PD-AAR-149

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT DATA SHEET

1. TRANSACTION CODE: A (A = Add, C = Change, D = Delete) — Amendment Number: ____

DOCUMENT CODE: 3

COUNTRY/ENTITY: UPPER VOLTA

3. PROJECT NUMBER: 686-0255

4. BUREAU/OFFICE: AFRICA — AFR 06

5. PROJECT TITLE (maximum 40 characters): Agricultural Development Support

6. PROJECT ASSISTANCE COMPLETION DATE (PACD): MM 08 DD 31 YY 88

7. ESTIMATED DATE OF OBLIGATION (Under 'B.' below, enter 1, 2, 3, or 4)
A. Initial FY 83 B. Quarter 4 C. Final FY 87

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

A. FUNDING SOURCE	FIRST FY 83 B. FX	C. L/C	D. Total	LIFE OF PROJECT E. FX	F. L/C	G. Total
AID Appropriated Total						
(Grant)	(5,593)	(1,107)	(8,365)	(26,550)	(3,450)	(30,000)
(Loan)	(--)	(--)	(--)	(--)	(--)	(--)
Other U.S. 1. PL 480 commodities*	--	--	--	6,372*	2,487**	8,859
Other U.S. 2. Peace Corps	--	--	320	320	--	320
Host Country	--	225	225	--	12,422	12,422
Other Donor(s)			--	--	--	--
TOTALS			8,910	33,242	18,359	51,601

9. SCHEDULE OF AID FUNDING ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE 1. Grant	2. Loan	D. OBLIGATIONS TO DATE 1. Grant	2. Loan	E. AMOUNT APPROVED THIS ACTION 1. Grant	2. Loan	F. LIFE OF PROJECT 1. Grant	2. Loan
(1) SH	184	53	--	--	--	30,000	--	30,000	--
(2) PL480				--	--	6,372	--	6,372	--
(3)				--	--	--	--	--	--
(4)				--	--	--	--	--	--
TOTALS				0	--	36,372	--	36,372	--

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each): 10 | 840 | 850

11. SECONDARY PURPOSE CODE

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

A. Code	XII	EQTY	ENV				
B. Amount							

13. PROJECT PURPOSE (maximum 480 characters)

To reinforce the capacity of the Ministry of Rural Development to manage and promote a more efficient use of resources in the agricultural sector.

14. SCHEDULED EVALUATIONS
Interim MM 05 YY 85 | MM YY | Final MM 06 YY 87

15. SOURCE/ORIGIN OF GOODS AND SERVICES
☐ 000 ☒ 941 ☒ Local ☐ Other (Specify) ____

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

Other:

* 6,372 is FX cost of PL 480 commodities

** Transportation value of PL 480 commodities delivered to Upper Volta is 2,487 L/C for LOP

17. Submitted BY
Signature:
Title: Emerson J. Melaven, Director, USAID/Upper Volta
Date Signed: MM 06 DD 24 YY 83

18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION
MM 06 DD 29 YY 83

VOLUME ONE

AGRICULTURAL DEVELOPMENT SUPPORT PROJECT

(686-0255)

USAID/UPPER VOLTA
June 25, 1983

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Lerner

ANNEX F

UNCLASSIFIED OUAGADOUGOU 3109

PP RUEHC
DE RUEHIC #3109 147 **
ZNR UUUUU
P 2714472 MAY 83
FM AMEMBASSSY OUAGADOUGOU
TO SECSTATE WASHDC
BT
UNCLAS OUAGADOUGOU 03109

CLASS: UNCLASSIFIED
CHRGE: AID 05/24/83
APPRV: DIR:MFLAVEN
DRFTD: OFM:STANFORD:GSC
CLEAR: 1.OPR:LERNER
2.OAG:RECKER
3.DDIR:HEILMAN
DISTR: AMB DCM CHRON
DIR DDIR CSR
OPR OAG OFM

OFM
OPR
OAG
DIR
CHRON
R.F.

AIDAC

FOR AFR/SWA

E.O. 12356:N/A
SUBJECT:121 (D) CERTIFICATION - UPPER VOLTA AGRICULTURAL DEVELOPMENT SUPPORT GRANT (686-0256)

1. IN A MEMORANDUM DATED 05 24 83, THE USAID DIRECTOR HAS CONCLUDED SINCE NO APPROPRIATED FUNDS UNDER SECTION 121 (D) WILL BE USED TO FUND LOCAL CURRENCY COSTS UNDER THE PROPOSED PROJECT NO CERTIFICATION OF ADEQUACY OF GOUV ACCOUNTING SYSTEMS IS REQUIRED. ALL LOCAL CURRENCY COSTS WILL BE FINANCED FROM LOCAL CURRENCY PROCEEDS OF COMMODITY SALES UNDER SECTION 206, PL 480 TITLE II.

2. COPIES OF THE DIRECTOR'S MEMORANDUM AND RELATED DOCUMENTS WILL BE POUCHED TO AID/W THIS WEEK. IT IS REQUESTED THAT THE NECESSARY NEGATIVE DETERMINATION BE PROCESSED AS SOON AS POSSIBLE. DALSIMER
BT
#3109

NNNN

UNCLASSIFIED OUAGADOUGOU 3109

Best Available Document

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The Agricultural Development Support Project was designed by:

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ACRONYMS

ADO	: Agricultural Development Officer
ADS	: Agricultural Development Support Project
AGRHYMET	: Agricultural Hydrological Meteorological
ASF	: Area Sampling Frame
ATA	: Agent Technique d'Agriculture (Agricultural Technical Agent)
ARCOMA	: Atelier Régional de Construction du Matériel Agricole (Regional Workshop of Agricultural Materials Construction)
BCEAO	: Banque Centrale des Etats de l'Afrique de l'Ouest (Central Bank of West African States)
BEPC	: Brevet des Etudes du Premier Cycle (Certificate on Completion of Lower Secondary Cycle)
BICIA	: Banque Internationale pour le Commerce, l'Industrie et l'Agriculture (International Bank for Commerce, Industry and Agriculture)
BIV	: Banque Internationale des Voltas (International Bank of the Voltas)
BND	: Banque Nationale de Développement (National Development Bank)
BOAD	: Banque Ouest Africaine de Développement (West African Development Bank)
CB	: Cereal Bank
CCCE	: Caisse Centrale de Coopération Economique
CENATRIN	: Centre National pour le Traitement d'Information
CERCI	: Centre d'Etudes sur le Riz et les Cultures Irriguées (Irrigated Cultures and Rice Study Center)
CER	: Centre d'Education Rurale (Rural Education Center)
CESAO	: Centre d'Etudes Sociales d'Afrique Occidentale (Social Studies Center for West Africa)
CFF	: Centre de Formation des Formateurs (Training of Trainers Center)
CFJA	: Centre de Formation des Jeunes Agriculteurs (Young Farmers Training Center)
CIMMYT	: International Center for Maize Improvement in Mexico
CMRPN	: Comité Militaire pour le Redressement et le Progrès National (Military Committee of Reform for National Progress).
CNCA	: Caisse Nationale du Crédit Agricole (National Agricultural Credit Bank)
CPR	: Centre de Promotion Rurale (Rural Training Center)
CRTO	: Centre Régional de Télédétection de Ouagadougou (Regional Remote Sensing Center of Ouagadougou).
CSPPA	: Caisse de Stabilisation des Prix des Produits Agricoles (Agricultural Product Prices Stabilization Fund)
CSRA	: Comité Spécialisé pour la Recherche Agricole (Specialized Committee for Agricultural Research)
CVC	: Conseil Villageois du Centre (Central Villagers Council)
DAAF	: Direction des Affaires Administratives et Financières (Department of Administrative and Financial Affairs)
DAI	: Development Alternatives, Inc.
DCG	: Direction du Contrôle de Gestion (Department of Financial Management and Control)
DEP	: Direction des Etudes et Projets (Department of Studies and Projects)
DGRST	: Direction Générale de la Recherche Scientifique et Technique (General Direction of Scientific and Technical Research)
DIRC	: Direction des Institutions Rurales et du Crédit (Department of Rural Institutions and Credit)

DSA	: Direction des Services Agricoles (Department of Agricultural Services)
DSFJA	: Direction des Services de Formation des Jeunes Agriculteurs (Department of Young Farmers Training Services)
FAAC	: Fonds d'Assistance ARCOMA/COREMMA (ARCOMA/COREMMA Assistance Fund)
FAC	: Fonds d'Aide et de Coopération (French Fund for Aid and Cooperation)
FAO	: Food and Agriculture Organization
FDR	: Fonds de Développement Rural (Rural Development Fund)
FED	: Fonds Européen de Développement (European Fund for Development)
FFTS	: Food and Food Technology Service (Service de l'Alimentation et de la Technologie Alimentaire)
FJA	: Formation des Jeunes Agriculteurs (Young Farmers Training)
FSR	: Farming Systems Research
FSU	: Farming Systems Unit
GF	: Groupements Féminins (Women's Groups)
GJA	: Groupement des Jeunes Agriculteurs (Young Farmers Group)
GOUV	: Government of Upper Volta
GRAAP	: Groupement de la Recherche d'Appui pour l'Auto-Promotion Paysanne
HER	: Hydraulique Equipement Rural
ICRISAT	: International Crop Research Institute of the Semi-Arid Tropics
IGHV	: Upper Volta Geographic Institute
IITA	: International Institute of Tropical Agriculture
INADES	: Institut National pour le Développement Economique et Social
INSD	: National Institute of Statistics and Demography
IPD	: Institut Pan-Africain pour le Développement (Pan-African Institute for Development)
IRA	: Institut de Recherches Agronomiques
IRAT	: Institut de Recherches Agronomiques Tropicales et des Cultures Vivrières (Tropical Agronomic Research Institute)
IRCT	: Institut de Recherches sur le Coton et les Textiles (Cotton and Textiles Research Institute)
IRHO	: Institut de Recherches sur les Huiles et Oléagineux (Vegetable Oils Research Institute)
IVRAZ	: Institut Voltaïque de Recherches Agronomiques et Zootechniques (Voltan Institute of Agronomic and Animal Sciences Research).
LOP	: Life of Project
MRD	: Ministry of Rural Development (Ministère du Développement Rural)
MOH	: Ministry of Health (Ministère de la Santé)
MSA	: Ministry of Social Affairs (Ministère des Affaires Sociales)
NASA/Ames	: U.S. National Aeronautics and Space Administration (Ames)
NES	: National Experimentation Service (Service National de l'Expérimentation)
NPV	: Net Present Value
NSS	: National Soil Service (Service National des Sols)
OFNACER	: Office National des Céréales (National Cereals Office)
ONBI	: Office National des Barrages et Irrigations (National Office of Dams and Irrigation)
ONPE	: Office National pour la Promotion de l'Emploi (National Office of Labor Promotion)
ORD	: Organisme Régional de Développement (Regional Development Organization)
OAG	: Office of Agriculture
PAPEM	: Point d'Appui de Prévulgarisation et de l'Expérimentation Multi-locales

PFP	: Partnership for Productivity
PI	: Principal Investigator
PID	: Project Identification Document
PMI	: Protection Maternelle et Infantile (Maternal and Child Health Care Centers)
POW	: Plan-of-Work
PP	: Project Paper
PVO	: Private Voluntary Organization
SAED	: Société Africaine d'Etudes et de Développement (Consulting Firm for African Development Studies)
SAFGRAD	: Semi-Arid Food Grain Research and Development
SCS	: Service de Conservation des Sols (Soil Conservation Service)
SOFITEX	: Société des Fibres Textiles (Fiber Textile Corporation)
SMP	: Supply Management/Procurement
SOVOLCOM	: Société Voltaïque de Commercialisation (Voltan Marketing Company)
SRA	: Service de la Recherche Agronomique
UMOA	: Union Monétaire Ouest-Africaine (West African Monetary Union)
UNDP	: United Nations Development Program
USAID	: United States Agency for International Development
USDA/SRS	: United States Department of Agriculture/Statistical Reporting Service
UVOCAM	: Union Voltaïque des Coopératives Agricoles Maraîchères (Voltan Agricultural and Truck Farmers Cooperatives Union).

