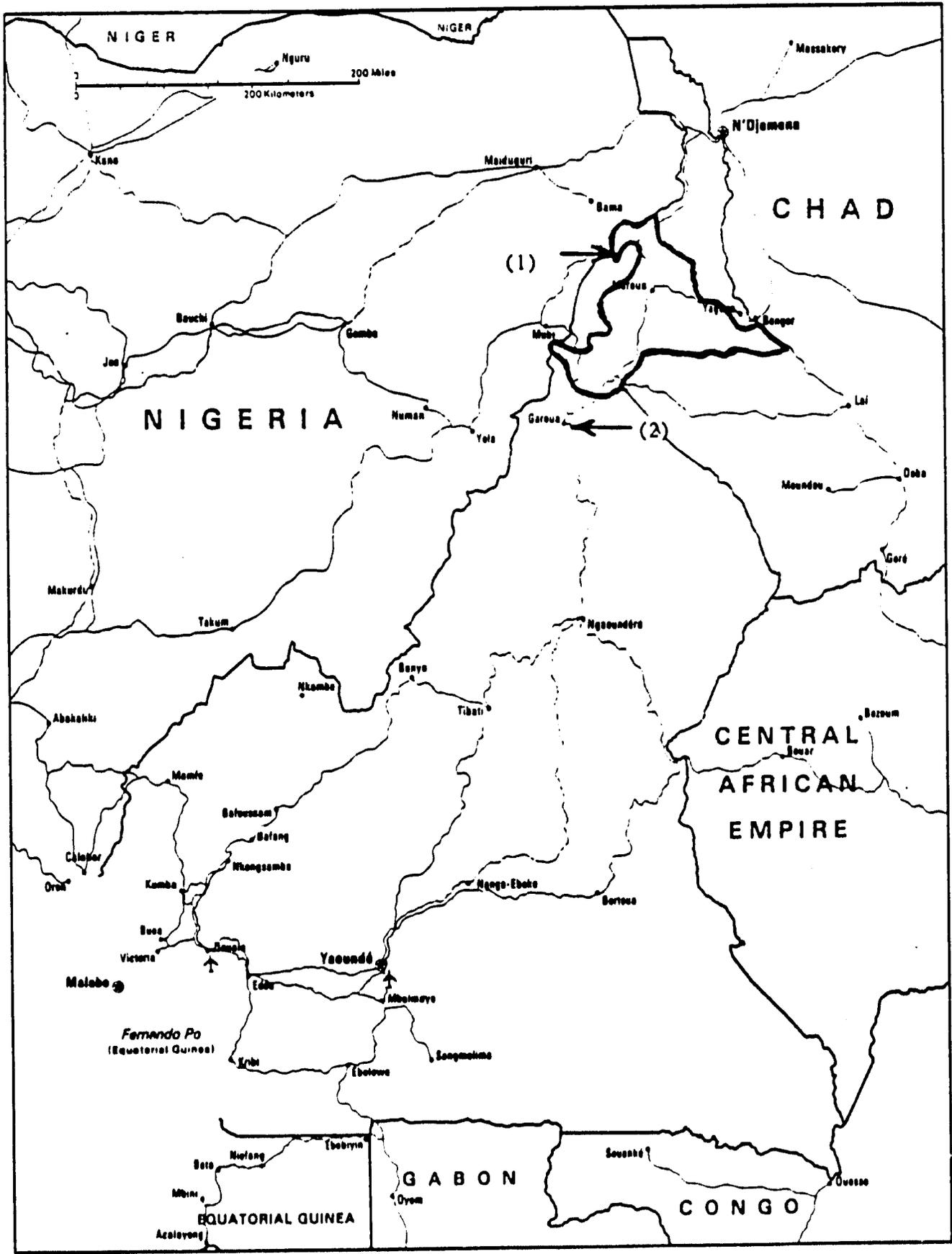
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Cameroon



909706 9-77 (541804)
 Lambert Conformal Projection
 Standard parallels 6° and 33°
 Scale 1:6,400,000

- (1) Guetele Seed Farm
- (2) Sanguere Seed Farm
- Project Area
- Railroad
- Road
- ✈ Airport

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Mr. Gary Reusche, Research Associate

Center North Project

Mr. François Beroud, Garoua

REDSO/WA

Mr. Paul Scott, Regional Legal Advisor
Mr. Norm Skow, Contract Specialist
Mr. Hugh Garmany, Procurement Specialist

5/1

I. SUMMARY AND RECOMMENDATIONS

A. Borrower/Grantee and Executing Agencies

The borrower/grantee will be the Government of the United Republic of Cameroon (GURC), represented by the Ministry of Economic Affairs and Planning (MINEP). The executing agencies will be the Food Development Authority (MIDEVIV), an organization within the Ministry of Agriculture, and the Institute for Agriculture Research (IRA).

B. Recommendations

(1) A grant of \$8,040,000 and a loan of \$5,600,000 should be authorized for the North Cameroon Seed Multiplication Project Phase II (631-0023). The five year project begins in FY 82 and is designed to increase the quantity, quality, and availability of improved peanuts, corn, sorghum, and millet seed for farms in Northern Cameroon. The grant will finance technical assistance, training, and equipment as described in Part Two of this Paper. The standard development loan will finance construction of facilities at two seed multiplication farms, a cold storage unit, and a regional seed testing laboratory as described in Part Two and Annex O of this Paper.

(2) Mission requests that AID/Washington redelegate the authority to allow the Regional Development Services Office/West Africa (REDSO/WA) Contracts Officer authority to negotiate the technical assistance contract.

(3) Proprietary procurement and source/origin waivers, pursuant to Handbook 15 (AID financed commodities), should be granted to permit the purchase of equipment and vehicles as justified in Annex F.

(4) The recommendation for a Negative Determination in the Initial Environmental Examination should be approved (Annex E).

C. The Project

The goal of the project is to increase farmers' real income and productivity.

The purpose of the project is to assist the GURC to create an institution which will multiply adequate quantities of improved peanut, corn, sorghum, and millet seed for distribution to farmers.

The proposed project is a second phase activity to the previous North Cameroon Seed Multiplication Project. Two seed farms which were established under Phase I will be further developed to provide high quality peanut, corn, sorghum, and millet seed for distribution to approximately 163,000 farm families in the North Province. Two seed processing plants and seed storage units will be constructed at the farms as well as office and housing units. In order to verify the physical and biological quality of the seeds before distribution, a regional seed testing laboratory will be constructed.

One seed cold storage facility will be constructed at the Institute for Agricultural Research (IRA) in order to maintain seed viability over five growing seasons. A training program to train the trainers of extension agents will be established.

AID will grant-finance a technical assistance contract to provide long and short-term advisors, equipment, and vehicles necessary to operate two seed farms. Long and short-term training in the U.S. and third countries will also be grant financed. The project will finance construction under standard development loan terms.

The GURC will finance cash costs associated with personnel salaries, operating costs of the two seed farms, operating costs for all equipment, in-country transport of commodities, and participants' international travel. It will also provide an in-kind contribution and land and existing buildings.

D. Summary Findings

The project has been reviewed for technical, administrative, social, economic, and environmental soundness. In each case the project was found to be feasible and beneficial.

E. Legal Criteria

The planning and costing requirements of Section 611(a) of the Foreign Assistance Act are considered satisfied.

F. Project Issues

(1) What Have We Learned From the First Phase of the Project that Supports the Need to Continue with a Second Phase?

The purpose of the North Cameroon Seed Multiplication project, as authorized in November 1975, was to establish and institutionalize a self-sustaining, regional system for production, distribution, and use of improved peanut and sorghum seed in North Cameroon.

Shown below is a summary of the project's projected and actual outputs.

<u>Output</u>	<u>Project Paper (1975)</u>	<u>1980 Results</u>
Seed (tons)		
Sorghum	400	47
Peanuts	120	145
Seed outlets	50	21
Trained Extension Agents	200	120
Counterpart Positions	7	16
Training		
Long-term (U.S.)	8	4
Short-term (U.S.)	-	5
Short-term (3rd Country)	6	3

The project did not achieve its purpose because the Government of Cameroon and USAID tried to do too many activities with limited resources. As a result, seed quality control was not maintained.

Seed quality control was not maintained due to the following reasons:

1. Contract farmers mixed improved seed with their own seed resulting in seed of unknown maturity and vigor.
2. The extension agent to farmer ratio was insufficient to demonstrate the importance of isolating improved seed.
3. The regular supply of peanut breeder seed to the project was discontinued.
4. There were insufficient inputs (fertilizers, pesticides, credit, etc.) available to the farmer for him to realize the maximum yield potential of improved seed.
5. Cameroonians trained in seed technology did not have any practical experience in seed farm multiplication.

However, the Cameroonian Government has considered the project to be very important and is very interested in continuing its involvement in seed multiplication activities. An example of Cameroon's continued interest in this activity is expressed in Annex B, Request for Assistance.

The GURC has assigned twice the number of agriculturists to the project as was planned (16 rather than 7). In support of these staff resources, the Cameroon Government has made a substantial budgetary commitment to the project. The Project Paper indicated that GURC's contribution to the project would be \$775,000 compared to AID's contribution of 1.5 million. In the GURC budget year 1979/80 approximately \$850,000 was allocated to the project. In one year the GURC allocated more resources for the project than was estimated for its total five year contribution.

It is obvious that the GURC perceives a need for the seed multiplication project. In addition, the GURC developed a national seed plan in 1980 describing the need for the plan and defining a program for providing improved seed varieties throughout Cameroon. The National Seed Plan has been incorporated in the GURC's Fifth Five Year Development Plan (1981-1986). The project has had a role in focussing national attention to food crop production.

Some of the originally proposed project outputs were met or exceeded, such as the peanut seed production and counterpart staffing and training, while other output targets were not reached, such as sorghum seed production, seed outlets and trained extension agents. There were two key phrases in the purpose statement that are indicative of the problems encountered during the first phase of the project. They are "establish and institutionalize" a system for "production, distribution and use" of improved seeds. Trying to establish and institutionalize a system for production, distribution, and utilization of improved seed within a five year period was too great of an undertaking for the project staff. The direction of the new institution was not sufficiently focussed on the production of its primary product - improved seed. The project's direction was primarily on extension and to the farmer. While certainly a laudable direction, the product was not forthcoming. High quality improved seed was not produced.

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The project's primary focus is on the production of high quality seed throughout the seed flow program (See Annex L Seed Flow Program). As a first step, the second phase of the project is providing for continuous supply of breeder seed and a seed testing laboratory which will provide continuous monitoring of seed quality. The seed multiplication farms will be fully equipped with field and seed processing equipment. The implementing agency, MIDEVIV, will focus its work on seed multiplication and will not be directly involved in the distribution of seed to farmers. Extension agents will demonstrate to the farmers the final multiplication and the use of inputs available to maximize yields of improved seeds.

(2) Is there an Adequate Extension System to Distribute and Demonstrate the Use of Improved Seed to Farmers and will there be Sufficient Inputs Available to Maximize these Yields.

(a) During the first phase of the project, MIDEVIV attempted to coordinate the distribution of seeds through the Ministry of Agriculture's Extension Service. This was not successful due to the small ratio of extension agents to farmers, little or no transportation, and no support for those agents having transportation.

The Cameroon Government has realized the problem it has had with the extension service. In the design of the Center North project (a rural development activity funded by the Cameroon government and the World Bank), the decision was made to allocate extension services for food and cash crop production to SODECOTON (Society for the Development of Cotton). Approximately two hundred of the extension agents with the Ministry of Agriculture will be transferred to the Center North project. This will bring the extension cadre up to approximately 700 agents, and a ratio of one agent to 233 farm families. The organization has worked with the development of cotton production in the North Province and provides extension services, other agricultural inputs, and marketing services to northern farmers. As a result of the Center North project, the mandate of SODECOTON includes the further development of food crop production.

The proposed project will provide improved seeds to the Center North project for distribution to the 163,000 farm families in the project zone. The agent to farm-family ratio is considered adequate by the Government of Cameroon and USAID to distribute and demonstrate the use of improved seed. This will allow MIDEVIV to concentrate its resources on the multiplication of high quality seed.

(b) The Center North project will provide effective services including input delivery of seed, fertilizers and pesticides, extension, supervised credit, marketing and adaptive research. SODECOTON has demonstrated its ability to deliver the necessary inputs to increase cotton production. All seasonal inputs are procured and distributed to the farmers before the planting season. Farmers are charged for fertilizer and pesticides. Recovery of costs is made at the time of marketing. Thus, there is no initial cash outlay, the price of additional inputs is deducted at harvest time. Farm families are already

using these additional inputs and the Government of Cameroon and USAID foresee no problems with the quantity, availability, and acceptability of the inputs.

(3) Will SODECOTON Concentrate its Resources on the Production of Cotton at the Expense of Food Crop Farmers and Production?

Cotton production, when first introduced in 1951, was developed on an extensive, low-input basis. The production of cotton reached a peak in 1969 of 91,000 tons only to fall to 27,800 tons four years later. This dramatic drop in production was the result of economic and climatic factors. A new strategy was developed: to produce cotton on an intensive basis thus freeing land and labor for food crops. Cotton production is increasing and the Cameroon Government is ready to proceed with the further development of food crop production. The next phase of this strategy is to develop other food crops as cash crops, such as peanut and corn, and to improve productivity of the basic staple crops, sorghum and millet. The execution of this continuing strategy will be through the means of the Center North project and its primary implementing institution, SODECOTON.

MIDEVIV and the Mission agricultural staff have discussed the seed multiplication project with the new director of the Center North project. He has indicated that they will purchase as much improved seed as will be available as long as it is of high quality.

(4) Will Prices for Improved Seeds Reflect the Cost of Production or will the seeds be Subsidized by the Cameroon Government?

The Cameroon government does provide subsidized agricultural inputs such as improved seed, fertilizers, herbicides, insecticides, and sprayers to the growers of the major export crops of coffee, cocoa and cotton. The Center North project will continue to provide subsidized inputs to cotton farmers although it is recommended by the World Bank that these subsidies be gradually removed beginning in 1984.

The proposed project will direct its activities to the economic operation of the two seed farms. Current grain prices are as follows: millet and sorghum 45-CFA/kilogram, peanuts-90 CFA/kilogram, and corn-60 CFA/kilogram. Seed prices will be established that will cover the costs of producing the improved seed but will not be expected to cover the initial start-up costs of establishing the two farms. This self-sufficiency of the seed farms' operations will involve more than just raising seed prices to cover costs, although a seed price of four times the current market price would cover MIDEVIV's operating costs. Seed prices will be determined on the basis of quality and cost of production. The Center North project will purchase the improved seed and distribute the seed to farmers in Center North project area. Seed will be available to farmers, outside the project area, which are willing to pay the same price for seed as the Center North project. Seed farm personnel will also strive for increasing yields of high quality seeds through good farm management techniques. Project administrators will also attempt the novel and resist creating a top-heavy seed farm staff. The project's training program emphasizes practical training at U.S. private seed firms which, in the long-term, will also support an efficient seed farm operation.

II. PROJECT DESCRIPTION

A. Background

The proposed project is the second phase of the North Cameroon Seed Multiplication Project.

The original project was designed in 1975 - a period of drought when farmers were reduced to eat their own seed stocks. The project was designed to provide improved seed varieties of peanuts and sorghum to farmers of the North Province, to provide a seed stock reserve, and to begin to provide a necessary input that would result in increased production yields. There were no existing facilities in North Cameroon where such an undertaking could take place nor was there an existing government institution with experience in food grain seed multiplication. The newly created Food Development Authority (MIDEVIV) was selected to be the implementing institution.

The project trained members of the MIDEVIV staff in seed technology and land was cleared at three locations to multiply seeds. Peanuts and sorghum were planted at the three farms and peanuts were also planted by contract farmers. While gaining experience in the administration of the project, the staff was unable to maintain quality control over the seed produced at multiple locations. The seed that was produced was not of good quality. Much of the seed was mixed with other local varieties and appropriate equipment was not available to properly clean and grade the seed.

MIDEVIV continued to assign additional people and allocate more budget resources to the project. The GURC saw a need because of a multiplicity of agricultural production projects to develop a national strategy to provide improved seed throughout the country. At its request the FAO provided technical assistance to MIDEVIV to develop a national seed plan. During the same period Mississippi State assisted MIDEVIV with an evaluation of the project's first phase and provided recommendations for future activities (See Annex K, Seed Flow Program). The representatives from FAO and Mississippi State recommended that MIDEVIV and USAID concentrate their resources on the development of a well-functioning regional seed multiplication system in the North Province before beginning other seed multiplication activities.

The basic agricultural system in the project zone includes research, multiplication, extension and farmers' production. Agricultural research is undertaken by the Institute of Agricultural Research (IRA). Breeder seed will be released by IRA to MIDEVIV and multiplied at two seed farms. Improved seed will be transferred to the primary extension institution, SODECOTON, which will distribute the improved seed to the farm families in the project region. Extension agents will demonstrate the final multiplication to the farmers (See Annex L).

During the past five years IRA has become increasingly involved with food crop research. Prior to that period, its research was primarily directed to cash crops such as coffee, cocoa, cotton and rubber. The proposed project

will provide the IRA station in the North Province with a peanut breeder, a cold storage unit and a regional seed testing laboratory. This will assure the project a regular supply of breeder seed and the means to perform tests of seed quality.

The proposed project will provide the equipment necessary to operate the two seed farms at Sanguere and Guetele and two seed processing plants. This will provide MIDEVIV with the mechanical and technical means to ensure seed quality. Housing will be provided at each farm for the seed farm staff and the technical assistance team. In addition, the headquarters for the MIDEVIV staff will be moved from Maroua to Garoua/Sanguere. In the past, the two seed farms had been "commuter farms" with the staff living in Maroua or Garoua and there was insufficient control over the seed farm activities. Personnel will live at the two farms to assure a constant surveillance of seed farm activities.

The farms are approximately 180 miles apart in different eco-climates. Each farm will have enough tractors, plows, discs, planters, cultivators, sprayers, diggers, wagons, and small tractor pulled combines to ensure the timely operations of planting and harvesting. Fertilizers and pesticides will be applied by trained personnel to ensure maximum yields. After harvesting, all seed will be processed, bagged and labeled. To help maintain the quality of seed, each farm will have dryers, shellers, cleaners, treaters, baggers and laboratory equipment. A machinery shop will be established at each farm to maintain and repair all field and seed processing equipment. A training room will be built to conduct in-service training courses on all aspects of seed multiplication. A processing and bulk storage facility will be built at each farm to handle the seed requirements.

The farm manager and agronomist at each farm will establish a crop rotation that will ensure that the different varieties of peanuts, corn, sorghum, or millet will not be mixed. Field inspectors will control weeds and crop pests. In addition, rogueing of off-type plants will take place in each field to maintain varietal purity. A small seed laboratory will be established at each farm to test and control the seed quality. The agronomist will determine when the different crop varieties should be harvested. He will test seed moisture content at harvest time and determine whether additional drying is needed. When the different varieties are at the correct storage moisture content, they will be bagged, labeled, and ultimately distributed through the Center North project to farmers.

The improved seeds will be an integral part of the Center-North Agriculture Development program. There will be an expanded urban demand, as well as an increasing international demand in Nigeria and Chad, for peanuts, corn, sorghum and millet. It is expected that peanuts will become the major cash crop for a third of the project zone's farmers and a secondary cash crop - after cotton - for many of the farmers. Approximately one-half of the peanut crop will be marketed. The majority (60 percent) of the corn will be marketed as well as an increasing proportion of the sorghum and millet (from 15 to 25 percent).

B. Detailed Project Description

(1) Project Goal and Purpose

The goal of the project is increase farmers' real income and productivity. The purpose of the project is to assist the GURC to create an institution which will produce adequate quantities of improved peanut, corn, sorghum, and millet seed for distribution to farmers.

(2) Project Outputs

(a) Breeder Seed and Cold Storage Unit

The North Cameroon Seed Multiplication Phase II Project will receive on an annual basis breeder seed from IRA-North. IRA-North will provide the following amounts of breeder seed: 2.5 tons of peanut, 300 kilograms of corn, 200 kilograms of sorghum, and 20 kilograms of millet. To help assure the continuation of this output, two participants will receive training in peanut breeding.

A cold storage unit will be constructed to maintain breeder seed for IRA-North. The unit will have two independent cooling systems to ensure seed viability for three to five years.

(b) Two Seed Multiplication Farms

The two existing seed stations at Sanguere and Guetele comprise 400 hectares and have warehouse facilities. Both stations will be upgraded. Seed processing plants, machinery repair facilities, and small laboratories will be constructed. Seed processing equipment and field equipment will be provided. In addition, offices and housing will be constructed for farm personnel. The seed multiplication farms will have the capacity to produce high quality seed. It is expected that at the end of the project at least the following amounts of seed will be produced annually: 216 metric tons of peanuts, 10.5 metric tons of sorghum, 10.5 metric tons of corn, and 1.3 metric tons of millet. This amount of seed will fulfill the projected requirements of the farmers in the Center North project (See Annex L).

(c) Regional Seed Testing Laboratory

A seed testing laboratory will be constructed and located at IRA-North in Maroua. It will be equipped with sufficient equipment to conduct germination, vigor, and moisture content tests. The laboratory will have the capacity to test 2500 seed samples annually by the end of the project. Prior to transferring improved seed to the Center North Project, the seed quality will be verified by the seed testing laboratory. To assist in the continuation of the output, two participants will receive training as seed laboratory technicians.

(d) Institutional Capacity to Train the Trainers of Extension Agents

A training program will be developed to train the trainers of extension and agricultural field personnel. A curriculum will be developed that will include the following points of seed appreciation:

1. Demonstrate that improved seed must be handled differently from grain.
2. Demonstrate how to isolate improved seed from other seed when planting and storing.
3. Demonstrate optimum planting densities.
4. Demonstrate the benefits of timely harvesting and drying.
5. Demonstrate the benefits of residual fertilizers in crop rotations.
6. Demonstrate the differences of local seed versus improved seed and additional inputs (fertilizer, insecticides) versus no inputs.

The North Cameroon Seed Multiplication Phase II project personnel will work with the extension service training unit of the Center North project. This unit has training sites at Guetele and Kaele and is staffed by seven training officers. The training unit will conduct on-going training for the 700 SODECOTON extension agents and Ministry of Agriculture field personnel.

The achievement of the goal will occur when all the project outputs are linked together in the seed flow chain from research to the farmer. IRA-North will develop improved food crop breeder seed and maintain the viability of the seed in the cold storage unit. As improved seed are developed, the Director of IRA will recommend the introduction of the new seed to the Variety Release Board. After the new variety is approved to enter the regional seed development program, the North Cameroon Seed Multiplication Project Phase II will multiply and sell the new variety to the Center North project and farmers. At this point, the project purpose will be achieved: to create an institution that will multiply improved sorghum, peanuts, corn, and millet seed for distribution to farmers. Before the improved varieties are sold to the Extension Agency, the Regional Seed Testing Laboratory will verify the quality of the seed through laboratory tests (i.e. percent germination, purity, vigor, etc.) The benefits of improved seed varieties will be demonstrated to the farmers by the extension agents. The goal, to increase farmers' real income and productivity, will be achieved when the farmers realize the production benefits of improved seed.

(3) Project Inputs

(a) USAID Contribution

Technical Assistance \$3,065,000

Twenty-three person years of long-term advisory assistance and thirty person months of short-term consultant assistance will be provided.

Long-term Advisors will include:

An Agronomist/Seed Specialist (5 PY) will be the Chief of Party for the

technical assistance team. This person will be the advisor to the director of the seed farms and will be based at the Sanguere farm.

An Agriculture Machinery Advisor (5 PY) will be stationed at the Guetele seed farm and be responsible for equipment maintenance and repairs at both seed farms.

An Administrator/Finance Specialist (5 PY) will be responsible for establishing administrative operations as well as budget and accounting systems for the two seed farms. This person will be based at the Sanguere seed farm.

A Peanut Breeder (5 PY) will be stationed at Maroua and will work for IRA-North producing breeder seed for the two seed farms.

A Seed Laboratory Technician (3 PY) will be responsible for the operation and supervision of the regional seed testing laboratory for IRA-North. This person will be based in Maroua (See Annex I for detailed job descriptions).

Each member of the Technical Assistance Team will have at least one counterpart who will takeover all of the responsibilities of the advisor prior to the end of the project.

Short-term advisory assistance will be provided in seed farm management, quality control, base-line studies, seed processing, pest management, farm machinery, agriculture extension training and evaluation.

Training \$866,000

The project's training component includes long and short-term training in the U.S., in third countries, and in Cameroon. All training will be in fields related to seed technology, agronomy (crops and soils), agriculture engineering and seed farm administration. Nine persons will receive long-term training, the majority of which will take place at commercial seed operations in the U.S. Six persons will each receive nine months short-term training, the majority of which will take place at Mississippi State University's Seed Technology Laboratory.

An additional six participants will attend short-term training in seed technology in third-country programs located in the Gambia, Senegal, Nigeria, and other African countries multiplying similar food crop seed. Twenty people will receive in-service training on the seed multiplication farms at Sanguere and Guetele.

A sufficient number of participants will be trained to replace the technical assistance team in its respective specialities and to provide a small core of trained seed specialists to help implement the national seed plan.

Commodities \$1,410,000

The following commodities will be financed by USAID:

Generators	\$ 80,000
Tractors	\$103,500
Field Equipment	\$132,100
Processing Equipment	\$280,700
Tools and Fuel Tanks	\$ 57,000
Vehicles	\$185,000
Lab and Audio Visual Equipment	\$ 17,300
Spare parts	\$198,000
Packing and Shipping	\$356,400

A complete commodities list is provided in Annex G. The equipment to be purchased in Cameroon complements and is standardized with the equipment purchased under the first phase of the project. See Annex F for the proprietary procurement waivers for items to be purchased for the project.

Other Costs \$440,000

Other costs include \$300,000 to provide for well surveys, well installation, and pipe connections to the water towers. Also, \$140,000 is budgeted to finance approximately 16 PM of U.S. Bureau of Census consultant services for evaluations.

Construction \$4,600,000

Loan funds will be provided for the construction of seed processing plants, repair facilities, offices, a laboratory, a cold storage unit and housing (See Annex O).

Provisions for contingencies are calculated at 10% and inflation is calculated at 15% and compounded annually. Total cost of USAID inputs is \$13,640,000 (See Section IV for detailed financial breakdown).

(b) GURC ContributionPersonnel

The GURC will finance salaries and support costs for eight senior level staff (agronomists), eight mid-level staff (Administrative and Agriculture Technicians), twenty-four skilled workers (mechanics, secretaries, etc.), and sixteen permanent unskilled workers. They will also finance all unskilled labor requirements. Total costs of GURC personnel are \$1,445,000.

Support of Vehicles and Equipment Already in Service

The GURC will finance operating costs for all vehicles and equipment already in service estimated at \$703,000.

Office Lease/Maintenance

The GURC will continue to finance all leased office space until completion of construction and all maintenance costs estimated at \$170,000.

Office Furniture/Equipment

The GURC will finance the purchase of office furniture and equipment estimated at \$25,000.

Travel for Participants

The GURC will finance all international airfare of participants estimated at \$68,000.

Support of New Vehicles/Equipment

The GURC will finance the recurrent costs associated with new vehicles and equipment estimated at \$828,000.

Fertilizers and Pesticides

The GURC will finance all fertilizers and pesticides estimated at \$340,000.

In-Country Transport

The GURC will finance all in-country transport of commodities estimated at \$282,000.

C. Other Related Activities

(1) AID related Activities

(a) National Cereals Research and Extension (NCRE)

The purpose of this project is to develop the institutional capacity to provide high-quality research on maize, rice, sorghum, and millet as well as to develop efficient linkages to facilitate transmission of the research results to the farmer. The NCRE project will provide a sorghum breeder and a cereals agronomist at the IRA-North Research station. Breeder seed developed by the researchers will be multiplied by the North Cameroon Seed Multiplication Phase II project and distributed to SODECOTON for distribution to the farmers.

(b) Semi-Arid Food Grain Research and Development (SAFGRAD)

The purpose of this project is to develop improved cereals (millet, sorghum, and maize), food legumes (cowpeas and peanuts), and cultural practices which are compatible with small farm semi-arid farming systems and to provide their adaptation in participating countries. An Extension agronomist stationed at IRA-North is doing field trials for sorghum and millet and grain legumes. The SAFGRAD project also complements the efforts of the whole seed program in the North.

(c) Regional Food Crop Protection (RFCP)

The purpose of this project is to encourage and facilitate the extension of integrated pest management concepts and techniques to small food crop farmers in the Sahel. A regional training advisor and an integrated pest management specialist can provide the North Cameroon Seed Multiplication Phase II project with in-service training on combatting food crop pests.

(d) Social Science Research and Training

The purpose of this project is to develop a center for economic and social science research in Cameroon. Field research by Cameroonian and U.S. researchers in the North Province is one of the ways the project is developing this capacity within Cameroon's Institute of Human Sciences (ISH). Field research teams are based in Kaele and Maroua (within the project zone) and Yagoua. These teams are collecting, among other things, farm level production and labor data at approximately 300 farms in the project zone. This information will be available in May 1982, and will serve as some of the baseline data required to evaluate the North Cameroon Seed Multiplication Phase II project.

(2) Other Related Activities(a) Center North Project (CNP)

This is a \$37 million IBRD-financed rural development project for North Cameroon. The project was signed in February 1981. The project activities include roads, stores, marketing facilities, and services including input delivery (fertilizers, pesticides), supervised credit, extension, marketing, and adaptive research. In the working documents of this project, the USAID financed North Cameroon Seed Multiplication Phase II project was identified as the supplier of improved peanut, sorghum, and corn seed to the CNP. Because of the infrastructure and services of the CNP, the project beneficiaries of the North Cameroon Seed Multiplication Phase II project and the CNP are the same.

(b) Institute for Agricultural Research (IRA)

The IRA has one research station in Maroua in the North Province. Its work is organized in two divisions: Food Crop and Fiber Crop Divisions. An extension agronomist is provided to IRA-North through the SAFGRAD program. A sorghum breeder and cereals agronomist will be assigned to the station by the National Cereals Research and Extension project and a peanut breeder will be provided through the North Cameroon Seed Multiplication Phase II project.

(c) National Seed Plan (NSP)

The Food and Agriculture Organization provided a seed expert to work within MIDEVIV/Yaounde and the Ministry of Economic Affairs and Planning to make recommendations for the formation of a national seed plan. The report was finished and presented to the Government of Cameroon in January 1981. The proposed North Cameroon Seed Multiplication Phase II project is viewed in the report and by the Government of Cameroon as a necessary step toward the development of a national seed plan (See Request for Technical Assistance, Annex B).

The proposed national seed plan, which is to be part of the Fifth Five Year Plan (1981-1986), recommends that a National Seed Committee be established to develop seed policies for Cameroon. It is further recommended that MIDEVIV be responsible for implementing these policies. The priority interventions are considered to be the continuation of the North Cameroon Seed Multiplication project followed by the creation of new seed multiplication farms. These farms are proposed to be located in Ntui for the forest zone; Yokadouma and Batouri for the East Province; Sabale and Ebolowa for the Center South Province; and Tonga for the West Province.

In conclusion, all activities mentioned in part C of Section II are linked to the Phase II project and complement one another in the development of a regional seed development program.

D. Beneficiaries

The primary and most important beneficiaries of the project will be 163,000 farm families of the region. The average size of the family is five to six persons with two to three people active in farming. The average size of the farm is 2.1 hectares. Farmers in the area grow sorghum, millet, peanuts, corn, vegetables, and legumes as food crops and cotton as a cash crop. Both husband and wife(ves) work on the farm. Women will benefit from the increases in food crop production, as they have their own plots which provide food for their family and/or extra income.

It is expected that peanuts will become a secondary cash crop after cotton. With approximately one-half of the peanuts being marketed, the extra income should have a positive effect for the family. However, it is presently unknown whether the extra-income will actually benefit the family or the head of the households. Thus, project benefits at the farmer level will be monitored and evaluated throughout the life of the project through funds provided by the Center North Project.

E. Relationship to USAID/Yaounde's Country Development Strategy Statement

This project is in conformance with the agriculture sector objectives and strategy outlined in the CDSS for Cameroon. Objectives in the agriculture sector include enhancing small-farmer income through self-sustained, real growth in agriculture production. The approved strategy to achieve this objective is increasing productivity through: (a) strengthening the ability of adaptive research organizations to develop low-cost technological packages -- including improved seed varieties -- as well as those institutions which produce resources required by the rural agriculture sector; and (b) strengthening and expanding the role of existing extension services and reinforcing their linkages to the research institutes. The CDSS further notes that the Center North project has been developed in close coordination with AID so that the program will be complementary.

In following this approved strategy, the project provides assistance to IRA (research) for the development of improved seed varieties; MIDEVIV (resources) for the mass production of this seed; and the Center North project (with its affiliation with SODECOTON) for its seed distribution and technology extension system to reach the targeted small-farmer. Linkages between these separate organizations are central themes in both the CDSS strategy and this project.

III. PROJECT ANALYSIS

A. Technical Feasibility

The North Cameroon Seed Multiplication Phase II project is a follow-on project to an existing seed development program in the North Province. The improved seed that will be available through the program represents the major food crops of the region. Representatives from Mississippi State University's Seed Technology Laboratory visited Cameroon twice during 1980. The purpose of these visits was to analyze the existing seed program and to make recommendations for a follow-on program. The theme of Mississippi State's recommendations was the need to maintain quality control throughout the seed multiplication process. In order to maintain high quality seed, a seed testing laboratory will be constructed, the two seed farms will be more fully mechanized, and there will be a continuing staff development program.

(1) Seed Testing Laboratory

A seed testing laboratory and cold storage unit will be built at IRA-North in Maroua. Test samples of seeds produced at the two seed farms will be performed to evaluate germination, vigor, and moisture content. Upon completion of the tests the seed will be labelled as appropriate. The cold storage unit will provide sufficient storage space for a three to five year supply of breeder seed. The seed laboratory will be under the administrative control of IRA-North rather than MIDEVIV in order to provide a system of checks and balances in the quality control program.

(2) Mechanization of Seed Farm Operations

The proposed field and seed processing equipment are listed in Annex G. The proper use of this equipment will maintain seed quality throughout the planting, harvesting, and processing period. For example, pneumatic planters will be used to minimize the cracking or splitting of peanut seed at planting time. Peanut diggers and combines will allow for quick digging, uniform drying, and gentle stripping of peanuts. This will reduce the loss of seed moisture content during the hot harvest season which, in the past, has resulted in low germination rates. The seed processing equipment will allow for proper seed cleaning and grading.

During the design phase the USAID project manager and personnel from Mississippi State University traveled through the peanut production area in the Southeast area of the U.S. The selection of the equipment listed in Annex G is a result of discussions with farmers and equipment dealers. The equipment in Annex F was selected over other types of equipment due to its durability and simplicity.

(3) Personnel and Training

Twelve people received long or short term training during the first phase of the project. These technicians and administrators form the nucleus for the continued development of the seed multiplication program, both regionally in the North, and nationally as Cameroon begins to implement its national seed plan. Additional training will be offered during the North Cameroon Seed Multiplication Phase II. This training includes peanut breeding, seed laboratory operation, equipment maintenance, and seed station administration. The latter field will be of particular interest because it will be conducted through private U.S. seed companies.

B. Administrative Feasibility

(1) USAID

The Mission has assigned a project manager from the Agriculture and Rural Development office to manage the project. The project has been designed and budgeted to allow for the most efficient administration of the project. The technical assistance contract will include all support services for the contract team, funds have been allocated for an A and E contract to handle all construction design and monitoring. The project manager will be able to direct his attention to the substantive aspects of the project rather than become overly involved with administrative details. The Management office will assist with procurement of major equipment and the engineer will approve construction documentation.

(2) MIDEVIV

MIDEVIV will be the primary implementing institution for the project. MIDEVIV and USAID have worked together for the past five years. Our experience has shown that it is capable of directing the project. MIDEVIV receives its budgetary allocations on a timely basis and can arrange for equipment and supplies to reach the project sites from the port of Douala.

(3) IRA-North

The IRA station in Maroua will be responsible for implementing part of the North Cameroon Seed Multiplication Phase II project. It will provide breeder seed to the two seed farms, maintain a stock of breeder seed in cold storage, and operate the seed testing laboratory. USAID has been working with several IRA stations and its directorate during the past several years. IRA has gained experience through the design and implementation of the National Cereals Research and Extension project and the implementation of the SAFGRAD project. The Cameroon government has been placing an increased emphasis on food crop research, and accordingly has been increasing budgetary support and staff support. This support is projected to continue, thereby assuring counterpart support, operating expense funds, and building construction supervision and maintenance.

(4) Center North Project

SODECOTON has been selected by the GURC to implement the Center North project based on its proven level of managerial competence. It will be responsible for the agricultural development activities, extension staff training, field trials, storage construction, marketplace improvements, and feeder roads improvement. Funds are provided in the Center North project for a project coordinating committee which will monitor and evaluate all project activities.

Social Soundness Analysis

The proposed project's main focus is on the institutionalization of a capability within MIDEVIV to produce improved varieties of sorghum, millet, peanut and corn seeds, for final multiplication and use by farmers in the Central North. While this role may be viewed as an intermediary step toward the achievement of the project goal, i.e., increasing farm production and incomes, it is nonetheless critical. To the extent that MIDEVIV will, hereafter, be able to provide farmers in the area with continuous increased supply of improved starter seed stocks, MIDEVIV will eliminate a major bottleneck in increasing food productivity and incomes.

It will be noted however, that the ultimate measure of this project's success goes beyond the institutionalization of a seed multiplication capability within MIDEVIV. An equally important gauge of success lies in farmers' acceptance of the improved seeds to be produced by MIDEVIV and the resulting increases in food productivity and incomes. This analysis therefore presents the socio-economic factors which may impact on farmers' adoption of improved cultivars. In addition, some analysis will be made on the on-going World Bank efforts to introduce improved packages of food technology in the Central North, since adoption of these will enhance the potentials of MIDEVIV's seeds.

Socio-Cultural and Economic Context

The geographic focus of the project is the Central North area of the North region, which is comprised of the departments of Diamare and Margui-Wandala and the arrondissement of Guider. The Central North, which covers an area of 19,700 square kilometers, accounts for 50% of the North region's total population, which in turn accounts for 30% of Cameroon's population. Of the Central North's population of 1.15 million, 85% lives in the rural areas, while the remaining 15% is in the urban areas. The bulk of the rural population lives in settlements with populations ranging from 500-1,000.

While there are about 16 different tribes in the North region, two main ethnic groups are found in the project area:

(a) Islamic Group - The Islamic group is predominated by the Fulani (60%). Other important Islamic tribes include the Bornouans, the Koto-ko, and the Mandara. While the Islamic group has traditionally been livestock-raisers, many of them are now sedentary agriculturists. The Fulani and Kotoko are prominent in local administration and are the most important landowners in the area.

(b) Non-Muslims - This group is made up of many tribes, the more predominant ones being the Toupouri in South Eastern Mindif and Southern Diamare, the Guider in the Guider district, and the Moundang, who reside in Kaele. These people are noted to be the more advanced agriculturists, and have traditionally been the main cotton-growers.

Topographical conditions and geological material vary widely in the project area, leading to numerous soil types and a complex pattern of soil distribution. The most prominent soil types in the area are deficient in phosphorous, as well as in nitrogen (although less so in the alluvial areas).

In developing and introducing improved seeds and cultural management

practices in the Central North, it is important to align efforts with the socio-economic context of the area. The Central North is in one of the poorest regions of Cameroon, where the main crop is cotton. Per capita income is \$52 per year, which makes it imperative that only low-cost production technologies are introduced. Furthermore, the basic rainfall pattern severely limits dryland farming, which means that production is generally concentrated in the four-month rainy season of the year. Thus, only cropping patterns compatible with the availability of water supply would have good potentials of farmer acceptance.

In the North, one of the major bottlenecks to increased productivity and incomes is the inadequacy of infrastructure and support services. All-weather rural roads and market centers are direly lacking. In addition, small farmers, particularly women, have very limited access to improved food technologies, credit and inputs, which largely accounts for low productivity. It will be noted that while men and women generally share in food crop cultivation, women's participation in economic development has been "largely avoided in Government programs" (FY 1982 CDSS, p.24). No information is readily available on the number of women engaged in food production, nor of the number and location of women-headed households in the Central North. The baseline studies envisioned for this project should obtain such information, and SODECOTON, which will distribute the seeds and provide the extension force, should ensure that inputs reach these women, if the project goal is to be meaningfully achieved.

Mutual Adaptability

In assessing the socio-cultural feasibility of gaining farmers' acceptance of improved seeds and cultural management practices, it is necessary to examine features of the social environment that will be affected by changes associated with improved technology adoption.

- a. Cropping Systems and Labor Utilization - The average farm size in the Central North is 2.1 hectares, and the typical cropping patterns are as follows:

	<u>Without Cotton</u> (ha)	<u>With Cotton</u> (ha)
Cotton	-	0.50
Peanuts	0.65	0.15
Sorghum (wet season)	0.85	0.85
Sorghum (dry season)	0.50	0.50
Others	<u>0.10</u>	<u>0.10</u>
Total	2.10	2.10

Most inhabitants of the central plains practise a shifting extensive agriculture. In heavy-soil areas, cotton rotates with sorghum, and on sandy soils, cotton may be followed by sorghum interplanted with peanut before prolonged fallow. Transplanted sorghum are grown in clayey lowlands, without rotation or interplanting.

When they can afford to, Fulani men prefer to hire laborers to

cultivate their fields. Fulani women work their own "kitchen gardens", but in times of extreme labor shortage, the women also work in their husband's fields. Non-Fulani men and women plow, seed and harvest, the divisions of labor being based upon whether the man or the woman owns, or has usage rights over the field. Women also grow peanuts and most other minor crops, as well as sorghum/millet to meet household requirements. Toupouri women receive two plots of their own land after marriage, in addition to usufruct of other land allocated by their husbands.

The short rainy season places heavy demands on agricultural labor. At times of acute labor shortages, the whole family contributes labor and thus the traditional roles are often ignored.

b. Land Ownership - Two main types of land tenure exist in the Central North. The Islamic peoples, particularly the Fulani, recognize familial land ownership. They often cultivate their larger-than-average size farms through hired labor, or by renting the land to others for cultivation. Payment is made to them in cash or as a fixed share of the crop after harvest. In the latter case, the tiller has no security of tenure. Insecurity of land tenure could pose a serious constraint to farmers' willingness to invest in improvements normally required in the adoption of improved technologies. The extent to which this prevails in the project area is unclear, and therefore, should be closely monitored. In addition, information on landowner/tenant arrangements with regard to input purchases should be obtained, and an identification of who normally makes decisions on farming practices to be employed should be made. This information, which should be relayed to SODECOTON (extension service), IRA-North, MIDEVIV, and the World Bank project implementors, is critical in the determination of the extent to which insecurity of land tenure could affect technology adoption and in the implementation of measures that could overcome or reduce the effect of such constraint on technology adoption.

In other tribal areas, land is held and distributed, according to custom, by the traditional chief. Such a system takes into account family size and needs and does not require rental payments, as such. Once allocated, the family can enjoy security of tenure over its lands as long as it continues to make productive use of the land. The chief may redistribute those lands which are unused or ill used.

c. Farmer Adoption of Improved Technologies - Through efforts initiated under the USAID-financed Young Farm Family Training Center, the ongoing extension work of SODECOTON and MINAGRI, and the exposure of contract farmers to improved seeds in Phase I of this project, it is evident that some farmers are generally familiar with improved cultural management practices. No data is currently available to show the number of farm families actually engaged in improved farming practices, nor of the present number of farmers using just improved seed varieties (food crops). However, this information, together with data on the number of farmers currently using traditional seeds and cultural practices should be gathered through the baseline studies envisioned for this project. Sex and age disaggregated data will be required for this

purpose, considering that both men and women equally participate in food production activities in the area. The information cited above is critical in identifying areas where extension efforts should be intensified and in validating, through subsequent monitoring and evaluation efforts of the World Bank and A.I.D., the adoption rates estimated by the Bank (see Economic Analysis section). The latter will serve as a useful guide for MIDEVIV in formulating more definitive estimates of seed demand.

While no estimates on the number of farmers planting improved seed varieties are readily available, for the following reasons, it is reasonable to expect that adoption of improved and proven cultivars suitable to farmer circumstances can be high: (1) investment on seeds are minimal and generally easily affordable even by small farmers; and (2) in farm lands that are not totally infertile, immediate increases in yields due to better seeds are readily obvious.

Improved seeds which are suitable to the farm environment are the most effective and simple means of increasing yields. Many studies have shown that generally, the use of improved seeds alone, under normal conditions, can cause immediate increases in yields. However, ready adoption of improved seeds and cultural practices cannot be expected without giving due consideration to critical socio-economic factors. It will be noted that farmers in the North are too close to the edge of subsistence to take unnecessary risks, unless the change assures a maximization of production for the entire cropping operation. The recommended varieties and practices must appear to possess a clear superiority in terms of yield and maximizing profitability, as well as in minimizing risks. Inputs, when required, must be readily available and inexpensive, and the labor requirements must be manageable so as not to conflict with the peak demands of other crops. In addition, as indicated earlier, the availability of water supply should be considered in the development of technical packages. It will also be pointed out that local taste preferences come into play in the acceptance or rejection of seed varieties (especially for sorghum). Uses of the crop by-products must also be considered. For example, since sorghum stalks have many uses, a very short sorghum may not be accepted. For corn, high-yielding white maize will probably be received favorably since the population, particularly the children, seem to accept anything that makes a gray-white gruel.

To ensure farm-level agronomic suitability of improved packages of technology, the World Bank is financing operating costs of IRA-North in order to strengthen its research capabilities. Equally important, also through the initiative of the World Bank, SODECOTON's experimentation station will be strengthened to function as a Field Trials and Demonstration Unit (FTDU). The FTDU, which will work in close collaboration with IRA-North, will carry out confirmation trials and demonstrations of improved farming techniques. This endeavor will be useful in establishing a close coordination between research and extension, which in turn, should result in improved communications among researchers, extension agents, and farmers.

In addition, through the existing SAFGRAD project, eighteen different farm trials of various varieties of sorghum are being conducted throughout the North region. Besides yield responses to various fertilization rates,

the trials are being conducted to determine acceptable varieties on the basis of cooking quality, preparation time, and taste. For this purpose, small quantities of sorghum are given to women who participate in these trials.

The opportunity exists for farmers to achieve the maximum yield potentials of improved seed varieties. Through SODECOTON, seasonal inputs are now made available to food producers, on credit. While in the past, FONADER was, in theory, responsible for providing capital equipment and production loans for food crops, without collateral, in practice, collateral had often been required. Small food producers had minimal access to the FONADER loans since these were generally extended to large groups or better-off individual farmers. A.I.D. is well-advised to influence SODECOTON to ensure that credit is equitably distributed, if this project's goal of contributing to increases in small farmer productivity is to be achieved. It will also be pointed out that since obtaining credit entails considerable risk-taking, particularly for subsistence farmers, very careful attention must be given to the extension of only the proven technologies. This is to say that only proven seeds and cultural practices that will not jeopardize farmers' repaying capabilities should be extended. The only loan recovery rate reports readily available pertain to cotton loans, which indicate that repayment for seasonal inputs has been high (98%). The recovery rate for medium-term loans (for the purchase of draft and animal traction equipment) however, stands at only 60%. Information on food crop loan recovery rates should be carefully monitored, since this could signal the existence of problems associated with the effectivity of the packages of technology being extended. Admittedly, there may be other reasons for repayment defaults (e.g., poor prices, bad weather, or farmers' resistance to repay) and therefore, such information should likewise be obtained.

Other factors that could enable farmers' realization of the maximum yield potentials of improved seeds include the provision to FONADER by the World Bank with a starter fund to extend medium-term loans to farmers who can viably utilize animal traction. However, based on the recovery rates obtained for the medium-term cotton loans, discretion must be exercised in the extension of this type loan. Likewise, the World Bank will finance the construction of rural roads and market centers in the Central North. SODECOTON's extension force will be increased and provided with intensive training in order to improve the efficiency of its operations, again primarily through World Bank financing. The Economic Analysis section provides estimates of potential increases in farmers' production and incomes that will result from the adoption of improved production technologies.

It will be noted that farmer adoption rates are envisioned to occur in stages, based upon farmers' ability and readiness to adopt recommended practices. To illustrate, it is envisioned that initially, only the more advanced sorghum growers will apply fertilizer on sorghum, while the rest will be encouraged to plant improved seeds and employ better management practices only. The recommended technical package for peanuts will not include use of fertilizer until IRA-North and the field trials have proven the economic viability of fertilizer application on peanuts. Intensified maize production will be carried out on an experimental basis (limited to the more progressive farmers) until such time when commercial demand for maize is fully developed.

At present, there is a paucity of information which analyzes the economic returns to land, labor or capital under traditional farming systems. This analysis should be undertaken, as well as an analysis of the economics of adopting improved packages of technology. Returns to farmers' labor will determine farmers' willingness to provide the additional labor required in adopting improved technologies, while returns to cash investment will determine farmers' willingness to assume indebtedness to finance the technology. The opportunity costs of these investments should also be determined since they affect farmers' responsiveness to improved technologies.

Local Participation

As earlier indicated, one of the bottlenecks in improving food productivity in the North has been farmers' (particularly women farmers) inaccessibility to improved food technologies. An efficient extension system that is participatory and effective in reaching men and women farmers would greatly facilitate farmers' acceptance of improved and proven packages of technology. In the North, the Government has transferred all agricultural extension functions to SODECOTON, which has been successful in disseminating cotton technologies. The problem with SODECOTON however, is that its approach has not been participatory (FY 1982 CDSS, p.41). The extension training that will be provided through World Bank financing will include training in human relations. This should result in a better understanding among extension agents of the critical importance of soliciting farmers' opinions on the usefulness or problems associated with improved packages of technology which they are disseminating. With the closer links being established between extension and research, farmers' constraints would be more immediately transmitted to IRA-North and considered in their development or improvement of technology packages. Another factor which will potentially broaden local participation in the improvement of food productivity in the North is the extension approach that is being initiated by the World Bank, which entails training of contact farmers to disseminate technologies to neighboring farms. Farmers' participation in extension will not only accelerate the spread of improved technologies, but would also instill a feeling of involvement and commitment among the farmers themselves to the goal of improving food production. Participation at the local level will likewise be expanded through the involvement of all the target farmers in the final stage of seed multiplication. This is in contrast to the mechanism employed in Phase I of this project, which limited involvement to a select group of, presumably the more advanced cultivators, in the multiplication of breeder seeds. Experience in Phase I demonstrated that involvement of farmers at this critical stage of seed multiplication slowed down the process of producing seeds of reliable quality. Lastly, as indicated earlier, women's participation will be solicited in the testing of seed varieties for their cooking and taste qualities. The involvement of women however, should not be limited to this activity. It is contingent upon A.I.D. and the project implementors to influence the Government and the World Bank to ensure that extension agents reach women farmers in order to: (1) provide them access to improved technologies and inputs; and (2) transmit women's constraints in food production to IRA-North. In order to facilitate access to women farmers, it will probably be necessary to recruit female extension agents, unless other types of approach can be employed to reach them.

Local participation, as discussed herein, is critical to the success of the proposed seed multiplication project. Without soliciting farmers' involvement in the choice of acceptable seeds, demand for this project's output may not be as expected. Consequently, this project's goal of directly contributing to increased production and incomes in the Central North may not be realized, at least during the life of the project.

Spread Effect

Through the efforts of SODECOTON's extension force and the rural development activities being financed by the World Bank (as discussed earlier), it is envisioned that by 1991, a total of 163,000 farms in the Central North will be using improved seeds and better cultural management practices. The diffusion effect is expected to occur through extension, farm demonstrations, and deputation of contact farmers to disseminate improved practices to other farmers. Ultimately however, unless MIDEVIV ensures that only proven and appropriate seeds are multiplied, the diffusion effect cannot be expected to occur. This requires multiplying only seed varieties that: (1) are agronomically and economically superior to traditional varieties; (2) require inputs that are readily available and inexpensive; (3) do not require excessive additional labor; and (4) are responsive to the population's quality preferences and traditional uses for the crop and its by-products.

It is recommended that a mechanism be devised to ensure close coordination and constant communication among the monitoring and evaluation technicians of this project and those of the World Bank. This is particularly important in connection with efforts to determine the diffusion rate of improved technologies to target farmers (farmer adoption rates) and the constraints that need to be resolved, if any.

Efforts that will be initiated through this project to make improved seed varieties readily available to farmers in the Central North will only be sustained if institutionalization is successfully accomplished and if the Government continues to provide the financial and human resources necessary to make MIDEVIV operational, particularly after the life of this project. The past history of the Government's performance in shouldering its recurrent cost obligations provides a reasonable assurance that such will occur. Needless to say, it is equally important that the improvements being initiated by the World Bank in the areas of marketing, transportation, extension, and other production-related support activities will have to be sustained if continued demand for MIDEVIV seeds is to be expected in the long-run.

Analyzing the potentials by which spread effect can be expected to occur is critical to show evidence that A.I.D.'s investment in this project will be optimally utilized, i.e., that the target beneficiaries will be reached, and that seed multiplication will be institutionalized in the Central North. Replication of this effort in other parts of Cameroon will largely depend on this project's success in establishing the groundwork for setting up a reliable and responsive seed multiplication institution.

Conclusion

Inasmuch as the goal of increasing productivity and rural incomes is mutually shared by this project, the World Bank project, and GURC (i.e., SO-DECOTON, MIDEVIV, IRA-North, and FONADER), close coordination and constant communication at all levels of implementation and in monitoring/evaluation, must be ensured. A network for information exchange, particularly on those that affect the concerns raised in this Analysis, must be devised to ensure that decision-makers are made aware of the problems that impede the attainment of goal. A systematic arrangement for resolving such problems is likewise strongly recommended.

The North Cameroon Seed Multiplication Phase II project will be implemented in the same target area and at the same time as the recently approved Center-North project. The two projects share the same goal and are mutually supportive in the sense that neither can be fully effective without the successful implementation of the other. Improved seed without the necessary extension service and complementary inputs, such as fertilizer, has been demonstrated to have little impact upon yields. Contrariwise, an expanded extension service, together with the increased availability of inputs that are complementary to seed, will not achieve its full potential without improved seed. Thus, analysis of the prospective economic costs and benefits of seed research and multiplication activities must also take such supportive activities into account. As a consequence, those elements of the Center-North project that relate to extension services and support for inputs that are complementary to improved seed have been included in an overall analysis of the economic costs and benefits of both projects together.

The World Bank's estimates for expected average yields from improved seed, expanded extension service, and increased use of fertilizer and other complementary inputs appear to Table 3A. Cotton is included, not only because it is an integral part of the Center North project, but also because it is intercropped by most of the farmers who cultivate food crops in the target area. By project completion participating farmers are expected to have adopted one of four states of yield improvement for each of the crops that will be directly involved in the two projects.

The projected yields will result in substantial benefits for participating farmers. Based upon extensive research, the World Bank estimates that farmer's net income will increase from \$257 to \$348 or 35% without cotton, from \$257 to \$385 or 50% with cotton, and from \$257 to \$414 or 62% with cotton and corn as cash crops, using purely manual cultivation. The average net return per man/day would increase from \$1.55 to \$1.87 or by 21% with manual cultivation. Family farm budgets are detailed in Table 4A. The prospective returns to participating farmers are obviously sufficient to provide adequate incentives to adopt the improved farming system package provided by USAID and the World Bank.

Given projected yields and adoption rates (Tables 3A and 3B) the volume of total food crop production from the 163,000 farms which would be directly affected by, and attributable to the two projects within 10 years is expected to increase at an average rate of roughly 2.5% per annum over the pre-project level. Projections of the expected incremental crop production attributable to the two projects are summarized in Table 3C.

Incremental production resulting from the two projects will be a major factor in maintaining present nutritional levels in the target area. Annual sorghum and millet production for the North Province, for example, is currently estimated at about 360,000 tons. By 1990 consumption should increase to about 400,000 tons. The additional 28,000 tons produced in the project area as a result of the two projects will thus cover 70% of the increase in demand. For peanuts, the incremental production of 6,800 tons resulting from the two projects will cover nearly half the estimated 15,000 tons of increased demand in the province by 1990.

Analysis of the future trends in the supply and demand for the affected food crops disclose that farmgate prices should remain firm throughout the decade. Indeed, as noted below in Table 3D, the World Bank staff projects a strong upward trend in peanut and sorghum prices.

Overall project costs and benefits appear in Table 3E. In estimating costs of family labor, an estimated average opportunity cost of \$1.19 per day has been employed. In estimating benefits, direct returns due to multiplier effects, such as increased earnings and employment in related sectors including construction, transportation, and agro-industry, were not separately quantified. Neither the possible benefits of lower consumer prices nor improved nutritional status as a result of the projects were taken into account either.

The internal rate of return, or IRR, calculated for the projects was 19.5 percent. The projects are thus demonstrated to be an efficient use of AID-World Bank resources. Sensitivity analysis disclosed that the IRR was slightly more sensitive to reductions in prospective yields than to increases in prospective costs. In any event, the economic analysis deliberately employed conservative assumptions in its projection and believes a realized IRR lower than that projected is unlikely.

In the economic analysis of the Center North project, staff members wrongfully excluded the costs of the North Cameroon Seed Multiplication Phase II project, but included the project's benefits. The overall IRR which they obtained was 39.5%. If the seed project costs are included in the overall total, the IRR declines to 25.6%. The main reason for the difference between this IRR and the 19.5 obtained with the present calculations relates to cotton. The World Bank's project devotes considerable resources to this non-food crop whose price outlook throughout the 1980's is excellent.

Table 3A

Yields Assumptions *

	<u>Without Project</u>		<u>With Project</u>		
	(Kg/ha)				
		<u>Manual</u>			<u>Ox-drawn</u>
	0	I	II	III	IV
Seed Cotton	400	1,000	1,100	1,200	1,300
Peanuts (shelled)	350	560	630	700	770
Corn	N/A	-	-	1,600	1,800
Sorghum (wet-season)	700	800	950	1,150	1,200

- I Farmers taught to use improved and treated seed, better density, and early sowing and weeding for their peanut crop.
- II Improved cultivation of wet-season sorghum introduced in rotation with peanuts.
- III NPK fertilizer used for peanuts if subsequent tests prove it to be worthwhile, plus 50kg/ha of urea for wet season sorghum.
- IV A small area of intensified maize grown in rotation with peanuts.

*Project yields-data provided by project technicians based upon actual field trials at two experimental stations in the case of peanuts and upon results obtained at other experimental farms in Cameroon and neighboring countries under similar soil and climatic conditions in the case of sorghum and corn. The results for cotton were provided by field trials and recent experience of farmers participating in CODECOIN program. USAID projections for sorghum yields were about 10 percent more optimistic than the zero increase projected by the World Bank. The mission program economist choose the more conservative figures of the World Bank to bias the analysis in such a manner that the probability of an IRR lower than that projected

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Table 3B: Expected Adoption Rate by Project Farmers*

	<u>PY0</u>	<u>PY1</u>	<u>PY2</u>	<u>PY3</u>	<u>PY4</u>	<u>PY5</u>	<u>PY10</u>
	<u>-----No. of participating farms ('000)-----</u>						
<u>Manual Cultivation:</u>							
Cotton as cash crop	59	67	73	76	79	82	83
Cotton and maize as cash crops	-	2	4	6	8	10	15
Peanuts as cash crop	-	10	20	30	35	36	40
Sub-total	59	79	97	112	122	128	138
<u>Ox-Drawn Cultivation</u>							
Cotton as cash crop	15	15	16	15	14	12	10
Cotton and maize as cash crops	-	1	2.0	4	7	10	15
Sub-total	15	16	18	19	21	22	25
Total No. of participating farms	74	95	115	131	143	150	163
No. of farms in project area	207	211	215	217	222	225	243
Expected adoption rate	36%	45%	53%	60%	64%	67%	67%

*Adoption rates are based upon the actual experience of Seed Multiplication Phase I and SODECOTON. The projected capacity of both institutions to multiply improved seed varieties under their respective programs and the estimates of the USAID and World Bank design teams.

Table 3C: Project Production (000 tons) *

	Pre-Project PYO	Project Completion PY5	Full Development PY10	% Increase (PY10/PYO)
Peanuts (shelled)	23.2	27.7	30.0	29
Sorghum	161.3	183.0	189.5	17
Corn	-	8.5	12.7	-
TOTAL QUANTITY	184.5	219.2	232.2	25.8

*Total production is estimated directly from yield and adoption resulting from this and other projects.

Table 3D: Projected Farmgate Prices **

<u>Product</u>	Actual 1978	1980	Economic 1985	1990
	<u>CFA/kg</u>	<u>CFA/kg. in constant 1980 prices</u>		
Peanuts	90	103.5	116.6	126.2
Sorghum	40-50	64.7	68.1	68.6
Corn	40-50	36.7	40.5	41.3

**The projected farmgate prices were calculated by the Commodity Division, World Bank, based upon projected trends in demand and supply of given commodities in world markets with adjustments for local transport to and from Cameroon.

Table 3E: ECONOMIC COSTS AND BENEFITS OF AGRICULTURAL DEVELOPMENT PROGRAM IN NORTHERN CAMEROON
(CFAF MILLION, CONSTANT 1980 PRICES, EXCLUDING TAXES, INCLUDING CONTINGENCY COSTS)

I. Costs	FY1	FY2	FY3	FY4	FY5	FY6	FY7	FY8	FY9	FY10	FY11-15	FY16
A. <u>USAID/GURC Seed Research and Multiplication</u>												
1. Technical assistance	65	133	167	135	144	-	-	-	-	-	-	-
2. Training	-	74	80	78	4	-	-	-	-	-	-	-
3. Commodities	63	167	67	-	-	-	-	-	-	-	-	-
4. Construction	22	602	551	-	-	-	-	-	-	-	-	-
5. Administration	170	188	170	146	122	163	163	163	163	163	163	-
6. Other	82	121	187	178	228	-	-	-	-	-	-	-
Subtotal	402	1,285	1,222	537	498	163	163	163	163	163	163	-
B. <u>IBRD/GURC Rural Development</u>												
1. Extension Service												
a. Sodecoton	136	100	83	91	87	57	58	54	57	57	54	-
b. MINAGRI	59	13	14	36	14	-	-	-	-	-	-	-
2. Training	146	92	70	26	29	18	20	24	18	18	20	-
3. Storage Facilities	70	53	48	2	2	2	2	2	2	2	2	-
4. Administration	66	55	55	57	55	45	36	26	17	7	-	-
5. Monitoring and Eval.	54	24	25	27	25	13	15	13	13	13	-	-
6. Feeder roads	341	161	153	142	128	82	13	15	13	13	13	-
7. Credit administration	7	4	4	6	4	4	4	6	4	4	5	-
8. Market place improvements	-	-	13	13	21	1	1	1	1	1	1	-
Subtotal	879	502	465	400	365	222	149	141	125	115	95	-

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Table 3E: (continued)

	FY1	FY2	FY3	FY4	FY5	FY6	FY7	FY8	FY9	FY10	FY11-15	FY16
C. On Farm Costs												
1. Seasonal inputs	96	184	260	341	421	468	501	515	532	539	538	-
2. Medium Term Investments	31	35	76	82	76	43	43	24	28	25	25	-
3. Incremental Farm Labor	79	157	239	334	413	468	494	543	555	565	565	-
Subtotal	206	376	575	757	910	979	1,038	1,082	1,115	1,129	1,128	-
Total Economic Costs	1,487	2,163	2,262	1,694	1,773	1,364	1,350	1,386	1,403	1,407	1,386	-
II. Benefits												
Increased food crop production	-	234	886	1,511	2,098	2,598	2,904	3,158	3,343	3,480	3,573	3,573
Total Economic Benefits	-	234	886	1,511	2,098	2,598	2,904	3,158	3,343	3,480	3,573	3,573
Net Economic Benefits	-1,487	-1,929	-1,376	-183	+325	+1,234	+1,554	+1,772	+1,940	+2,073	+2,187	+3,573
Internal Rate of Return	<u>19.5 percent</u>											

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E. Environmental Analysis

The threshold decision is that the project will have a minimal impact on the environment. (See IEE Annex E). Seed varieties released for multiplication on the seed farms will be planted with limestone and essential nutrients required for high production (N.P.K.). Environmental Protection Agency (EPA) approved insecticides have been chosen to control insects during the growing season and storage periods. Also, EPA approved herbicides have been chosen to control grasses and broad leaf weeds during the growing season.

The use of these pesticides along with an integrated pest management program are considered as an essential component to the overall seed program of maintaining and distributing high quality seed.

F. Engineering Analysis

The project sites have been visited by the Mission Engineer.

The Engineer has inspected the existing construction, which will become an integral part of the project centers, and assessed the amount of repair and/or alterations needed for each structure so that it may serve its intended purpose. The Engineer prepared and reviewed Annex O, Construction, with the Design Team.

All construction will be one-story, masonry wall bearing, sloped aluminum roofing type building so as to conform with the common construction system used in the project areas which has proved to be reasonably economical. Storm drainage will be controlled by site improvements (ditches, culverts and ground cover) as will be deemed appropriate during the final design on the project centers. The limited industrial and the domestic sewage will be disposed of on site by percolation. Tests will be conducted to determine the rate of percolation prior to the final design of the sewage disposal system for each center. Properly oriented buildings and strategically located windows, together with adequate floor layouts, will assure sufficient ventilation and eliminate the need for air conditioning.

IV. FINANCIAL PLAN

A. Financial Analysis

The financial soundness of the project depends on the GURC's ability to repay the loan and meet incremental project-generated expenses after grant and loan assistance has ended. This depends on the following factors:

(1) GURC Overall Financial Stability and Revenue

Cameroon's recent economic history displays a record of steady economic growth and consistently prudent financial policies and management, including regular payment of debts. The external debt service ratio currently stands at about 10% and has been projected by the World Bank to increase to 15.7% by 1986. The outlay for debt service is thus expected to remain low as a proportion of overall GURC budget and to be well within the country's revenue-raising capacity. Cameroon's economy is not dominated by any one export at present, and current policy is to diversify further export production. Oil exploration and production continue to grow, however, and oil is expected to be the leading export very shortly. Moreover, the country's industrial energy needs are met through hydroelectric power sources. While Cameroon is a net food importer, food is exported in significant quantities and the GURC supports increased food production by agribusinesses and family farms. As a result, the growth of public revenues is expected to continue unabated. By African standards Cameroon is relatively immune to financial crises emanating from external events. Adequate financial support may thus be predicted for projects to which the GURC is committed.

(2) Allocation of Revenues

The GURC allocates its expenditures through two budgets: the capital (investment) and the current (operating expenses). Unfortunately, when project investment is externally funded (as by AID), there is always a possibility that recurring project operating costs will not be incorporated into the operating budget. It is, therefore, essential that new recurring costs be clearly identified and that their budgetary implications be understood and accepted in advance. The recurring costs to be generated by this project have been thoroughly reviewed and accepted by GURC officials.

(3) Capacity to Plan/Implement Usages of Budget Allocations

There are several reasons to believe that financial support problems will not arise with this project. First, as part of its policy of prudent financial management, the GURC proceeds with extreme caution before signing a project agreement. This assures that the Ministry of Economic Affairs and Planning and the Ministry of Finance are on-board and committed to supporting the proposed project. Once an agreement is signed, however, USAID/Cameroon knows of no case in which the GURC has defaulted on its commitments. Indeed, it has often exceeded the support stipulated as demonstrated in the first phase of the project. Additionally, this project has built into it training and technical assistance in the administrative field, which should serve to minimize still further the potential problem of understanding budget requirements.

(4) Budget Experience

Cameroon has a strong performance record for complying with its investment objectives. For the years 1966-1970, overall compliance with the capital budget was 82% of planned investment. This rose to 98.7% for the years 1971-1975. The GURC thus has a record of financing, either from domestic or external sources, investment to which it accords sufficient importance.

(5) Conclusion

In view of the high priority assigned to agriculture and the continuing growth of the economy, this project is financially feasible for Cameroon. The GURC's financial history clearly supports the conclusion that funds can and will be made available for this project.

B. Cash Flow for the Farmer

During the project period, farmers would be expected to adopt improved practices at different stages. For example, farmers with peanuts as their main crop would first be taught to use improved seed, better plant population, and early planting and weeding for their peanut crop. Then improved cultivation of wet season sorghum would be introduced in rotation with peanuts. Finally, NPK fertilizer would be used for peanuts and urea would be applied to wet season sorghum. The following is the existing cropping pattern in the project area.

Sorghum	1.00 ha.
Cotton	.50 ha.
Peanuts	.25 ha.
Corn	.25 ha.
Millet	.10 ha.
	<hr/>
	2.10 ha.

Table 4A. shows the projected benefits of improved food crop seed and improved cultural practices as a result of the agricultural development activities in the project zone.

TABLE 4A

SUMMARY OF FAMILY FARM BUDGETS

Farming System:	Without Project		With Project (at full development)				
	Manual		Manual			Ox-Drawn	
	Without Cotton	With Cotton	Without Cotton	With Cotton	With Cotton and Maize	With Cotton	With Cotton and Maize
Value of production	299.40	291.07	456.42	487.42	549.28	756.69	804.40
Production costs	24.55	15.27	91.98	82.47	113.00	214.22	251.09
Taxes	16.66	16.66	16.66	16.66	16.66	16.66	16.66
Debt service	-	-	-	-	-	67.38	57.87
Cash income from outside plowing	-	-	-	-	-	47.57	47.57
Total net farm benefit	258.19	259.14	347.78	388.29	419.62	506	526.35
Family labor (mandays/farm)	169	166	222	224	224	259	263
Net benefit per manday	1.52	1.56	1.56	1.73	1.87	1.95	2.00
Net benefit per capita	54.93	55.13	74.00	82.61	89.28	107.65	112.00

C. Financial Summary

Total costs over the life of the project are estimated at \$18,740,000. USAID will fund 73 percent of these costs. GURC will fund 27 percent of the project's costs. The summary of costs is shown below.

	<u>Amount</u>	<u>Percent</u>
USAID		
Grant Funds	8,040,000	42.9
Loan Funds	5,600,000	29.9
GURC		
Cash and In-kind Costs	5,100,000	27.2
Totals	<u>18,740,000</u>	<u>100.0</u>

D. USAID Funds

(1) Grant Funds: \$8,040,000

(a) Technical Assistance: \$3,065,000

USAID will fund 23 work years of long-term TA in Cameroon and 20 person months of language training in the U.S. All salaries, allowances, and support of costs for the long-term technicians are estimated at \$2,440,000. Additional costs for the long-term people include: vehicles and operating costs, \$135,000; residential furnishings/appliances, \$75,000; office supplies, \$13,000; and support staff costs of \$108,000. USAID will also fund 30 person-months of short-term TA at an estimated cost of \$294,000.

(b) Training: \$866,000

USAID will fund long-term training in the United States for 9 participants at an estimated cost of \$568,000 and \$234,000 is budgeted to fund 6 participants for short courses in the U.S. Funding of \$40,000 will be provided for 6 participants to attend short courses in a third country. In-country seminars will be funded at an estimated cost of \$20,000, and training materials provided for in-service training at an estimated cost of \$4,000 (See Annex M).

(c) Commodities: \$1,410,000

USAID will fund seed processing equipment, field equipment, vehicles, and spare parts for this project. See Annex G for a detailed description and cost break-down.

(d) Other Costs: \$440,000

USAID will fund up to \$300,000 for the cost of a wells survey to provide water to the two seed farms. Also, \$140,000 is budgeted to finance 16 PM of consultant services from the U.S. Bureau of Census.

(e) Contingency: \$565,000

The provision for contingencies is 10 percent of above costs.

(f) Inflation: \$1,694,000

Inflation is computed at 15 percent and compounded annually.

(2) Loan Funds: \$5,600,000

(a) Construction Costs: \$4,214,000

USAID will fund the construction of seed processing plants, repair facilities, a laboratory, a cold storage unit, offices and housing. Of the total costs, \$424,000 is allocated to A and E services: \$3,790,000 to actual construction costs (See Annex O).

(3) Contingency: \$421,000

The provision for contingencies is 10 percent of above costs.

(4) Inflation: \$965,000

Inflation is computed at 15 percent and compounded annually.

E. GURC Funds

(1) Costs: \$5,100,000

The GURC will assign counterpart and support personnel to the project for an estimated total of \$1,445,000. It will pay for all operating costs of the two seed farms. This includes POL costs for existing vehicles and equipment (\$703,000) and POL costs for new vehicles and equipment (\$828,000). It will purchase all fertilizers and pesticides (\$340,000) and will continue to lease and maintain office space and housing to support its staff (\$170,000). The GURC will also supply office furniture and equipment (\$25,000). It will pay for the in-country transport of commodities (\$282,000) and fund the international airfares of participants (\$68,000). Inflation is computed at 15 percent and is compounded annually (\$1,239,000).