PROJECT AUTHORIZATION

COUNTRY : Upper Volta

PROJECT : Agricultural Development Support

PROJECT NO. : 686-0255

1. Pursuant to Part 1, Chapter 1, Section 121 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Agricultural Development Support Project for the Republic of Upper Volta ("Cooperating Country") involving the planned life-of-project obligation of not to exceed thirty million dollars ($30,000,000) in grant funds prior to the end of FY 87, 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. I also hereby authorize non-competitive negotiation with Purdue University to implement the farming systems research activity of the Project.

2. The Project consists of the provision of technical assistance, training, commodities, the construction of office, laboratory and warehouse facilities, and the financing of a portion of the local operating costs of the Ministry of Rural Development ("MRD") for the purpose of reinforcing the capacity of the MRD to manage and promote a more efficient use of resources in the agricultural sector, as well as to plan, test and promote nutritionally sound practices. The long-term goal is to increase agricultural productivity and food production self-reliance by improving both human capital through training and management, planning and information flows, as well as by transferring production/conservation technologies and reducing the uncertainty regarding food commodity availabilities. It is anticipated that if funds become available, an agreement will be entered into between USAID and the Cooperating Country to provide PL 480 Title II Section 206 commodities to the Cooperating Country and that the proceeds from the sale thereof will be used exclusively for assisting the Cooperating Country in financing the local currency costs of the Project.

3. The Project Agreement, which will be negotiated and executed by the officer to whom such activity is 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 terms and conditions as AID may deem appropriate.

A. Source and Origin of Goods and Services

Goods and services financed by AID under the Project shall have their source and origin in the Cooperating Country, and in countries included in AID geographic Code 941, except as AID may otherwise agree in writing. Ocean shipping financed by AID under the Project shall, except as AID may otherwise agree in writing, be financed only on flag vessels of the Cooperating Country and countries included in AID geographic Code 941.

B. Conditions Precedent to Disbursement

.../...

(1) First Disbursement

Prior to any disbursement of funds under the Grant, or the issuance of any commitment documents with respect thereto, the Cooperating Country shall furnish to USAID, in form and substance satisfactory to USAID, the following:

(a) An opinion of counsel acceptable to AID that this Agreement has been duly authorized and/or ratified by, and executed on behalf of, the Cooperating Country, and that it constitutes a valid and legally binding obligation of the Cooperating Country in accordance with all of its terms.

(b) The name and specimen signature of the following:

(i) The Minister of Rural Development and the Secretary General of the Ministry of Rural Development;

(ii) The officials who will be assigned to act on behalf of each of the above named officials in their absence; and

(iii) The GOUV Project Managers of each of the Project's eleven activities.

(2) Additional Disbursements

(a) Prior to the disbursement of funds under the Grant, or the issuance of any commitment documents with respect thereto for any training in each activity outside Upper Volta, the Cooperating Country shall furnish to USAID, in form and substance satisfactory to USAID:

(i) evidence that the institution at which the training will be carried out will be accredited by the Ministry of Higher Education and Scientific Research; and

(ii) training plans and local currency budgets for each activity for that Project year. The plans should specify the objectives of the training, the institution providing the training, and as accurately as possible the names, qualifications and present positions of the candidates.

(b) Prior to the disbursement of funds under the Grant, or the issuance of any commitment documents with respect thereto for any building construction activity financed under this Grant (except disbursement of funds for the preparation of plans and specifications), the Cooperating Country shall furnish to USAID, in form and substance satisfactory to USAID, the following:

(i) evidence that suitable sites have been selected, that the land is owned by the Cooperating Country, and that such land has been provided to the Project;

(ii) detailed plans, specifications, and construction schedules with respect to such activities;

.../...

(iii) a description of the arrangements made to provide construction services for such activities; and

(iv) a description of the arrangements made to provide engineering supervisory services for such activities.

(c) Prior to the disbursement of funds under the Grant, or the issuance of any commitment documents with respect thereto, for procuring any word processing or computer equipment, the Cooperating Country shall furnish to USAID, in form and substance satisfactory to USAID, a plan or report to ensure that such equipment is compatible with similar equipment owned or used by the MRD and explaining how it will interface with the Government-wide computer systems if at all.

(d) Prior to the disbursement of funds under the Grant, or the issuance of any commitment documents with respect thereto for the procurement of any items of equipment and/or commodities financed by USAID under the Grant, and not as already specified in other conditions precedent to this Project Agreement, the Cooperating Country shall furnish in form and substance statisfactory to USAID, the following:

(i) detailed specifications for such equipment and/or commodities; and

(ii) if such equipment and/or commodities are to be procured from sources other than Upper Volta, an executed contract for the services of a procurement agent or other arrangement satisfactory to USAID for procuring such equipment and/or commodities.

(e) Prior to the disbursement of funds under the Grant, or the issuance of any commitment documents with respect thereto to establish and equip the food testing laboratory, the Cooperating Country shall furnish to USAID, in form and substance satisfactory to USAID, the following:

(i) an assessment of alternatives to such a laboratory based on needs, economic analysis and other donor activity; and

(ii) a detailed equipment list and recurrent cost analysis for operating the laboratory.

(f) Prior to the disbursement of funds under the Grant, or the issuance of any commitment documents with respect thereto for purchasing any food processing equipment, the Cooperating Country shall furnish to USAID, in form and substance satisfactory to USAID, an economic analysis, including a cost/benefit analysis therein, on the utilization of this equipment and the proposed terms on which it will be provided to women's cooperatives.

(g) Prior to the disbursement of funds under the Grant, or the issuance of any commitment documents with respect thereto for a national soils survey, a water resources assessment, a natural resources monitoring program, or any survey or study financed under this Grant, the Cooperating Country shall furnish to USAID, in form and substance satisfactory to USAID, a work plan and proposed methodology for such activity.

.../...

(h) Prior to any disbursement of local cost funds, under the Grant, or the issuance of any commitment documents with respect thereto, or the release of any such funds to the Project for the capitalization of a credit fund the Cooperating Country shall furnish USAID, in form and substance satisfactory to USAID, a financial plan assuring the continued capitalization of any credit fund established or financed by the Project. This plan will include a detailed analysis of costs and expected revenue which will determine the interest rate to be applied.

(i) Prior to the disbursement of funds under the Grant, or the issuance of any commitment of funds under the Grant, or the issuance of any commitment documents with respect thereto for warehouse equipment/commodities, the Cooperating Country will furnish USAID, in form and substance satisfactory to USAID, a financial and economic plan which will assure adequate revenues to cover the recurrent and replacement costs of such equipment/commodities.

C. Special Covenants

(1) The Cooperating Country will provide adequate office space for all expatriate technicians, short-term and long-term, assigned to and financed by the Project, unless otherwise stated in this Agreement.

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

(a) an evaluation of progress towards attainment of the objectives of the Project;

(b) identification and evaluation of problem areas of constraints which may inhibit such attainment; and

(c) evaluation, to the degree feasible, of the overall development impact of the Project.

(3) Two years prior to the end of the Project, the Cooperating Country will furnish USAID, in form and substance satisfactory to USAID, a written strategy to cover the recurrent costs of the Project.

(4) OFNACER will remain within the MRD and serve as a policy instrument to ensure remunerative prices to producers and adequate grain availabilities at the national and regional levels.

(5) The Cooperating Country will make available a significant number of qualified candidates for long-term academic training in the United States.

(6) The Cooperating Country through the MRD, will provide USAID, no later than May of each year during the Project, for its approval a proposed annual program of Farming Systems Research to be carried out by the National Experimentation and Applied Studies Services.

.../...

(7) All equipment, including vehicles procured under the Project, will be used exclusively for the Project Activities, and the use of all vehicles will be under the joint direction and supervision of the USAID and the Cooperating Country, the exact persons to be decided by agreement in writing of the Parties.

4. Waivers

The following waiver to AID procurement regulations is hereby approved:

A single source procurement waiver to permit the procurement of 86 vehicles from American Motors Corporation, Southfield, Michigan.

Date_____ _____

ACTION: Memorandum for the Administrator

FROM: Emerson J. Melaven, Director USAID/Upper Volta

SUBJECT: Upper Volta - Agricultural Development Support Project (686-0255) Single Source Procurement Waiver Request

Problem: Your approval is requested for a single source procurement waiver to purchase approximately 86 vehicles from American Motors Corporation (AMC) for the Agricultural Development Support (ADS) Project.

A. Cooperating Country:	Upper Volta
B. Authorizing Document	Project Paper
C. Project	Agricultural Development Support
D. Project Number	686-0255
E. Nature of Funding	Grant
F. Description of Goods	58 4-wheel drive vehicles, 28 passenger sedans
G. Approximate value:	$812,000
H. Probable Origin	United States
I. Probable Source	AMC, Southfield, Michigan
J. Value, Mission-issued waivers to date for the Project	- 0 -

Discussion: Under AID Handbook 15, Chapter 3 C 3 b (2) (e), the requirement for competition may be waived and negotiation with a single source may be authorized "in special cases". If the value of procurement exceeds $500,000, the authorization may be granted only by the Administrator. While no specific criteria on which to base such a waiver are given under non-project procurement, AID Handbook 1, Supp.B, Chapter (3 A1C (2)), non-competitive negotiated procurement is expressly permitted when a "special supplier-importer relationship (as described in Section 201.23 (e) of AID Regulation 1) exists". Such relationship exists when "the importer is purchasing for resale a registered brand-name commodity from a supplier who is the exclusive distributor of that commodity to the area of the importer". [AID Handbook 15, Appendix A (AID Regulation 1)].

In Upper Volta, Manutention Africaine, Ouagadougou (MA) is the only representative of a US manufacturer. AMC established a franchise with MA to stock and service AMC vehicles several years ago. As a result, MA has on hand approximately $70,000 worth of spare parts for AMC vehicles. MA does not attempt to cover all of Upper Volta. In areas not near Ouagadougou, parts and service must be arranged through other private firms willing to perform such tasks. However, USAID is endeavoring to assist in the establishment of a truly nationwide representative of a US vehicle manufacturer by purchasing all 86 project vehicles from the only US manufacturer phusically represented in Upper Volta. USAID believes that the opportunity should

.../...

be provided for assisting a viable local dealership of a US vehicle manufacturer with a future possibility of penetrating the private, commercial market. The 4-wheel drive vehicles will be used in the rural areas where often roads are non-existent. The sedans will be used primarily in the urban areas where all-weather roads exist for transporting government and Project personnel.

Moreover, since 1980, USAID has purchased approximately 80 AMC vehicles. The purchase of additional AMC vehicles would lend itself to a possible standardization of equipment, better availability of spare parts and better trained mechanics to perform the necessary repair services and maintenance for all the existing and future purchase of vehicles.