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F. Recurrent Costs Analysis

Tables 3E and 4D and Annex N of subject PP detail project generated costs to be covered by the GURC. Of these new costs only the personnel and operating cost (support of vehicles/equipment already in services, administrative and general maintenance) will be of a recurring nature.

In the final year of the project, these costs total \$1,052,000 (including 15 percent for inflation) this represents only 1.6 percent of the projected Ministry of Agriculture's operating expense budget for 1986-87 (assuming an average budget increase of 22.8 percent per annum).

The World Bank and IMF analyses of recurrent costs for development projects, which are based upon conservative assumptions, show that recurrent costs per unit of investment are higher for social and agricultural programs than for infrastructure projects such as dams, roads, etc. An "R" coefficient (see note) for agricultural projects, based on the IBRD and IMF assumptions for each unit of investment is 0.08. When this figure is applied to the life of project cost of phase II of the seed multiplication project, a recurrent cost of \$1,488,000 is obtained. This higher figure would represent only 1.8 percent of the projected 1986-87 budget for the Ministry of Agriculture. The average yearly project costs to the GURC of \$1,020,000 constitute only 0.04 percent of the projected national budget for FY 87.

During the past 5 years the GURC budget has been managed conservatively. All expenditures have been covered by revenues. The attached table indicates that the average annual growth of budgetary revenue was 23 percent for the first 10 years listed. The projections for 1982-87 are expected to average 25 % per year due to the expected revenue increases from oil production, a portion of which is expected to be used for recurrent costs.

The attached table gives a summary of GDP, GURC Budgetary revenue and expenditure and the debt service ratio from FY 1972/1973 to 1981/82. The debt service ratio is currently 10.8 % and, according to World Bank projections, is expected to increase to 14 % in 1982 before dropping to 12.5 % in 1986. Continued expansion in the production of crude and refined oil will have a major impact on government revenues and export receipts (estimated to reach 13.4 billion by 1986). The World Bank believes that such revenues will result in a continued high proportion of domestic financing of total investment and a modest debt service ratio throughout the 1980's.

Cameroon has had a strong performance record for complying with its investment objectives. The percentage realization of the 2nd development plan's investment was 82% . The ratio is even higher in the 3rd plan which has been put at 98.7% of planned investment. Thus, there is every reason to assume that the GURC is committed and will make the necessary resources available to cover the recurrent costs of the project.

The GURC commitment to the project has already been emphasized in the PP and the budgetary implications of the recurrent costs to be generated by

this project have been thoroughly reviewed and accepted by the GURC officials. The GURC has agreed to make available the funds necessary to carry on the project's activities after concessional funding terminates.

(Note) The "R" coefficient is the ratio of net recurrent expenditures for a given project per unit of investment. This was derived on the basis of sample surveys of projects in a number of countries (Malawi, Kenya, Ivory Coast, etc.). The "R" coefficients have been derived for a significant number of sectors and programs. (Heller, Peter - "The Under-Financing of Recurrent Development Costs" Finance and Development, Vol. 16, No. 1, March 1979, pages 38 and 39).

Cameroon GDP, Budgetary Revenue, Budgetary Expenditure and Debt Services

	<u>72/73</u>	<u>73/74</u>	<u>74/75</u>	<u>75/76</u>	<u>76/77</u>	<u>77/78</u>	<u>78/79</u>	<u>79/80</u>	<u>80/81</u>	<u>81/82</u>
GDP (in Billion CFAF)	342	492.6	576.6	657.3	789.9	937	1090	1356.2	1451	1563
% change	NA	23	16.8	13.2	20.2	18.6	16.4	25.5	NA	NA
Budgetary Revenue (in Billion CFAF)	59.3	67.9	83.4	98.8	120	162.3	180	199.8	246	310
% increase	5	15	23	15	22	34	11	11	31.8	25
Budgetary Expenditure (in Billion CFAF)	60.2	69.4	81.5	96.7	121.5	153.7	165	177.1	213.6	NA
% change	6	15	17	19	26	26	7	7.2	20.3	NA
External Debt (in Mill. dols) Outstanding and disbursed	-	236	372	515	837	1157	1634	1877	2340	2628
Debt Service Payments (in Mill. dols)-	-	15	36	39	52	103	126	212	252	379
Debt Service Ratio (%)	-	4.9	5.6	5.5	6.2	8.4	9.4	11.0	10.8	14
Total Ag. Budget (in Billion CFAF)	8.5	12.1	14.8	20.6	36.1	17.9	35	31.9	29.4	NA
Current (in Billion CFAF)	2.6	3.0	3.9	4.0	6.8	4.6	5.3	5.4	6.4	7.2
Investment (in Billion CFAF)	5.9	9.1	10.9	16.6	29.3	13.3	29.7	26.5	23	NA
Consumer Price Index in Yaounde (General Index 100)	124.8	143.3	168.5	185	206.8	237.3	259	279	299.5	
Percent Increase	7.3	4.9	7.6	9.8	11.8	14.7	9.0	7.0	10.1	

Source: IBRD Economic Memorandum, 1980 (No. 2877-CM)
 IBRD Country Program Paper, 1981
 IMF Recent Economic Conditions, 1981
 250 CFAF Equal \$1.00

TABLE 4B.

SUMMARY COST ESTIMATE AND FINANCIAL PLAN
(\$000)

	USAID Grant Funds		USAID Loan Funds		GURC		TOTAL	
	FX	LC	FX	LC	FX	LC	FX	LC
Technical Assistance	2138	927	-	-	-	-	2138	927
Training	842	24	-	-	-	-	842	24
Commodities	670	740	-	-	-	-	670	740
Other Costs	140	300	-	-	-	-	140	300
Construction	-	-	-	4214	-	-	-	4214
In-kind Costs	-	-	-	-	-	2343	-	2343
Cash Costs	-	-	-	-	-	1518	-	1518
Subtotal	3790	1991	-	4214	-	3861	3790	10066
Contingency	365	200	-	421	-	-	365	621
Inflation	1096	598	-	965	-	1239	1096	2802
Evaluation								
TOTAL PROJECT COSTS	5251	2789	-	-	-	5100	5251	13489

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TABLE 4.C1.

USAID EXPENDITURES BY FISCAL YEAR - GRANT FUNDED

(\$000)

	FY 82	FY 83	FY 84	FY 85	FY 86	TOTAL
<u>Technical Assistance</u>						
Long-Term Advisory Services	225	486	614	510	605	2440
Short-Term	4	55	112	87	36	294
Vehicles	15	60	-	-	-	75
Vehicle Operating Costs	3	12	15	15	15	60
Furniture/Appliances - Residential	52	-	23	-	-	75
Expendable Supplies	2	2	3	3	3	13
Support Staff	9	21	26	26	26	108
Total	310	636	793	641	685	3065
<u>Training</u>						
Long-Term United States	-	202	227	101	38	568
Short-Term United States	-	117	117	-	-	234
Short-Term Third Country	-	8	16	8	8	40
In-Country Seminars	-	5	5	5	5	20
In-Service Training	-	1	1	1	1	4
Total	-	333	366	115	52	866
<u>Commodities</u> (See Annex G for list)	299	794	317	-	-	1410
<u>Other Costs</u>						
Wells Survey	300	-	-	-	-	300
Evaluation	28	28	28	28	28	140
Subtotal	909	1763	1476	756	737	5641
Contingency (10%)	91	176	148	76	74	565
Inflation (15% compounded)	-	265	477	395	557	1694
TOTAL EXPENDITURES	1028	2232	2129	1255	1396	8040

TABLE 4.C2

USAID EXPENDITURES BY FISCAL YEAR - LOAN FUNDED

(\$000)

	FY 82	FY 83	FY 84	FY 85	FY 86	TOTAL
<u>Construction Costs</u>						
Consultant Services	96	212	116	-	-	424
Construction Costs	-	2082	1708	-	-	3790
Subtotal	96	2294	1824	-	-	4214
Contingency (10%)	10	229	182	-	-	421
Inflation (15% compounded)	-	344	621	-	-	965
TOTAL EXPENDITURES	106	2867	2627	-	-	5600

TABLE 4.D

GURC EXPENDITURES BY FISCAL YEAR
(\$000)

	FY 82	FY 83	FY 84	FY 85	FY 86	TOTAL
<u>Costs</u>						
Personnel	289	300	304	315	237	1445
Support of Vehicles/Equipment already in service	148	148	148	148	111	703
Office Lease/Maintenance	57	57	56	-	-	170
Office Furniture/Equipment	22	-	3	-	-	25
Training (Travel for Participants)	-	19	16	19	14	68
Fertilizers/Pesticides	68	68	68	68	68	340
Support of new Vehicles/Equipment	165	165	166	166	166	828
In-Country Transport of Commodities	60	159	63	-	-	282
Subtotal	809	916	824	716	596	3861
Inflation (15% compounded)	-	137	266	380	456	1239
TOTAL EXPENDITURES	809	1053	1090	1096	1052	5100

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TABLE 4.E
COSTING OF PROJECT OUTPUTS/INPUTS *
(\$000)

	Breeder Seed & Cold Stor- age Capacity	Regional Seed Testing Laboratory	2 Seed Multiplication Farms	Institutional Capacity to Train Trainers	Total	%
USAID Grant-Funded Inputs						
Technical Assistance	651	427	1916	71	3065	16.5
Training	62	62	660	82	866	4.7
Commodities	-	17	1391	2	1410	7.6
Other Costs	-	-	300	-	300	1.6
Contingency	71	51	427	16	565	3.0
Inflation	214	152	1281	47	1694	9.1
Total Grant-Funded Inputs	998	709	5975	218	7900	42.5
USAID Loan-Funded Inputs						
Construction	147	98	3969	-	4214	22.7
Contingency	14	10	397	-	421	2.3
Inflation	34	22	909	-	965	5.1
Total Loan-Funded Inputs	195	130	5275	-	5600	30.1
GRC Inputs						
Costs	99	66	3544	152	3861	20.8
Inflation	32	21	1137	49	1239	6.6
Total GRC Inputs	131	87	4681	201	5100	27.4
TOTAL PROJECT INPUTS	1324	926	15931	419	18600	100.0

*Does not include \$140,000 for project evaluations.

V. IMPLEMENTATION ARRANGEMENTS

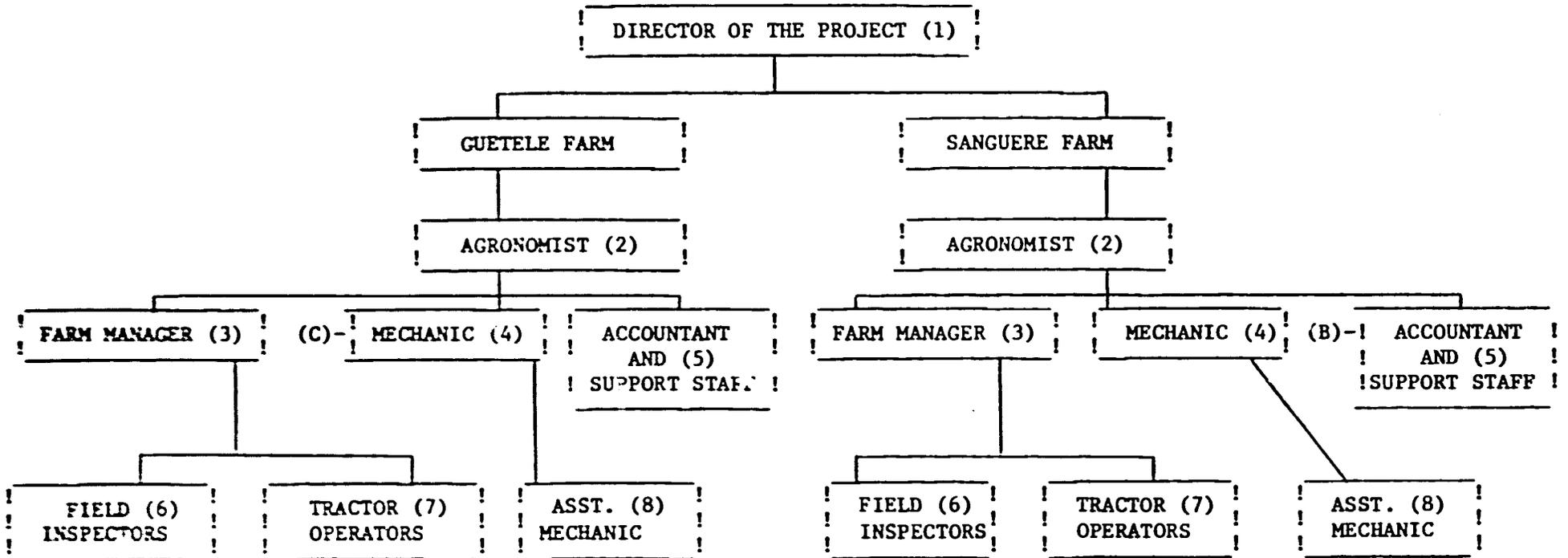
A. Administrative Arrangements

The Director of MIDEVIV and the Director of IRA will assume overall administrative responsibility for the project. The Director of MIDEVIV will delegate responsibility for the execution of the Seed Multiplication Project to a project manager within MIDEVIV. The Director of IRA will delegate responsibility for the execution of research activities to the Director of IRA-North. The Director of the seed multiplication project will be responsible for the overall management of the seed farms. The Director of IRA-North will be responsible for food crop research activities related to the project.

A member of the USAID/Yaounde Office of Agriculture and Rural Development will be the project manager. The contractor's Chief of Party will be the counterpart of the Director of the Seed Multiplication Project. Four additional AID-financed technicians will function as counterparts to technicians in IRA-North and the seed project. The Director of the Seed Project and IRA-North will nominate counterparts for the AID-financed technicians.

- (1) Organization Charts Showing Project Administration and Technical Assistance Personnel Relationships and Responsibilities

1 (a) ORGANIZATION CHART - THE SEED MULTIPLICATION PROJECT



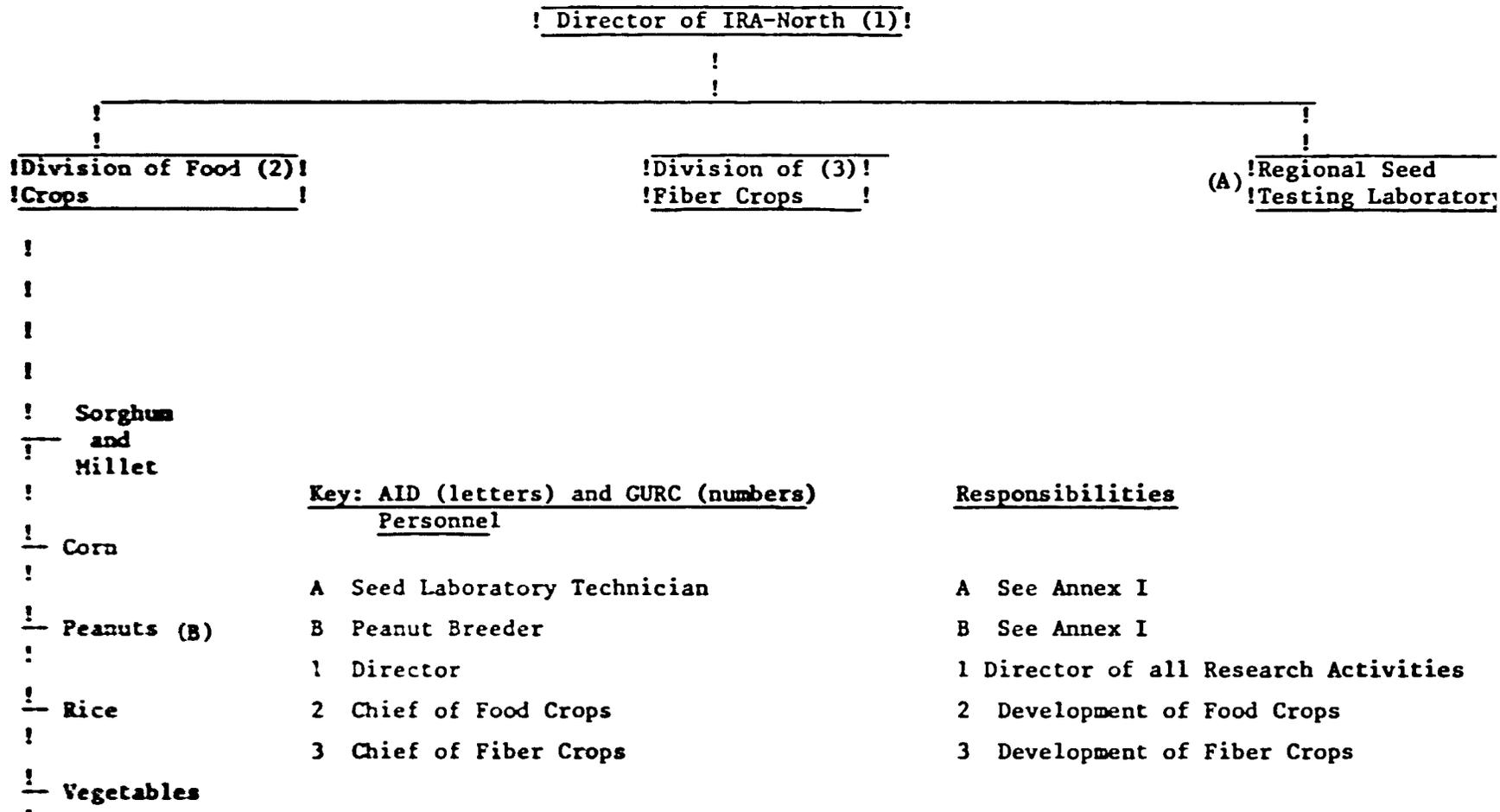
Key: AID (letters) and GURC (numbers) personnel

- A Agronomist/Seed Technologist
- B Administrator/Finance Specialist
- C Agriculture Machinery Advisor
- 1 Director
- 2 Agronomist
- 3 Farm Manager
- 4 Mechanic
- 5 Accountant and Support Staff
- 6 Field Inspectors
- 7 Tractor Operators
- 8 Assistant Mechanic

Responsibilities

- A Seed Annex I
- B " " "
- C " " "
- 1 Manager for the two Seed Farms
- 2 Quality Control Expert and General Manager of the Farm
- 3 Supervise Field Inspectors, and tractor operators, establish crop rotations
- 4 Repair and Maintain Field and Processing Equipment
- 5 Establish Cost of Production Figures. Financing, Secretarial support
- 6 Supervise weeding, Rogueing and Insect Control
- 7 Field Operations
- 8 Repair and Maintain Field and Processing Equipment

1 (b) ORGANIZATION CHART - IRA-NORTH



(2) Specific Project Administration Responsibilities

AID/Washington is responsible for authorizing the project, delegating the authority to allow REDSO/WA to negotiate and execute a technical assistance contract, and obtaining procurement waivers for services and equipment.

USAID/Yaounde is responsible for providing administrative support and technical guidance to the contractor, execution of all PIO/Ts, PIO/Cs, PIO/Ps, and project evaluations, and assisting in the negotiation and execution of a technical assistance contract.

REDSO/WA is responsible for negotiating and executing a technical assistance contract with the assistance of the USAID/Yaounde Project Manager.

The Government of Cameroon is responsible for providing budgetary and personnel support, facilities, some equipment, and all operating expenses. In addition, it is responsible for assuring the intra-governmental linkages regarding coordination and implementation responsibilities.

The Contract team is responsible for project implementation in conjunction with its counterparts, preparing reports as specified in the contract, and procuring all locally purchased vehicles, equipment, spare parts, furniture, utilities, office supplies and secretarial support. It is also responsible for housing rental until housing is complete.

B. Procurement Plan

The procurement financed by USAID will be the responsibility of MIDEVIV acting on behalf of the GURC, with the assistance of the TA Contractor, for commodities purchased in Cameroon. MIDEVIV, with the assistance of the USAID/Yaounde project manager, will be responsible for the commodities purchased in the U.S. through a GURC-selected procurement services agent (PSA) acceptable to AID. The appointment of a procurement services agent will be finalized soon after the signing of the grant agreement. The USAID/Yaounde project manager will monitor project procurement.

The technical assistance (TA) contractor will procure for the team; vehicles, furniture and appliances, and office supplies. Provision for these items will be made in the PIO/T and be carried as an add-on into the TA contract. The TA Contractor will use the procurement procedures set forth in A.I.D. Handbook 11, Chapter 3 when procuring commodities under the PIO/T. Provision will be made in the TA contract that title to the vehicles driven by U.S. technicians will remain with the U.S. Government during the project. All other commodities will be titled to the GURC. In addition, the TA Contractor, on behalf of the GURC, will be responsible for procuring all commodities and spare parts to be purchased in Cameroon. The USAID/Yaounde project manager and the Management Office will monitor procurement by the contractor.

The method of payment for commodities will be by letters of commitment (L/COM) and direct payments. Payment for commodities procured by the PSA will be reimbursed by means of an AID/W direct letter of commitment. Local commodities procured by the GURC and/or contractor will be paid by direct payment

in a method acceptable to USAID/Yaounde after certification of purchase and receipt by MIDEVIV have been received and approved by the USAID/Yaounde project manager.

A procurement lead time of eight to ten months is being allowed for U.S. origin and source goods from the time the PIO/Cs are approved. Procurement of local commodities will be bought throughout the life of the project, as needed.

AID rules and regulations regarding ocean/air transportation and other USG statutes to which AID is subject, will be observed. AID customarily does not pay transportation costs beyond the port of entry in Cameroon, (Douala).

All U.S. source commodities will be shipped CIF, Douala. It is the responsibility of MIDEVIV to initiate documentation required for customs exoneration prior to arrival of goods at Douala. Such documentation must be made available to the freight forwarder upon arrival of goods at Douala to permit commodities to be moved from Douala to the project sites promptly. An amount of twenty percent of the cost of commodities (locally and US purchased) has been budgeted into the GURC expenditures to pay for inland insurance and transportation costs of commodities to project sites. It is also the responsibility of the transitaire and MIDEVIV to inspect commodities upon arrival at port and project site. Any claims for damages or shortages will be reported to the USAID port-monitor at Douala (if claims are to be made at that point) and to the USAID/Yaounde project manager.

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

Goods and Services financed by A.I.D. under the grant, will have their source and origin in the United States and the Cooperating Country, except as A.I.D. may otherwise agree in writing. Ocean shipping financed by A.I.D. under the grant shall, except as A.I.D. may otherwise agree in writing, be financed only on flag vessels of the United States.

Imported shelf items having their origin in the United States (Geographic Code 000) can be purchased without restriction. Commodities mined, produced, or assembled in Cameroon are available for purchase without restriction, except for the limitation upon the total value of local procurement established. Shelf items having their origin in Geographic Code 941 countries are eligible for local cost financing in unlimited quantities, save for the limit on local procurement funding. Shelf items having their origin in any country included in Code 899 but not in Code 941 are eligible if the price of one unit does not exceed \$5,000. For goods sold by units of quantity, e.g., tons, barrels, etc., the unit to which the local currency equivalent of \$5,000 is applied is that which is customarily used in quoting prices. The total amount of imported shelf item purchases from countries included in Code 899 but not in Code 941 may not exceed \$25,000 or 10% of the total local costs financed by AID for the project, whichever is higher; however, in no case will the total amount of such purchases exceed \$250,000 without first obtaining a specific geographic source waiver. Procurements in excess of the limits will be authorized only as source waivers in accordance with the provisions and limitations of Delegation of Authority No. 40 and any redelegation thereunder.

Procurement of imported shelf items shall conform to good commercial practices, shall be at reasonable prices, and shall not conflict with local laws and practices. A supplier furnishing shelf items for the project must provide a statement attesting to the source and origin of the commodity

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sold. The USAID/Yaounde project manager, in turn must attest that the price being paid is a reasonable one.

(1) Payment

Payment to the procurement services agent for services rendered will be made by a Direct Letter of Commitment. Upon receipt of the PIO/C in AID/W, the Letter of Commitment is sent to the PSA to initiate procurement. When the PSA has completed its purchasing actions, documents are presented to the AID certifying office in New York for payment.

For local procurement payments, documentation is presented to the USAID/Yaounde Management Office for verification of appropriate documents. The USAID/Yaounde Controller will enact payment upon receipt of this documentation.

(2) Delivery

All project commodities imported into Cameroon will be shipped on the basis of CIF, Douala. Suppliers will provide all-risk marine insurance in the amount of 120% of the CIF cost of the commodities AID's marking requirements for overseas shipments will be reinforced by the PSA marking.

C. Implementation Sequence

- (1) Project Agreement signed.
Request for technical assistance (TA) issued.
Equipment from U.S. origin ordered.
- (2) Request for proposals for A/E technical services.
- (3) Evaluation proposals for TA.
- (4) TA contract signed.
TA team begins language training (4 people 20 PM).
A/E firm selected for technical services.
- (5) Language training continued for TA team.
- (6) Language training continued for TA team.
- (7) Language training continued for TA team.
Three participants identified for short-term U.S. training (10 PM).
- (8) Water quantity approved by USAID Engineer and Cameroonian officials.
Language training continued for TA team.
- (9) Three technicians arrive.
Request for extension specialist.
Advertise for construction bids.

- (10) Counterparts assigned to TA team.
Nine participants identified for long-term training (27 PY).
- (11) Evaluate construction bids.
Equipment from U.S. arrives at sites.
- (12) Negotiate and sign construction contract.
- (13) Request farm machinery advisor.
Language training begins for short-term U.S. participants.
- (14) Construction begins (see Annex 0).
- (15) Request pest management specialist.
Agriculture extension specialist arrives (2 PM).
- (16) Language training begins for nine long-term participants (54 PM).
Construction continues.
Training course for extension trainers.
- (17) Request seed processing specialist.
Request quality control expert.
Two participants identified for third-country training.
- (18) Three participants identified for U.S. short-term training.
Request soil conservationist.
Farm machinery expert arrives (2 PM).
Three participants begin short-term U.S. training (12 PM).
- (19) Pest management specialist arrives (2 PM).
Request farm management specialist.
Request extension advisor.
- (20) Training begins for nine long-term participants (30 PM each).
Three participants return from short-term U.S. training.
- (21) Two participants depart for third-country training (2 PM).
Seed processing specialist arrives (2 PM).
Quality control expert arrives (2 PM).
- (22) Two participants return from third-country training.
Seed laboratory technician arrives.
- (23) Soil conservationist arrives (2 PM).
Language training begins for three short-term U.S. participants.
Two participants identified for third-country training.
- (24) Farm management specialist arrives (2 PM).
Extension expert arrives (2 PM).
Training course for extension trainers.

- (25) Evaluation team arrives (2 PM).
- (26) Request seed processing expert.
Request quality control expert.
Request farm machinery expert.
- (27) Request pest management specialist.
Request soil conservationist.
Three participants begin U.S. short-term training (12 P
Two participants begin third-country training (4 PM).
- (28) Two participants return from third-country training.
- (29) Request farm management specialist.
Request extension specialist.
- (30) Three participants return from short-term U.S. training
- (31) All construction and remodeling completed (see Annex O)
- (32) Seed processing expert arrives (2 PM).
Quality control expert arrives (2 PM).
Farm machinery expert arrives (1 PM).
- (33) Pest management specialist arrives (1 PM).
Soil conservationist arrives (1 PM).
- (34) Farm management specialist arrives (1 PM).
- (35) Training course for extension trainers.
- (36) Two participants identified for third-country training
- (37) Nine participants return from U.S. long-term training.
- (38) Two participants start third-country training (4 PM).
- (39) Two participants return from third-country training.
- (40) Request final evaluation team.
- (41) Evaluation team arrives (2 PM).

VI EVALUATION ARRANGEMENTS

A. Introduction/Objectives

The project evaluation efforts will assess the project's outputs and the extent of its achievement of its purpose. The evaluations will be used for planning and management purposes in order to monitor the quality of seeds produced and make necessary changes and recommendations.

The indicators to be monitored in verifying accomplishments of the project outputs and purpose are presented in the Logical Framework (Annex A).

B. Evaluation Schedule

USAID will monitor the progress of project implementation through periodic reviews and quarterly reports provided by the project manager and contractor(s). Joint MIDEVIV-USAID progress evaluation will be held annually. Mid and final evaluations will involve external consultants including a seed technologist and an extension expert. MIDEVIV, the Ministry of Agriculture, IRA, Center North Project and USAID personnel will also participate in these major evaluations.

Assessment of Achievement of the Project Purpose:

Achievement of the project purpose will be assessed by measuring the degree to which end of project status indicators have been fulfilled by the fifth year of the project, with interim assessments of years two, three, and four. Evaluations using purpose level indicators will be done in coordination with the Center North Project's monitoring and evaluation unit to assess production records.

Assessment of Outputs Indicators:

Output indicators will be monitored closely throughout the life of the project through a contract with a single institution, such as Mississippi State. USAID/Cameroon has scheduled ten person-months of evaluation to take place during various seasonal operations to monitor quality control of seed, seed processing and seed planting and harvesting techniques (see Implementation Sequences). Progress on building construction will be monitored regularly by the USAID Engineer.

Monitoring of Provisions of Project Inputs:

Project records and reports will provide the principal source of information regarding project inputs.

B. Other Provisions

Provision for approximately 16 PM of U.S. Bureau of Census consultant services has been added to the project. The consultants will be evaluation specialists with sound backgrounds and experience in survey statistics and evaluating A.I.D. projects. In collaboration with the evaluators identified in the PP, and subject to the World Bank's plans for evaluation of the Center North Project, they will develop baseline and follow-up surveys for evaluation. Specific activities will include determining variables and constructing hypotheses to be tested; designing and testing monitoring and survey forms; designing survey samples and making arrangements for processing, tabulating and analyzing the data. Their main objective will be to measure the adoption rate of the seeds and uncover reasons for adoption or nonadoption of seeds.

VII. CONDITIONS, COVENANTS AND NEGOTIATING STATUS

Planning of this project has proceeded to the point that the main issues concerning the project have been addressed and substantively resolved to the satisfaction of the GURC and USAID/Yaounde. The project has been discussed in detail with MIDEVIV officials during the formulation of its functional components as described in this Project Paper. The project, as described herein, has been jointly presented to both MIDEVIV and the Ministry of Agriculture and reflects the outcome of the ensuing discussions. Thus the substance of the project, including the following conditions, has been agreed upon in principle and no difficulties are expected in concluding negotiations of the project agreement.

A. Conditions Precedent

In addition to the Standard Conditions Precedent (legal opinion, specimen signatures, designation of authorized representatives), the following clause will be required in the project agreement.

(1) Additional Disbursement for Construction Services

Prior to disbursement under the Loan for each construction activity or to the issuance by AID of documentation pursuant to which disbursement will be made with respect thereto, the Cooperating Country will, except as the Parties may otherwise agree in writing, forward to AID with respect to such activity, in form and substance satisfactory to A.I.D.:

- (a) Plans and specifications, bid documents, and time schedules for such construction;
- (b) An executed contract for construction supervision services of such activity with a firm acceptable to A.I.D.;
- (c) Evidence that an adequate supply of water and electricity is available at the site for such construction activity; and
- (d) An executed contract for construction services for such activity with a firm acceptable to A.I.D.

(2) Additional Disbursement for Procurement of Commodities and Equipment in the U.S.

Prior to disbursement under the Grant for each commodity or equipment procurement from the U.S. (except commodity and equipment procurement by the technical assistance contractor), or to issuance by A.I.D. of documentation pursuant to which disbursement will be made with respect thereto, the Cooperating Country will, except as the Parties may otherwise agree in writing, furnish to A.I.D., in form and substance satisfactory to A.I.D.:

- (a) Detailed specifications for such commodities or equipment;
- (b) An executed contract or other suitable arrangement with a firm acceptable to A.I.D. under which the firm will act as a procurement services agent on behalf of the Cooperating Country for such commodities or equipment; and
- (c) An executed contract for such commodities or equipment.

B. Covenants

(1) Implementation Agreements

The GURC agrees to cause to be executed, as soon as possible after signature of this Agreement, agreements or memoranda of understanding between IRA and MIDEVIV and between the Center North Project and MIDEVIV establishing the institutional linkages and making other arrangements necessary to carry out the project in a timely and efficient manner.

(2) Project Evaluation

The Parties agree to establish an evaluation program as part of the Project. Except as the Parties otherwise agree in writing, the program will include, during the implementation of the Project and at one or more points thereafter:

- (a) evaluation of progress toward attainment of the objectives of the project;
- (b) identification and evaluation of problem areas of constraints which may inhibit such attainment;
- (c) assessment of how such information may be used to help overcome such problems; and;
- (d) evaluation, to the degree feasible, of the overall development impact of the Project.

ANNEX A
LOGICAL FRAMEWORK

Life of Project:
From FY 82 to FY 86
Total U.S. Funding \$13,500,000
Date Prepared: 8 June 1981

Project Title and Number: North Cameroon Seed Multiplication Phase II - 631-0023

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p><u>Goal:</u> To increase farmers real income and productivity.</p>	<p>1. Income of 163,000 participating farmers increases from an annual average of \$208 at present to an annual average of \$300 by 1991.</p> <p>2. By 1991 participating farms will have increased yields.</p> <p style="margin-left: 40px;">Peanuts 41%</p> <p style="margin-left: 40px;">Sorghum 36%</p>	<p>1. CURC statistics</p> <p>2. Records of SODECOTON</p> <p>3. USAID reviews and evaluations</p> <p>4. Baseline surveys</p> <p>5. MIDEVIV records</p> <p>6. IRA-North records</p>	<p>1. International market developments will not adversely affect the prices of foods for which seed will be multiplied.</p> <p>2. Continuing commitment on the part of CURC to seed research and multiplication.</p> <p>3. There will be a normal amount of cooperation with Center-North Project (CNP) and other extension oriented projects in target area.</p> <p>4. Normal weather conditions will prevail</p>
<p><u>Purpose:</u> To create an institution that will produce improved sorghum, peanuts, corn and millet seed for distribution to farmers.</p>	<p><u>Conditions that will indicate purpose has been achieved:</u></p> <p>1. Two seed farms (total 400 hectares) and two processing plants operated by trained Cameroonian personnel.</p>	<p>1. MIDEVIV records</p> <p>2. USAID reviews and evaluations</p> <p>3. Seed farm records</p> <p>4. CNP records</p>	<p>1. CURC will not transfer personnel in key positions of responsibility without insuring comparable replacement</p>

ANNEX A
LOGICAL FRAMEWORK

Life of Project:
From FY 82 to FY 86
Total U.S. Funding \$13,500,000
Date Prepared: 8 June 1981

Project Title and Number: North Cameroon Seed Multiplication Phase II - 631-0023

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
	5. 400 hectares of land under cultivation 6. Two seed processing centers operating, and a total seed storage capacity of 240 MT.		
c) Regional Seed Testing Laboratory established in Maroua.	1. 2,500 different seed lots will have been tested by year 5.	1. Regional Seed Testing Laboratory records.	1. Construction of buildings, delivery and installation of equipment will be on schedule. 2. CURC nominates and releases participants for training on schedule. 3. US TA arrives on schedule.
Institutional capacity to train the trainers of extension agents.	1. Seven of the trainers of SOSECOTON's extension agents trained by the Phase II Project.		

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ANNEX A
LOGICAL FRAMEWORK

Life of Project:
From FY 82 to FY 86
Total U.S. Funding \$13,500,000
Date Prepared: 8 June 1981

Project Title and Number: North Cameroon Seed Multiplication Phase II - 631-0023

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS								
	<p>2. By the end of the project there will be an annual production of improved seed in the following quantities:</p> <table style="margin-left: 20px;"> <tr> <td>1. Peanut:</td> <td>216 MT</td> </tr> <tr> <td>2. Sorghum</td> <td>10.5 MT</td> </tr> <tr> <td>3. Corn</td> <td>10.5 MT</td> </tr> <tr> <td>4. Millet</td> <td>1.3 MT</td> </tr> </table>	1. Peanut:	216 MT	2. Sorghum	10.5 MT	3. Corn	10.5 MT	4. Millet	1.3 MT	<p>5. Institute of Agronomic Research Records (IRA).</p>	
1. Peanut:	216 MT										
2. Sorghum	10.5 MT										
3. Corn	10.5 MT										
4. Millet	1.3 MT										
<p><u>Outputs:</u></p> <p>a) Breeder seed and a cold storage unit established at Maroua.</p>	<p>1. Breeder seed provided by IRA-North by the end of the project:</p> <table style="margin-left: 20px;"> <tr> <td>a) Peanuts</td> <td>2.5 MT</td> </tr> <tr> <td>b) Sorghum</td> <td>200 kg</td> </tr> <tr> <td>c) Corn</td> <td>300 kg</td> </tr> <tr> <td>d) Millet</td> <td>20 kg</td> </tr> </table> <p>2. By 5th year approximately 6,000 kg of peanuts, sorghum, corn and millet stored in the cold storage unit.</p>	a) Peanuts	2.5 MT	b) Sorghum	200 kg	c) Corn	300 kg	d) Millet	20 kg	<p>1. IRA records 2. MIDEVIV records 3. USAID evaluations</p>	<p>1. Construction of buildings and installation of equipment will be on schedule. 2. No disastrous climatic and/or pest/disease.</p>
a) Peanuts	2.5 MT										
b) Sorghum	200 kg										
c) Corn	300 kg										
d) Millet	20 kg										
<p>b) Two seed multiplication farms operable including seed processing and storage facilities</p>	<p><u>Magnitude of Outputs:</u></p> <ol style="list-style-type: none"> 1. 216 T of peanuts produced by end of project. 2. 10.5 MT of sorghum seed produced by end of project. 3. 10.5 MT of corn produced by end of project 4. 1.3 MT of millet produced by end of project. 	<p>1. Records of seed farms at Guetele and Sanguere. 2. USAID evaluations</p>	<p>1. US TA team and equipment arrive on schedule 2. GURC provides adequate space 3. No disastrous climatic and/or pest/disease. 4. Training of participants takes place on schedule. GURC releases participants for training.</p>								

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ANNEX A

LOGICAL FRAMEWORK

Life of Project:
 From FY 82 to FY 86
 Total U.S. Funding \$13,500,000
 Date Prepared: 8 June 1981

Project Title and Number: North Cameroon Seed Multiplication Phase II - 631-0023

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p><u>Inputs:</u></p> <p>a) USAID-Grant</p> <ol style="list-style-type: none"> 1. Technical Assistance 2. Training 3. Commodities 4. Other Costs 5. Contingencies (10%) 6. Inflation (15%) <p>Total Grant Expenditures \$8,040,000</p> <p>b) USAID-Loan</p> <ol style="list-style-type: none"> 1. Construction 2. Contingency (10%) 3. Inflation (15% compounded) <p>Total Loan Expenditures \$5,600,000</p> <p>c) GURC</p> <ol style="list-style-type: none"> 1. Personnel 2. Operating Costs 3. Vehicle - POL 4. Fertilizers/Pesticides 5. Office/Housing 6. Furniture/Equipment 7. Transport of Commodities 8. International Airfares 9. Inflation <p>Total GURC Expenditures \$5,100,000</p>	<p>a) USAID-Grant (\$000)</p> <ol style="list-style-type: none"> 1. \$3,065 2. 866 3. 1,410 4. 440 5. 565 6. 1,694 <p>b) USAID-Loan (\$000)</p> <ol style="list-style-type: none"> 1. \$4,214 2. 421 3. 965 <p>c) GURC (\$000)</p> <ol style="list-style-type: none"> 1. \$1,445 2. 703 3. 828 4. 340 5. 170 6. 25 7. 282 8. 68 9. 1,239 	<p>USAID and GURC Budget and Audit reports.</p> <p>Contractor's periodic reports.</p>	<ol style="list-style-type: none"> 1. Both USAID and GURC's Budgeted contribution will be available when needed. 2. Consultants possessing appropriate skills are available.

Republique Unie du Cameroun
Paix. Travail. Solidarité

N° 37727 /MLNEP/CT2.-

Ministère de l'Economie
et du Plan

Yaoundé, le

Le Ministre

OBJET : Projet Semencier
au Nord Cameroun. Phase II.

DEC 2 15

ACTION COPY

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1.002	<i>Ellu</i>	
1.003		1/9/81

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Monsieur le Directeur,

Dans le cadre de la préparation de la phase II du projet semencier au Nord Cameroun, qui doit faire suite au projet financé par l'US.AID et qui vient de prendre fin, un document de travail a été élaboré par des experts du "SEED TECHNOLOGY LABORATORY OF MISSISSIPPI STATE UNIVERSITY". Ce document a été discuté lors de récentes séances de travail avec les services du Ministère de l'Agriculture, de l'Institut des Recherches Agricoles et de mon département. Il en ressort que le projet tel qu'il est proposé est parfaitement conforme à la politique du Gouvernement, tant dans les objectifs fixés que dans les modalités d'exécution. En particulier, le projet s'intègre parfaitement avec le Plan Semencier National en cours d'élaboration, et avec le projet "Centre Nord" financé par la Banque Mondiale et dont la mise en oeuvre est prévue dès 1981 ; il respecte les choix du Gouvernement visant à confier pour les cultures vivrières (a) à l'Institut des Recherches Agricoles l'introduction et la sélection des variétés, (b) à la HIDEVIV la multiplication en régie des variétés fournies par l'IRA ; (c) à la SODECOTON la diffusion en milieu paysan et la vulgarisation des techniques culturales, y compris l'expérimentation pluri locale en milieu paysan (en liaison avec l'IRA), dans sa zone d'intervention.

MONSIEUR LE DIRECTEUR DE L'AGENCE
AMERICAINE POUR LE DEVELOPPEMENT
INTERNATIONAL (US.AID)

YAOUNDE

.../...

+ 86

UNOFFICIAL TRANSLATION

Letter received in French

From: The Minister of Economy and Plan

To: The Director of the Agency for International Development

Dated: November 28, 1980

Subject: North Cameroon Seed Multiplication Project, Phase II

Dear Mr. Director,

As part of the preparation of phase II of the North Cameroon Seed Multiplication Project, which follows the USAID financed project which has just ended, a working document was designed by experts from the "SEED TECHNOLOGY LABORATORY OF MISSISSIPPI STATE UNIVERSITY". This document was discussed during recent working sessions with the services of the Ministry of Agriculture, the Institute of Agricultural Research and my department. The result of these sessions is that the project, as it is proposed, is in complete accordance with Government policy, in its objectives as well as in its implementation plan. In particular, the project combines perfectly with the National Seed Plan which is now being designed, and with the "Center North" project financed by the World Bank and to be implemented by 1981; it respects the decision of the Government, as regards food crops, to entrust (a) the Institute of Agricultural Research with the introduction and selection of varieties, (b) the MIDEVIV with the multiplication under Government control of the varieties provided by IRA, (c) the SODZCOTON, in its zone of intervention, with the distribution among rural people and the extension of cultural techniques, including pluri-local testing in rural areas (in coordination with IRA).

I am taking this opportunity to inform you that the national divisions and agencies concerned were highly satisfied with the quality of the document designed.

This second phase should thus successfully follow the first phase whose design and implementation have unfortunately been unsatisfactory.

It is important to implement this second phase as soon as possible; therefore, I would be grateful to you to expedite the submission of this project to the United States Congress.

I would like to draw your attention to the urgency of bringing a peanut breeder to the project in the IKA (as it is planned in the project): this conditions, to a large extent, the success of the seed project and of the Center North project. Therefore, I would be grateful to you to review the possibility of financing this expert before the implementation of the project, in order for him to be operational as soon as the 1981 rainy season starts, which is highly recommendable.

Sincerely yours,

/s/ Pierre Désiré Engo
Vice Minister of Economy and Plan

ANNEX C

PROJECT CHECKLIST AND STANDARD ITEMS CHECKLIST

A. GENERAL CRITERIA FOR PROJECT

1. App. Unnumbered; FAA Sec. 653 (b);
Sec. 671

(a) Describe how Committees on Appropriations of Senate and House have been or will be notified concerning the project;

Congressional presentation 1982

(b) is assistance within (Operational Year Budget) country or international organization allocation reported to Congress (or not more than \$1 million over that figure).

Yes

2. FAA Sec. 611(a) (1). Prior to obligation in excess of \$100,000 will there be:

(a) engineering, financial, and other plans necessary to carry out the assistance; and

Yes

(b) a reasonable firm estimate of the cost to the U.S. of the assistance?

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. No host government legislative action required.

4. FAA Sec. 611(b); App. Sec. 101. If for water or water-related land resource construction, has project met the standards and criteria as per the Principles and Standards for Planning Water and Related Land Resources dated October 25, 1977?

N/A.

5. FAA Sec. 611(e). If project is capital assistance (e.g. construction), and all U.S. assistance for it will exceed \$1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration to country's capability effectively to maintain and utilize the project? **Yes.**
6. FAA Sec. 209. Is Project susceptible of execution as part of regional or multilateral project? If so, why is project not so executed? Information and conclusion whether assistance will encourage regional development programs. **This project has been planned to multiply improved seed developed by research and to transfer the seed to the extension agency which will distribute the seeds to the farmers. The extension component is being funded by the World Bank.**
7. FAA Sec. 601(a). Information and conclusions whether project will encourage efforts of the country to:
- (a) increase the flow in international trade; **(a) The project will assist CURC efforts to increase the volume of exported grain.**
 - (b) foster private initiative and competition **(b) The project will encourage the use of improved seed and improved culture practices on private farms.**
 - (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; **(c) N/A.**
 - (d) discourage monopolistic practices; **(d) The project is multiplying peanuts, sorghum, millet and corn seed to serve the needs of many small farmers.**
 - (e) improve technical efficiency of industry, agriculture and commerce; and **(e) Project's purpose is to increase cereal grain and peanut production.**
 - (f) strengthen free labor unions. **(f) N/A.**

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8. FAA Sec. 601(b). Information and conclusion on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise). U.S. manufactured seed processing equipment will be purchased to ensure seed quality. Technical assistance will be sought from U.S. individuals or firms.
9. FAA Sec. 612(b); Sec. 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized to meet the cost of contractual and other services. The GURC is contributing to the project the maximum amount it is capable of. No excess Cameroonian currency is owned by the U.S.
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 79 App. Act Sec. 608. 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? Yes, the primary purpose of this project is to increase consumption and sales of corn, sorghum, millet and peanuts within Cameroon and to provide some grain for sale on a regional basis.

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

a. FAA Sec. 102(b); 111; 113; 281a.

Extent to which activity will

(a) effectively involve the poor in development, by extending access to economy at local level, increasing labor-intensive production 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;

The project's purpose is to increase the productivity of cereal grains and peanuts for the small farmer by developing the institutional capacity of MIDEVIV to multiply improved varieties of peanuts, corn, millet and sorghum.

(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;

N/A.

(c) support the self-help efforts of developing countries;

Yes.

(d) promote the participation of women in the national economies of developing countries and the improvement of women's status; and

Yes.

(e) utilize and encourage regional cooperation by developing countries?

No.

h. FAA Sec. 101, 101A, 104, 105, 106, 107. Is assistance being made available: (include only applicable paragraph which corresponds to source of funds used. If more than one fund source is used for project, include relevant paragraph for each fund source).

0.4

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

Project is designed to increase productivity and income of small farmers (average holding is 2.1 hectares) in project region.

(2) (104) for population planning under Sec. 104(b) or health under Sec. 104(c); if so, extent to which activity emphasizes low-cost, integrated delivery systems for health, nutrition and family planning for the poorest people, with particular attention to the needs of mothers and young children, using paramedical and auxiliary medical personnel, clinics and health posts, commercial distribution systems and other modes of community research.

(3) (105) for education, public administration, or human resources development; if so, extent to which activity strengthens non-formal education, makes formal education more relevant, especially for rural families and urban poor, or strengthens management capability of institutions enabling the poor to participate in development;

(4) (106) for technical assistance, energy, research, reconstruction, and selected development problems; if so, extent activity is:

(i) technical cooperation and development, especially with U.S. private and voluntary, or regional and international development organizations;

(ii) to help alleviate energy problems;

(iii) research into, and evaluation of, economic development processes and techniques;

(iv) reconstruction after natural or manmade disaster;

(v) for special development problem, especially small labor-intensive enterprises, marketing systems, and financial or other institutions to help urban poor participate in economic and social development.

c. (107) is appropriate effort placed on use of appropriate technology?

Yes.

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

Yes.

e. FAA Sec. 110(b). Will grant capital assistance be disbursed for project over more than 3 years? If so, has justification satisfactory to the Congress been made, and efforts for other financing, or is the recipient country "relatively least developed?"

Yes, see Congressional Presentation.

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

The project recognizes the particular needs of the recipient country in agriculture and will help to strengthen the sector of food crop production. The project provides long-term degree training and short-term practical training.

g. FAA Sec. 122(b). Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase or productive capacities and self-sustaining economic growth?

Yes.

2. Development Assistance Project Criteria (Loans Only)

a. FAA Sec. 122(b). Information and conclusion on capacity of the country to repay the loan, including reasonableness of repayment prospects.

Project financial analysis concluded that the GURC is capable to repay loan.

b. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete in the U.S. with U.S. enterprise, 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. Project Criteria Solely for Economic Support Fund

a. FAA Sec. 531(a). Will this assistance support promote economic or political stability? To the extent possible, does it reflect the policy directions of section 102?

Yes.

b. FAA Sec. 533. Will assistance under this chapter be used for military, or paramilitary activities?

No.

STANDARD ITEM CHECKLIST

Has the Standard Checklist been reviewed for this project?

Yes XX No _____

ANNEX D

PID APPROVAL CABLE

The following addresses the principal concerns raised by the PID review cable (State 066893 dated 18 March 1979).

1. "PID was reviewed and approved for further development... The final PP should contain a section which specifically addresses the findings and recommendations of the North Cameroon Seed Project Evaluation".

See Section 3 and Annexes H and K of PP.

2. "Main concern was that GURC's capacity to provide collateral agricultural production support is preventing achievement of output targets".

The project has been designed in coordination with the GURC and IBRD funded Center-North project. The Center-North project is an agricultural development activity that will provide agricultural inputs (including improved seeds), credit, extension, storage, marketing services and farm-to-market roads.

3. "Economic benefits and costs of the project should be examined".

The project's internal rate of return is calculated to be 19.5 percent. See Section 1.4 for the complete economic analysis of the project.

4. "Reviewers noted that the PID was not very specific about the role of private sector seed producers during the proposed project. Project Paper should address this issue and belief here is that it should be clear from beginning that national seed service will contract out seed multiplication needs to private farmers."

The use of contract farmers to produce certified seed will not be done in the project. Past experience has shown that quality seed is not returned to the seed stations. The principle emphasis of the project will be to produce high quality seed.

The project will direct its efforts to making the two seed farms self-sufficient and to minimize the sale of subsidized seed. The majority of the long and short-term U.S. training will be at private seed companies.

5. "Will there be any problem in attracting and retaining adequate staff?"

The implementing agency, MIDEVIV, has been able to attract well qualified, although inexperienced, staff.

6. "Section 611(a) requirements, as they apply to the construction elements, should be met".

Mission engineer has prepared Annex O.

7. "The relationship of the project to AID's WID concerns should be detailed".

The project purpose is to produce high quality seed. The seed will be distributed by the GURC and ERD funded Central North project. Both men and women are food crop producers among the 103,000 farm families targeted by the Center North project. Since women in the project area tend to maintain their own farm plots in addition to production maintained by the entire family it is expected that women will benefit from the increased food crop production.

8. "Revised IEE should be submitted with Project Paper".

The revised IEE is Annex E of the PP.

9. "Costing of GURC inputs should be re-examined".

GURC input has been revised and is shown in Section 4.

10. "Project Paper should provide details as to how the project will tie in with existing GURC agricultural extension efforts".

The project has been designed to be complementary to the extension and marketing aspects of the Center North project.

11. "There are a number of Title XII institutions with substantial capacity in seed multiplication and a likely interest in the project".

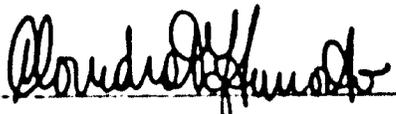
Personnel from Mississippi State University had a major role in the design of the project. Title XII Institution will be welcome to submit Technical Proposals for the project's implementation.

ANNEX "E"

THRESHOLD DECISION ON INITIAL ENVIRONMENTAL EXAMINATION (IEE)

Project Location: Cameroon
Project Title: North Cameroon Seed Multiplication Phase II
Project Number: 631-0023
Funding: \$13.5 million
Life of Project: FY 1982 - FY 1986

IEE Prepared By:



Claudio D. Fortunato, P.E.
Environmental Officer - USAID/Y

Date:

June 29, 1981

Recommended Additional
Environmental Action:

NEGATIVE DETERMINATION

Concurrence:

GC/AFR  _____

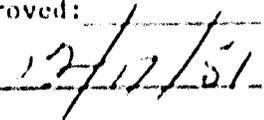
 _____
Bernard D. Wilder, Acting Director
USAID/Yaounde

Bureau for Africa Decision:

Approved: 

Leslie L. Boyd, AER/DE/SDP

Disapproved: _____

Date:  _____

1. General Considerations

The components of this project do not fall into the category of those activities which are known to affect the environment to a significant degree, such as rural roads, electrification, water supply, irrigation, industrialization, etc..

Nonetheless, some factors of the project will have minor influences on the physical, biological, social environments as they presently exist. These factors will be addressed and examined in this Annex, in relation to the activities which will take place in the three sites considered by the project: Guetele, Maroua and Sanguere.

Although there are some slight differences in the environmental characteristics at the three sites, they are not of such magnitude as to justify an independent examination. Furthermore, the activities in Guetele and Sanguere are essentially identical, while the activity in Maroua is limited to the mere construction of two buildings. Therefore, the three sites will be simultaneously considered in the following sections.

Since the project proposes, inter alia, the assistance for procurement and use of pesticides, this Annex will include a separate section dealing with relative economics, social and environmental risks and benefits.

2. Consideration of Physical Environment

a) Agricultural Lands

With the exception of the construction in the urban section of Maroua, the project area is in the midst of agricultural land. This land is presently being utilized mainly for the production of breeder seeds, an activity which started during Phase 1 of the seed multiplication project.

b) Soil Erosion and Slope Stability

The site in Guetele is predominantly flat and the project activities do not include any alterations which might affect the present soil stability.

In Sanguere, where some construction has been completed during Phase 1; the terrain is slightly rolling.

The expansion of the facilities needed for the completion of the seed production processing center will require earth moving operations. In order to control the eroding effects due to seasonal flooding site improvements in Sanguere will include an interceptor ditch which will divert the storm water runoff from the building area to an existing creek located in the vicinity (see PLATE 05, Annex "O", Construction).

c) Energy Resources

Both seed production farms will need electrical power to operate the water supply pump, operate the seed processing plant, serve the offices, laboratories and houses. Since no public utility is available in either site, the utilization of diesel generators is anticipated. This will require fuel to be periodically delivered to Guetele and Sanguere.

Roadway improvements, programmed for the near future between the cities of Maroua and Mokolo, will facilitate the delivery of the needed fuel to Guetele from Maroua, via Mokolo. The roadway between Garoua and Sanguere is paved and in excellent condition. Thus, a continuous operation for the seed production/processing centers may be assured.

d) Surface Water Quantity and Quality

The only alteration to the existing natural environment in all sites is the construction of small structures and houses. This activity alone cannot significantly alter the existing surface water characteristics. Seed production fields are located in the plains and crop cultivation is not apt to cause any changes to the present state of surface water quantity and quality.

e) Ground Water Quantity and Quality

The site in Guetele is adjacent to an existing center for young farmer families' training center which was established a few years ago. The center includes a well which has continuously yielded potable water in sufficient quantity.

As mentioned above the farm site in Guetele lies in the plains; the soil

is permeabel and although the raining season is limited to only four months per year, when as much as one-thousand millimeters of precipitation takes place, there is reason to believe that an adequate acuifer is present in the area. There are indications that sufficient water is also available in Sanguere, where similar conditions exist.

Nevertheless, before construction at either site begins, a ground water exploration program will be conducted to ascertain the extent of the aquifers.

Most of the water tapped from the aquifers will be returned, directly or indirectly to the soil: therefore, no significant impact will occur. The quality of the ground water below the seed production fields will be altered due to leaching of pesticides and fertilizers. However, propagation of contamination is not anticipated due to the flat nature of the terrain where the fields are located. Alterations to the aquifers being tapped for potable water will be avoided by selecting the well sites upstream and remote from any area subject to contamination.

f) Air Quality and Noise

No activity connected with this project is apt to significantly affect the air quality of the area nor create unacceptable noise levels.

3. Consideration of Biological Environments

a) Terrestrial Ecosystem

The sites of the seed production/processing farms are located in the Savanna, which characterize the North Province of Cameroon. None of the project activities, outside of cultivation, are likely to alter this condition. Since no dependency of the population on the existing ecosystem can be identified, there is no significant impact.

b) Endangered and Migratory Species

c) Beneficial Plants and Animals

There are no considerations of these environmental components due to the farms limited areas and lack of significant quantities of animal and floral species identifiable as such.

d) Pest Plants and Animals

Although pest plants (weeds) and animals (rodents, and insects) do not constitute any problem in the project areas, they will be nonetheless controlled by the rational utilization of herbicides and insecticides in order to protect the crops during production and storage.

e) Disease Vectors

This project will not develop activities which may be identified as affecting the existing disease vector balance. Therefore, no sensitive assessment of this factor is formulated. Population increase in the areas is minimal and its activities unrelated to this environmental consideration.

4. Considerations of Social Environments

Of the mostly recognized social environment factors, such as distribution system, employment, at-risk and migrant population, community stability, cultural and religious values, tourism and recreation, and nutrition, the only one which will be affected by the project is nutrition. This project will cause a beneficial impact on nutrition, in the long-term, by increasing the availability of improved high yielding seed. A combination of peanuts and cereals (sorghum and millet) will improve diets by providing essential amino acids.

5. Benefits and Risks of Planned Use of Pesticides

The USAID Regulation 22 CFR, Part 216, Environmental Procedures, requires that "...a separate section evaluating the economic, social and environmental benefits of the planned pesticide use, to determine whether the use may result in significant environmental impact..." be included separately in the EEE.

The pesticides to be used by the project, as planned, are "Malathion" and "Orthene", (Acephate), insecticides, and "Alachlore", better known as "LASSO", a herbicide. As required by the above regulation, the following factors will be considered:

a) US/EPA Status

Malathion, Orthene and LASSO are products which have undergone extensive

examination and testing by the EPA and which are included in its approved list of pesticides classified under "restricted use".

b) Basis for Selection

Malathion and Orthene have been selected for their low toxicity and crop tolerance and efficient control of aphids. LASSO has been selected in accordance with crop tolerance, least residual effect in the soil, a characteristic needed for rotating crops, and effective control of grasses and broad leaf weeds, common at both seed production farms.

c) Integrated Pest Management

This program will be monitored by the ongoing project of Regional Food Crop Protection (RFCP). The pesticide program has been determined by the identification of pests, crops, soil types, and crop rotations and will have a minimal effect upon natural beneficial predators and/or pollinators. The pesticides have little or no residual effects which may influence crop rotation.

d) Method of Application

Equipment and methods of application of the pesticides are known to the people who will be involved in this project. One of the components is the supply of safety equipment to be used by the personnel assigned to the application of pesticides and a continued and expanded training program under the RFCP project.

e) Long-term Hazards

Application of the pesticides will be supervised by the Chief of Party, who will be registered in the American Registry of Certified Professionals in Agronomy, Crops, and Soils. In addition to strict supervision and enforcement for the safe storage and disposal of pesticide containers, the Chief of Party will assure application of the pesticides in accordance with the regulations as printed on the labels and as approved by the US/EPA.

f) Effectiveness of Proposed Pesticides

Malathion and Orthene are effective in controlling the spread of aphids, leafhoppers, and thrips. These insects have been identified in the fields

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and their uncontrolled propagation could reduce crop yields. LASSO controls infestation of weeds which greatly reduce crop yields due to competition for water and nutrients.

5. g) Compatibility With Ecosystems

Physical, biological, and social ecosystems will not be significantly affected by the rational use of pesticides. With the exception of localized control and destruction of undesired insects and weeds, the ecosystems will remain essentially unaffected to the application of the pesticides. The predators of insects (birds, spiders, and large insects) will have to search elsewhere for their prey, but the effects are not considered significant enough to justify further considerations.

5. h) Conditions Under Which Pesticides Are to be Used

The pesticides will be used during calm and dry days to minimize drift and dispersion to adjacent areas. The pesticides will be applied prior to the pest's critical threshold point to minimize multiple applications. In order to avoid damage to desirable insects, such as pollinators, the insecticides will be applied during periods of the insects' least activity (late evenings or early mornings). Livestock will be excluded from the seed field and will not be exposed to any forage which might have been treated by the pesticides. Finally, seed fields are located in the plains, where permeable soils absorb residual chemicals directly and underground migration is unlikely.

5. i) Other Pesticides or Non-Chemical Methods

The reason for selecting these pesticides has been dictated by the need of producing the crop and maintaining the quality of the seed as effectively and as safely as possible.

Funds are provided for three person months of short-term consultancy to initiate an integrated pest management program (IPM) for the seed multiplication farms and the farmers. In addition, Cameroon participates in the regional food crop protection project (RFCPP) and Yaounde is the site of that project's regional training centers. Two PASA technicians are resident in Cameroon. A trainer and an entomologist, and both have been working in Northern Cameroon with the Ministry of Agriculture's crop protection service. Personnel from the RFCPP will be consulted to determine the primary pests in each cropping rotation and how farmers are presently dealing with the pests. After determining the primary pests associated with each crop and the existing control measures, personnel from the RFCPP and the short-term consultants will be able to initiate an IPM program which is adaptable for the farmer and the two seed farms.

5. j) Ability of the GURC to Regulate the Safe Handling of Pesticides

The GURC has used pesticides with many other agricultural projects. Some workers have been trained in the safe handling of pesticides. However, additional training is scheduled by the project. Funds are provided for construction of appropriate warehouses for safe storage of the pesticides and the Chief of Party will have responsibility for the safe handling, transportation, and disposal of containers for the duration of the project. This responsibility will later be transferred to the GURC.

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k) Provision for Training

This consideration, in conjunction with other factors related to the pesticides program, was discussed above.

l) Monitoring System Effectiveness

Although the effectiveness of the proposed program has been tested on a smaller scale during Phase 1 of the project, monitoring and control of the final outcomes will continue through the direction and activities of the Chief of Party and his assistant.

6. Conclusions

The Mission Environmental Officer concludes that this Initial Environmental Examination of foreseeable effects indicates no significant impact on physical, biological, and social environments. Hence, the Threshold Decision on the need for an Environmental Assessment should be negative.

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ANNEX F

WAIVER REQUESTS

Justification for a source/origin waiver from Codes 000 and 941 to Code 935 and a proprietary procurement waiver for procurement of select farm equipment.

- a) Cooperating Country : Cameroon
- b) Authorizing Document : Project Authorization
- c) Project : North Cameroon Seed Multiplication-II (631-0023)
- d) Nature of Funding : Grant

e) <u>Description of Goods</u>	<u>Quantity</u>	<u>Cost \$</u>
Massey Ferguson 290 tractor	3	55,200
Massey Ferguson 265 tractor	3	48,300
Massey Ferguson 21 Disc Harrow	2	7,400
Massey Ferguson 765 Disc Plow	2	6,100
Nodet Gougis pneumatic 11 planter	2	20,000
Tecnoma TS-400 22ft. sprayer	2	7,600
Hudson backpack sprayer	8	2,400
		<u>147,000</u>
SPARE PARTS 30%		44,000
Total		<u>191,000</u>

- f) Approximate Value : \$191,000
- g) Probable Source : Cameroon
- h) Probable Origin : United Kingdom, Canada, U.S. and France

Discussion and Justification

The following is a list of field equipment purchased during Phase I of the project by either AID or the GURC.

<u>Brand</u>	<u>Model</u>	<u>Description</u>	<u>Quantity</u>
Massey Ferguson	265	tractor	2
Ford	3000	"	1
John Deere	2010	"	1
Massey Ferguson	35	"	2
Massey Ferguson	21	disc harrow	2
Massey Ferguson	765	disc plow	2
Nodget Gougis	11	planter	2
Tecnoma	TS-200	sprayer	1
Hudson	backpack	sprayers	3
Hunrd	24 blade	disc harrow	1
Gard	2 blade	disc plow	1
Ebra	4 row plate	planter	1

This waiver is needed to allow the grantee to procure equipment and spare parts that are already standard to their present operations. The Massey Ferguson (MF) 765 disc plows and MF 21 disc harrows were chosen over the Hunrd disc harrow and Gard disc plow because of durability. Project personnel experienced less breakdown time during the critical seed bed preparation period (2 - 3 weeks) with the MF 765 plow and MF 21 disc harrow. The MF 290 tractors were selected because 75 horsepower is required to operate the Lilliston 1580 peanut combine, and neither John Deere nor Ford has the appropriate size tractors available in country. In addition, long periods of back orders for spare parts have occurred when trying to get parts for the Ford and John Deere tractors. Three MF 265 tractors were chosen with the optional hydraulic lift for dumping seed from the Peerless wagons. In addition, the MF 265 tractors were chosen over Ford and John Deere because of less break-down time. The Nodet Gougis pneumatic planter was chosen over the Ebra model because the delicate peanut seed is handled by air rather than a turning metal plate which results in a higher seed germination. The Tecnoma TS-400, 22 foot tractor mounted sprayers were chosen because parts are interchangeable with the TS-200 model and the tanks have a larger water capacity which is necessary for spraying pests quickly at very critical periods. The Hudson backpack sprayer has proven its durability and flexibility when disinfecting storage areas and equipment. It is expected that all the items in the waiver request will be purchased in-country from a dealer or dealers who have the service facilities and trained personnel to respond to recurring support needs. Local firms with repair parts and maintenance units in Yaounde, Douala, and Garoua will be favored for this procurement.

AID Handbook 11, Chapter 3.2.4.2.b. allows proprietary procurement when justified in terms of one or more of the following factors.

- 1) Standardization which allows for economies in maintenance of spare parts and an increase in technical familiarity by operating personnel and mechanics; and
- 2) Compatibility with equipment on hand which has proven to be very economical, dependable, and durable under local conditions.

A.I.D. Handbook 1, Supplement B, Chapter 5B4b(11), permits a waiver of the authorized geographic code when there is an emergency requirement for which non-AID funds are not available and the requirement can be met in time only from suppliers in-country and not included in the authorized geographic code.

The seed multiplication farms at Guetele and Sanguere are located in an agriculture area where most of the labor is done manually. The two seed farms have not reached their full production due to the unavailability and unreliability of manpower resources at the critical times of seed bed preparation planting and harvesting. If the required equipment can be purchased locally, it will be available for the 1982 planting season which begins in April. If the request for a source/origin waiver is not approved, the time required for codes 000 or 941 procurement would cause the project to miss the 1982 planting season and thereby cause a one year delay in project implementation.

Recommendation: Based upon the justification provided above that you:

- 1) approve a procurement source/origin waiver from AID Geographic Codes 000 and 941 to Code 935;
- 2) conclude that special circumstances exist requiring a waiver of the directives contained in Handbook 1, Supplement B, Chapter 5B; and
- 3) certify that exclusion of procurement of the above described commodities from Free World countries other than the cooperating country and countries included in Code 911 would seriously impede the attainment of U.S. foreign policy objectives.

Justification for a waiver of Section 638(i) of the Foreign Assistance Act, a source/origin waiver from Codes 000 and 941 to Code 935, and a proprietary procurement waiver for procurement of three Toyota flatbed trucks.

- a) Cooperating Country : Cameroon
- b) Authorizing Document : Project Authorization
- c) Project : North Cameroon Seed Multiplication-II (631-0023)
- d) Nature of Funding : Grant
- e) Description of Goods : Three 7-9 ton Toyota cargo trucks with spare parts (30%)
- f) Approximate Value : \$130,000
- g) Probable Source : Cameroon
- h) Probable Origin : Japan

Discussion and Justification

Project implementation involves the transportation of equipment, fertilizers, construction material and seed to and from the project sites. Three 7-9 ton cargo trucks with platform beds and side racks are required to move these commodities on a timely basis. Transportation of these commodities must take place during the dry season as opposed to the wet season when the roads become slippery and impassable.

If the vehicles are not bought early, project implementation will be delayed by one year.

Two Toyota 9-ton trucks and three Toyota pick-up trucks were purchased under Phase I of the project. The GURC wishes to standardize the project fleet using Toyotas for the following reasons:

- 1) service and spare parts are available locally;
- 2) standardizing on Toyotas facilitates the maintenance of a spare parts inventory necessary to reduce breakdown time; and
- 3) project mechanics are already familiar with Toyotas.

Toyota cargo trucks of the required specifications are always in stock locally for immediate delivery to the project sites.

U.S. manufactured trucks of the required specifications are not available locally and cannot be procured in time for the current dry season. Moreover, under another project the same specifications were transmitted to a PSA (AAPC) in an attempt to obtain U.S. trucks, but no U.S. manufacturer complied.

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AID Handbook 11, Chapter 3.2.4.2b.1, permits proprietary procurement when justified on the benefits to be achieved through standardizing on a particular type of vehicle.

A.I.D. Handbook 11, Chapter 3.2613a permits a change in the authorized geographic code when based on the following reason:

The project faces an emergency situation such that a year delay in project implementation can be avoided only by purchasing trucks from the local Toyota dealer because U.S.-manufactured trucks are not available locally.

Recommendation: Based upon the justification provided above that you:

1. Approve a procurement source/origin waiver from A.I.D. Geographic Codes 000 and 941 to Code 935;
2. Conclude that special circumstances exist requiring a waiver of Section 636(i) of the Foreign Assistance Act; and
3. Certify that exclusion of procurement from Free World countries other than the cooperating country and countries included in Code 941 of above described commodities would seriously impede the attainment of U.S. foreign policy objectives and the objectives of the foreign assistance program.

Justification for proprietary procurement of select farm equipment and spare parts.

- a) Cooperating Country : Cameroon
 b) Authorizing Document : Project Authorization
 c) Project : North Cameroon Seed Multiplication-II (631-0023)
 d) Nature of Funding : Grant

<u>Description of Goods</u>	<u>Quantity</u>	<u>Cost \$</u>
Lilliston 2000 series 4-row rolling cultivator	4	12,100
Lilliston 8100 series 2-row digger-shaker inverter	4	14,500
Lilliston 1580 peanut combine 540 HP/d	4	54,000
Peelers, 14 foot hydraulic drying wagons	12	40,500
Jet Dryer peelers swing arm mount 5 HP, 3 phase 50 cycle	6	17,700
Hobbs 188 complete peanut cleaner	2	37,000
Clipper 27 seed cleaner	2	6,000
		<hr/>
		181,800
Spare parts 10%		55,200
		<hr/>
TOTAL.		237,000

f) Probable Source : U.S.

g) Probable Origin : U.S.

Justification

The above equipment was recommended by Jim Heck, an agriculture machinery expert from Mississippi State University, during the design process. The project manager and Gary Huesche from Mississippi State were able to see all the equipment in operation in the peanut production area of the U.S.

A.I.D. Handbook 11, Chapter 3.2.4.2.b. permits proprietary procurement when certain equipment provides substantial benefits in achieving project objectives. The following discussion details these benefits as determined by Mr. Beck, Mr. Reusche and the project manager. The justification will focus on these points: (1) standardization and compatibility with equipment on hand (Clipper 27); (2) proven economical performance under conditions similar to those in Cameroon; and (3) service availability, dependability and superior design features.

The Lilliston cultivator uses a slicer-tine spider for cultivating rather than the conventional snowel cultivators. The cultivator can be used on a wider range of soil conditions due to the speed at which it operates. The Lilliston digger-shaker-inverter was selected over other models because the windrows were laid into a neat perpendicular doublepile position with pods exposed to the sun and air for uniform drying. The Lilliston combine was selected over the Hustler model because of the balance of the machine total weight, and 15 years of field performance. The Peerless wagons and Jet dryers were chosen for their flexibility of plenum hook-up and the capacity of the hydraulic hoist. The Hobbs 488 cleaner was chosen for its large capacity of cleaning 7,500 to 10,000 pounds per hour and its accurate separation of seed from foreign material. Many other brands of U.S. manufactured agriculture equipment were considered during the selection process, but due to design features, capacities, durability and cost estimates, the above mentioned equipment is recommended for the Phase II project. The Clipper 27 was selected due to compatibility with other models currently being successfully used by the Grantee.