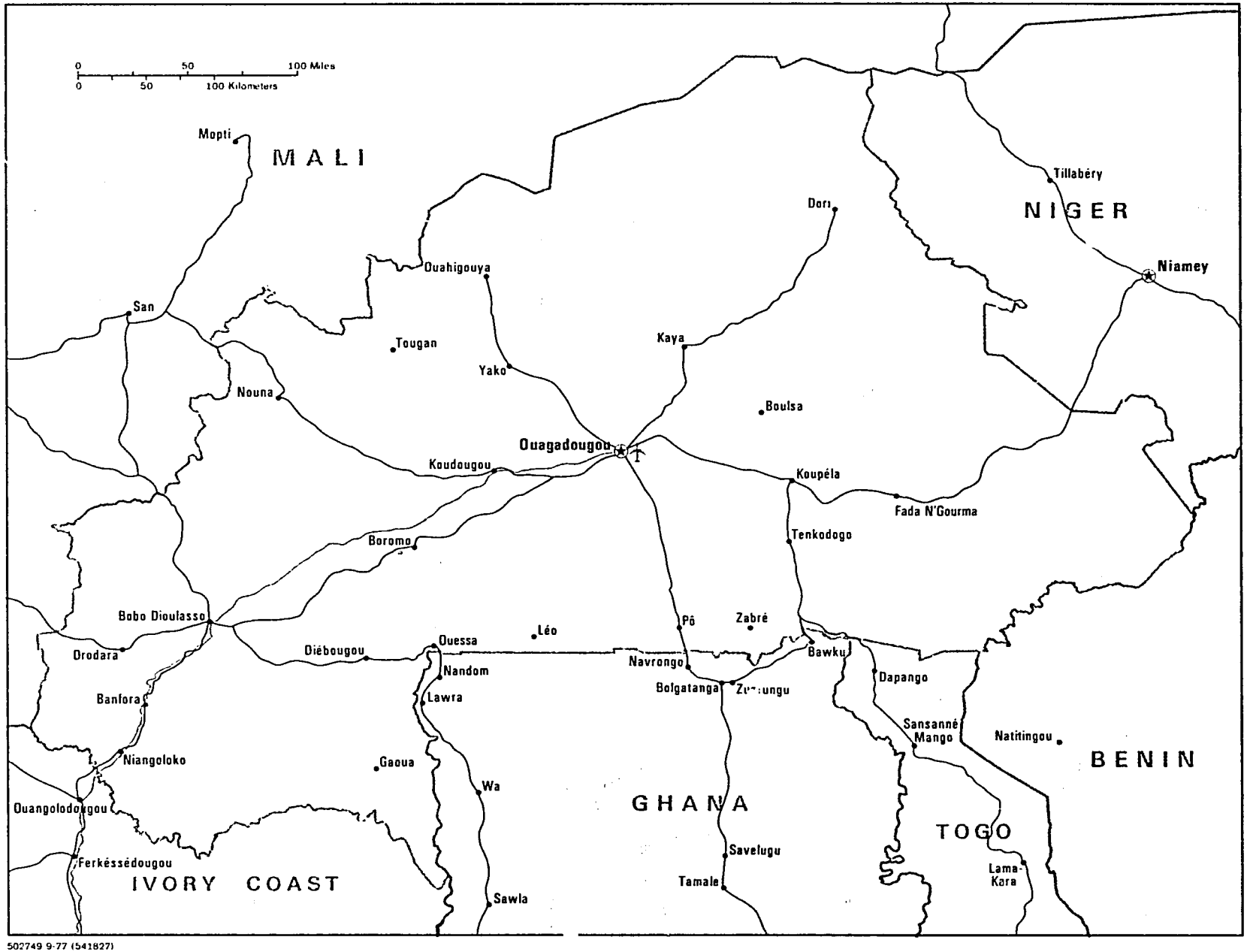
Summary Justification - AMC is the only US manufacturer of vehicles, who has an established a supplier-importer relationship in Upper Volta. This relationship would qualify for non-competitive procurement under AID Regulation 1 for non-project procurement. We believe that such relationship constitutes a "special case" under which negotiation with a single source may be authorized for the subject Project.

Recommendation: Based upon the above, that you sign below thereby authorizing procurement of 86 US manufactured vehicles from a single source, AMC, Southfield, Michigan.

Approved_____

Disapproved_____

Upper Volta



502749 9-77 (541827)
Lambert Conformal Projection
Standard parallels 8° and 32°
Scale 1:4,000,000
Boundary representation is not necessarily authoritative

Railroad
Road
Airport

I. PROJECT RATIONALE AND DESCRIPTION

A. GENERAL DESCRIPTION OF THE PROJECT

USAID/Upper Volta is proposing to fund a five-year project for the purpose of reinforcing the capacity of the Ministry of Rural Development (MRD) to manage and promote a more efficient use of resources in the agricultural sector. The goal of the Project is increased agricultural productivity, including both food and non-food production. The Project consists of four distinct, but interrelated, components which systematically address increased agricultural production through (a) improved management, planning and information flows; (b) the improvement in human capital through managerial and technical skills training; (c) the select transfer of production and conservation technologies; and (d) a decrease in the uncertainty regarding food commodity availabilities.

While each of these components alone is expected to have a positive impact on agricultural productivity, we believe the integration of the components into one overall project will permit greater returns to the investment ($30 million DA and approximately $10 million PL 480 Title II Section 206) over time in that such a project structure focuses systematically upon the linkages as well as the implementing agencies. We believe that this strategy, working in close collaboration with other donors and other ministries, will facilitate and expedite the evolution of the agricultural sector to a position of optimal returns and minimal risks given the physical setting.

Each component is described below in general terms, simply to enable the reader to understand what we are proposing and in order to set the stage for the discussion of the rationale for the investment. The components are described in detail in a later section.

1. Improved MRD Management of Available Resources

The first component of the Project is designed to improve the allocation of scarce resources (physical, human and capital) to permit increased levels of production. The process consists of support to the national level entities within the MRD which are charged with agricultural policies, planning and programming. These entities are attempting to maximize the impact of capital flows into the agricultural sector, and as such they are relying increasingly upon the private sector to assume a greater role in the construction of productive infrastructure, the marketing of inputs, the exporting of outputs, and the extension of appropriate technologies.

The necessary first step to the realization of improved MRD management of available resources is a significant upgrading of agricultural statistics. Currently, many statistics which are essential for planning and management purposes are unavailable, while others are available only after significant processing delays which diminish their usefulness. Most statistics currently available have been generated in a non-scientific fashion with unacceptable levels of accuracy. Consequently, the Project will support the USDA Statistical Reporting Service in introducing an area sampling frame to estimate crop and livestock production figures. It is expected that over time this frame will be employed generating other socio-economic data which, along with improved information on natural resources, land tenure, input and output

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markets, trade and consumption, will permit the MRD and the GOUV to better gather and assess basic statistics.

Recognizing that data are of little value if analysts and decision makers do not have access to information in a timely manner, the Project will strengthen the data and information processing and documentation systems within the MRD. Moreover, improved information is necessary for improved decision-making by all economic agents, especially the private sector. Therefore the Project will focus on the timely dissemination of relevant information to interested parties through extension agents, as well as the press, television and radio.

While improved information is necessary, it is not sufficient from the GOUV perspective. It is imperative that information be well analyzed in order to serve as a basis for policy and programs. Given informational limitations, the MRD has followed a relatively progressive posture with respect to the agricultural sector. Nonetheless, in a more modern and market-oriented agricultural sector, policy plays a more significant role. Therefore, the Project will support both training and studies within the central Ministry and other policy making entities in the MRD in order to support the MRD's policy planning and coordination functions and to ensure that available public resources are channeled to their most productive uses within the sector.

Finally, due to the lack of effective informational feedback systems there has historically been misallocation of resources. Currently many project monitoring and evaluation activities are being carried out in an uncoordinated fashion. The Project proposes to address this problem through support to the Department of Studies and Projects' Monitoring and Evaluation Unit by increasing the overall efficiency of the system and ensuring that lessons are learned and have an impact on reprogramming more quickly.

In summary, better statistics and data processing, more and better studies and analysis leading to improved policy, planning and programming, and finally a comprehensive and coordinated system of project monitoring and evaluation, will ensure that external resource flows will be combined with domestic resources in a more effective and efficient manner. Recognizing the long-term nature of this institution-building process, we are implicitly making a ten year commitment in terms of support to the MRD and the collaborating U.S. Title XII university.

While the linkage with production is indirect, we believe the availability of more and better information to the public and private sectors should encourage greater productivity through the better allocation of resources at both the micro and macro decision-making levels.

2. Improved Human Capital

Improved human capital is expected to have an impact on agricultural productivity through greater returns to household labor and the better management of household resources, as well as through the impact on the agricultural transformation and service sectors. In Upper Volta, as elsewhere, the agricultural production function is that of capital, land, labor and climatic conditions. Given declining soil fertility, population growth, and the migration of labor from the Mossi Plateau to the previously under-cultivated Southwest, the country can only depend upon an expansion of area under cultivation as a source of agricultural growth for a limited number of years. Consequently, the

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key to sustained long-term growth is increasing the returns to labor and capital, assuming favorable climatic conditions. Furthermore, experience has taught us that while increases in capital may lead increases in human resources for a short period of time, the human resource base must be expanded in order to ensure an efficient utilization of available capital.

As discussed above, an expected output of the investment in the central Ministry's statistical service is more and better information available to the private sector. Such information availability will not in and of itself lead to greater productivity unless it is introduced into the household's (production and consumption) decision-making process.

Assuming the availability of more and better information, it is expected the agricultural sector in Upper Volta will become more dynamic. Therefore an increase in human capital is necessary to maximize resource allocation under dynamic conditions.

This component of the Project will concentrate on strengthening human capital in those selected areas where we have a comparative advantage given other donors' current and planned activities. These areas of intervention will include: the strengthening of managerial and skills training of rural youth; strengthening the system of managerial training for adult cooperatives; and the introduction of a fund for the training of mid-level technical and managerial skills for representatives of both the public and private sectors.

First, with respect to the strengthening of managerial skills training of rural youth, there is no question that the future of Upper Volta rests with its youth. Historically, a major factor in the slow growth of agriculture has been the "brain drain" from the farm to the more lucrative and prestigious vocations in urban areas. The GOUV has recognized that such a trend has had a negative effect on rural productivity, and has developed a system of vocational training in agriculture which will be supported under this Project in those areas which are currently under-financed by other donors. It is believed this program will lay the groundwork for both short and long-term increases in productivity by introducing state of the science technologies and management techniques which can be employed by the youth as they begin farming and may have some impact on the families' household decisions.

Secondly, the Project will strengthen the managerial training for adult cooperatives. This activity recognizes the fact that increases in human capital are required in the near-term as well as over time. While the training of rural youth is expected to have some impact on the introduction of new technologies and practices, it is acknowledged that the traditional practices of their parents will be slow in being replaced. Therefore, this activity focuses upon the managerial training for those producers/consumers who have organized themselves into cooperatives. Such training, which will focus upon literacy, basic applied accounting, and marketing, is expected to permit a greater response to the improved informational flows of the first component. It is also expected this managerial training will complement the extension work financed by other donors and result in the indirect upgrading of both technical and managerial skills throughout the rural population.

Finally, the Project will introduce a fund for the training of mid-level technical and managerial skills to representatives of both the public and private sectors. Upper Volta, like many developing countries, finds itself

with a supply of low-level agricultural generalists, while the demand is for better trained agricultural specialists. This fund will permit the GOUV to begin to address this gap by providing training for mechanics, market agents of agricultural inputs, computer technicians, etc. who are expected to increase rural production through the provision of improved support services to the agricultural sector.

In summary, we believe the investment in human capital will permit the agricultural sector to better utilize available resources and increase its productivity. The decision to focus on rural youth, village coops, and the agricultural service sector reflects our efforts to support the GOUV strategy in areas where we have a comparative advantage at this time. It is expected that our efforts, coupled with a strengthened monitoring and evaluation unit within the central Ministry, should permit complementarities with other donor's effort which will multiply the returns to human capital investment by a factor that is greater than would otherwise have been possible.

3. Accelerated Transfers of Productive Technologies into the Agricultural Sector

Upper Volta has only recently begun to benefit from technological transfers. While an increase in information availability and human capital as described above is expected to increase the rate of productivity increases over time, the transfer of certain essential technologies is expected to accelerate this progress and permit a higher sustained rate given the complementarities with information flows and human capital. As is the case with human capital, we are limiting ourselves to those interventions which are most appropriate and in which we have a comparative advantage. The technological interventions under the Project will therefore be limited to the following: the introduction of the farming systems approach to research and extension; the development and extension of nutritionally sound food production and processing practices, and the development and extension of environmentally sound soil, water and land use practices.

A major constraint to the increase in agricultural productivity has been the lack of development of improved farming systems and the extension of available techniques to the farming population. In retrospect, it appears that research institutions and government officials have sought quick and easy solutions which did not satisfactorily address the complex and interrelated constraints faced by the producer. This search for easy solutions has emphasized "technical packages" and "high yielding varieties". While both areas offer some promise, it would be simplistic to believe the hope of significant productivity increases lies with the discovery of a new technological breakthrough. Rather, the prospects for increased productivity are in long-term changes consisting of incremental improvements in the farming system and in the agricultural resource base. While the long-awaited technological revolution has not been forthcoming, the current farming systems research under the regional SAFGRAD project has demonstrated the potential of sustainable productivity through the use of intercropping techniques, crop rotation, the shifting of crop mixes, etc. To date, these advances in productivity have not been fully disseminated to the rural population due to the lack of information from the international research institutes to the central Ministry to the ORDs.

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The Project will systematically institutionalize farming systems research within the MRD, facilitate the flow of information through the extension service and develop a functional relationship with IVRAZ (Ministry of Higher Education and Scientific Research) for more efficient and accurate assessments of research priorities, technological developments and the national research agenda. Given the locational specificity of farming systems research and the potential for immediate feedback at the grassroots level, we believe this is the most cost-effective approach to applied research and extension and will complement directly the FAO/World Bank extension efforts as well as those of donors financing regional development programs.