Recommendation: Based upon the justification provided above, that you approve the proprietary procurement of the farm equipment listed above.

Justification for a source origin waiver from Codes 000 and 941 to Code 935 for construction commodities.

- a) Cooperating Country : Cameroon
- b) Authorizing Document : Project Authorization
- c) Project : North Cameroon Seed Multiplication-II (631-0023)
- d) Nature of Funding : Loan
- e) Description of Goods :
 1. Reinforcement steel
 2. Electrical wires & fixtures
 3. Piping & plumbing fixtures
 4. Miscellaneous metal items (frames, handrails, etc.)
 5. Glazing materials (glass, caulking, etc.)
 6. Sundries
- f) Approximate Total Value : \$1,000,000
- g) Probable Source : Cameroon
- h) Probable Origin : France, U.K., Germany, Belgium

Discussion and Justification

A.I.D. Handbook 1, Supplement B, Chapter 5B4b(1) and (7) permit a change in the authorized geographic codes for purchases of commodities when circumstances are (1) determined to be critical to the success of project objectives; and (2) when there is an emergency requirement for which non-AID funds are not available and the requirement can only be met in time from suppliers in a country not included in the authorized geographic code.

None of the commodities listed above have their origin in Cameroon. Procurement of commodities from Code 941 countries other than the U.S. is also limited. There is no steel production in West Africa. Other construction commodities (e.g., electrical wiring and fixtures, plumbing, glass, etc.) are imported mostly from western European countries. The required commodities are available on the local market.

As the exact specifications for the commodities required can not be determined until the construction contractor is selected, the commodities can not be ordered from the U.S. and stocked for later use. By the time the construction contractor is selected, we will be approximately 12 months into project implementation. Ordering the commodities from the U.S. would require a minimum leadtime of 9 months. It is highly probable that this unacceptable delay would be even longer given the poor transportation links between the U.S. and the Cameroon. In addition, bid prices are likely to be higher given transportation costs and the probability of damage and pilferage would increase significantly.

The buildings to be constructed must be compatible with the existing buildings in the project area. The commodities listed above are in common use in the Cameroon and can be more easily maintained than commodities from the U.S. as replacement parts or complete units can be purchased on the local market. There are no buildings built with American specified commodities in the Cameroon.

The required commodities are available on the local market in sufficient quantities so that procurement can commence immediately after the construction contract is signed, thus permitting the construction phase to begin without any delays.

Recommendation: Based upon the justification provided above that you:

- 1) approve a procurement source/origin waiver from AID Geographic Codes 000 and 941 to Code 935;
- 2) conclude that special circumstances exist requiring a waiver of the directives contained in Handbook 1, Supplement B, Chapter 5B; and
- 3) certify that exclusion of procurement of the above described commodities from Free World countries other than the cooperating country and countries included in Code 941 would seriously impede the attainment of U.S. foreign policy objectives and objectives of the foreign assistance program.

ANNEX G

COMMODITY LISTAID Financed Commodities to be Purchased in Cameroon

Item No.	Quantity	Description	Cost
1	2	Diesel Fuel storage tank, 5000 liters	12,000
2	3	Tractors, MH 290	55,200
3	3	Tractors MF 265	48,300
4	2	Disc harrow, PVX 501, (24 disc)	7,400
5	2	Disc plow, F3 (3 disc)	6,100
6	2	Planter, Nodger-Gougis (4 row)	20,000
7	2	Sprayer, Teconoma 90 pump, 9m. boom	7,600
8	8	Backpack sprayers	2,400
9	2	Surge bins 6ft. x 8ft., 45° hopper	6,000
10	2	Surge bins 5ft. x 8ft., 45° hopper	5,500
11	3	Trucks, 7-9 ton capacity	100,000
			<hr/>
			\$ 270,500
30% machinery spare parts			74,000
			<hr/>

344,500

AID Financed Commodities to be Purchased in the U.S.

12	3	Pick-ups	45,000
13	2	Station wagons	40,000
14	2	Elevator, 25ft. 6" x 4" cups and motor 3hp 220V 50Hz	11,800
15	2	Elevator 20ft. 6" x 4" cups and motor 3 hp. 220V 50Hz	10,000
16	2	Portable belt conveyer 26 ft., 12 in. belt, motor 3 hp. 220V 50Hz	8,000
17	2	Portable belt conveyer, 14ft., 12 in. belt, motor 2 hp. 220V 50Hz	4,000
18	2	Vibrating hopper, 74 Bu. capacity, motor 1hp. 220V 50Hz	12,000
19	2	Distributor, 6 way, 8 inc. diameter	1,000
20	2	Distributor, 4 way, 8 inc. diameter	500
21	14	Tubes, 8 inch diameter 25 ft., long, 5 ft. sections	3,500
22	2	Bagging scale, semi-automatic	4,000
23	4	Portable bag closer, Fishbein, needles, string 220V 50Hz	4,200
24	-	Laboratory equipment (see Mississippi report)	15,300
25	-	Audio visual equipment	2,000
26	2	Fertilizer broad casters	8,000
27	2	Portable corn shellers	4,000
28	2	Sets of shop tools	45,000
29	250,000	Seed bags and labels	105,000
30	12	Peerless, 15ft. hydraulic drying wagons	40,500
31	6	Dryer fans, 3 phase 220 volts 50Hz	17,700
32	4	Peanut digger-shaker-inverter Lilliston (2R)	14,500
33	4	Peanut combines, Lilliston 1580 540 RPM	54,000
34	4	Rolling cultivators, Lilliston	12,100
35	2	Seed cleaners, clipper 27	6,000
36	2	Peanut cleaners, Hobb 488 complete	37,000
37	4	Generators 85 KVA capacity	80,000
			<hr/>
			585,100
30% machinery spare parts			124,000
			<hr/>
Export packing			709,100
			<hr/>
			356,400
			<hr/>

TOTAL

\$ 1,410,000

Items 1 through 11 will be purchased in Cameroon and require the proprietary source and origin waiver justified in Annex F. Items 9 and 10 must be built on the site to conform with the processing equipment.

Items 12 through 37 will be purchased in the U.S. under code 000. Items 33 through 37 require the authorization proprietary procurement based on waiver requests outlined in Annex F. Specific makes and catalog numbers may be found throughout the other items listed for identification purposes only; procurement when undertaken will specify that "or equal" commodities will be acceptable.

The GURC will fund the transportation and insurance costs of all commodities from the port of entry into Cameroon or the point of purchase in Cameroon to the project sites. This is an estimated cost of \$282,000.

ANNEX H

PHASE I EVALUATION RECOMMENDATIONS

The first phase of the project was evaluated twice, once by Development Alternatives, Inc. (DAI) in November/December 1978, and again by Mississippi State University - Seed Technology Laboratory in January 1980. Listed below are their recommendations with comments on action taken.

Development Alternatives, Inc.

1. The project goals should be scaled down to the capacity of the Cameroon Government.

Comment - Production goals have been lowered to the provision of about 238.3 metric tons of improved seed.

2. The project should adopt an approved book-keeping system. MIDEVIV has placed a book-keeper at the project headquarters.

Comment - In the NCSM II project the services of a full time Administrator/ Finance Specialist is included in the project budget.

3. Emphasis should be placed in using "good" farmers for seed production.

Comment - The quality control problems associated with farmer production and experience during Phase I of project dictate that the project must insure quality control through the initial multiplication of seed at the Guétélé and Sanguéré seed farms. Therefore, farmers will be used only for the final multiplication of improved seed.

4. The project should study costs and returns of farmers under different growing and cultivating practices.

Comment - This farming system research has been built into the Center-North project. The project will have an on-going evaluation unit.

5. Establish a revolving fund to purchase production from farmers.

Comment - No contract farmers will be used in NCSM II.

6. Minimum support prices and storage programs should be considered.

Comment - The support prices refer to prices to be paid to contract farmers for seed. Additional storage facilities are part of the Center-North project.

7. The GURC must decide to place the seed project to make it permanent and effective.

Comment - MIDEVIV is implementing agency identified by the GURC.

8. Secure a seed breeder for IRA-North

Comment - The project provides funds for a peanut breeder for IRA-North

9. Issue of a national seed service must be explored and considered at GURC policy levels.

Comment - An FAO expert prepared a report on a proposed national seed plan in January 1981. The Phase II project is in complete harmony with the framework of the national seed plan and the national seed plan is part of the Fifth Five Year Development Plan (1981-1986).

10. Utilize the contract farm system to provide inputs such as fertilizer and credit.

Comment - No contract farmers will be utilized. However, input services of credit, fertilizer, and pesticides will be provided to the farmer by the Center-North project.

11. Reassign the USAID extension agronomist to Maroua.

Comment - There is no longer a USAID extension agronomist on the project. Consistent with GURC policy the extension work in the project area is the responsibility of the Center-North project.

12. Establish audio-visual training component.

Comment - Funds for equipment and personnel are provided for in the NCSM II project.

13. Prepare a plan and conduct a maintenance program at each farm.

Comments - Maintenance programs are established and funds are provided for training personnel for the continuation of the program. Training will be coordinated at the two seed farms where repair and maintenance shops will be established.

Mississippi State University**1. Establish seed multiplication farms to insure quality seed.**

Comment - This is precisely what NCSM I proposed to do.

2. Discontinue contract farmer seed multiplication.

Comment - No contract seed farmer will be used.

3. Scale down the project to fit manpower requirements and quality control needs.

Comment - The project has been scaled down and additional staff provided for.

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4. Manpower development must be accorded a high priority

Comment - The project has a large training component.

5. Seed multiplication should be restricted to Guétélé and Sanguère.

Comment - Only Guétélé and Sanguère seed farms will be used in the NSCM II project.

6. Expand support to both farms.

Comment - The proposed project expands both USAID and GURC support to the development of the seed farms.

7. Establish a realistic time frame.

Comment - The proposed second five year phase will provide sufficient time to institute quality control measures and still meet production projections.

8. The project must provide technical expertise to organizations receiving seed and educate the rural sector on the benefits of improved seed.

Comment - The project has a component for the training of extension trainers responsible for upgrading the skills of extension agents.

ANNEX I: JOB DESCRIPTIONS FOR TECHNICAL ADVISORS

I. Job Description - Agronomist (Seed Specialist)

A. Position Objectives:

1. Establish quality control programs for the seeds farms.
2. Act as chief of party for the technical assistance team.
3. Advise the Director of project of the development and operation of the two seed farms.
4. Advise the Project Director and the Director of MIDEVIV on efficient ways to manage the operation of the farms so that they can become self-sufficient enterprises.

B. Responsibilities

1. Establish and maintain a small, seed testing laboratory at each farm.
2. Develop a workable crop rotation for the seed farms.
3. Establish planting, harvesting, and processing programs.
4. Recommend the application of all fertilizers and pesticides.
5. Through on-the-job training, develop a qualified Cameroonian technician to successfully operate and maintain two seed farm testing laboratories once AID project assistance terminated.
6. To participate in in-country training seminars to provide a large number of Cameroonians with an appreciation of seed.

C. Training

The equivalent of a degree in Agronomy-Seed Technology (previous job experience in managing seed multiplication farms may substitute for formal training).

D. Experience

The person must be a certified professional agronomist recognized in the American Registry of Certified Professionals in Agronomy Crops and Soils.

Five years: The incumbent should have a thorough knowledge of managing seed multiplication farms and laboratory practices that are common to seed testing and seed quality control. Such techniques include purity, germination, vigor, and moisture testing. The person will train Cameroonian counterparts so that the seed farm operation will be able to proceed without expatriate assistance.

E. Language

The person must have at least an S-3 and R-3 rating in French.

F. Health

The person must be in excellent health as evidenced by a statement from a medical doctor.

Other

The person will reside in Sanguere. Since there is no schooling at post, funds will be budgeted for correspondence programs or boarding schools depending on the employee's preferences.

II. Job Description - Administrator/Finance Specialist

A. Position Objectives:

1. Expedite the movement of all project-related goods and materials from point of purchase to project sites.
2. Assist in all project personnel matters.
3. Develop a financial plan and record keeping system for the project.

B. Responsibilities:

1. With direction from the project team leader, handle all administrative, financial, and accounting/inventory control matters associated with the purchase, customs clearance, and delivery of all project equipment and commodities.
2. Recommend ways to minimize costs of operating two farms.
3. In collaboration with GURC, assist in organizing the establishment of the seed farms.
4. Handle all administrative and financial matters associated with contract personnel funded primarily by the USAID project contribution; duties shall include scheduling, for example, travel (vacations, dependents of personnel, medical evacuations if required)
5. In collaboration with the GURC, provide assistance to the participant training program.
6. Work closely with USAID/Yaounde as liaison between the project and AID.

C. Experience

The person must have extensive experience with administrative and financial business between the U.S. government and a developing country. He must have worked in developing countries (preferably in sub-Saharan Africa).

Language

The person must have at least an S-3 and R-3 rating in French.

Health

The person must be in excellent health, as evidenced by a statement from a medical doctor.

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Other

The person will reside in Sangueré, but will travel frequently to Douala, Yaoundé, and the seed farm at Guetele.

III. Agricultural Machinery Advisor

A. Position Objectives:

1. Assist in the development and operation of the seed multiplication farms at Guetele and Sangueré.
2. Train Cameroonian staff to operate and repair all farm and seed processing equipment.

B. Responsibilities

1. With direction from appropriate GURC officials and the project leader, operate and maintain all seed farm equipment.
2. Through on-the-job training, develop qualified Cameroonian equipment operators and mechanics in order for them to successfully operate and maintain all seed farm equipment once AID assistance is terminated.
3. To coordinate all activities of the seed farms with the Director of the seed project. The machinery technical advisor is expected to take responsibility for the prudent use of project funds for procurement activities.

C. Training

A certificate as a qualified farm equipment operator/mechanic. Previous overseas job experience may substitute for formal training.

D. Experience

The person must have extensive experience with the development and operation of a seed multiplication farm. At least two years of the experience should be on the training of people in developing countries in the proper use and maintenance of farm and seed processing equipment.

E. Language

The person must have at least an S-3 and R-3 rating in French.

F. Health

The person must be in excellent health as evidenced by a statement from a medical doctor.

Other

The person will reside in Guetale. Since there is no appropriate schooling at post for dependents, funds will be budgeted for correspondence programs or boarding schools, depending on the employee's preference.

IV. Seed Laboratory Technician

A. Position Objectives:

1. Assist in the development and operation of the regional seed testing laboratory in Maroua.
2. Train Cameroonian staff to operate and repair all seed testing laboratory equipment and to accurately determine quality levels of seeds.

B. Responsibilities:

1. To operate and maintain all seed testing laboratory equipment.
2. Through on-the-job training, develop qualified Cameroonian technicians to successfully operate and maintain all seed testing laboratories once AID financed project assistance ends.
3. To work closely with quality control personnel at the seed farms to ensure that high quality seed is produced.
4. To participate in in-country training seminars to provide a large number of Cameroonians with an appreciation of the value of improved seed.

C. Training

A Degree in Agronomy-Seed Technology. Previous job experience in operating a seed testing laboratory may substitute for formal training.

D. Experience

The person must have had extensive experience with the development and operation of seed testing laboratory(ies). At least two years of the experience should be in the training of people in developing countries in the proper use and maintenance of seed testing laboratory equipment.

E. Language

The person must have at least an S-3 and R-3 rating in French.

F. Health

The person must be in excellent health as evidenced by a statement from a medical doctor.

Other

The person will reside in Maroua. Since there is not appropriate schooling at post for dependents, funds will be budgeted for correspondence programs or boarding schools, depending on the employee's preference.

V. Job Description - Peanut Breeder

A. Position Objectives:

1. Produce in collaboration with Cameroonian counterpart improved breeder seeds which are adapted to the Northern Region of Cameroon.
2. Maintain available peanut lines and collect germplasm both locally and internationally for trials and adaptation experiments to be conducted in North Cameroon.
3. Recommend varietal release of breeder seed to the Director of the Institute of Agricultural Research.
4. Conduct breeding trials at the research stations and field trials at different ecological zones in the North.
5. Advise personnel of the North Cameroon Seed Multiplication phase II project on varietal maintenance.
6. Publish the results of the field trials and set-up field days for extension agents.
7. Provide on-the-job training to the Cameroonian peanut breeder.

B. Responsibilities

Project Work Plan

The contractor must submit to USAID/Yaounde, FAO, and IRA a detailed research work plan for the term of his contract within three months of his arrival. The research work plan will encompass the field trials and field days to be implemented as well as a training plan for counterparts.

C. Quarterly Progress Reports

The contractor shall submit a draft final report incorporating a review of research accomplishments, problems encountered, and recommendations for future research in peanuts.

D. Experience

At least five years of seed breeding experience.

E. Language

The person must have at least an S-3 and R-3 rating in French.

F. Health

The person must be in excellent health as evidenced by a statement from a medical doctor.

Other

The person will reside in Maroua. Since there is not appropriate schooling at post for dependents, funds will be budgeted for correspondence programs or boarding schools, depending on the employee's preference.

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ANNEX J: FERTILIZER AND PESTICIDE REQUIREMENTS

Fertilizer Requirement

<u>Type</u>	<u>Tons/yr.</u>	<u>5 yr. Requirement</u>	<u>Costs</u>
Ammonium Sulfate	13	65	15,000
Triple Super Phosphate	10	50	12,500
Murate of potash	9	45	11,500
N P K	2	10	3,000
Lime	-	750	150,000
		Total	192,000

Fertilizers and pesticides to be used on the seed farms will be purchased by the GURC. The GURC will fund all operating costs for the two seed farms. The technical assistance team will recommend to the GURC that it purchase EPA - approved fertilizers and pesticides.

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Pesticide Requirements

<u>Crop</u>	<u>Pesticide</u>	<u>Controls</u>	<u>Active Ingredient</u> (AI)	<u>5 year Requirement</u> lbs.
Peanuts	Orthene (WP)	Aphids	2.0 lbs./acre	5,000
Peanuts	Lasso (WP)	Grasses and broad leaf	2.0 lbs./acre	5,000
Peanuts	Malathion (WP)	Moths and beetles	.60lbs./acre	22
Sorghum	Malathion (WP)	Aphids	.50lbs./acre	90
Sorghum	Malathion (WP)	Moths and beetles	.60/1000 bu.	3
Corn	Malathion (WP)	Aphids	.10lbs./acre	120
Corn	Malathion (WP)	Moths and beetles	.60/1000 bu.	3
Storage	Malathion (WP)	Moths and beetles	.45/1000 ft. ²	3
<hr/>				
<u>Summary</u>	Orthene		5000 lbs./AI	\$65,000
	Lasso		5000 lbs./AI	\$72,000
	Malathion		240 lbs./AI	\$ 4,800
Protective clothes, goggles and gloves				\$ 3,000
				<hr/>
				\$144,800

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ANNEX K: SEED FLOW PROGRAM (Research to Farmer)

The following is a summary of the analysis of the Seed Flow Program made by Mississippi State University personnel and the USAID/Yaounde project manager.

1. Analysis of Existing Seed Flow Program

- a) Research interests of IRA-North are of the following crops: Cotton, millet, sorghum, rice, cowpeas, okra and peanuts.
- b) Some breeder seed of peanuts, corn, sorghum, and millet have been multiplied by the North Cameroon Seed Multiplication Project Phase I.
- c) Seed multiplied by the existing project are distributed to agriculture posts, farmers and various regional organizations.
- d) Extension activities for promoting improved food crop seed are being done by agents from the Ministry of Agriculture.
- e) Depending upon the growing season, farmers save seed for the following planting season. However, if seed production is low, farmers buy seed from the local markets or receive seed from their neighbors.

2. Technical Problems of Existing Seed Flow Program

- a) A basic supply of breeder seed is not available to the seed multiplication project.
- b) There is no seed cold storage to maintain breeder seed over five growing seasons.
- c) No system exists for varietal release.
- d) There is a lack of sufficient farm and processing equipment essential for maintaining seed quality.
- e) Maintenance of production and processing equipment is fragmented.
- f) There is insufficient water and no electricity at the seed farms.
- g) There is no mechanism for selling seed from the seed farms to farmers.
- h) No viable extension program exists for demonstrating the use of improved seeds.

3. Proposed Changes in the Seed Flow Program

- a) Intra-governmental linkages will be established to supply breeder seed of peanuts, corn, sorghum and millet from IRA-North to the seed multiplication project.
- b) A seed cold storage building will be built at IRA-North to maintain breeder seed.
- c) A varietal release board will be established to make recommendations of new seed varieties to be released and seed varieties to be disregarded.
- d) Sufficient farm and processing equipment will be bought for each seed farm to insure seed quality.

- e) Two maintenance and repair shops will be established, one at each seed farm.
- f) Enough water and electricity will be supplied to each seed farm to make them operational.
- g) Intra-governmental linkages will be established to sell improved seed from the project to SODECOTON.
- h) SODECOTON will provide inputs to acquire maximum benefits from improved seed to the farmer through their credit system.
- i) A regional seed testing laboratory will be built at IRA-North.

ANNEX L: ANALYSIS OF DEMAND FOR IMPROVED SEED

The target farmers must be involved in multiplying and maintaining improved seed in order to have an appreciation of improved seed. Thus, the farmers will receive a small sack of improved seed. This small amount will be multiplied once, and enough seed will be harvested to plant the projected hectareage the following year. The following analysis shows the projected demand for improved seed.

Step-by-step Analysis

1. 207,000 family farms in the target area.
2. 163,000 family farms are expected to use and benefit from improved seed.
3. Average farm size is 2.1 hectares.
4. Existing cropping pattern:

1.3 hectares of sorghum
.5 hectares of cotton
.2 hectares of peanuts
.1 hectares misc. (corn, cowpeas, millet)

5. Projected cropping pattern:

1.00 hectares sorghum
.50 hectares cotton
.25 hectares peanuts
.25 hectares corn
.10 hectares millet

6. Kilograms of improved seed required to plant projected cropping pattern:

1.00	hectares	sorghum	requires	10	kilograms
.25	"	peanuts	"	25	"
.25	"	corn	"	6.25	"
.10	"	millet	"	.8	"

7. Quantity of improved seed sold in sacks to the farmers:

150 grams sorghum
3 kilograms peanuts
150 grams corn
20 grams millet

The above quantities of seed will be multiplied by the farmers through the supervision of extension agents.

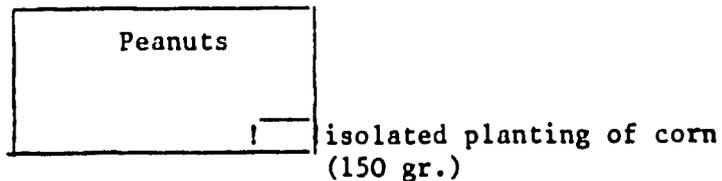
8. Farmer's production:

<u>Crop</u>	<u>1st year</u> <u>multiplication</u>	<u>2nd year</u> <u>production</u>
Sorghum	12.5 kg.	900 kg.
Peanuts	30 kg.	250 kg.
Corn	77.2 kg.	300 kg.
Millet	2 kg.	80 kg.

The estimated first year production will be enough seed to plant the projected cropping pattern outlined in step 5.

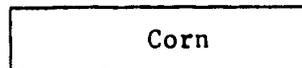
9. Improved seed should be replaced by the farmer every three years.
10. Example of the multiplication/production pattern for the farmer:

- a) Year one - farmer buys a small quantity of improved seed and isolates this seed from his existing seed when planting.

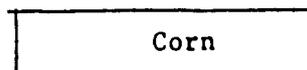


Enough improved corn seed harvested and stored to plant projected hectares for year two (7.2 kg.).

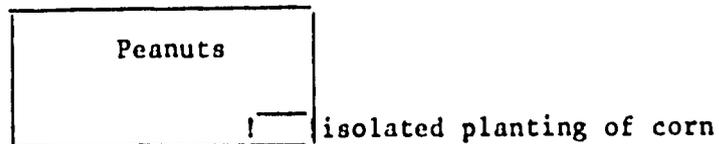
- b) Year two - farmer plants projected hectares of corn (.25ha.) with improved seed harvested from year one.



- c) Year three - farmer plants projected hectares of corn from seed saved from year two



Farmer buys another small sack of improved seed and isolates the planting.



- d) Year four - farmer will have enough new improved seed to continue planting projected hectares of corn.

11. The amount of seed sold by the seed multiplication farms (phase II) will supply 1/3 of the project beneficiaries every year.

12. Seed farm production:

<u>Crop</u>	<u>Hectares</u>	<u>Yield M.T.</u>	<u>M.T. Sold</u>	<u>Reserve</u>
Peanuts	200	216	163	53
Sorghum	14	10.5	8.2	2.3
Corn	9	10.5	8.2	2.3
Millet	1.5	1.3	1.1	.2

ANNEX M: TRAINING PROGRAM

Nine candidates will receive long-term training, twelve short-term, and twenty in-service training. Selections for the training will come from Project Personnel, MIDEVIV and the Advanced School for Agriculture (ENSA). Training will be in the following subject areas;

1. Long-term

- a) 2 participants: Practical training with U.S. Private Seed Companies in seed multiplication administration.
- b) 2 participants: University training in peanut breeding.
- c) 2 participants: Practical training in seed laboratory tests and operations.
- d) 2 participants: Practical training with U.S. Private Seed Companies in operating, adjusting, and repairing field and processing equipment.
- e) 1 participant: Practical training with USDA extension expert and U.S. Private Seed Company.

2. Short-term

- a) 6 participants: Practical training in seed technology in African countries producing the same food crops as Cameroon.
- b) 2 participants: Practical training with a private soil testing company.
- c) 2 participants: Practical training in crop production on the farm.
- d) 2 participants: Training in international seed improvement at Mississippi State University.

3. In-Service

- a) 20 participants (60 person days) on seed technology, field inspections, mechanics, seed testing, etc.

ANNEX N - RECURRENT COSTS

	Year	Quantity	Cost/Year Unit	Total Cost
A. <u>Repairs and Maintenance</u>				
1. <u>Vehicles</u>				
	1	13	1,500	19,500
	2	13	1,800	23,400
	3	13	2,100	27,300
	4	13	2,400	31,200
	5	13	2,700	35,100
			<u>Subtotal</u>	<u>136,500</u>
2. <u>Generators</u>				
	1	4	375	1,500
	2	4	625	2,500
	3	4	1,000	4,000
	4	4	1,500	6,000
	5	4	2,750	11,000
			<u>Subtotal</u>	<u>25,000</u>
3. <u>Tractors</u>				
	1	6	300	1,800
	2	6	366	2,200
	3	6	466	2,800
	4	6	566	3,400
	5	6	700	4,200
			<u>Subtotal</u>	<u>14,400</u>
B. <u>Gas and Diesel Consumption</u>				
1. <u>Vehicles</u>				
	1	13	3,253	42,300
	2	13	3,646	47,400
	3	13	4,015	52,400
	4	13	4,415	57,400
	5	13	4,861	63,200
			<u>Subtotal</u>	<u>262,500</u>
2. <u>Tractors</u>				
	1	6	1,350	8,100
	2	6	1,350	8,100
	3	6	1,350	8,100
	4	6	1,350	8,100
	5	6	1,350	8,100
			<u>Subtotal</u>	<u>40,500</u>

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ANNEX O: NORTH CAMEROON SEED MULTIPLICATION - PROJECT 631-0023
CONSTRUCTION

1. Extent of Work

Construction will be undertaken in the province of North Cameroon (See PLATE 1

The work will involve restoration, alteration, and new construction in three sites:

Site I:	Guetele	(see PLATE 2)
Site II:	Maroua	
Site III:	Sanguere	(see PLATE 4)

a) Site I - Guetele (See PLATE 3):

On this site there are several buildings which have been utilized as seed storage sheds, offices, and machine repair shops. Most of them have been found to be, structurally and architecturally, in fair to poor condition, needing to be repaired. Furthermore, alterations to existing buildings, as well as the construction of new buildings, will be necessary so as to satisfy the space requirements demanded by the project.

When completed, this site will be one of two seed production/processing and storage centers contemplated by the project.

In addition to building construction, this site will require the supplying of utilities (electricity and water) in order to satisfy the needs for:

- (1) Approximately forty people who will live in a total residential area of about 1,600 square meters (m²).
- (2) Utilization of water, for diluting pesticides, of about 3,800 liters per day (LPD) for a two week period every year.
- (3) Office space with a total area of approximately 300 m².
- (4) A seed processing building and a drying shed with a total area of 720 m² and about 12 horse power (HP) peak work force.
- (5) Storage, with a total area of approximately 1,500 m².
- (6) A laboratory with a total area of 50 m².
- (7) Equipment shed with a total area of 650 m².
- (8) Equipment repair shops with a total area of about 300 m² and about 2 HP peak work force requirement.

An adequate source of water will be identified prior to disbursement of funds by USAID for construction activities on this site.

b) Site II - Maroua:

The only construction required in Maroua consists of a Regional Seed Testing Laboratory, and a cold storage unit, 80 m², for the preservation of breeder seed.

	Year	Quantity	Cost/Year Unit	Total Cost
3. Generators	1	2	34,930	69,860
	2	2	34,930	69,860
	3	2	34,930	69,860
	4	2	34,930	69,860
	5	2	34,930	69,860
			<u>Subtotal</u>	<u>349,300</u>
			<u>Grand Total</u>	<u>827,900</u>

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Although the exact location for this construction has not been identified to this date, it is expected that it will be centrally located in the city of Maroua where no problems will be met in supplying the necessary utilities.

c) Site III - Sanguere (see PLATE 5):

The site in Sanguere has already been partially developed by USAID financing under the North Cameroon Seed Multiplication, Phase I. This site will be further developed and upgraded so as to constitute the second center for seed production/processing and storage.

At present, there are no utilities serving the site. However, after completion of the center, sufficient water and electricity must be supplied to satisfy the needs for:

- (1) Approximately thirty people who will live in a total residential area of 1,400 m². ^{1/}
- (2) A peak utilization of water for diluting pesticides of about 3,800 LPD.
- (3) Office space with a total area of approximately 400 m².
- (4) A seed processing building and a drying shed with a total area of 720 m² and about 12 HP peak work force.
- (5) Storage with a total area of 380 m².
- (6) A laboratory with a total area of 40 m².
- (7) Equipment shed with a total area of 210 m².
- (8) Equipment repair shop with a total area of 100 m² and a peak work force requirement of 2 HP.

An adequate source of water will be identified prior to disbursement of funds by USAID for construction activities at this site.

2. Utility Considerations

As previously stated, one of the conditions precedent to disbursement by USAID for any construction work consists of the requirement to adequately supply electricity and water to each site.

For the electricity, this means that an electrical hook-up to the SONEL ^{2/} system and a distribution line to the construction site will be made whenever possible.

^{1/} Additional people will work in Sanguere, but they, with their families, will find lodging in the nearby city of Garoua where housing may be rented at a cost competitive to the cost of constructing new housing.

^{2/} National Electricity Company - Within the city limits of Maroua this will not be necessary since it is assumed that sufficient potable water from the city system is available for the regional laboratory.

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Insofar as the water supply is concerned, the initial action will be to undertake all necessary research, drilling, and testing to assure that adequate ground water is available near or at the sites of Guetele and Sanguere.

After certification by the hydrological authorities of the GURC that water quality and quantity are adequate for the intended scope of the centers, a pumping station and a main pipeline from the station to the selected site of the water tower will be installed. The estimated cost of all this work, at both Site I (Guetele) and III (Sanguere), is US \$300,000. This amount will be financed under the USAID grant component of the project.

a) Analysis of Electrical Power Demand:

Required watts per surface area used:

Residence:	3.0 watts per sq. foot (WSF) or 32 watts per sq. meter (WSM) ^{2/}
Office:	5.0 WSF or 54 WSM ^{2/}
Processing Building:	3.0 WSF or 3.2 WSM ^{2/}
Seed Storage:	0.2 WSF or 2.2 WSM ^{4/}
Laboratory:	5.0 WSF or 54 WSM ^{3/}
Machine Repair Shop:	0.5 WSF or 5.4 WSM

Required watts per unit:

Refrigerators:	1,000 W. per residential unit
Ventilators:	200 W. per residential unit ^{5/}
Electric Motors:	1,300 per HP

Hence, the estimated power demands for Guetele and Sanguere has been calculated as follows:

<u>ITEM</u>	<u>GUETELE</u>	<u>SANGUERE</u>
Residence	19,870	17,630
Office	16,200	21,120
Processing Bldg.	2,300	2,300
Seed Storage	3,300	840
Laboratory	2,700	2,160
Machine Repair Shop	1,620	540
Refrigerators	8,000	7,000
Ventilators	2,600	2,200
Electric Motors	18,200	18,200
TOTAL DEMANDS (in W)	74,790	71,990

^{2/} 100% first 3,000 W. 35% in excess 3,000 W.

^{3/} 100% first 20,000 W. 70% in excess of 20,000 W.

^{4/} 100% first 12,500 W. 50% in excess of 12,500 W.

^{5/} No air conditioning will be installed in this project.

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Assuming overload requirements, due to contingencies and nominal site illumination, of at least 13% and providing one stand-by unit, the generators to be supplied in the sites to be developed will be of the following capacities:

Guetele two at 85 kilowatts (KW), or kilo-volt-amperes (KVA)
Sanguere two at 85 KW, or KVA

b) Analysis of Water Supply Requirements

Required consumption of water per capita is estimated at 100 gallons per day (GPD) or 380 liters per day (LPD). This quantity represents all need for water-related activities including private gardening.

Hence, for Guetele, the average daily consumption is estimated at $380 \times 40 = 15,200$ LPD. Considering the additional need for 3,800 LPD, due to application of pesticide during the months of June-August, and that a one-day supply should be stored in case of a pump breakdown or other emergencies, it is estimated that the capacity of the water tower for Guetele must be of at least 19,000 liters or 19.0 m^3 .

In Sanguere, the same capacity water tower will be provided, although somewhat less daily consumption is expected.

3. Estimated Cost of Construction

All of the following costs are based on estimated prices for construction material and labor as well as other indirect costs referred to the end of June 1981.

a) Guetele

Restoration and Alterations of Existing Buildings

01.	Block 1:	Seed Storage and Shed	9,000 (see PLATE 6)
02.	Block 2:	Seed Storage	10,000 (see PLATE 7)
03.	Block 3:	Storage and Repair Shop	32,000 (see PLATE 8)
04.	Block 4:	Lab/Office and Storage	18,000 (see PLATE 9)
05.	Block 5:	Office Building	2,000 (see PLATE 10)
06.	Block 6:	Seed Storage	9,500 (see PLATE 11)
07.	Block 7:	Seed Storage	7,000 (see PLATE 12)

New Construction

08.	One 20 m^3 Water Tower	100,000 (see PLATE 13)
09.	Two 3-bedroom Houses	260,000 (see PLATE 14)
10.	Five Duplex Apartments	460,000 (see PLATE 15)
11.	One Office Building	115,000 (see PLATE 16)
12.	One Generator Shed	27,000 (see PLATE 17)
13.	One Drying Shed	35,000 (see PLATE 18)
14.	One Seed Processing Plant	330,000 (see PLATE 19)

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Site Improvements

15. Medium work required for grading and site drainage: (assume 7.5% of Total Construction). 100,000
- b) Maroua
16. One Seed Testing Laboratory 100,000 (see PLATE 20)
17. One Cold Storage Unit 150,000 (see PLATE 21)
(estimated costs include site improvement and utilities hook up).
- c) Sanguere

Alterations to Existing Building

18. One 20 m³ Water Tower 10,000 (see PLATE 22)

New Construction

19. One 20 m³ Water Tower 100,000 (see PLATE 13)
20. One 1-bedroom House (Type A) 160,000 (see PLATE 23)
21. Two 1-bedroom Houses 260,000 (see PLATE 14)
22. Four Duplex Apartments 368,000 (see PLATE 15)
23. One Office Building 220,000 (see PLATE 24)
24. One Generator Shed 27,000 (see PLATE 17)
25. One Drying Shed 35,000 (see PLATE 18)
26. One Seed Processing Plant 130,000 (see PLATE 19)
27. One Fertilizer/Pesticide Storage 90,000 (see PLATE 25)
28. One Equipment Shed 40,000 (see PLATE 26)

Site Improvements

29. Improvement of Existing Road 200,000 (see PLATE 5)
30. Heavy Work for Grading, Site Drainage and Flood Diversion Ditch (assume 10% of Total Construction Cost) 185,000 (see PLATE 5)

4. Construction Implementation Plan and Cost Considerations

It is anticipated that all the construction listed in section 3 of this Annex may be contracted in five separate lots, thus:

	<u>TIME REQ.</u>	<u>TOT. COST</u>	<u>MOBILIZ.</u>	<u>COST/QTR</u>
<u>Lot A</u>				
Repairs and alterations and industrial construction in Guetele, including site improvement work		(794,500)	239,500	-
items 01 to 07	6 months	87,500		30,000
item 08	6 months	100,000		35,000
items 11, 13 and 14	18 months	480,000		56,000
item 12	3 months	27,000		19,000
item 15	6 months	100,000		35,000
<u>Lot B</u>				
Residential construction in Guetele		(720,000)		
items 09 and 10	18 months		216,000	84,000
<u>Lot C</u>				
Construction in Maroua		(250,000)		
items 16 and 17	12 months		70,000	45,000
<u>Lot D</u>				
Alterations and industrial construction in Sangouere		(852,000)	258,000	-
item 18	3 months	10,000		7,000
item 19	6 months	100,000		35,000
item 23	18 months	220,000		25,000
item 24	3 months	27,000		19,000
items 25 to 28	18 months	495,000		58,000
<u>Lot E</u>				
Residential construction, road and site improvement in Sangouere		(1,173,000)	361,000	
items 20, 21 and 22	18 months	788,000		92,000
items 29 and 30	6 months	385,000		130,000

From the above analysis, the yearly construction costs, including Architectural and Engineering (A/E) fees may be estimated as shown in the following table.