The second intervention of developing and extending nutritionally sound food production and processing practices is expected to contribute to agricultural production through both its impact on human capital and the possible shift of time allocation practices to more remunerative activities. The general nutritional levels in Upper Volta rank among the lowest in the world. While this is especially true of children, poor nutrition also reduces the potential output of adults pwr day of labor. Given the fact that fueing the agricultural season (particularly for the seasonal activities of planting and weeding) there is a labor constraint which effectively limits potential production, it is believed improved nutritional levels will have a direct and positive impact on increased production. Another dimension is the potential shift of time allocation from food processing to other more remunerative (including restorative leisure) activities. Field research indicates that women in Upper Volta allocate a significant part of their day to food processing activities. The introduction of grain mills and oil presses, for example, into the rural household's production function will shift the time constraint and may permit the allocation of the time saved to farm production activities. This in turn would be expected to increase agricultural production to off-farm employment, which would increase rural productivity and effective demand, or leisure time which is a necessary restorative investment in the household production as well as consumption good.

The final intervention under this component is to develop and extend environmentally sound soil, water, and land use practices. An extremely important factor of Voltan production is the land. Due to the pressures of population, the soils, which are of lateritic composition and lacking natural fertility, are becoming increasingly depleted. The result is that both the absolute and relative potential for crop and livestock productivity is diminishing over time. While the long-term goal of this component is to restore fertility and bring back into production areas which have been abandoned, the critical step is to arrest the negative trends, particularly on the Mossi Plateau, and maintain the physical resource base in order that there may be sustained increases in agricultural productivity. The United States is recognized as having a comparative advantage in terms of identifying and addressing erosive tendencies. Our proposed intervention with the soils and water service will directly complement other donors' activities and support regional development concerns.

In summary, these three limited technological transfers are in areas in which the U.S. has a comparative advantage over other donors. They are all areas which heretofore have not been addressed systematically and have resulted in a less than optimal utilization of public and private resources. As is the case with the other components of the Project, this component is expected to have a direct positive impact on increased agricultural production. While this impact is not insignificant, the impact of this component can only be fully appreciated when the multiplier effect of the linkages with the other components is considered.

4. Decreased Food Insecurity

A final factor which affects resource allocation decisions and therefore production at both the macro and micro level is insecurity. The introduction of the concept of risk or insecurity as an exogenous variable into either the producer's or the policy-maker's decision-making process will tend to shift resource allocation away from the economically optimal point for long-term growth in production towards a less optimal point that minimizes risk. While there are many uncertainties which enter the decision-making process, by far the most important in the Voltan setting is the availability of basic food commodities, i.e. coarse grains, rice, wheat, meat, and oils (the availability of fruits and vegetables, roots and tubers , may enter into production/ consumption decisionsof individual households, but are as yet not considered significant enough to enter the top level policy decision-making process). This component of the Project is designed to reduce the insecurity in order that the producer and the MRD can realize a higher value of production given the constraints of land, labor, and capital. In particular, the Project will: reduce cereal supply uncertainty at the local level, increase the efficiency of national level supply stabilization efforts, and reduce the uncertainty associated with the importation of preferred cereals and oils.

The efforts to reduce village-level insecurity will be directed through the establishment of a revolving fund to finance the establishment and expansion of privately owned and operated village cooperative cereal banks (village-level grain storage). The establishment of such institutions provides the first line of defence in catastrophic times, and if properly managed, offer the possibility of dividends and/or expansion into other agricultural services such as the supply of agricultural inputs to producers or the development of rural financial institutions. We argue that with the increased availability of coarse grains at the village level, uncertainty regarding the following year's supply will be reduced, and the farm household will be encouraged to shift surplus areas out of coarse grains to more remunerative activities, particularly fruits, vegetables, oil seeds, and livestock. Such a shift will serve to not only increase the supply of more nutritious commodities, but will increase the effective demand as well.

The decision to provide capital to the private sector for local level grain reserves is further expected to reinforce the capacity of the Ministry of Rural Development to promote a more efficient use of resources in the agricultural sector by encouraging a more cost effective approach to local level security and supporting the MRD's efforts to more narrowly define the role of the state in assuring national level food security. This approach is expected to permit the GOUV to allocate its scarce financial resources to activities and institutions which will have a more direct impact on agricultural productivity.

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The concept of village-level uncertainty will also be addressed through the continuing efforts to strengthen the National Cereals Office's (OFNACER) planning unit. The GOUV is currently attempting to follow a policy which will permit the Ministry of Interior and PVOs to purchase grain from OFNACER for emergency domestic distribution. While this is a noble notion, the program is currently rife with definitional and institutional problems. It is expected that over the life of the Project the MRD will be able to develop criteria with the PVOs and the Ministry of Interior to assure that the truly needy will have adequate supplies available without encouraging market distortions which would depress producer prices.

This component is also designed to increase the efficiency of OFNACER's supply stabilization program. During the last two years, OFNACER has demonstrated that it can be an effective means of eliciting a supply response in the surplus potential areas of the country by purchasing approximately 15% of marketed domestic coarse grains. This improvement in effectiveness is noteworthy, but we believe that a leaner OFNACER can be equally as effective while permitting a more optimal allocation of public resources. The Project will therefore continue to support OFNACER's recently created Planning Unit, which will work closely with the Department of Studies and Projects at the Ministerial level, to analyze production and market conditions and adopt the appropriate market intervention practices given the GOUV objectives and resources. It is expected that the effect of this program will be similar to that of local level cereal bank operations. That is, as domestic production responds to remunerative prices, policy-makers will be less insecure regarding coarse grain availabilities which will gradually permit policies encouraging coarse grain production to be superseded by policies encouraging production of higher value and more nutritious commodities.

The final intervention designed to decrease food insecurity is the integration of the PL 480 Title II Section 206 Program. The Section 206 Program is designed to reduce the GOUV uncertainty regarding the availabilities of imported preferred commodities (wheat and oil) for domestic consumption. When we analyzed recent trends in Voltan preferred commodity markets, we found a rapidly increasing demand for preferred commodities, which is believed to be associated with the rural to urban migration and increased real income levels. Insecurity arises from the lack of cash reserves available to purchase imported commodities and the fact that Upper Volta as a commercial importer of preferred commodities faces wide fluctuations in commodity prices. While world prices are currently depressed, the apparent success of the "Payment in Kind", or "PIK", program in the United States coupled with continued droughts in Africa and/or a major food shortage in the Soviet Union or elsewhere could very likely tighten world market conditions. If at the same time, Upper Volta were required to import 60,000 - 70,000 mt to satisfy domestic demand and had insufficient cash reserves to cover the expected costs, the increase in world prices associated with a tightening of the market conditions might result in the inability to import sufficient quantities to meet demand. Such a shortfall would be expected to have domestic political repercussions which would effectively allocate public resources away from rural development and agricultural productivity. Therefore, it is believed that the Section 206 Program will have a direct immediate impact in that it will help meet the incremental growth in demand for preferred commodities and will permit the GOUV to generate additional local currency resources to complement our Development Assistance funding. The program will also have the indirect effect of temporarily reducing uncertainties of balance of payments issues for preferred commodities which would be expected to increase the GOUV's own investment within the agricultural sector.

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In summary, risk and uncertainty effectively constrain the optimal allocation of available resources. This Component, through support to privately managed village-level cooperatives, OFNACER, and the importation of preferred commodities with the sales proceeds to be utilized by the Ministry of Rural Development, will progressively minimize the impact of risk in order that the producer, the MRD, and the GOUV can better allocate resources and increase rural productivity. The component will also encourage the more optimal allocation of public resources through its support to the private sector for village-level grain storage programs. It is expected that as the private sector develops local level grain reserve capabilities, the role of OFNACER and the State in terms of food insecurity will be reduced to the appropriate role of assuring national and regional availabilities of cereal commodities.

B. RATIONALE FOR THE INVESTMENT

A thorough analysis of the investment rationale for the Agricultural Development Support Project was prepared by USAID/Upper Volta staff and submitted to AID/W for review, in conformance with Paragraph 3 of the PID Approval Cable (Annex A). In this section of the PP we will highlight the major factors constituting the rationale for the investment, but we direct the reader to the analysis itself in Annex K. The Investment Rationale Paper also contains a section on the macro-economic situation of Upper Volta, including a discussion of the economic structures and performance, and the macro-economic policy setting. That section of the paper provides an overview of the economy and an appreciation of the relative importance of the agricultural sector.

As described in the discussion of the agricultural sector pp. 18-29 of the Investment Rationale paper, the slow growth in agriculture is largely due to a set of physical and technological constraints which are expensive to overcome and not to the inappropriate pricing and marketing policies or an inappropriate role for the central government. There are a few exceptions to this general principle, but the generalization is a robust one.

The economic incentives for agricultural production improved steadily over the past decade. Both market and official prices for good staples (sorghum, millet and maize) increase faster than either general inflation or the prices of agricultural inputs (fertilizers, improved varieties of seeds and insecticides). Subsidies on inputs grew larger and more credit was made available on easier terms. There has also been a steady increase in the level of foreign-financed investment directed at agriculture. The increasing attractiveness of agricultural activities relative to other activities and the free market for domestic output improved the incentives for the farmer to produce more.

Against this backdrop of improved economic opportunity, cereal production (and perhaps overall food production) expanded more slowly than population growth. In our analysis we attribute this phenomenon to a combination of the impact of food aid and commercially imported coarse grains, the substitution of perferred commodities (rice, wheat, vegetables, oil) and a shift to roots and tubers, as well as physical and technical constraints to increased cereal production.

The physical constraints everywhere are particularly severe except in the Southwest. These include inadequate and highly variable rainfall, the high cost of irrigation, poor soils, a high-density population and the high cost of modern technology. Low and variable levels of rainfall increase the difficulty of developing varieties as well as reducing yield potential of traditional varieties. Improved varieties are usually more sensitive to drought conditions, whereas traditional varieties do not respond as strongly to good growing conditions. Irrigation would allow better water control and the accompanying use of yield-increasing inputs, but there is relatively little irrigation potential in Upper Volta and it has proven to be very expensive compared to the value of output. Voltan soils have low natural fertility which is further reduced by leaching and erosion when they are cultivated. Fallow periods are not sufficiently long to restore soil fertility in the Central Plateau under traditional rotation systems and due to

the high rate of population growth, even with out-migration, these insufficient fallow periods are being further reduced.

The high cost of modern technology has also been a constraining factor. The World Bank analysis of financial and economic returns to the adoption of available technologies shows profitable returns to increasing output for most crops. However, it appears that raising the net financial and economic return per labor unit is dependent upon favorable natural conditions and proficient farming, i.e. good timing of operations, use of fertilizer, animal traction and manure. The I.B.R.D. analysis of financial and economic returns to adoption of new technologies demonstrates the scope for improvement of productivity is limited.

To sum up the technical constraints, it is apparent there are no "green revolutions" in sight for the farming conditions in Upper Volta. Rather USAID/Upper Volta sees increased productivity in agriculture as being generated by the increase in productivity per hectare. Such increases in productivity are expected to be brought about through improved conservation practices to improve soil fertility and retain moisture, increased intercropping, and the shift towards higher value crops, as well as continued research and development of improved technical packages. Such a strategy is consistent with the World Bank conclusion that we must work towards "long-term changes consisting of incremental improvements in the farming systems and in the agricultural resource base".*

The general economic constraints to development facing a landlocked agrarian economy, with the additional constraints of a poor physical resource base and emigration of labor to coastal countries which raises the cost of labor. These classic constraints are the higher cost of imported inputs and the lower value of exported outputs due to the overland transportation costs to the sea. Poor internal transportation networks also reduce the net value of output, particularly in the East. The openness of the economy and its small size mean Upper Volta is a price taker for imported and exported goods and has little scope for influencing the price structure. As an example of this, the high demand for meat in the Ivory Coast raises the cost of animal traction teams.

To recapitulate, Upper Volta has a low level of technology, faces severe physical resource constraints, has high factor costs due to the demand for its labor in the Ivory Coast and the cost of imported inputs, and faces low world commodity prices. Given these constraints, we conclude that Voltan agriculture has performed reasonably well. The country still meets almost all its internal demand for food, albeit at poor nutritional levels, in average years and it has successfully promoted the growth of cotton exports. Domestic markets are competitive and unconstrained and, with the exception of food aid sales, government intervention in these markets has encouraged greater production and has not displaced private trade. The GOUV needs to take a critical look at the input supply system and its handling of export crops, with a view towards privatizing these activities. However, the results of liberalization in these areas are not likely to be revolutionary if the I.B.R.D. analysis of returns to new technologies is accurate.

* I.B.R.D., Upper Volta Agricultural Issues Study, p.11

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1. Options for Improving Productivity in Agriculture

The decision to concentrate A.I.D. resources in supporting the streamlining and strengthening of the central Ministry of Rural Development's management and policy-making capacity and the delivery of essential agricultural services, was the result of consideration of reasonable alternatives and careful study of the reasoning and conclusions of two major studies of the Upper Voltan agricultural sector.* The alternatives are discussed in detail in the Investment Rationale paper, pages 38-46. In order to provide the reader of this PP with a comprehensive understanding of the rationale for investment in the third option, we will treat the three principal options in detail below. The three options are (a) direct investment in rural private enterprise and farming, (b) investment through the ORDs, and (c) investment in central management policy-making, research and essential services.

a. Direct Private Investment

Over the past few years, a number of donors have attempted to place investment funds in the hands of local entrepreneurs. The basic problem which seriously constrains this type of activity is the lack of rural financial intermediaries. The United States, through the Entente Fund, and the I.B.R.D. have made special lines of credit available for rural entreprises through the National Development Bank (BND). Very little of either line of credit was utilized. This inactivity prompted the U.S. to channel these lines of credit to other Development Banks in the Entente zone where loans were being made, such as the Ivory Coast. As a result of this experience, the I.B.R.D. is undertaking a study of the financial sector in order to find mechanisms for improving rural financial intermediation.

To these conspicuous failures we added our reservations about providing a credit on a subsidized basis. Given the small margin allowed the banks, including the National Agricultural Credit Bank (CNCA), and the high unit costs associated with making many small loans, an implicit subsidy would have been unavoidable in any public rural lending program. The subsidy is generally financed through the decapitalization of credit funds. Thus, unless we were willing to work through a financial system which itself is not structured along sound financial principles, we could not invest directly in rural private enterprises.

Even if we had decided to accept the undesirable implicit subsidy as an unavoidable cost of doing business in the CFA franc zone, we still face the weak, poorly articulated financial sector with its built-in incentive not to expand rural credit aggressively. In one of our most successful PVO projects, Partnership for Productivity (PFP) has aggressively sought out loan possibilities, given management advice to small businesses and has developed a good small loan portfolio. Yet, at the price it may charge for its services, i.e. the 15% interest charge plus user fees on its loans, it will be difficult to interest private entrepreneurs in taking over the business due to the high cost of loan supervision and recovery.

Clearly, the incentives for PFP employees to do a good job are not related to the financial return on the loan portfolio. Nor are there strong financial incentives for the CNCA to seek out rural loan possibilities and act

I.B.R.D., Upper Volta Agricultural Issues Study and D.A.I., Agricultural Sector Assessment of Upper Volta

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as investment bankers. Instead CNCA must rely on other incentives such as career advancement for state employees who perform well. These incentives are not negligible in their effect on performance, but the scope for expansion of credit relying on such incentives is limited in comparison to direct financial incentives.

Without a dynamic financial institution to work through and given the problems outlined above, we have concluded we are not in a position at this time to promote rural investment on a large scale. Rather, our policy is to continue to engage in an active dialogue with the GOUV and the donor community in order to promote the adoption of sound financial principles which will permit viable revolving credit funds. This process of policy dialogue will be accompanied by a small (less than $550,000) capitalization of a revolving credit fund which is to be managed by the Department of Rural Institutions and Credit for lending to village cooperatives for the development of local level cereal banks (component 4). A condition precedent to the release of funds to this credit fund will be that the DIRC determine an effective interest rate (i.e. through straight interest and/or interest plus service charges) which will prevent the fund from decapitalizing.

The Ministry of Rural Development fully appreciatesthat the lack of liquidity in rural areas is a major constraint to agricultural development. The GOUV has created a relatively new instrument to encourage rural savings and capital mobilization through the " Caisse Populaire" or Village-level Savings and Credit Union. While the support of such institutions is extremely attractive conceptually to USAID/Upper Volta, there are currently too many uncertainties regarding the legal status of these institutions for us to provide support to them under this Project. We will continue to discuss the prospects for village-level financial institutions with the GOUV, and should the legal and financial considerations permit, a project supporting this endeavor will be developed at a later date.

Another approach being pursued by the GOUV is strengthening the National Agricultural Credit Bank (CNCA) which has the major responsibility for managing credit to the rural private sector now and for the foreseeable future.

Given uncertainties regarding the ability to satisfactorily achieve basic policy reforms and the current intervention levels by other donors, we believe intervention at this time is not feasible. We will continue to play an active role in the policy discussions however, and should appropriate policy reforms be forthcoming, we will reconsider the provision of a line of credit as well as assist the GOUV to minimize lending costs through the improvement of recovery rates, computerization and the improvement of the selection criteria to constitute the best possible loan portfolio.

In summary, we have concluded that an increase in direct private investment levels is a necessary, but not sufficient, condition to assure increases in rural productivity. We have expressed our concerns in this area to the MRD an are currently engaged in policy dialogue with both the MRD and the donor com munity. While we remain optimistic that appropriate reforms and clarificatio which would permit a more active participation will be forthcoming, we acknowledge the fact that such dialogue will require a lengthy germination period and that in the short-term direct investment beyond support to the DIRC-Cereal Bank credit fund is neither feasible nor the best allocation of resources.

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b. Investment Through Regional Development Organizations

The ORDs are supposed to be financially autonomous, but as a group they are deeply in debt, their decision-making autonomy has been questioned by the Ministry and, except in the West and Southwest, they have not been particularly successful at extending new techniques and increasing productivity. To be fair, new techniques have just not been available for the low rainfall areas of the Center, North and East. Lacking cash crops and credible technical advice for farmers, even well-managed ORDs would have been hardpressed not to go into debt to their suppliers.

The ORD structure is charged with the essential responsibility of being an effective informational link between the central government research institutions and the farm households. Historically, the ORDs have had a broad mandate to implement multi-sectoral, integrated rural development projects. Such efforts involved several other Ministries which were often unable or unwilling to allocate sufficient resources. This has often resulted in a situation such that the ORDs are obliged to attempt to coordinate the programs of other Ministries with neither the resources nor the legal authority to do so. The ORDs' mandate has been narrowed recently to solely that of an agricultural focus.

However, a change of focus by itself will not permit the ORDs to become a truly effective extension service. The problems of the ORDs are exceedingly complex and include the lack of both systematic linkages to the central government services/research institution findings and the ability to effectively transmit available information to the rural population. The ORDs effectiveness has been further diminished by the tendency of donors to concentrate their development efforts within the confines of a geographic region. This tendency, compounded by the infrequent information sharing sessions among donors and the lack of central government monitoring and evaluation capabilities, has historically resulted in the situation where the GOUV and the donors have spent an unacceptably high level of funds reinventing various wheels, including more than a few with defective axles.

The general, albeit over-simplified, investment pattern within the ORD structure is that those donors who provide soft-loan financing (The World Bank, IFAD, and the French Caisse Centrale de Cooperation Economique) invest in those areas which have the greatest potential return to investment (the ORDs of Volta Noire, Hauts Bassins, Comoe, Central West and East), while those donors which provide grant financing (The Dutch, Italians, Germans and USAID) are currently concentrating their activities in the ORDs of the Center, Central East, Central North and Yatenga. We believe such a geographic distribution by funding type is an appropriate allocation of resources.

While it would be conceivable for us to assist in developing a relatively neglected ORD such as the Sahel, Yatenga or the Center, we believe that both the economic rate of return and USAID's comparative advantage are greater by strengthening the central Ministry. Our judgement is that investment in central services, policy planning and management will have an additional impact on investment in all the regions which could not be equalled by a comparable amount of region-specific investments. For the GOUV to maximize the return to available resources it must develop and strengthen the Ministry-level planning and management capabilities. Such an investment is expected

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to complement the investment of other donors in geographic regions by facilitating the flow of information in order for resources to be allocated more appropriately and effectively.

This is not to imply we will not be concerned with regional development activities, only that our activities will be channeled through the central Ministry. Due to the relatively greater financial resources available to the people of the Southwest, it is clear that in order to achieve national-level programs, relatively greater field-level attention must be given to those regions which have historically not benefitted to the same degree. Therefore, relatively greater attention will be given to the Mossi Plateau in the areas of conservation, farming systems research, literacy training, and local-level food security in order for these relatively neglected areas to benefit from comparable, albeit smaller, programs than other regions. This will facilitate the unification of programs into national level strategies and policies which are well planned and well managed.

In summary, we believe the ORD structure must be strengthened in order to assure an effective information flow between the central government/research institutions and the farm household. The principal constraints which diminish this information flow are the weak links between the ORD and the rural household. Given the FAO/World Bank efforts to strengthen the ORD/household link and the funding levels for those ORDs which have the greatest potential return to investment, we believe that while financing a currently under-supported ORD is a plausible option, based on our past experience it does not offer the greatest return to investment at this time. Finally, it must be acknowledged such a strategy does not preclude field-level activities in relatively under-supported areas which must indeed be strengthened in order to permit the development of national level planning and management.

c. Investment in Central Services, Policy Planning and Management

The third investment alternative considered is reinforcement of selected central services and overall capacity to manage projects in the agricultural sector. This approach would be carried out through the central Ministry of Rural Development, which is responsible for providing technical support for the ORDs and policy guidance. The departments ("Directions") which provide supporting services or participate in extension are the Department of Agricultural Services (DSA), the Department of Livestock Services, the Department of Rural Institutions and Credit (DIRC) and the Department of Young Farmer Training Services (DSFJA). There are two other departments, the Department of Hydraulics and Rural Equipment (HER) primarily concerned with well-drilling, and the Department of Studies and Projects (DEP) concerned with the coordination of data collection, policy analysis and project evaluation. The Ministry also has a department for financial management oversight of projects and parastatal operations ("Direction du Controle de Gestion des Organismes et Projets") (DCG), which exercises management oversight responsibilities through the office of the Secretary General for the ORDs, AVV, OFNACER, the Rural Development Fund (FDR), FAAC, and the Development Fund.

Although the Ministry is responsible for providing policy guidance and formulating policy proposals, the Department of Studies and Projects (DEP) is one of the newest and weakest departments in the Ministry. Its budget is less than one percent of the Ministry budget. Equally small and ineffective is the DCG with even fewer staff and resources than the DEP. Thus financial monitoring

of projects is almost entirely the de facto responsibility of the financing agencies. The Department of Administrative and Financial Affairs (DAAF) does, however, administer the Ministry's operating budget which is set forth by department in the table below.

Table 1

Ministry of Rural Development

1983 operating budget

(millions of CFAF)

Department	Personnel	Material*	Total	%
Minister's Cabinet	44.5	3.0	47.5	1.7
Secretary of State's Cabinet	8.7	3.0	11.7	0.4
Secretary General	468.8	3.0	471.8	16.3
Technical Inspection	11.2	2.0	13.2	0.5
D.E.P.	20.5	2.6	23.1	0.8
D.C.G.	16.6	2.5	19.1	0.7
D.I.R.C.	39.2	1.9	41.1	1.4
D.S.A.	353.1	12.5	365.6	12.6
H.E.R.	176.5	15.0	191.5	6.6
D.S.F.J.A.	1040.0	15.3	1055.3	36.5
Livestock Service	504.5	20.0	524.5	18.1
D.A.A.F.	56.9	2.0	58.9	2.0
General Operating costs	18.1	50.6	68.7	2.4
TOTALS	2758.8	133.4	2892.2	100.0

*The Ministry also receives a share of the "Common Expenditures" of the GOUV which covers rental, telephone, telex, utilities and some transportation. The total common expenditures for the GOUV are 4.7 billion CFA. The Ministry's share greatly increases its material budget but probably does not alter the relative importance of different departments.