**NORTH CAMEROON SEED MULTIPLICATION-PHASE II (631-0031)
CONSTRUCTION IMPLEMENTATION SCHEDULE**

LOT	DESCRIPTION	ITEM/YR.	1	2	3
A	MOBILIZATION (GUETELE) REPAIRS & ALTER. TO EXIST. BLDGS. 20 m ³ WATER TOWER OFF. BLDG., DRYING SHED, SEED PLANT GENERATOR SHED SITE IMPROVEMENT	01 TO 07 08 11, 13, 14 12 15			
B	MOBILIZATION (GUETELE) HOUSES AND APARTMENTS	09 & 10			
C	MOBILIZATION (MAROUA) LABORATORY AND COLD STORAGE	16 & 17			
D	MOBILIZATION (SANGUERE) ALTERATION TO EXIST. BLDG. 20m ³ WATER TOWER OFFICE BUILDING GENERATOR SHED SHEDS, SEED PLANT, STORAGE	18 19 23 24 25 TO 28			
E	MOBILIZATION HOUSES AND APARTMENTS ROAD AND SITE IMPROVEMENTS	20, 21, 22 29 & 30			
A/E	CONSULTANT SERVICES: (WATER EXPLORATION) DESIGN (~5% CONSTR) US\$ 192,000 INSPECT'N (~6% ") US\$ 232,000				
BUDGET	QUARTERLY (GRANT EXCLUDED)		32,000	32,000	32,000
	YEARLY (GRANT EXCLUDED)		96,000	2,293,500	1,824,000
	TOTAL CONSTRUCTION (GRANT EXCLUDED)			4,213,500	(*)

(*) ALL ESTIMATED COSTS BASED ON JUNE 1981 INDEX FOR NORTH PROVINCE OF CAMEROON, CONVENTIONAL CONSTRUCTION, CONSISTING OF CONCRETE BLOCK BEARING WALLS, ONE STOREY BUILDING WITH ALUMINUM ROOFING.

ANNEX P: 611(e) Certification

Certification pursuant to Section 611(e) of the Foreign Assistance Act of 1961, as amended.

I, Bernard Wilder, Mission Director of the Agency for International Development in Cameroon, having taken into account, inter-alia:

- A. The ability of the implementing agencies, the Food Development Authority (MIDEVIV) and the Institute for Agricultural Research (IRA), to ensure the necessary cooperation among the various divisions of their organization to achieve effective operation and maintenance for the proposed Phase II activity;
- B. The current efforts being made by GURC to train mechanics and maintenance personnel and to provide them with improved repair facilities and adequate supporting services and supplies;
- C. Especially, the excellent past record of MIDEVIV in maintaining and improving its operation of Phase II of this project which was financed by AID and IRA's ability to acquire the necessary budgetary support for demonstrated donor-financed research projects, including the on-going National Cereals Research and extension project financed by AID.
- D. The Government of the United Republic of Cameroon considers the Phase II Project;
 - (1) As a necessary step of the improved seed development program from research to the farmer, and
 - (2) In complete harmony with the National Seed Plan; and
- E. The Government of the United Republic of Cameroon and MIDEVIV's and IRA's present and projected budgetary and financial positions are such that sufficient resources will be available to pay the recurrent costs of the project;

Do hereby certify that in my judgement the United Republic of Cameroon has the financial and human resources capability to maintain and utilize effectively the subject capital assistance project.

Bernard Wilder, Acting
Director, USAID/Yaounde

Date

ANNEX Q: DRAFT PROJECT AUTHORIZATION

Project Authorization Action Memorandum

- I. Problem: Your approval is required to execute a grant and loan of \$13,600,000 from the ARDN appropriation to Cameroon for the North Cameroon Seed Multiplication Project Phase II, 631-0023. It is planned that \$6,600,000 will be obligated in FY 1982.

II. Discussion

- A. Project Description: The purpose of the project is to assist the GURC to create an institution which will produce adequate quantities of improved peanut, corn, sorghum, and millet for distribution to farmers. The project is a second phase activity to the previous North Cameroon Seed Multiplication Project. Two seed farms will be further developed to provide high quality seed for distribution. Two seed processing plants and seed storage units will be constructed at the farms as well as office and housing units. In order to verify the physical and biological quality of the seed before distribution, a regional seed testing laboratory will be constructed. One seed cold storage unit will be constructed at the Institute for Agricultural Research (IRA) in order to maintain breeder seed viability over five growing seasons. In addition, a training program to train the trainers of extension agents will be established.

The agricultural sector strategy stated in the CDSS includes enhancing small-farmer income through self-sustained, real growth in agriculture production. The approved strategy will be achieved by increasing productivity through:

- (1) Strengthening the ability of adaptive research organizations to develop low-cost technological packages -- including improved seed varieties -- as well as those institutions which produce resources required by the rural agriculture sector; and
- (2) Strengthening and expanding the role of existing extension services and reinforcing their linkages to research institutions.

The primary beneficiaries of the project will be 163,000 farm families of the region. Farmers in the area grow the following crops; sorghum, millet, peanuts, corn, vegetables, legumes and cotton as a cash crop. Both husband and wife(ves) work on the farm to produce food for their family and for income.

B. Financial Summary

1. FY 1982 funding includes \$1 million in grant funds and \$5.6 million in loan funds. Life of project funding includes \$7.9 million in grant funds and \$5.6 million in loan funds for a total cost of \$13.5 million.

2.	<u>\$000</u> <u>First Year</u>	<u>\$000</u> <u>LOP</u>
Technical Assistance	341	4,275
Commodities	329	1,962
Training	-0-	1,208
Construction	5,600	5,600
Other Costs	330	455
 Total FX	 670	 5,111
Total LC	5,930	8,389
Grand Total	6,600	13,500

3. The Cameroon Government's contribution to the project totals an equivalent of \$5.1 million.

C. Social-Economic, Technical and Environmental Description

The socio-economic impact of the project involves the acceptance of improved seed varieties and related input practices by the 163,000 farm families. Experience from the first phase has shown there is a demand for the seed. All the activities that will be undertaken in the project zone are familiar to the people of the region. The Project Committee finds the project to be technically sound. A negative determination is recommended for the IEE and no future environmental analyses are necessary. Project implementation will be closely supervised by trained Cameroonians and the technical assistance team.

D. Other

Sufficient water must be available prior to any disbursement of funds for construction purposes. In addition, intra-governmental linkages will be established between the Institute of Agricultural Research and the extension agency and the project implementing agent, the Food Development Authority, thus strengthening the links of the seed flow chain from research to the farmer.

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Waiver requests from source code 000 to 935 are recommended for procurement of commodities justified in Annex F.

The implementation plan outlined in Section 5 of the PP is realistic and represents a reasonable time frame for achieving the project purpose.

The Food Development Authority (MIDEVIV) and the Institute for Agricultural Research (IRA) are the implementing agencies for the project.

E. Committee Action and Congressional Apprisement

The project was reviewed and approved at the ECPR chaired by you on _____
The project review meeting presented no issues for resolution to the ECPR.

Congress was notified of the project on page 380 of the Fiscal Year 1982 Congressional presentation Annex I.

An engineering technical paper has been prepared and reasonable cost estimates determined by the Mission Engineer and it has been determined that the requirements of Section 611(a) of the FAA have satisfactorily been met.

Gary W. Bittner is responsible for the project in the Mission and Russ Anderson is responsible for the project in AFR/DR.

III. Recommendation:

That you sign the attached project authorization, and thereby approve life of project funding of \$13,600,000 (\$7,900,000 grant funded and \$5,600,000 loan funded), the requested waivers outlined in Annex F, and the IEE in Annex E.

IV. Attachments:

- (a) Project Papers
- (b) Waiver Requests
- (c) Initial Environmental Examination

Date: _____

Assistant Administrator for Africa

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PROJECT AUTHORIZATION

Name of Country: Cameroon

Name of Project: North Cameroon
Seed Multiplication Phase :

Number of Project: 631-0023

1. Pursuant to Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the North Cameroon Seed Multiplication Project Phase II for the United Republic of Cameroon ("Cooperating Country") involving planned obligations of not to exceed thirteen million five hundred thousand dollars (US \$13,500,000) of assistance over a five-year period from date of authorization, subject to the availability of funds in accordance with the AID OYB/allotment process, to help in financing foreign exchange and local currency costs for the project.
2. The purpose of the project is to assist the cooperating country to create an institution which will produce adequate quantities of improved sorghum, peanut, corn and millet seed for distribution to farmers. The project consists of the provision of technical assistance, participant training, commodity procurement and construction of seed processing centers for two seed multiplication farms.
3. The project agreement, which may be negotiated and executed by the officers to whom such authority has been delegated in accordance with AID Regulations and delegations of authority, shall be subject to the following essential terms and covenants and major conditions, together with such other items and conditions as AID may deem appropriate.

a. Source and Origin of Goods and Services

Except for ocean shipping, goods and services financed by AID under this project shall have their source and origin in the cooperating country or in countries included in AID Geographic Code 935, except as AID may otherwise agree in writing. Ocean shipping financed under the grant shall be procured in the United States or in the cooperating country, except as AID may otherwise agree in writing.

b. Conditions Precedent

The project agreement shall contain two conditions precedent providing in substance that prior to the first disbursement of the loan, the

cooperating country shall furnish in form and substance satisfactory to A.I.D.

1) For architectural and engineering services;

An executed contract for engineering or other services with a firm acceptable to A.I.D.

2) For construction Services;

- a) Plans and specifications, bid documents, cost estimates and time schedules for carrying out the construction.
- b) Evidence that an adequate supply of water and electricity is available for each of the project construction sites.

c. Covenants

The project agreement shall contain covenants providing in substance that:

1) Implementation Agreements

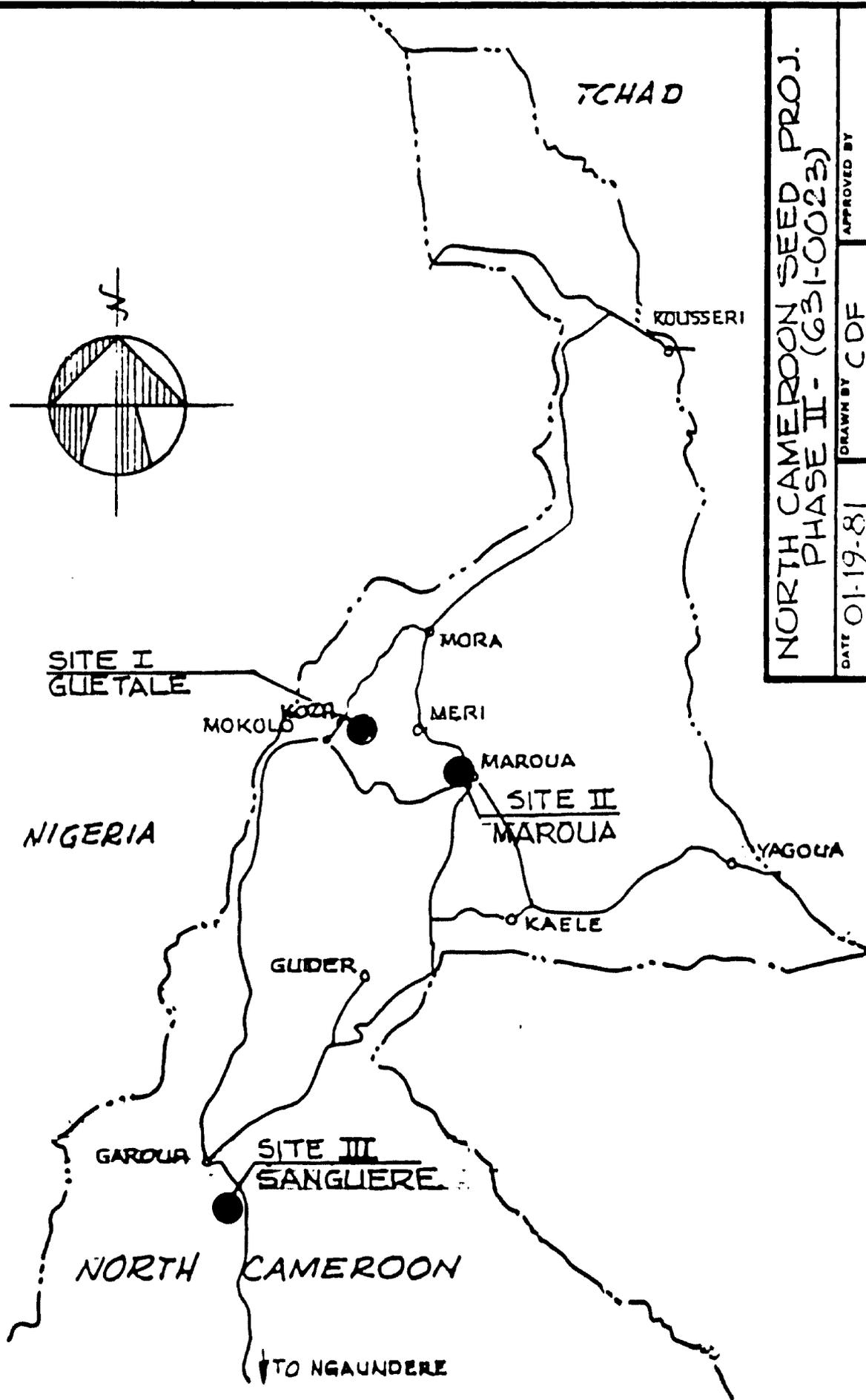
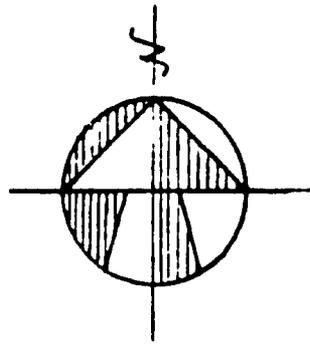
Within one year from the date of this Agreement, the Government agrees to cause to be negotiated and executed, and furnished to AID in form and substance satisfactory to AID, firm agreements between IRA and MIDEVIV and between SODECOTON and MIDEVIV, establishing the institutional linkages between these respective organizations and governing the procedures by which the Project actions described in this Project Paper will be carried out.

2) Project Evaluation

The Parties agree to establish an evaluation program as part of the Project. Except as the Parties otherwise agree in writing, the program will include, during the implementation of the project and at one or more points thereafter:

- (a) Evaluation of progress toward attainment of the objectives of the project;
- (b) Identification and evaluation of problem areas of constraints which may inhibit such attainment;
- (c) Assessment of how such information may be used to help overcome such problems and
- (d) Evaluation, to the degree feasible, of the overall development impact of the Project.

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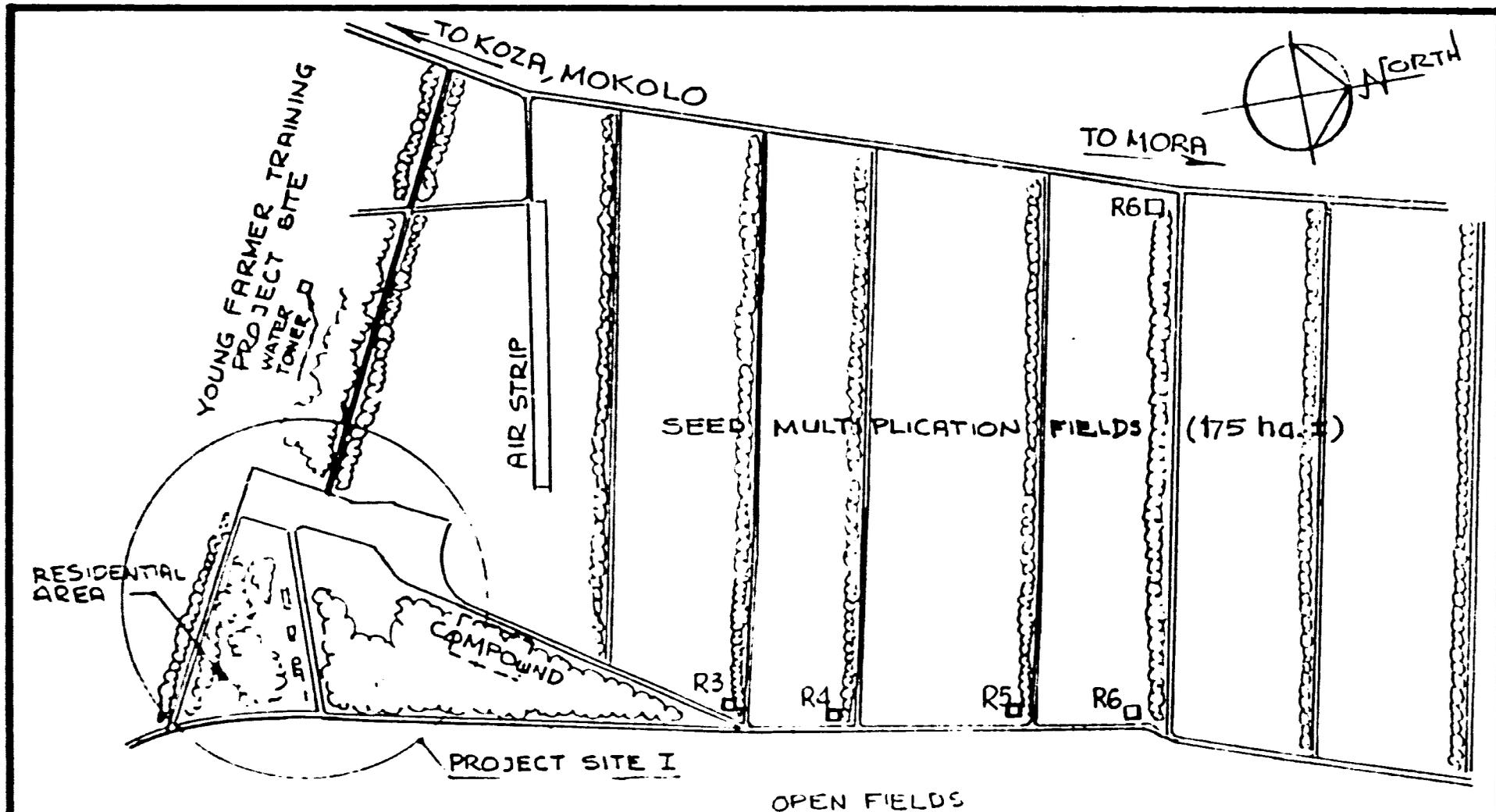
NORTH CAMEROON SEED PROJ.
PHASE II - (631-0023)

DATE 01-19-81 DRAWN BY CDF APPROVED BY

SCALE 1:2000000 REVISED 04.07.81

LOCATION MAP
SKEMATIC -

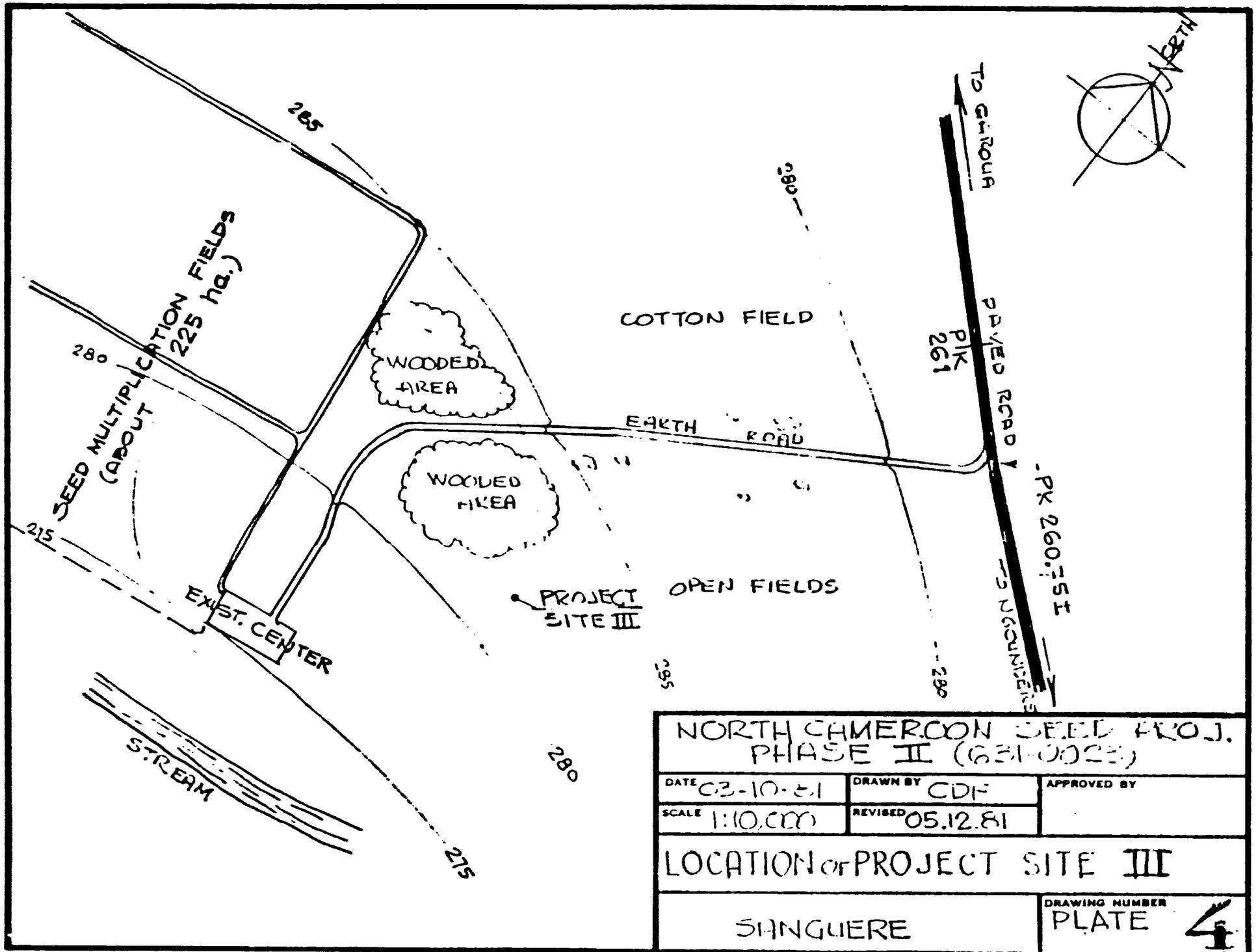
DRAWING NUMBER
SITES I THRU III
PLATE I



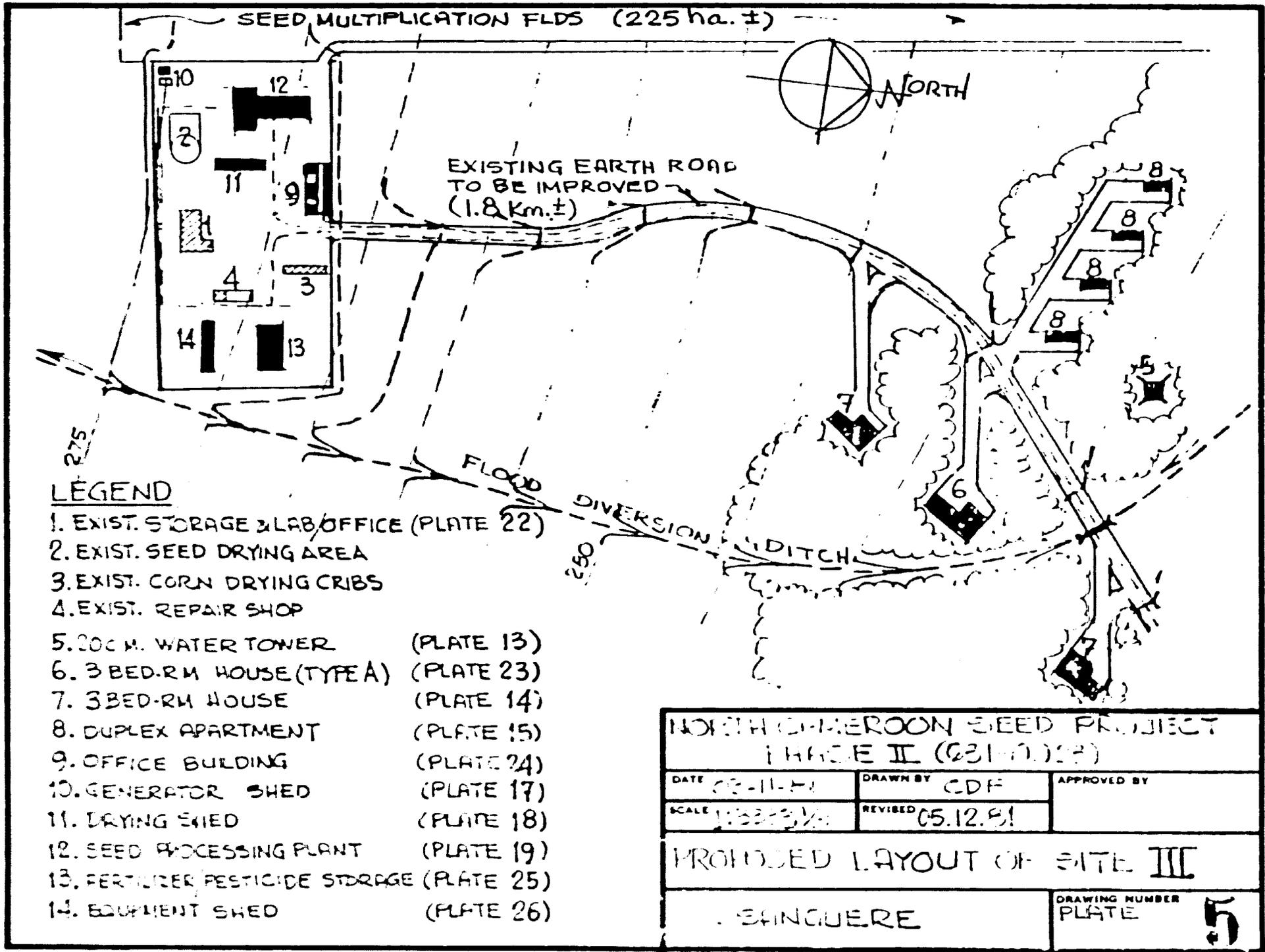
LEGEND

- ==== EARTH ROAD
- ~~~~~ ROW OF TREES
- ~~~~~ WOODED AREA
- CONCRETE MONUMENT

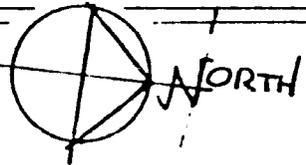
NORTH CAMEROON SEED PROJECT PHASE II - (631-0023)		
DATE 03-10-81	DRAWN BY CDF	APPROVED BY
SCALE 1:10,000	REVISED 05.12.81	
LOCATION OF PROJECT SITE I		
GUE TELE		DRAWING NUMBER PLATE 2



NORTH CAMEROON SEED PROJ. PHASE II (631-0023)		
DATE 03-10-81	DRAWN BY CDF	APPROVED BY
SCALE 1:10,000	REVISED 05.12.81	
LOCATION OF PROJECT SITE III		
SANGUIERE		DRAWING NUMBER PLATE 4



SEED MULTIPLICATION FLDS (225 ha. ±)



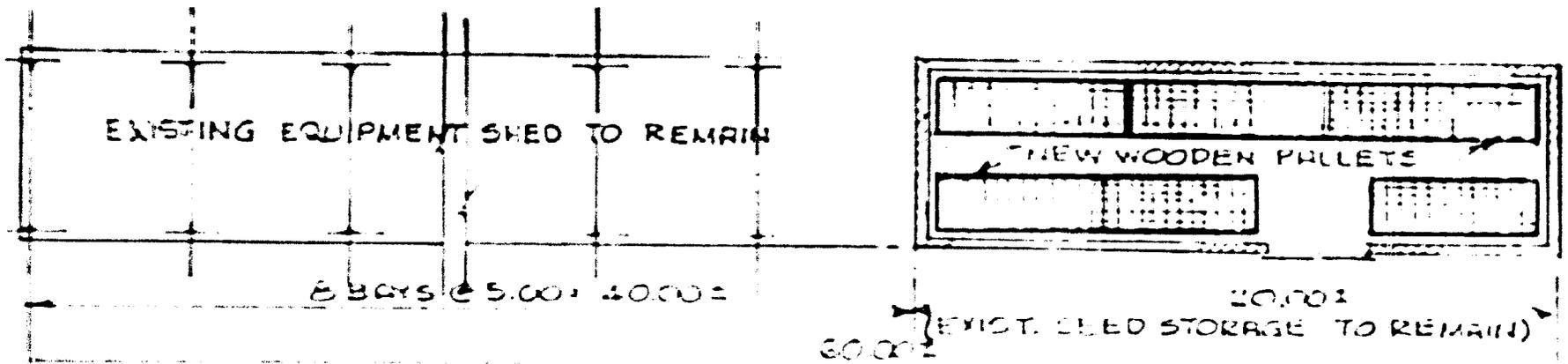
EXISTING EARTH ROAD TO BE IMPROVED (1.8 Km. ±)

FLOOD DIVERSION DITCH

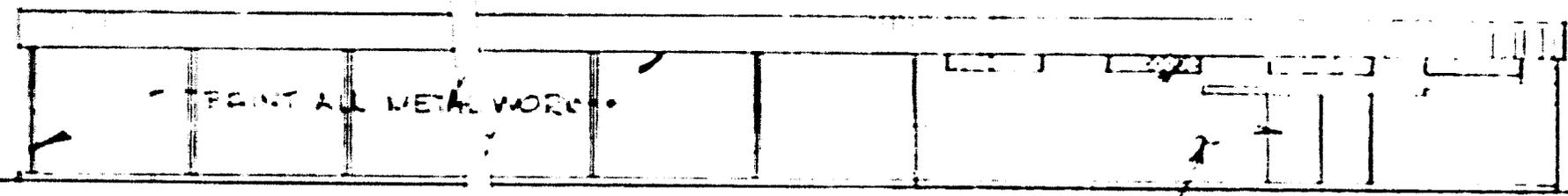
LEGEND

- 1. EXIST. STORAGE & LAB/OFFICE (PLATE 22)
- 2. EXIST. SEED DRYING AREA
- 3. EXIST. CORN DRYING CRIBS
- 4. EXIST. REPAIR SHOP
- 5. 20CM. WATER TOWER (PLATE 13)
- 6. 3 BED-RM HOUSE (TYPE A) (PLATE 23)
- 7. 3 BED-RM HOUSE (PLATE 14)
- 8. DUPLEX APARTMENT (PLATE 15)
- 9. OFFICE BUILDING (PLATE 24)
- 10. GENERATOR SHED (PLATE 17)
- 11. DRYING SHED (PLATE 18)
- 12. SEED PROCESSING PLANT (PLATE 19)
- 13. FERTILIZER/PESTICIDE STORAGE (PLATE 25)
- 14. EQUIPMENT SHED (PLATE 26)

NORTH CAMEROON SEED PROJECT PHASE II (231-70) (23)		
DATE 02.11.81	DRAWN BY CDF	APPROVED BY
SCALE 1:2000	REVISED 05.12.81	
PROPOSED LAYOUT OF SITE III		
SANGUERE		DRAWING NUMBER PLATE 5



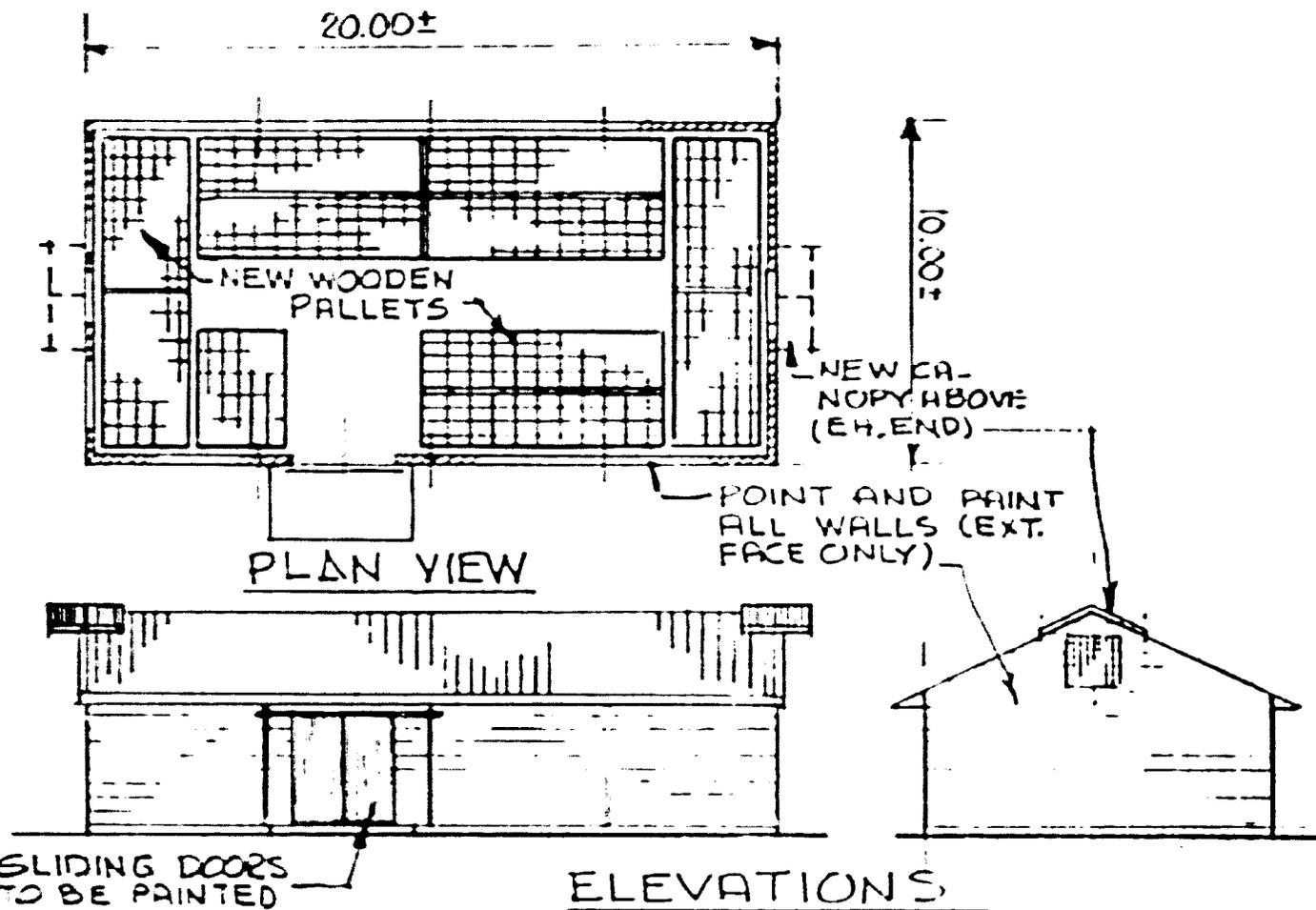
PLAN



ELEVATION
 PAINT AND PAINT WALLS (EXT. FACE)