The most important departments by budget allocations are Young Farmers' Training, the Livestock Service, the Secretary General's Office and Rural Hydraulics and Equipment. The majority of extension agents are paid through Young Farmers' Training. This is an administrative arrangement which makes DSFJA appear more important than it really is. The Livestock Service is an important service occupied with animal health care delivery. The Secretary General's Office manages the contributions to the eleven ORD budgets, the AVV and several other projects. DSA and HER provide specific services in the field. DIRC is far smaller than these other departments, but is responsible for training and recycling of community development agents as well as

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training of village groups and developmental credit activities.

It is within and through these central departments that the third investment alternative would be implemented. The principal constraints to agricultural development were identified in both the D.A.I. and I.B.R.D. studies as the absence of appropriate technological packages for semi-arid rainfed farming, a weak extension service, poor and degrading soils, competitive domestic markets which might function even more efficiently with better infrastructure and communications, inadequate technical support, financial control and coordination of regional development activities in extension, research and programming of investments, and inadequate resources devoted to operational expenditures on administration, research and extension. Given the complex and interrelated constraints, a central investment priority is the continued research and development of incremental improvements of current farming systems.

As improvements to the existing farming systems are developed, there is a need for a good extension service which makes good use of all the communication methods available to it. In an illiterate society this is principally face-to-face oral communication. This is a second area of investment which must be carried out through national technical back-stopping or support to ORD-specific programs.

The poor, degrading soil structure is of primary concern in lower rainfall areas, but migration to the Southwest is advancing the time this will become a major concern in that favored region as well. The National Soil Service has begun some modest efforts in the Northern region and within the O.R.V. zone. Combined with poor water management and deforestation, the problem of maintaining capacity on the Mossi Plateau is increasingly difficult. Soil and water management is consequently a priority area for improvement in the delivery of services to assist in the design of water retention and anti-erosion structures and to assure follow-up to correct any deficiencies.

The inadequacy of infrastructure and communications is often cited as a constraint to all development activities. Its influence on transportation costs and information flow also affects the integration of markets which signal effective demand and supply through price differences. The high cost of transportation may limit spatial integration of markets and poor information availability can also prevent markets from adjusting. Beyond markets, poor roads and communications may isolate producers and inhibit the development of markets, as is clearly the case in the Eastern region. Investments in roads and communication networks are clearly necessary for long-term development of national agricultural markets.

The inadequacy of technical support, financial control and coordination through the Ministry of Rural Developmentare identified by both the World Bank and D.A.I. as major constraints to productive investment in agriculture. The Ministry has not and is not now providing guidance to the ORDs with regard to development planning and budgeting, nor is it coordinating donor activities among the ORDs. In short, the Ministry should be setting national priorities for the different ecological zones and planning resource use to achieve objectives in each zone.

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Our own experience in the Eastern region is instructive in this regard. We observed several successful campaigns to promote new crops for the region -- rice and soybeans. Farmers produced large quantities on the basis of promises of government marketing interventions when the crops came in. In neither case did this materialize and local markets could only absorb a small part of the increased output. With clear national policies and planning the Eastern ORD would not have been encouraged to embark on such adventures and farmers would not have produced unmarketable crops. The lack of technical backstopping was similarly apparent in all types of activities from the management of water impoundment to the absence of soil analysis and different advice on fertilizer use. This compromised the potential value of numerous investments including the return on inputs which farmers purchased on credit from the ORD. These types of problems which we encountered in implementing projects caused us to consider remedying the central support problems before engaging in new regional projects.

The Ministry should also be providing technical guidance to the ORDs and supporting training of extension services. Better planning would indicate where the Ministry's resources should be concentrated to achieve the best results, not only by region but also by crop or other farming activity. The most important role which the Ministry has neglected is policy review, analysis and reform. While the policy framework is not as anti-economic as it is elsewhere in Africa, it is expected that as more and better information is analyzed, the MRD will be better able to direct its policies in a truly positive fashion and defend existing good policies against the policy proposals of other interest groups.

Another area of concern is the financial monitoring of project funds which has historically been weak. While this weakness has attracted the attention of the donors, particularly USAID, it has also become an important management issue for the GOUV, which is attempting to maximize the return to available financial resources. Improvement of financial management skills among GOUV project managers would improve the use of project funds and give projects a better chance to stay on schedule, avoid funding interruptions and thereby meet their objectives.

The final general constraint which is related to the need for better policy, is the shortage of operating expenditures for administration, research and extension. This is related to policy because the GOUV must decide what role to play in agriculture and what activities to reallocate to the private sector. As an example, involvement of the DSA and the ORDs in the input marketing area could be greatly reduced, thus freeing up resources for other activities. Similarly, subsidies on inputs could be reduced, also freeing up resources for more productive uses. However, the general problem is beyond the means of Upper Volta alone to resolve, even with much improved policies and management.

In particular, with respect to operational expenditures for research, the operating funds constitute part of the investment in the country's future production capacity. A similar argument can be made for the cost of extending new techniques. This recurrent expenditure is really part of the investment being made in agriculture. This is also true of administrative costs of development. An investment in recurrent operating costs would be made with the clear intention of getting out of the business once the productive potential is realized, as with any other investment. The GOUV should be in a

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position to capture a portion of the increasing rural revenues and eventually to fully support, along with the beneficiaries, the maintenance of any structures necessary to continuing production at the new, higher level.

Investment at the central level is considered a means to improving the policy framework and the technical support and policy guidance at the regional or project level. It is part of the recognition that in the Voltan context, the problems of agricultural development are not amenable to quick technological or even policy fixes so that resources must be allocated to achieve steady, long-term progress in agriculture. It is the absence of a clear capacity to make the resource allocation decisions that strengthening central services, policy planning and management is designed to remedy.

2. Selection of the Option to Strengthen the Ministry of Rural Development

The preceding section set forth three options for investment in agriculture: (a) direct investment in farming and rural enterprise through rural financial intermediaries, (b) agricultural or rural development projects implemented through the ORDs and (c) strengthening of central services and management through the Ministry of Rural Development.

Section B.1.a. above described the limited activity of rural financial intermediaries and the difficulty of institutionalizing rural credit programs given the current restrictions on interest rates and margins. The problem of decapitalization of credit funds could be resolved technically if the GOUV agreed to replenish these funds, i.e. subsidize its rural credit program. However, this would not resolve the problem of allocating credit to its most productive uses which would remain an administrative exercise. Nor would it restore institutional incentives to expand the lending program, institute rural savings programs or act more as an investment banker in following up problems with its clients. While we believe there is the potential for rural financial intermediation in the years to come, the current Voltan policy and the intervention levels of the French and European Economic Community significantly constrain the potential impact of USAID/Upper Volta at this time. We will continue to monitor rural financial developments with the perspective of a possible intervention through either the public (CNCA) or private (Credit and Savings Union) sectors should the political and financial situation offer sufficient possibilities.

Section B.1.b. above discussed regional-specific project activities and the ORD structure. Our assessment is that the ORDs' relative ineffectiveness is the result of weak linkages between both the central government research institutions and the ORD as well as the weak linkages between the ORD and the rural household. Given the FAO/World Bank efforts to revitalize the ORD structure and improve the linkages to the rural household, we believe that the most serious constraint for USAID/Upper Volta to address at this time is the linkage/support services between the central government research institutions and the ORDs. The reinforcement of these linkages is critical in order for the ORD agents to have access to and to transmit incremental improvements in the technical package (e.g. conservation practices, intercropping, shift of cropping mixtures, improved inputs, etc..).

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It is also believed that those donors who provide loan financing have nearly saturated those ORDs which have the highest potential return to investment. In particular with respect to the Southwest, the DAI assessment concluded "donor financing for the South (meaning the Southwest) will not be a constraint. Thus the allocation of AID resources to this area would not have as large a net impact on Voltaic development as if they were spent in other ways".*

While there are other ORDs in the geographic region of the Mossi Plateau which are under-financed, we believe the multiplier effect associated with support to the central Ministry will yield a greater return to investment than direct investment to the ORD structure in the lower return areas of the Mossi Plateau.

The third alternative, strengthening central services, policy planning and management, is the one which our experience and analysis pointed to as critical to Voltan agriculture. It is also fraught with the risks of encouraging unproductive expansion of government and it is the least directly linked to production increases. Given all the other activities underway in the sector, it is nonetheless the most attractive investment opportunity in agriculture. On this point the DAI assessment states: "evaluations of ORD programs and projects have consistently found that the support provided by national institutions is inadequate. The effectiveness of these institutions constitutes a serious bottleneck to increased production; conversely, investments that made them more effective could be expected to have a beneficial impact on ORD programs throughout the country".**

Along the same lines the World Bank Agricultural Issues Study states: "The most fundamental reforms which are recommended in the sector, however, involve strengthening institutions and planning capabilities at the center of government where technical and managerial skills are insufficient to provide the needed direction to the regional organizations. Therefore, a strong case can be made for donors to adopt a more programmatic approach to lending as well, which would provide a coherent framework for reforms with national, not just regional, applicability in the areas of price policy, reorientation of research and extension, marketing, and financial management. By strengthening the Ministry of Rural Development's capabilities of coordination and technical oversight, such lending would provide both the leverage and the administrative means necessary to link research and extension and to effect sector-wide policy changes which cannot be implemented through project loans alone".***

To implement these recommendations the World Bank and USAID have been negotiating the type of support to selected central departments and services which would remedy the absence of policy guidance, the lack of technical direction and coordination of activities for the ORDs. This Project, and presumably the proposed World Bank agricultural sector activities, attempt to minimize expansion of necessary services, provide support for operating expenditures to render existing personnel more effective and define a more appropriate role for government in order to concentrate on its priority tasks of policy making, direction of national research and extension programs, and financial oversight of public investment.

* D.A.I. Agricultural Sector Assistance Strategy for Upper Volta, March 82, P. 197.

* * Ibid, p. 196

*** I.B.R.D., Upper Volta Agricultural Issues Study, October 1982, p. 20

C. RELATIONSHIP OF THE PROJECT TO OUR CDSS

As the analysis in our CDSS makes clear, the level of development in Upper Volta is very low and the constraints to development are not easily removed. The past few years' experience implementing projects throughout Upper Volta, confronting the various manifestations of human resources policy, institutional and technological constraints, has improved our understanding of the most appropriate ways to attack these constraints. Between the analysis in our CDSS and the analysis in the Investment Rationale paper we believe we have clearly identified both the fundamental problems in key economic sectors and our comparative advantage in solving these problems.

In our CDSS we said our highest priority objective is nutritional self-reliance within a context of economic comparative advantage. The rationale for the adoption of this objective as our highest priority is the lamentable, unparalleled nutritional status of the Voltan population even when compared with other African populations. Anthropometric surveys identify 30-40% of pre-school children as stunted, an indication of chronic malnutrition. The same surveys found acute malnutrition in 3-22% of pre-school children. The evaluation of the Upper Volta PL 480 Title II program in January 1981 found "about half the children 0-6 years old in Upper Volta must be considered to be malnourished".*

The objective of nutritional self-reliance is also consistent with Upper Volta's first objective of national food self-sufficiency, which the GOUV is attempting to define more precisely through development of a National Food Plan. Our program is made up of activities which will contribute directly and indirectly to the attainment of the principal objective.

The top priority area is agriculture. Our basic purpose is to increase productivity through the development of improved and higher value farming systems. Such systems have been neglected in comparison to traditional cash crops. Work in regional research projects is just beginning to develop new varieties and improved farming techniques for semi-arid rainfed agriculture. Our projects will continue efforts to improve the quality and availability of agricultural inputs. A large training program for vocational skills useful to the private sector in agriculture is our primary emphasis in agricultural human resources development.

We will continue to build the national capacity to carry out agricultural research with emphasis on farming systems research. There will be a major effort to improve the nutritional data base and build nutritional criteria into agricultural policy decisions. Lastly, the central emphasis of our agricultural strategy will be the strengthening of analytical capability, management and policy-making functions in the Ministry of Rural Development. Good central management, policy analysis and policy decision-making are critical to providing the environment in which the value of agricultural output can grow more rapidly.

The second priority area is natural resource management which we see primarily as a means of maintaining and eventually improving the soils, water and vegetation in order to preserve the productive resource base for agriculture. The strategy in this area consists of two major elements. The first is soil and water management through the National Soil Service to combat erosion and

* AID/FFP, Upper Volta Food for Peace/Title II Evaluation, September 1981, p. 9

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reduce vulnerability to rainfall variation. The second, which will be addressed in a separate project, is forest management through the Ministry of Transport, Environment and Tourism to assist in developing forest management plans and educating forestry agents. One objective of our assistance is to strengthen the coordination of conservation activities through the interministerial commission and help them develop a comprehensive national environmental policy.

As discussed in the Investment Rationale paper, we do not foresee any major or dramatic increases in agricultural productivity over the short-term. Given the existing physical, capital, and human resource base, the development strategy must be long-term, permitting gradual increases in capital with the increase in absorptive capacity, incremental increases in the quality of human resources, and efforts to minimize the degradation of the physical resource base. To achieve long-term increases in productivity, there is a need for stronger institutions to better understand the basic constraints and develop appropriate policies for the sector, to guide the national research program and to strengthen its linkages with extension and to improve the management of public resources through improved planning of investment allocation and coordination of donor and GOUV-financed activities.

The Project goal of increased agricultural productivity is linked to the wider Mission goal of nutritional self-reliance as described below. As discussed in our CDSS, the current Mission-level goal of nutritional self-reliance is significantly different from the previous goal of food self-sufficiency in two important ways.

First, by considering nutrition rather than food as the objective, we have substantially upgraded the qualitative dimension of our goal. In the past, food has too often been viewed simply as cereals, and most generally as the coarse grains of sorghum and millet. We are now concerned with a much wider commodity mix to ensure adequate availabilities of not only carbohydrates but also proteins, fats, and vitamins.

Secondly, by the term self-reliance we have explicitly recognized the important role of trade and buffer stocks. The term self-reliance is synonymous with the original meaning in the literature of the term self-suffiency. Unfortunately, the term self-sufficiency has been more narrowly interpreted in many quarters as the domestic production in a given year equal to domestic consumption. Such a concept simply does not represent the dynamic quality of reality, and if strictly adhered to may be expected to result in the misallocation of resources such as protectionist import-substitution schemes in settings where there is no comparative advantage to domestic production.

The goal of this Project is increased agricultural productivity. Achievement of this goal will contribute to the wider Mission goal in two ways. First, to the extent that food crop and livestock productivity are increased, a greater supply of food is potentially available domestically. Secondly, to the extent there is growth in commercial agriculture (including marketed food crops and livestock as well as non-food commodities), producers will have greater disposable incomes to increase the demand for nutritious foods which may be satisfied by either domestic or imported commodities produced either during the consumption year or in previous periods. The project goal itself embodies concepts which are discussed below.

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The goal of increased agricultural productivity includes both food and non-food production. Therefore, support to cotton and other cash crops as well as food crops is not inconsistent with the Project goal. The goal also recognizes the importance of trade and comparative advantage but does not ignore the economic arguments for balanced growth. Therefore, simple import-substitution schemes in rice with implications for massive investments in infrastructure will not be considered. Rather, investments will be supported where clear advantage exists. However, we also recognize that a greater proportion of external resource flows are already going to regions of greater advantage (i.e. the Southwest with its better soils and rainfall) and we will pursue a policy of more balanced growth by focusing on increasing productivity in the relatively less well endowed area of the Mossi Plateau, where approximately one half the population lives. Lastly, the goal will be achieved largely by changes in technology which in turn will trigger substantial changes in cropping and production systems to provide a value mix. In other words, we are not expecting four to five percent sustained growth rates in coarse grains. We are however, anticipating that technology gains in the production of coarse grains will free up scarce land, labor and capital for the production of more remunerative crops.

This Project is designed to impact on the goal in a positive manner through the reinforcement of the capacity of the Ministry of Rural Development to manage and promote a more efficient use of resources in the agricultural sector. This purpose will be realized through attainment of the sub-purposes (components one through four) which are to:

(1) improve the management of aggregate resources and investment flows; (2) improve the quality of human capital; (3) accelerate the transfer of sound technology; and (4) decrease production uncertainty largely through reductions in food insecurity.

D. THE RELATIONSHIP OF THE PROJECT TO GOUV OBJECTIVES IN THE AGRICULTURAL SECTOR

Upper Volta is a predominantly rural country where agricultural production currently accounts for about 40% of all economic activity, down from a 60% level which prevailed in the early 'sixties. The relative decrease in seeming importance of the agricultural sector over the last 20 years results from a major increase in import-substituting industries and the service sector, coupled with a relatively stagnant agricultural sector. Cotton, sugar and shea-nuts (a tree crop) are exceptions to the general stagnation in agriculture. Indeed, available evidence suggests the current per capita consumption of foodstuffs remains roughly equivalent to the level of 20 years ago, and only recently have cattle exports begun to rebound from the late 'sixties pre-drought levels. With the expansion in the service sector slowing, and no real advantage in manufacturing, a revitalization of the agricultural sector is the key to Upper Volta's near term growth and development.

The GOUV accords the agricultural sector highest priority in its development planning and considers growth in agricultural production and markets as critical to attaining food self-sufficiency and higher standards of living for the majority of Voltans. This position is widely shared by the external donor community as evidenced by the fact the agricultural/rural sector receives the most resources. The investments have been primarily of two types: investments to mobilize resources of labor and capital to the relatively more productive natural resource areas of the Southwest and investments in research aimed at increasing the level of technology. Investments aimed at changing the regional crop mix and relying on increased interregional trade have only been followed partially, although it appears such an investment pattern should be increased in years to come in order to offset the tendency of increasing regional income inequities.

Ever since the traumatic dought years of 1972/73 and 1973/74, the GOUV has been strongly committed to attaining both food self-sufficiency and food security. Increasingly , however, the GOUV as come to depend upon external financing for investment and has allocated its own resources to personnel and operating expenses with very little remaining for development projects. This is not a surprising use of resources in a situation where foreign aid is consistently larger than the national budget. While GOUV budget allocations do not conclusively demonstrate the priority attached to food self-sufficiency, the regular increases in official food grain prices at a rate greater than general inflation demonstrate the concern with encouraging domestic grain production as well as that of other crops.

Table 2

Official Producer Prices in CFAF/KG for Selected Crops

Campaign Year	Consumer Price Index	White Sorghum*	Paddy	Cotton(1st Quality)	Groundnuts (shelled)	Sesame	Shea-nuts
1971/72	107.7	12	19	32	25.75	26.75	7.0
1975/76	144.6	23	35	40	38.00	39.00	20.7
1979/80	204.1	40	63	55	54.29	90.00	24.5
1980/81	229.0	45	68	55	81.93	75.00	27.0
1981/82	246.3	50	68	62	130.718	83.75	43.0
1982/83	-	58*	68	-	138.150	89.00	46.0
Annual Rate of Increase % 71/82	8.3	13.8	11.6	6.6	15.3	10.9	17.1

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* In 1982/83 official prices differentiate between millet (60 FCFA/KG), white sorghum (58 FCFA/KG), corn (55 FCFA/KG), and red sorghum (50 FCFA/KG), reflecting OFNACER's choice of grains to constitute food security stocks.

The official prices for white sorghum, millet, and corn are floor prices for about 10-15% of marketed output, thus putting upward pressure on grain market prices in general in recent years. The official prices for groundnuts are for exports only. They have been largely irrelevant to producers in recent years because world market prices are lower than domestic prices and almost all groundnut production is now marketed domestically at free market prices. Upper Volta's growth in cotton output has recently reversed itself slightly, partly in response to the decreasingly attractive producer price relative to food crops. Upper Volta farmers have also benefitted from strong demand for sheanuts. Therefore, official policy over the past decade has been to encourage food crop production through market incentives.

As a former French colony, Upper Volta has historically had a very centralized structure which in many ways has limited the effectiveness of its rural and agricultural development efforts. Due in part to the recognition of the limits of this political structure and in part due to the lack of governmental financial resources, the GOUV has been attempting to become progressively more decentralized and shift as much of the development burden to the local level as possible.

These themes of decentralization and community participation have been expressed in one form or another by every government since the Third Republic (1978/80). The Third Republic began the revitalization of the "collectivites Rurales", efforts which have been continued by the CMRP (1980-83) and the CSP. The GOUV recognizes that the strength of Upper Volta rests with its people and that for development to be meaningful it must reflect the desires of the population, particularly in the rural areas.

The development process implies transition from traditional to more modern means of both production and input and output marketing. The GOUV strategy is therefore to rely as much as possible on traditional village structures with the State taking on the role of educator and initiator of more modern structures. It is our assessment that this approach is sound and is the most efficient and effective means of encouraging rural development. Traditional village structure in Upper Volta is generally strong and cooperative in nature. Villagers work together in order to assure the survival of the family and village. The major difference between tradition and the GOUV approach is that traditionally the village has attempted to achieve self-sufficiency, while the GOUV is encouraging monetization, increased specialization and trade, as it is only through such shifts in economic behavior that the village can accumulate the financial means to provide the basic goods and services (better diet, health, and education).

The GOUV is also attempting to decentralize its decision-making processes and increase the authority and responsibility of its technical offices. A universal conflict exists between politicians and technicians. Such a conflict cannot be avoided, but the GOUV is attempting to minimize the negative impact by strengthning the technical offices' analytical capabilities in order for policy-makers to have better information and a clearer understanding of the implications of policies. Due to the low prices of the early 1970s, the GOUV easily made appropriate policy choices by increasing official producer prices without much

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consultation with the technical offices. In the future, however, as the economy becomes more monetized, policy choices are expected to be more difficult and the consequences more significant. Consequently, we strongly support the GOUV's efforts to decentralize and strengthen the technical offices.

The ADS Project is designed to encourage and support these trends of decentralization and community participation in the development process. Community participation will be directly supported by the training and cereal bank activities. These activities will strengthen the Government's capacity to provide training and credit to individuals and village cooperatives in order that they may play a more dynamic role in the development process, while simultaneously reducing the role required of the central Government.

Through its activities with the central Ministry's planning and management entities (component 1), the National Soil Service, National Experimentation Service and the Food and Food Technology Service (Component 3) and OFNACER (Component 4) the ADS Project will strengthen the Ministry's analytical capabilites in order that the policy choices are more conducive to rural development.

E. DETAILED PROJECT DESCRIPTION

As noted in Section A, the General Description of the Project, the Agricultural Development Support Project is designed for the purpose of reinforcing the capacity of the Ministry of Rural Development to manage and promote a more efficient use of resources in the agricultural sector. In order to accomplish this purpose the Project has four distinct but interrelated, sub-purposes which are (1) improve the management of agricultural sector resources and investments, (2) expand the managerial and technical skills base in the agricultural sector, (3) accelerate the process of transferring productive technologies into the agricultural sector, and (4) decreased cereal insecurity at the national, regional and village levels in Upper Volta.

The linkages between each of these sub-purposes and the purpose, the purpose and the Project goal, and the Project goal with the overall Mission-level goal have been addressed in Sections A and B of Part I as well as the Investment Rationale paper (Annex K).

There are four components to this project, each responding to one of the aforementioned sub-purposes. In this section of the PP we discuss the detailed project description of the eleven activities within the four components.

1. Component One

Component One consist of three activities, each of which contributes to attainment of the sub-purpose of improved GOUV management of available resources. The activities are (a) planning, programming and policy analysis/ evaluation and monitoring, (b) improved agricultural statistics, and (c) administrative support.

A. Planning, Programming and Policy Analysis/Evaluation and Monitoring

In Upper Volta, planning and programming at the national level are the responsibility of the Ministry of Plan.The Ministry of Rural Development traditionnally assists in national planning by providing sector-level information on agriculture. No national-level agricultural sector planning has been done in Upper Volta to date and the national planning process has been historically weak.

Some of the planning and programming of the agricultural sector which has taken place, has been decentralized at the national and sub-regional level or along functional lines, such as in factor marketing. Such efforts in aggregate planning have also been weak. By far, the most prevalent type of planning and programming has been at the project level. The performance here has been mixed, with some projects well planned, programmed and executed and others less so. The variation can be attributed to a number of factors, not the least of which includes the absence of any centralized authority and control in sector planning. The problem has continued to worsen.