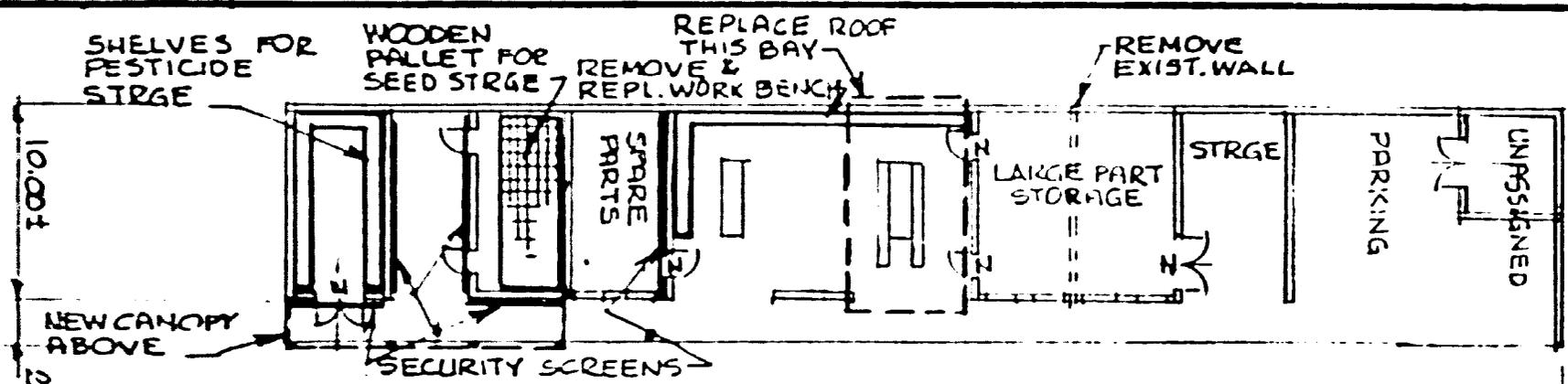
ESTIMATED COST OF ALTERATIONS \$ 9,000

NORTH CAMEROON SEED PROJECT PHASE II (6310023)		
DATE: 11/51	DRAWN BY: CLF	APPROVED BY:
SCALE: 1/2" = 1'-0"	REVISED:	
DETAILS OF EXIST. BLDG. QUETILE BLOCK I		
SEED STGE & EQUIP. SHED	DRAWING NUMBER	PLATE 6

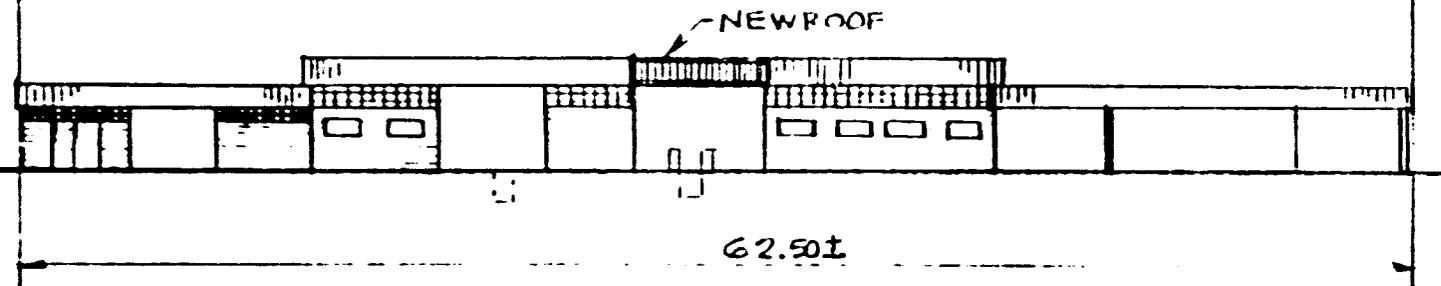


ESTIMATED COST OF ALTERATIONS \$ 10,000

NORTH CAMEROON SEED PROJECT PHASE II (631-0023)		
DATE 03.11.81	DRAWN BY CDF	APPROVED BY
SCALE 1:200	REVISED	
DETAILS OF EXISTING BLDG. - GUETELE BLOCK 2		
SEED STORAGE		DRAWING NUMBER PLATE 7



PLAN

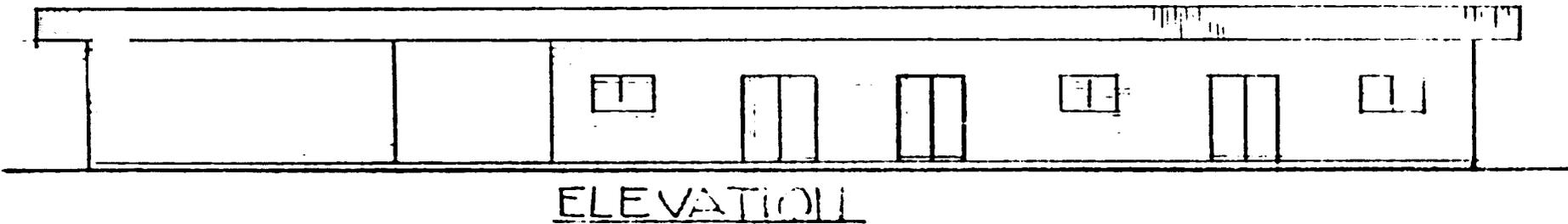
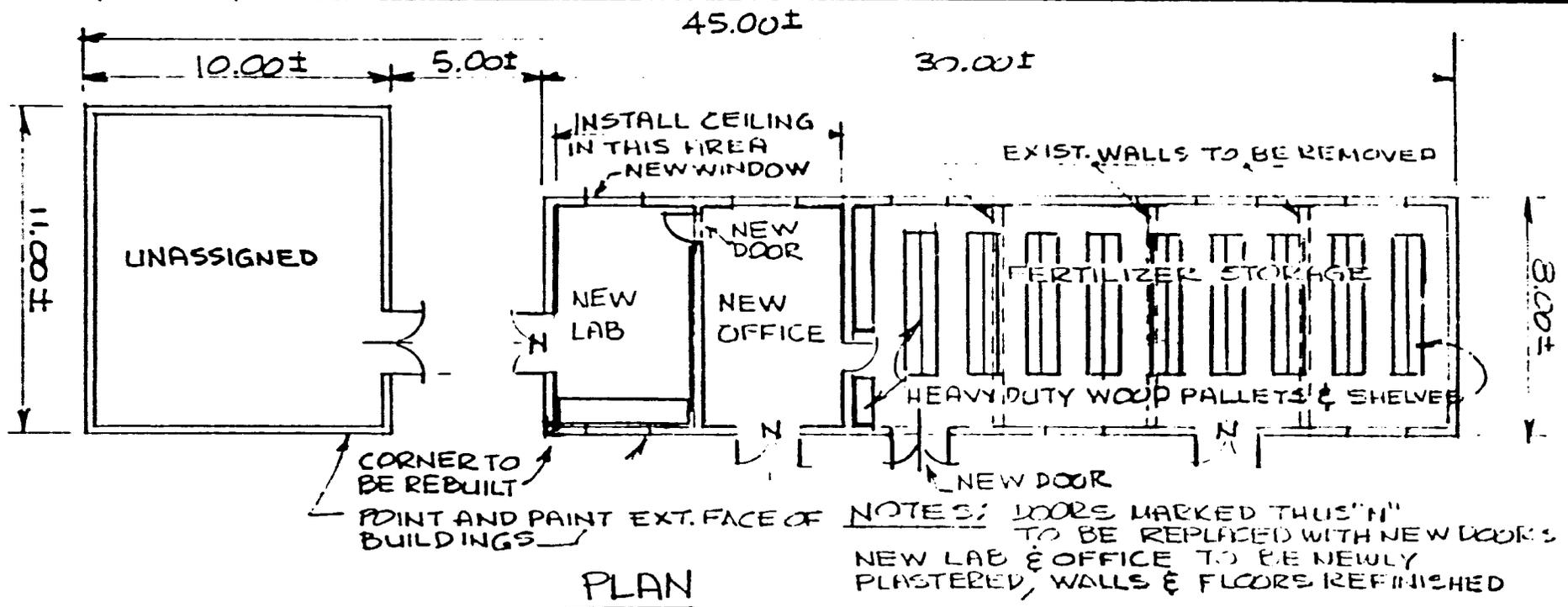


ELEVATION

NOTE: ALL DOORS MARKED THUS "N"-NEED TO BE REPLACED
 PAINT AND PAINT ENTIRE BLDG. (EXTERIOR)

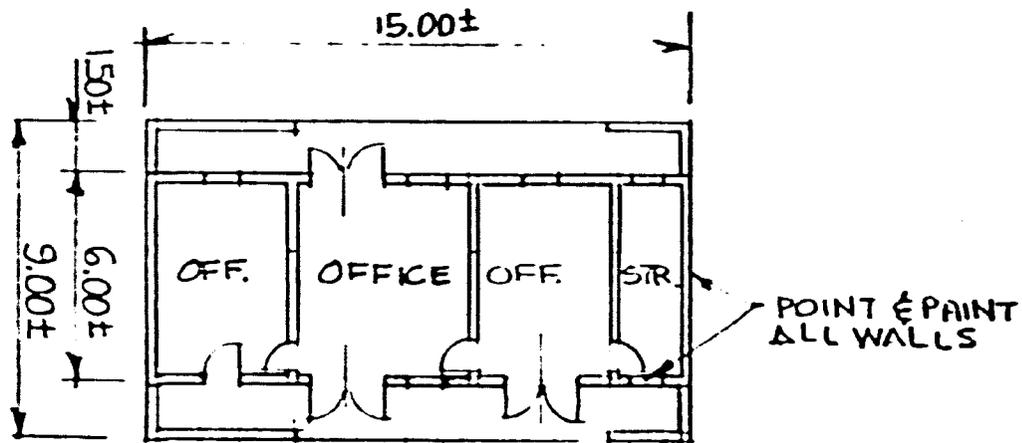
ESTIMATED COST OF ALTERATIONS \$ 32,000

NORTH CAMEROON SEED PROJECT PHASE II (631-0023)		
DATE 1/25/78	DRAWN BY CDF	APPROVED BY
SCALE 1/2" = 1'-0"	REVISED	
DETAILS OF EXISTING BUILDING, GIETELE BLOCK 3		
STATION REPAIR SHOP		DRAWING NUMBER PLATE 8

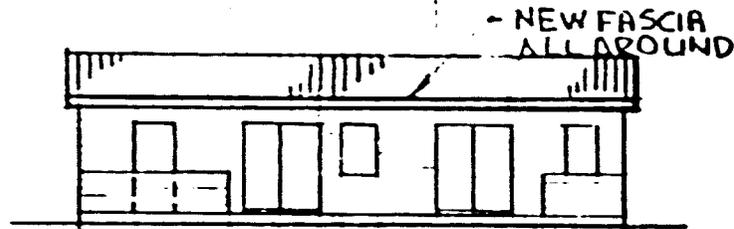


ESTIMATED COST OF ALTERATIONS \$ 18,000

NORTH CAMEROON SEED PROJECT PHASE II (631-0023)		
DATE 03.12.81	DRAWN BY CDF	APPROVED BY
SCALE 1:200	REVISED	
DETAILS OF EXISTING BUILDING - GIETELE BLOCK 4		
LAB/OFFICE & STORAGE		DRAWING NUMBER PLATE 9



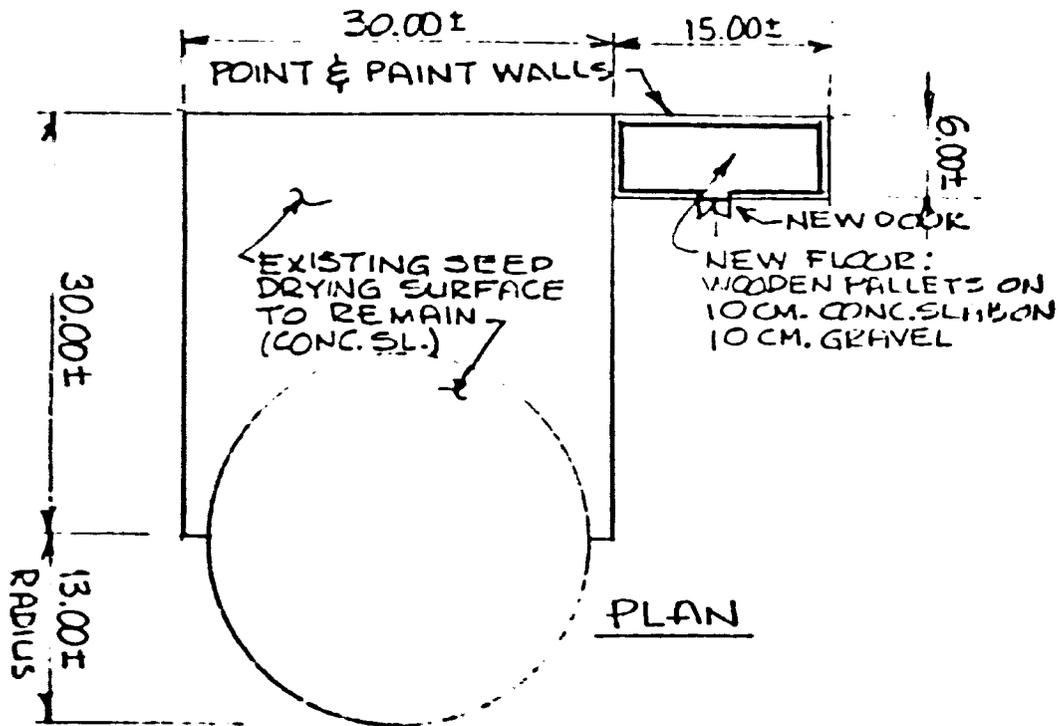
PLAN



ELEVATION

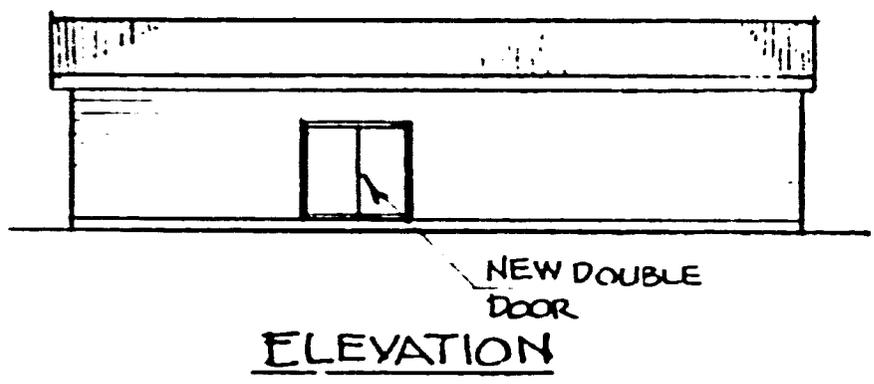
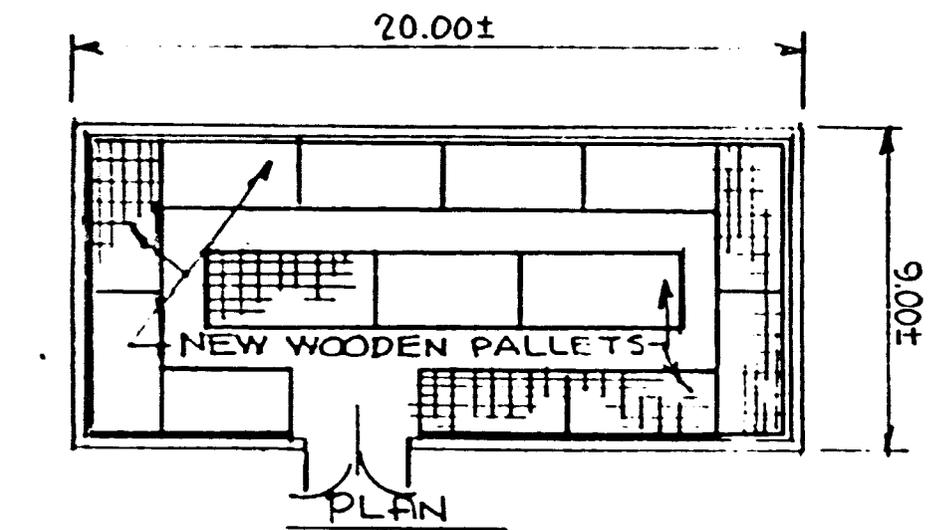
ESTIMATED COST OF ALTERATIONS ₺ 2,000

NORTH CH.ERROON SEED PROJECT PHASE II (631-0023)		
DATE 03.12.21	DRAWN BY CDF	APPROVED BY
SCALE 1:200	REVISED	
DETAILS of EXISTING BUILDING - CUETELE BLOCK 5		
OFFICE BUILDING		DRAWING NUMBER PLATE 10



ESTIMATED COST OF ALTERATION ₦ 9,500

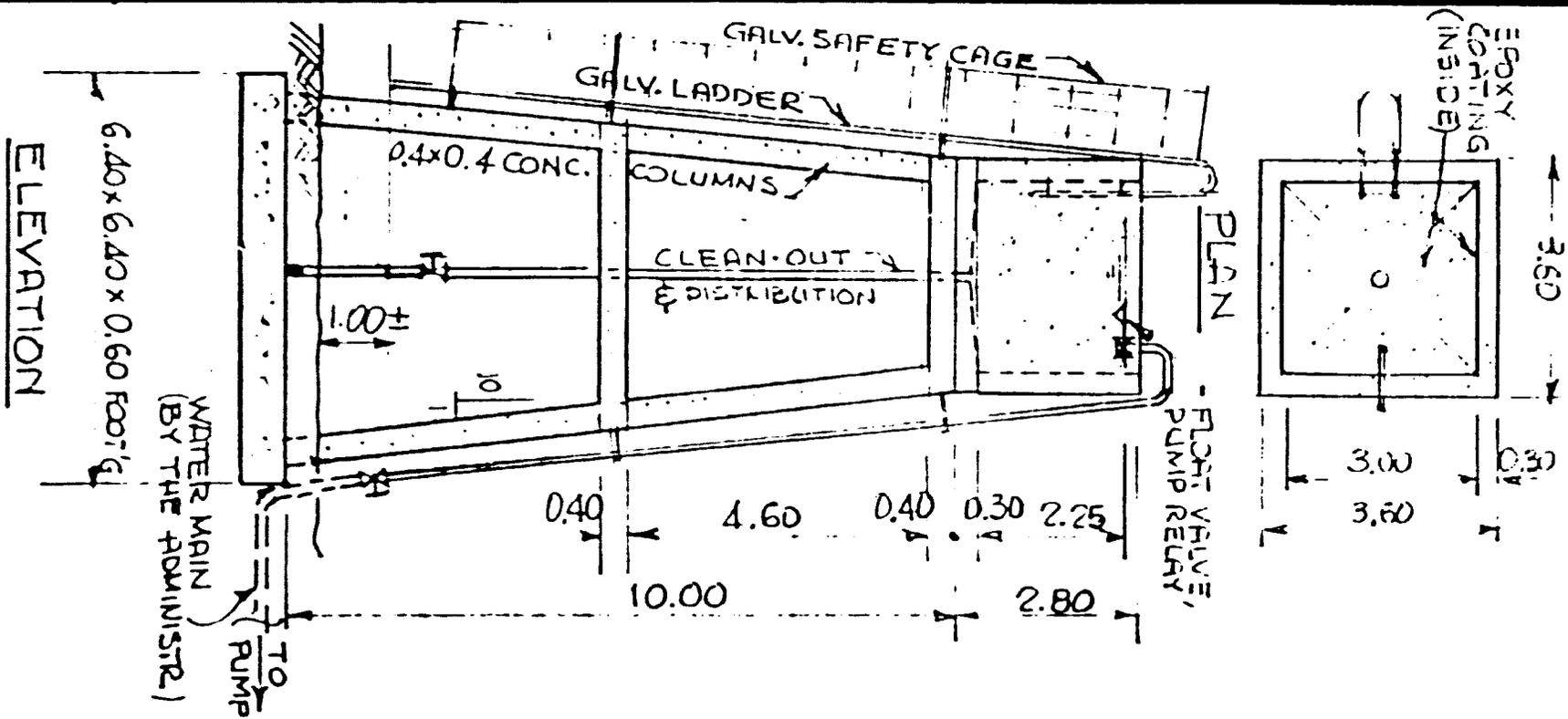
NORTH CAMEROON SEED PROJECT PHASE II (631-0023)		
DATE 03.12.81	DRAWN BY CUF	APPROVED BY
SCALE 1:500	REVISED	
DETAILS OF EXISTING BLDG - GIETELE BLOCK 6		
SEED STORAGE		DRAWING NUMBER PLATE 11



ESTIMATED COST OF ALTERATION \$ 7,000

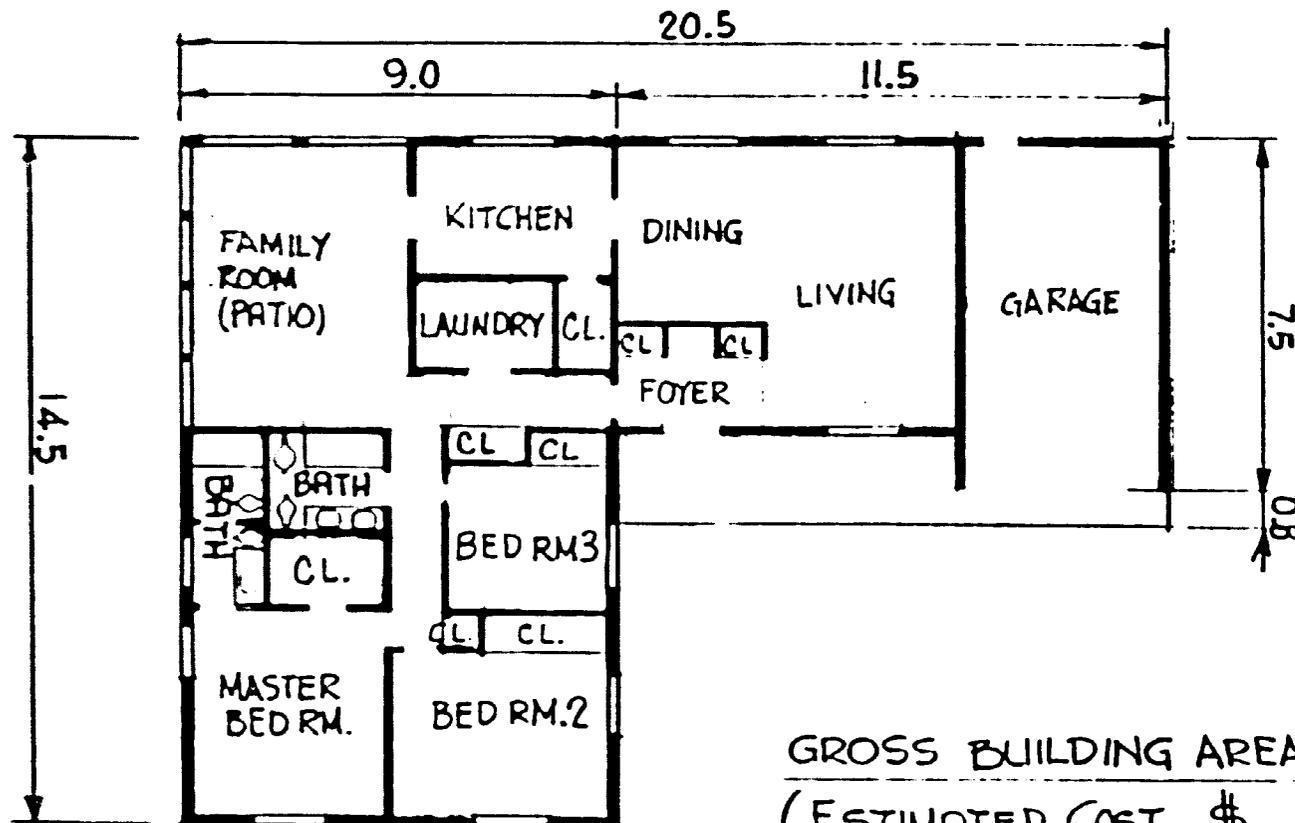
NORTH CAMEROON SEED PROJECT PHASE II (631-0223)		
DATE 03.12.81	DRAWN BY CDF	APPROVED BY
SCALE 1:200	REVISED	
DETAILS OF EXISTING BLDG.- CUETELE BLOCK 7		
SEED STORAGE		DRAWING NUMBER PLATE 12

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ESTIMATED COST \$ 100,000

NORTH CAMEROON SEED PROJECT PHASE II (631-0023)		
DATE 02.12.81	DRAWN BY CDF	APPROVED BY
SCALE 1:100	REVISED	
20 m ³ - REINFORCED CONC. WATER TOWER		
PROPOSED DETAILS	DRAWING NUMBER	13
	PLATE	

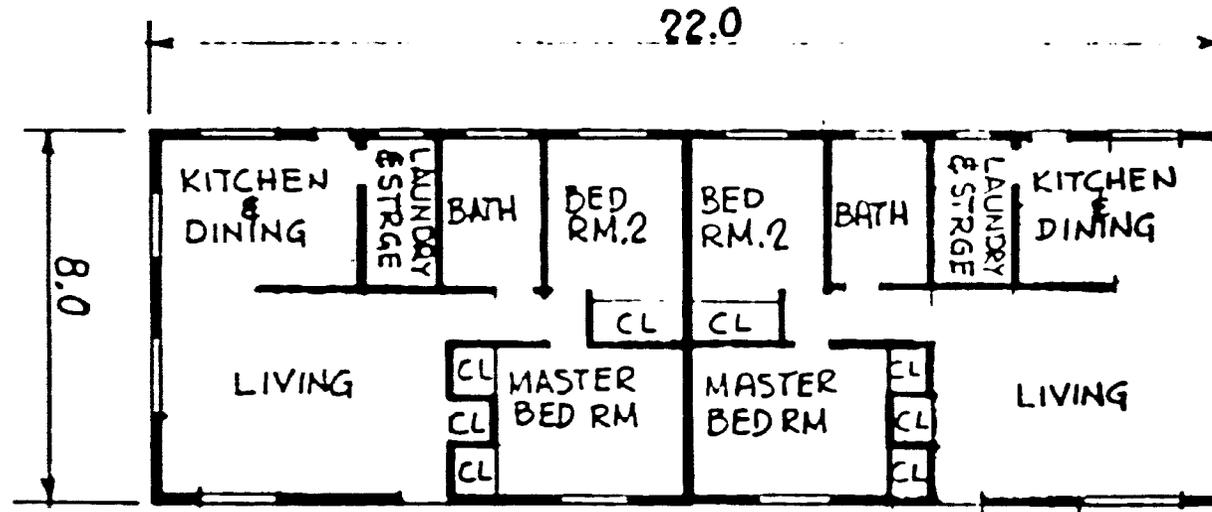


GROSS BUILDING AREA \approx 220 m²
 (ESTIMATED COST \$ 130,000)

FAMILY ROOM	4.5x6.0
KITCHEN	2.8x4.0
LAUNDRY	2.0x2.8
DINING	3.0x3.6
LIVING	4.0x6.0
FOYER	2.2x3.0
GARAGE	4.0x7.0
MASTER BED RM.	4.0x4.5
BED RM 2	3.4x4.5
BED RM 3	3.0x3.3

NORTH CAMEROON SEED PROJ. PHASE II - (631-0023)		
DATE 01-07-81	DRAWN BY C.D.F	APPROVED BY
SCALE 1:150	REVISED	
TYPICAL 3 BEDRM. HOUSE - SKETCH -		
FLOOR PLAN		DRAWING NUMBER PLATE 14

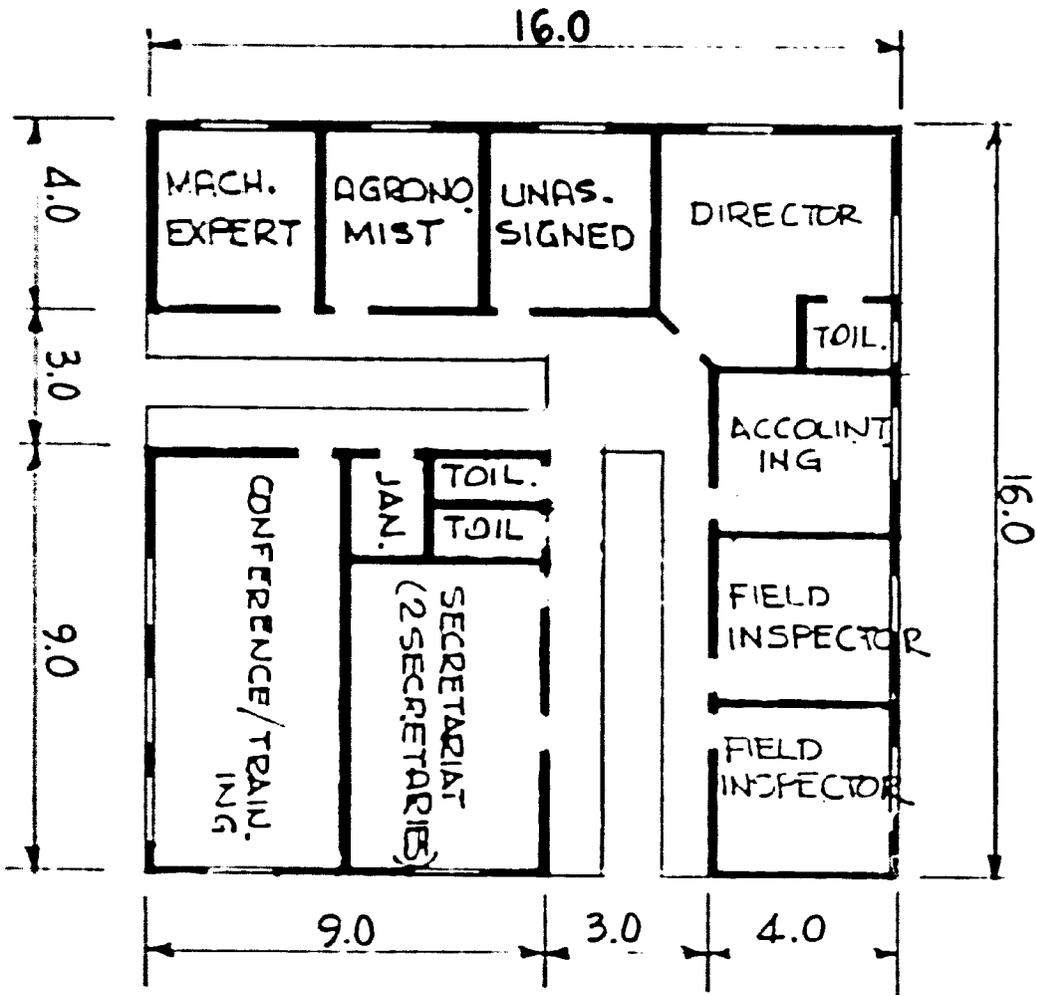
1/1



KITCH & DINING 3.0 x 4.2
 LAUNDRY + STRGE 1.5 x 3.0
 LIVING 4.2 x 6.0
 MASTER BED RM. 3.2 x 4.0
 BED RM. 2 2.8 x 3.3

GROSS BUILDING AREA = 176 m²
 (ESTIMATED COST = \$ 92,000)

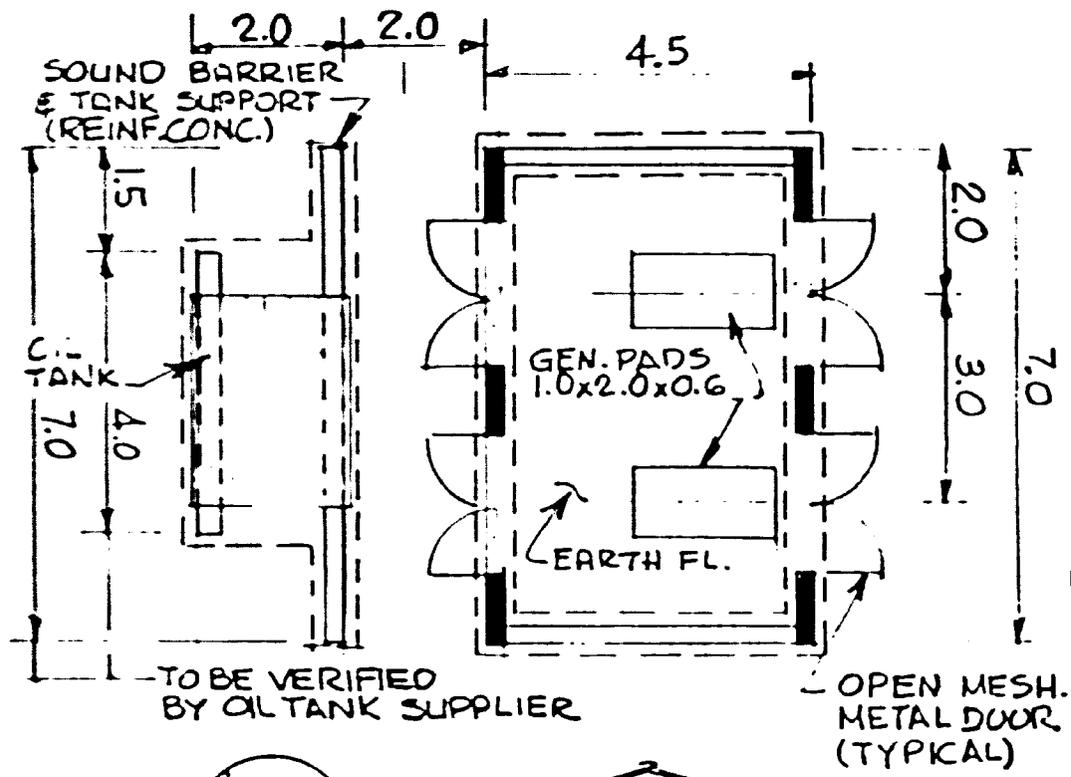
NORTH CAMEROON SEED PROJ PHASE II. (631-0023)		
DATE 01-07-81	DRAWN BY CDF	APPROVED BY
SCALE 1:150	REVISED 04.07.81	
TYPICAL DUPLEX APARTMENT SKETCH		
FLOOR PLAN		DRAWING NUMBER PLATE 15



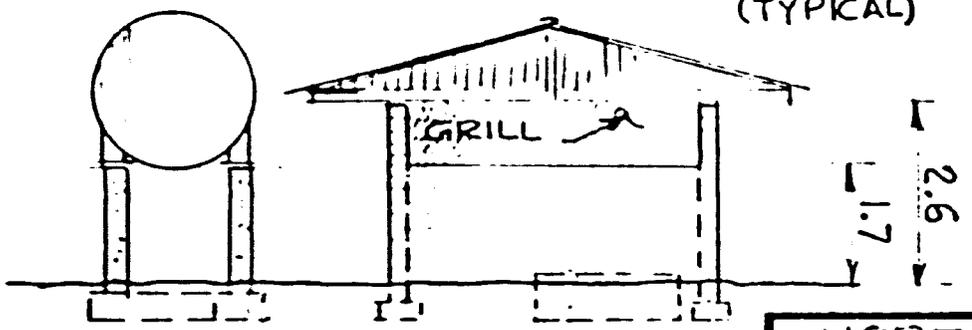
- ALL OFFICES 3.7 x 3.3
- DIRECTOR 5.0 x 5.0 (NOM.)
- CONF/TRAINING 4.0 x 8.6
- SECRETARIAT 4.0 x 6.3
- JANITOR 1.5 x 2.2

GROSS BLDG. AREA = 190 m²
 (ESTIMATED COST: \$115,000)

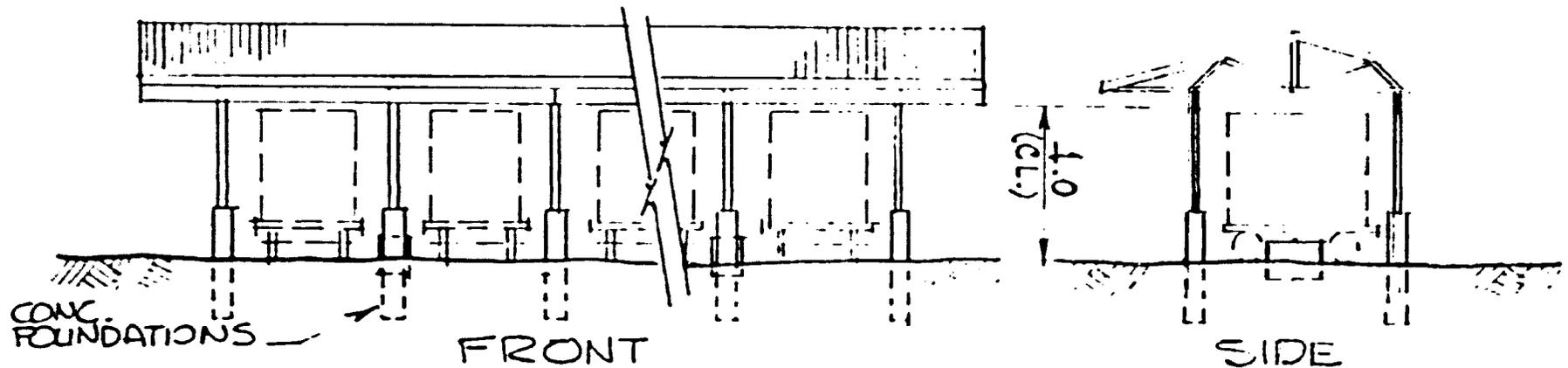
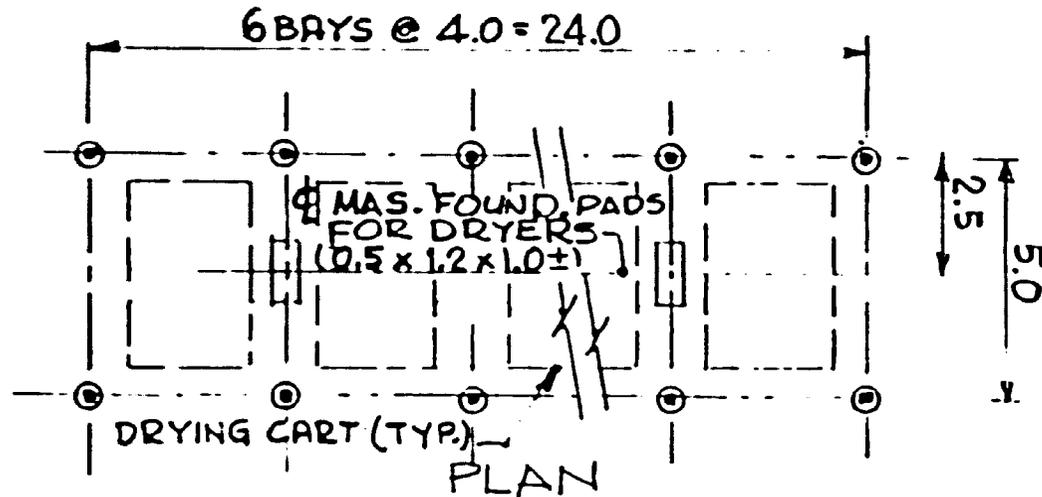
NORTH CAMEROON SEED PROJ. PHASE II (G31-0023)		
DATE 01-07-81	DRAWN BY CDF	APPROVED BY
SCALE 1:150	REVISED 01/07/81	
TYPICAL OFFICE BLDG. IN GUETELE		
FLOOR PLAN		DRAWING NUMBER PLATE 16



GROSS BUILDING AREA =
= 60 m²
(ESTIMATED COST \$27,000)
EXCLUDING EQUIPMENT

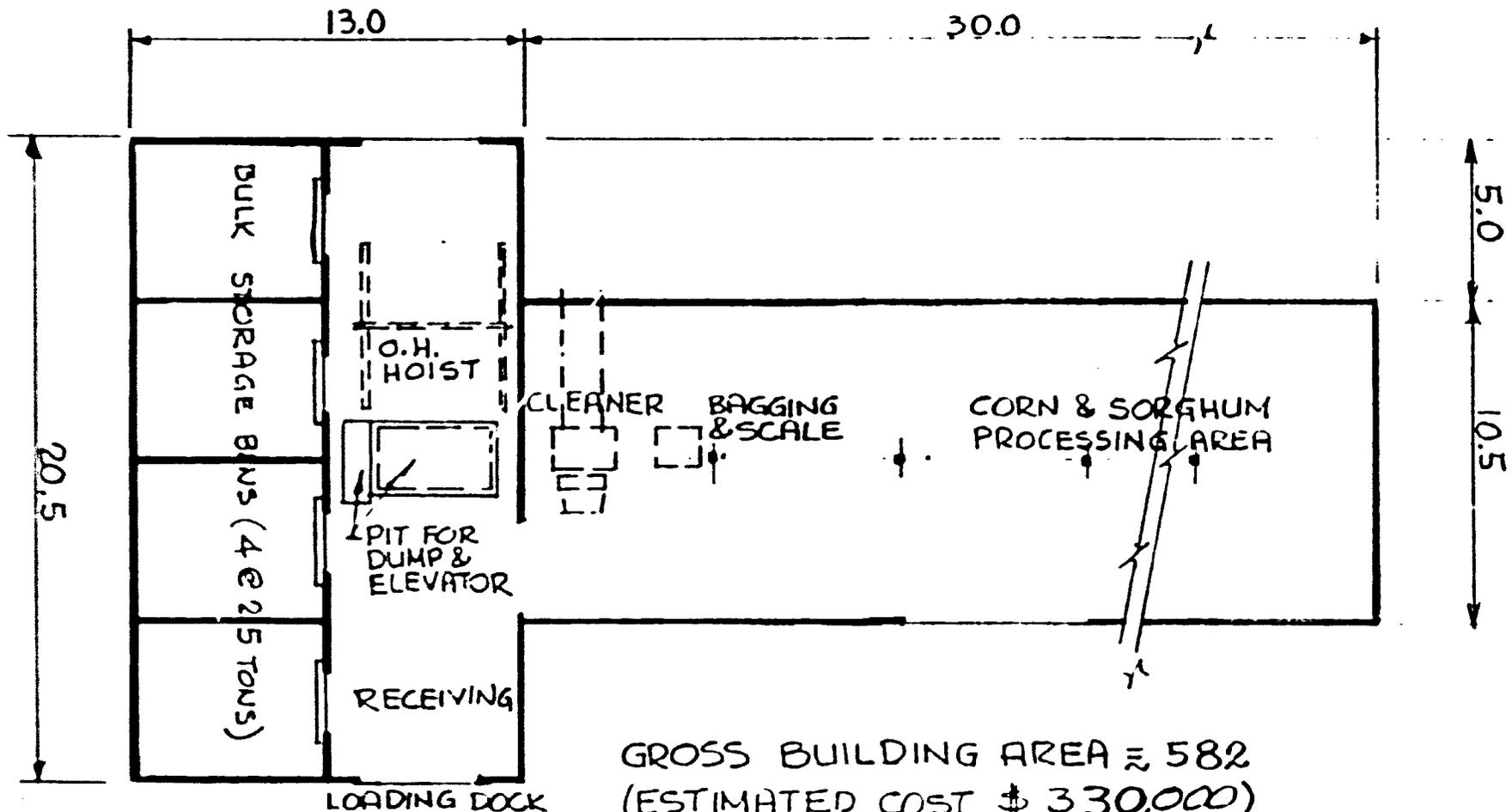


NORTH CAMEROON SEED PROJ. PHASE II - (631-0023)		
DATE 01-15-81	DRAWN BY CDF	APPROVED BY
SCALE 1:100	REVISED	
GENERATOR SHED - SKETCH -		
PLAN & ELEVATION		DRAWING NUMBER PLATE 17



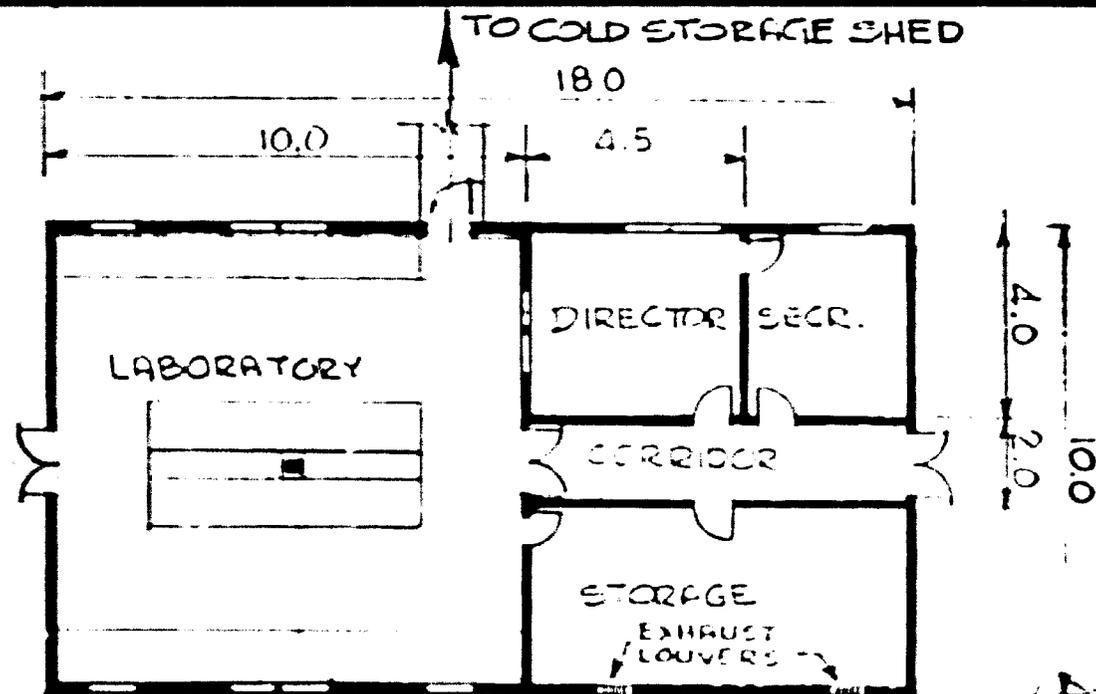
GROSS BUILDING AREA = 120 m²
 (ESTIMATED COST \$ 35,000)
 EQUIPMENT NOT INCLUDED.

NORTH CAMEROON SEED PROJ. PHASE II (631-0023)		
DATE 01-15-81	DRAWN BY CDF	APPROVED BY
SCALE 1:150	REVISED	
DRYING SHED - SKETCH -		
PLAN & ELEVATIONS		DRAWING NUMBER PLATE 18



GROSS BUILDING AREA \approx 582
 (ESTIMATED COST \$ 330,000)
 EXCLUDING EQUIPMENT COST

NORTH CAMEROON SEED PROJ. PHASE II - (631-0023)		
DATE 01-14-81	DRAWN BY CDF	APPROVED BY
SCALE 1:200	REVISED	
SEED PROCESSING PLANT - SKETCH -		
FLOOR PLAN		DRAWING NUMBER 19



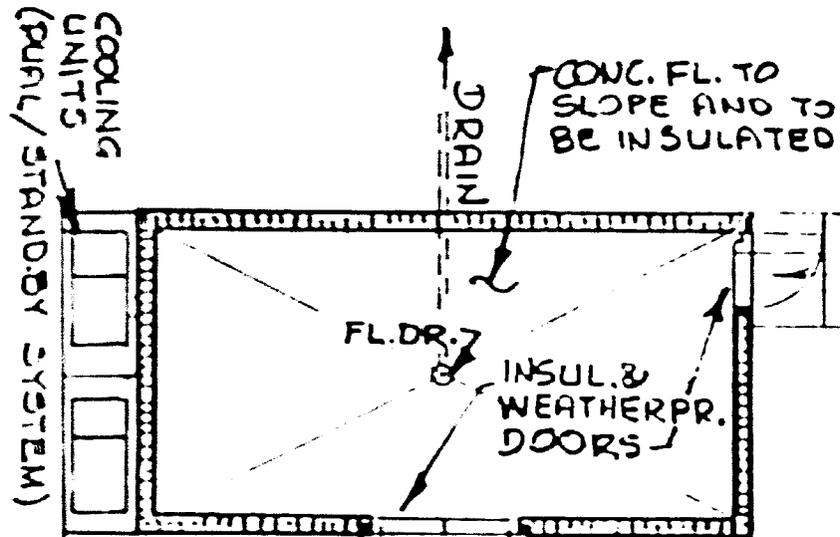
COMPRESSOR FOR CENTRAL AIR COND.

NOTE. ALL ROOMS TO BE WELL LIGHTED AND AIR CONDITIONED

PLAN

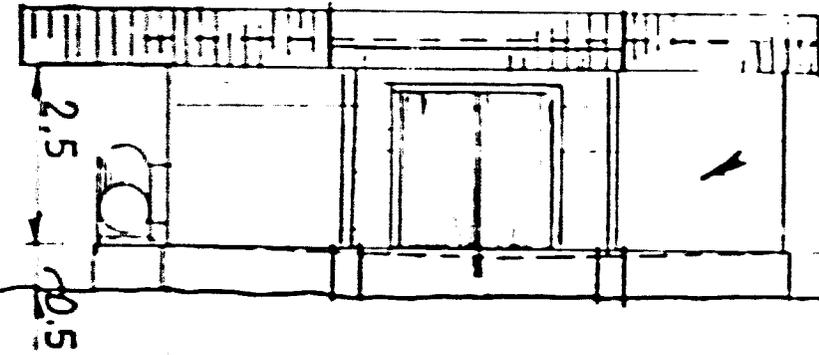
GROSS BUILDING AREA 180 m²
 (ESTIMATED COST \$100,000)

NORTH CAMEROON SEED PROJECT PHASE II (631-0023)		
DATE 05/13/51	DRAWN BY CDF	APPROVED BY
SCALE 1/20	REVISED (4/10/51)	
SEED TESTING LABORATORY SKETCH		
PROPOSED PLAN		DRAWING NUMBER PLATE 20

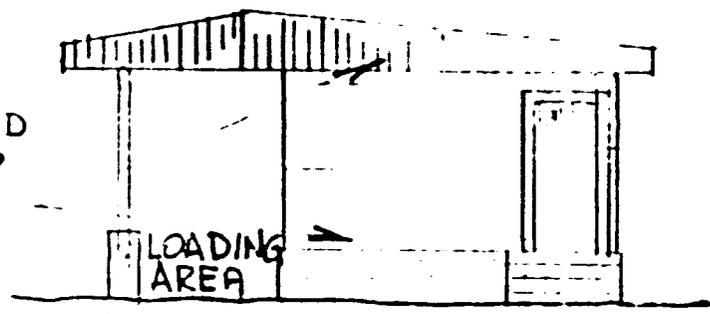


GROSS BUILDING AREA ≈ 45 m²
 (ESTIMATED COST: \$ 150,000)

INT. DIM'S = 4.0 x 8.0 x 2.5

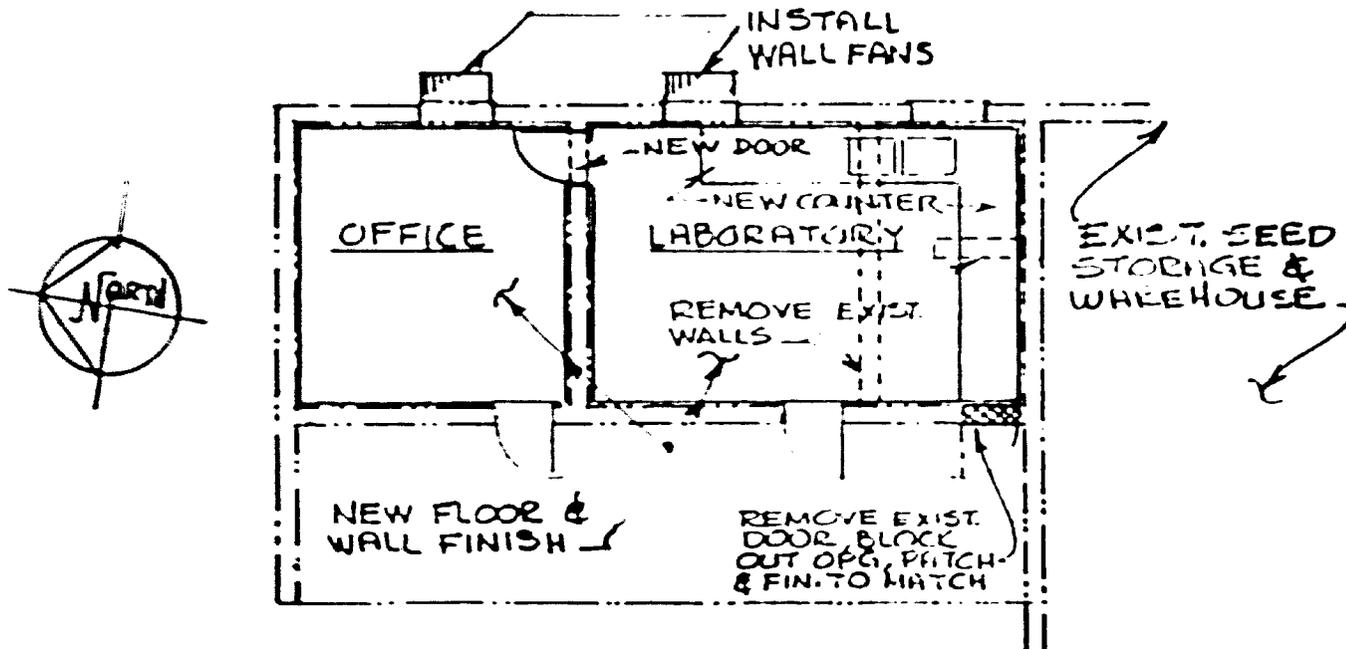


INSULATED WALLS & ROOF



LOADING AREA

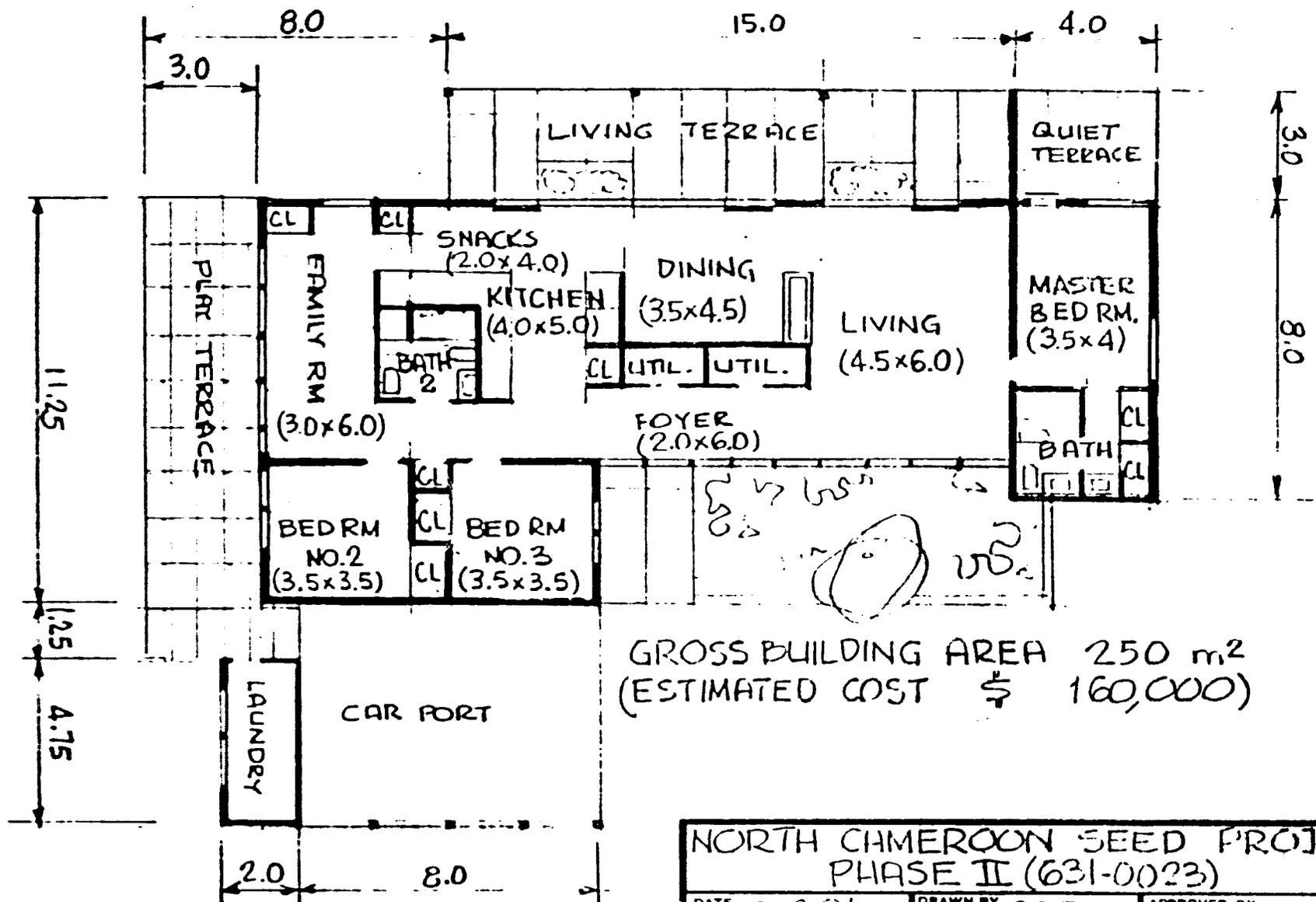
NORTH CAMEROON SEED PROJ. PHASE II (631-002?)		
DATE 01-14-81	DRAWN BY CDF	APPROVED BY
SCALE 1:100	REVISED 04.07.81	
COLD STORAGE SHED SKETCHES -		
FLOOR PLAN & ELEVATIONS		DRAWING NUMBER PLATE 21



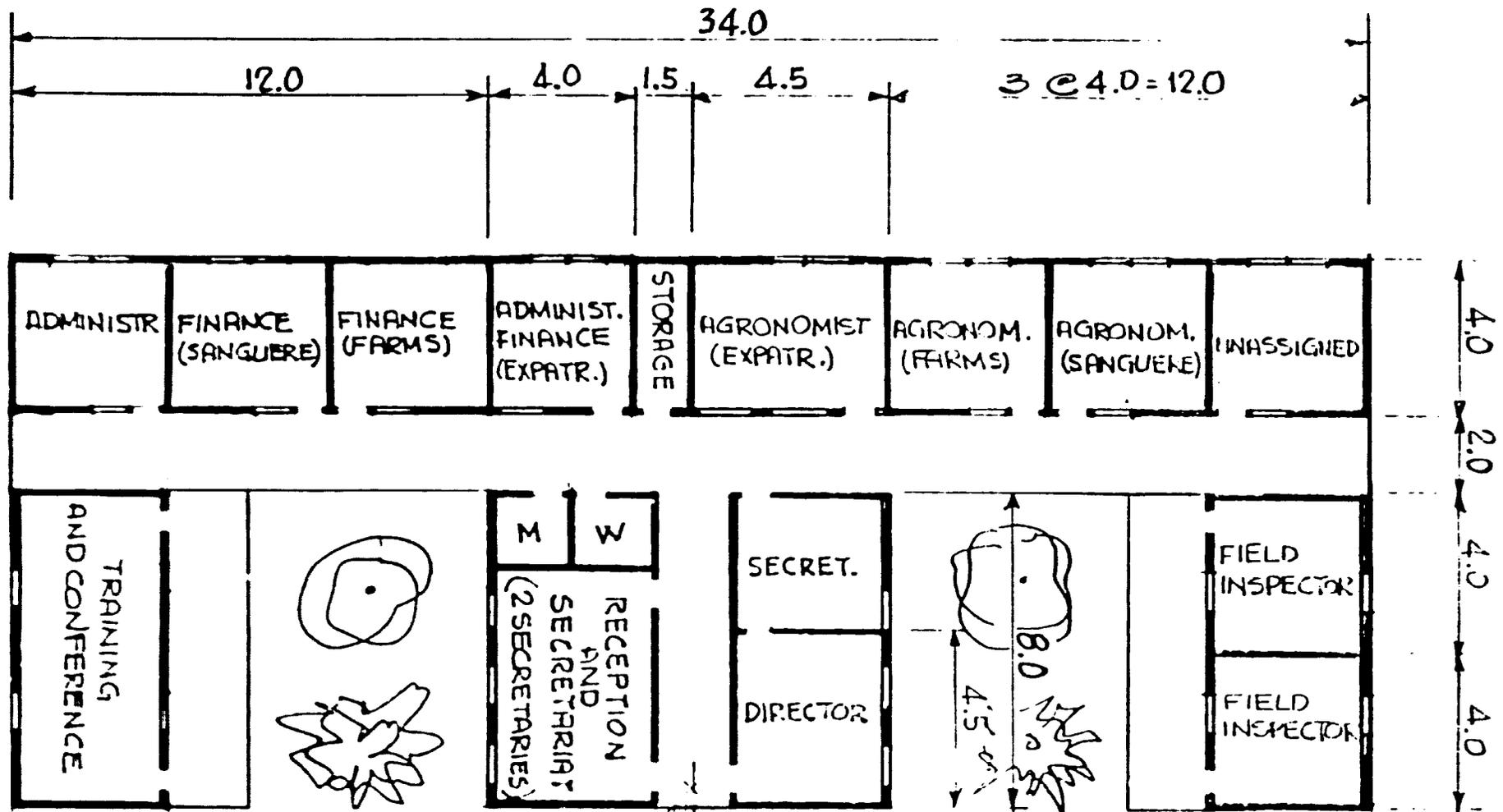
PLAN

ESTIMATED COST OF ALTERATIONS \$ 10,000

NORTH CAMEROON SEED PROJECT PHASE II (02.1.2023)		
DATE 02.13.21	DRAWN BY CDF	APPROVED BY
SCALE 1:100	REVISED 04.09.21	
DETAILS OF EXIST. BLDG- SANGUERE -- STORAGE & LAB/OFFICE		
PROPOSED ALTERATIONS		DRAWING NUMBER PLATE 22

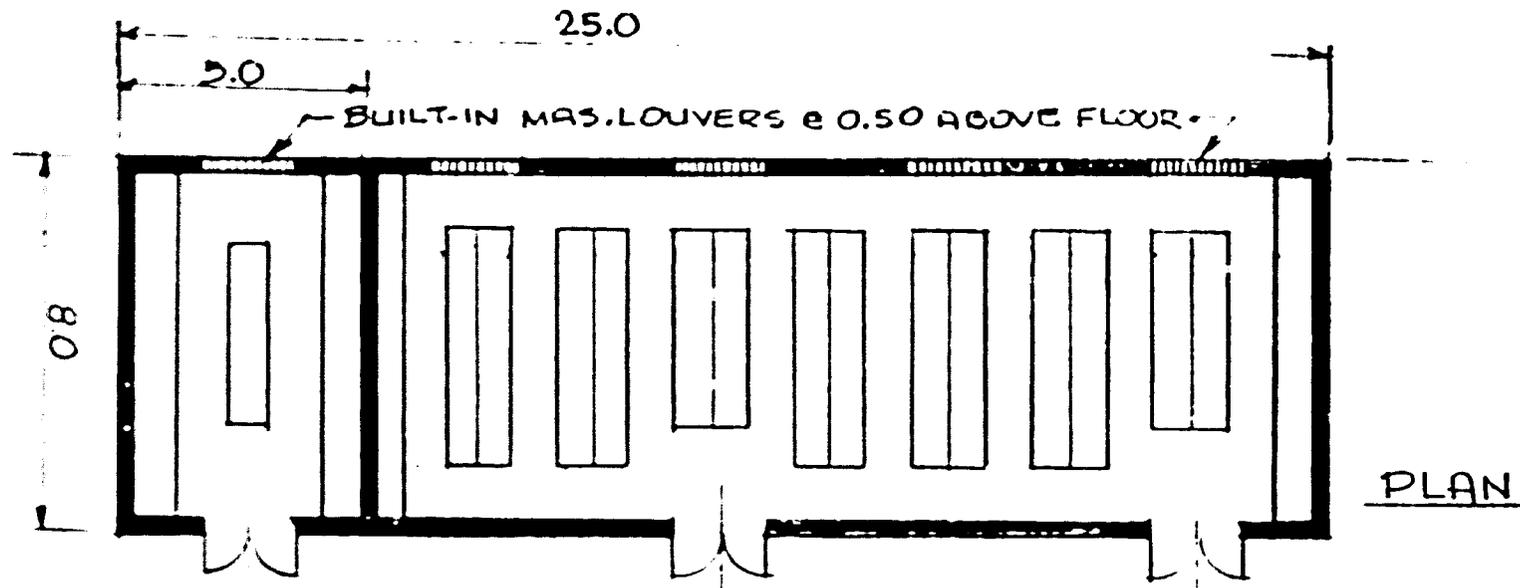


NORTH CAMEROON SEED PROJECT PHASE II (631-0023)		
DATE 03.12.81	DRAWN BY CDF	APPROVED BY
SCALE 1:150	REVISED	
3 BED-RM HOUSE - TYPE A - SKETCH		
FL. : PLAN		DRAWING NUMBER PLATE 23

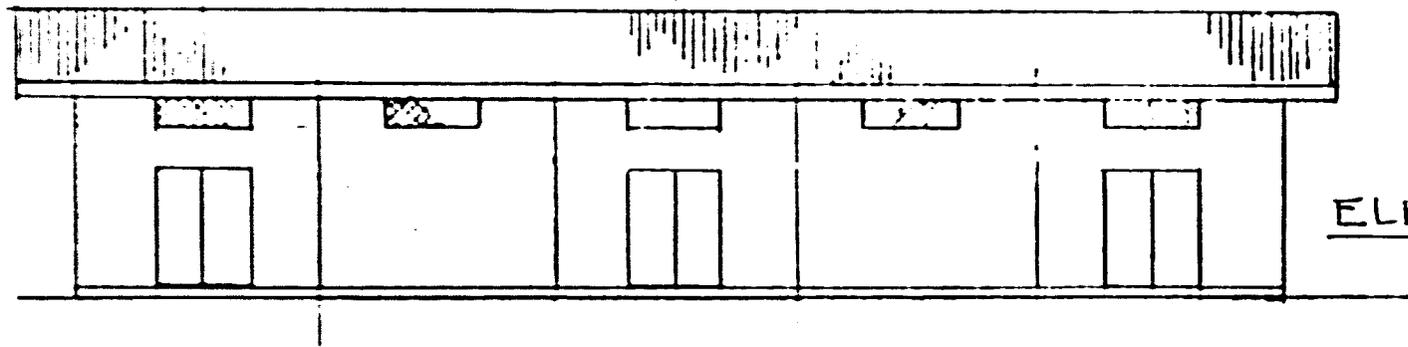


GROSS BUILDING AREA = 380 m²
 (ESTIMATED COST \$ 220,000)

NORTH CHIMEROON SEED PROJ. PHASE II - (631-0023)		
DATE 01-14-81	DRAWN BY CDF	APPROVED BY
SCALE 1:150	REVISED 04.09.81	
OFFICE BUILDING IN SANGUEBE.		
FLOOR PLAN SKETCH		DRAWING NUMBER PLATE 24



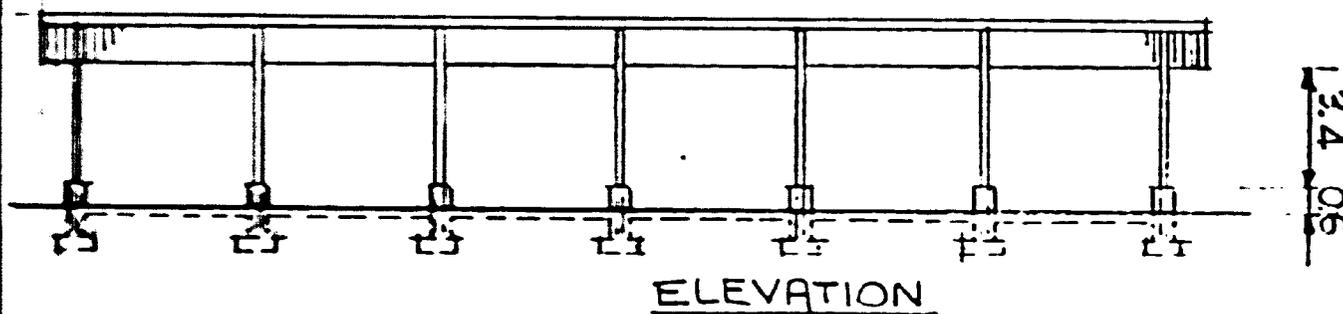
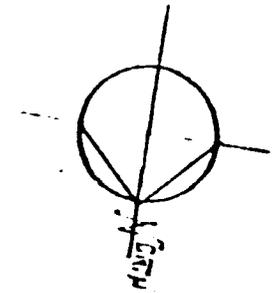
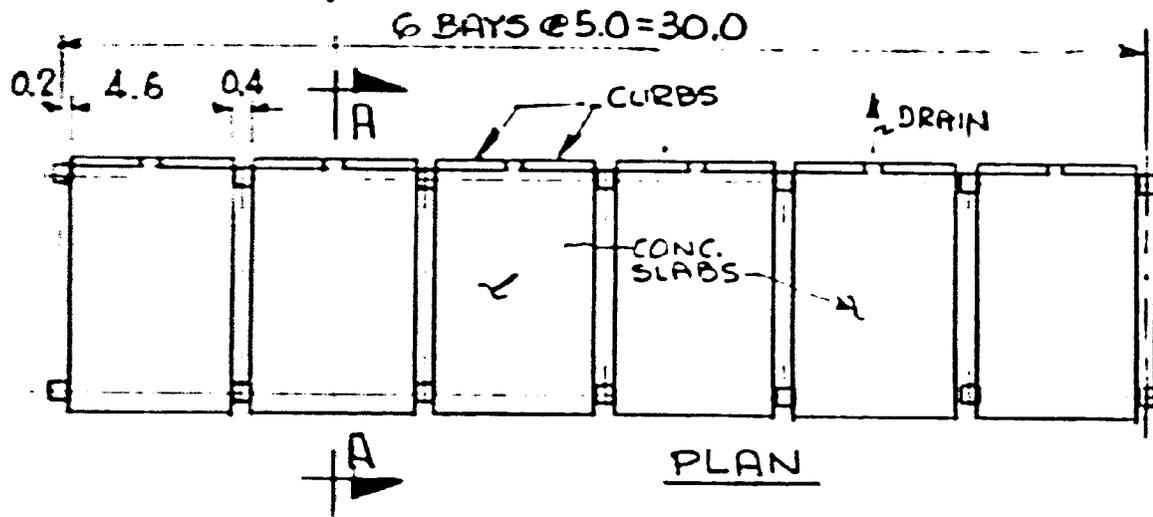
PLAN



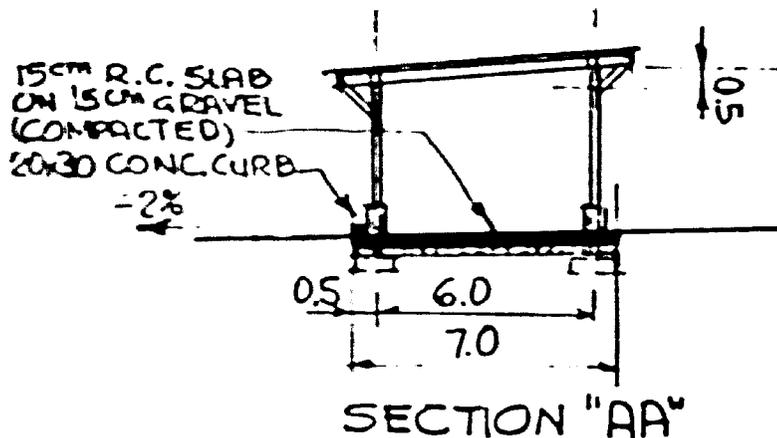
ELEVATION

GROSS BUILDING AREA = 200 m²
 (ESTIMATED COST ₦ 90,000)

NORTH CAMEROON SEED PROJECT PHASE II (631-0023)		
DATE 03.12.81	DRAWN BY CDF	APPROVED BY
SCALE 1:150	REVISED 04.09.81	
FERTILIZER/PESTICIDE STORAGE SKETCH-		
PLAN & ELEVATION	DRAWING NUMBER	PLATE 25



GROSS BUILDING AREA 210 m²
 (ESTIMATED COST \$40,000)



NORTH CAMEROON SEED PROJECT PHASE II (631-0023)		
DATE 03.12.51	DRAWN BY CDF	APPROVED BY
SCALE 1:200	REVISED 04.02.81	
EQUIPMENT SHED SKETCH		
PROPOSED DETAILS	DRAWING NUMBER	PLATE 26