During the 70's, Upper Volta's rural sector underwent a major infusion of external capital. The three year period 1972-74 saw some 10 major projects introduced with an average value of about 2 million dollars each. During the three year period 1977-79, some 30 major projects were introduced with an average value slightly greater than the earlier period. This analysis excludes the proliferation of numerous smaller projects which were channeled through the MRD and its related organizations. The proliferation of projects in the absence of any centralized control has resulted in a situation of inefficient investment. First, project planning alone is a myopic approach, often resulting in reduced rates of return because critical conditions to project success lie outside the purview of the project and are therefore ignored. Secondly, not only do critical voids occur but the reverse also results. In other words, there is often duplication with two or more projects having similar goals and objectives competing for scarce resources. Thirdly, projects which are uncoordinated can be at odds with each other and/or inconsistent with policy. Finally, in the absence of clarified and coordinated criteria for investment decisions, unintended regional imbalances in growth and development can occur.

The MRD recognized this problem and made several efforts to introduce a mechanism for controlling investment. The most recent effort was the 1981 reorganization of the small, under-financed and under-staffed Rural Planning Division of the Secretary General's office. The new organization was elevated to the level of a Department and is now called the Direction des Etudes et Projets (DEP). It has been given the mandate to (1) generate scientifically sound agricultural data, (2) conduct policy analysis and studies, and (3) evaluate and track project proposals and implementation. This responsibility is sector-wide and all MRD institutions are included. To date however, the DEP remains somewhat like its predecessor, under-staffed and under-financed. Currently the DEP has a total of seven Cadre A-level professionals and receives less than 1 percent of the MRD operating budget.

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Several donors also recognized the problem of sector planning and programming. The Dutch have provided DEP the assistance of a technician for two years to assist in project monitoring and evaluation, with an emphasis on the relationship between the central MRD and the ORDs. In their Agricultural Issues Study, the I.B.R.D. recognized the problem and recommended "building-up the capacity of the Ministry of Rural Development to provide effective technical support, financial control and coordination of regional activities in the areas of extension, research and programming of development expenditure.* Our own DAI-led assistance strategy review team concluded that MRD capacity in "national-level planning, policy analysis and management"** needed to be strengthened.

More recently USAID, under the auspices of INSORTMIL, has introduced a land use planning model on a Osborne micro-computer into the DEP. We expect the model to be fully operational within six months. Based on the findings of the DAI report, we began exploratory discussions with DEP, while simultaneously determining what other donor support to DEP would be over the next few years. The Dutch have no further plans of support at the central level, choosing instead to consolidate their assistance downstream. The I.B.R.D. is interested in policy and project evaluation but their support would necessarily have to be tied to a downstream project, i.e. in this case specific studies/analyses dealing with removal of the fertilizer subsidies and the implications to cereal pricing policy. The I.B.R.D. therefore welcomed our interest in supporting the DEP and we have kept in close contact with them throughout the project design.

(a) The AID Response

The Sub-purpose of this Project activity is to improve the management of sector resources and investment by strengthening the policy analysis and project evaluation capabilities of the MRD system. While this entails a focus on the DEP, it also includes strengthening the analytical and project evaluation linkages to and capabilities within other MRD institutions. The linkage with agricultural productivity is an indirect, but important one, where it is posited that improved planning and programming resulting from coordinated policy at both national and regional levels plus a coordinated system of project analysis, monitoring and evaluation will result in a higher level of investment performance aimed at increasing productivity.

To achieve the sub-purpose, the Project activity is necessarily engaged in long-term institution building. The most appropriate implementing agency is a U.S. university with a proven track record in francophone West Africa. Therefore, while the Project is designed for five years, the intention is to establish a long-term relationship between the MRD and a U.S. university by evaluating and subsequently extending aspects of this Project activity as merited. Also, recognizing the importance of jointly designing the Project activity, we opted for the collaborative mode as the most appropriate procedure. Insofar as time did not permit such a collaborative design to be completed at the Project Paper stage, the final design of the activity will be accomplished within the first year of the Project implementation. We will exercise our review authority upon completion of the design phase and independently determine if the effort should proceed. Therefore, the remainder of the Project description must be considered in the context of approximate types and levels of outputs and inputs. The analyses will also be subsequently refined.

* I.B.R.D., Upper Volta Agricultural Issues Study, Report No 3296-UV, 1982, p. 20

** DAI, Agricultural Sector Assistance Strategy for Upper Volta, March 1982, p. 181

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(b) Inputs

The description of inputs at this point is more difficult than the description of intended outputs. Nonetheless, the very broad categories of support and cost levels can be approximated.

The first input will be a design effort. It is estimated that up to 8 person months of a university design team will be required and will include policy analysts, project specialists, a computer scientist , a library science expert and an administrative specialist. They will visit Upper Volta at various times throughout the design stage. In addition, it is anticipated that the MRD will send a team of approximately three people to visit the selected university to meet staff and review facilities.

The implementation of the Project over the period of four years remaining after the design phase will require a commitment from the university to provide advisory assistance, training and procurement of commodities. Advisory assistance will include both long and short-term advisors. Long-term advisors include a policy analyst, a program evaluation specialist (focusing on the entire ADS Project) and a Project analyst, each for two years, for a total of 6 person years. In terms of short-term advisors, approximately eight person months for each of the four years is projected for a total of 32 person months and include a variety of scientists. Training to be provided by the university will be both short-term in the U.S. and in Upper Volta, and long-term academic training in the U.S. For both types of short-term training, about 10 person months per year for the four years is estimated for a total of 40 person months each. Long-term academic training will cover three M.S. degrees and two Ph. D. degrees, for a total of 12 person years. The university will also procure 6 vehicles and one computer and related equipment valued at approximately $110,000.*

The MRD, using its own funds or the PL 480 Section 206 funds if available, will provide the support for an expanded DEP staff of approximately seven cadre A-level professionals. This level of support will approximately double the current professional staff. The mid-level staff will also increase, but the magnitude is not significant. It is estimated that approximately $125,000 per year or $625,000 during the LOP will be required to support the expanded DEP staff. This represents approximately a doubling of the $60,000 annual budget which DEP was provided in 1983.

(c) Outputs

At this point the activity envisages four distinct types of outputs: two major types in the area of policy analysis and two major types of output in project evaluation.

In the context of policy analysis, the basic USAID-MRD position is that whatever studies and analysis are undertaken, they must contribute to the planning and programming process. Thus, the first type of policy analyses output will be a series of studies contributing to the development of the National Food Plan. The World Food Council has taken the lead in assisting the GOUV in the design of the National Food Plan and the MRD (DEP) plays a major role within the Inter-Ministerial Council charged with developing the plan. Thus, the university and the DEP will focus initially on the determination of appropriate policy issues and studies required to resolve food plan needs. This effort will build on studies currently being undertaken by the University of Michigan/CRED contract with OFNACER (under our Grain Marketing Development Project) as well as coordinate closely with the

* The vehicles may also be brought in directly by USAID

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food security studies undertaken in the OFNACER activity of Component 4. Some studies which may be undertaken include structure of cereals demand (traditional and preferred), cereal pricing policy, cereal trade policy, and rice import-substitution policy.

The second type of output will be a series of studies contributing to the development of the 1986-91 agricultural sector plan component of the next Five-Year Plan. The university and the MRD will review current policy issues and decide what areas require further study.These studies may include supply response studies under alternative price regimes, technology adoption in agriculture, land and water rights studies, income distribution and related equity issues, and energy in agriculture. Another major study particularly important in this context is the recurrent cost analysis for the MRD system, including a review of fiscal reforms. Finally, there are two dimensions which are not studies per se, but more research and analysis criteria. These are the gender-linked dimension of research and the implication of research to the private sector. The university will be required to review all studies in their design phase in the context of both gender-linked dimensions as well as private sector orientations. Imposing this type of analytical rigor is important for future balanced/equitable growth in Upper Volta.

The first type of project evaluation output will be a project analysis and evaluation system, a process whereby projects throughout the MRD system will be subjected to the same levels of scrutiny. Furthermore, the project review process will be undertaken systematically before, during and after project funding. With such a coordinated review of projects, return on investment standards should be raised.

The second type of project evaluation output is the expansion and further refinement of the current project monitoring system throughout the entire system. Currently the coordinated system is being introduced between the DEP and the ORDs. The system must be spread throughout the entire MRD system. The coordination and rapid ability to assess project problems will lead to a more efficient allocation of resource investments.

B. Improved Agricultural Statistics

Long-term concerns about the economic, social and political future of Upper Volta are closely linked to food security issues. As the economy of Upper Volta becomes increasingly interdependent with world markets, the need for more accurate and timely data will become more acute. In order for the Voltan farmers and agricultural industry to exploit their areas of comparative advantage in local and world markets, a better understanding of physical and economic production, distribution, consumption, import and export systems is required. Unless the Government of Upper Volta is able to determine with a reasonable degree of certainty that their actions will bring about the desired results with a minimum of unintended consequences, there is little basis for rational government action. Improvements in decision-making concerning food security and agriculture in general, rest squarely on the ability of the GOUV to improve the timeliness and accuracy of data collection and analyses.

The current agricultural information system is based on compilation of data collected by "encadreurs", or field-level agricultural extension personnel. The data are aggregated by statisticians at the sub-regional, or sector level, and submitted to the regional offices - the ORDs. The regional statistician extrapolates the data to establish estimates for the region, and transmits the estimates to the statistics unit of the appropriate Department within the MRD. Until recently, the Direction des Services Agricoles (DSA) was responsible for crop area and production statistics, and the Direction des Services de l'Elevage et des Industries Animales, for livestock statistics. In November 1982 responsibility for all agricultural statistics was transferred to the Direction des Etudes et Projets (DEP). The Institut de Statistique et de Demographie is responsible for the publication and dissemination of all official statistics.

Several factors impact on the quality of information currently published. First, the ORDs are responsible for selecting the sample, and collecting and tabulating the data. Personnel are inadequately trained, and it is reported that"in certain cases, they do not collect data for the sample, but calculate their estimates based on previous years figures". The personnel are also assigned many other duties unrelated to statistics. No information is available to determine if scientific sampling procedures are employed. The potential conflict-of-interests at the ORD level, between attaining production quotas and accurately reporting crop production, is not conducive to obtaining reliable information. These factors, alone or in combination with others not described, present numerous opportunities for the introduction of biases into official statistics.

Information currently published includes regional and national estimates of area and production for millet, sorghum, corn, rice, cotton, peanuts, fonio and sesame. No data are published on roots and tubers even though they are of consirable importance from a nutritional standpoint. Estimates of fruit, vegetable and oil production are derived from secondary data sources by the Union Voltaique des Cooperatives maraicheres. DSA data are not available until three to six months after harvest, and due to financial constraints and highly variable August and September rains, early season estimates of area planted and expected production are not generated.

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These production indicators are primarily used by the GOUV, in conjunction with consumption indicators, to determine if emergency food aid is needed. To date, little use could be made of the data for policy analysis, planning or project evaluation due to the questionable accuracy, the inconsistencies between different data sources, and the lack of disaggregated information.

A major step was taken towards resolving these problems when the MRD was reorganized and the responsibility for collection and dissemination of agricultural statistics, policy planning and analysis, and project evaluation was centralized within the DEP. This centralization creates the potential for the GOUV to begin developing a framework for consistent policies, programs and projects which provide a proper balance of inputs and incentives for farmers and agricultural industries to increase productivity.

(1) Constraints

Currently, the DEP lacks adequate space, personnel, training, equipment, vehicles, computer resources and operating funds to carry out its mandate. This project activity provides the appropriate inputs required to achieve the intended purpose. In the wake of their reorganization, the MRD is establishing new space allocations and moving forward to ensure DEP has adequate space. Operating funds will be obtained from local currency generated from PL 480 Section 206 sales. The Director General of DEP envisions building a small, centrally located, core staff of statisticians and computer specialists for the Statistics Unit, and utilizing ORD personnel, including the extension agents, for the data collection activities. This approach to staffing minimizes recurrent costs which is a major consideration of the GOUV and AID if this Project is to institutionalize the prescribed capabilities.

(2) The AID Response

This activity of the Project is designed to institutionalize the capability to collect, summarize and disseminate accurate and reliable information on the status of the agricultural community in a timely manner. This information will be utilized by the public and private sectors and donor community to formulate plans and policies, study production and marketing systems, and evaluate efficiency and effectiveness of ongoing and proposed projects. The successful implementation of this activity is a pre-condition for the success of the remainder of this component of the Project.

The Project will focus on equipping and training the Statistics Unit, developing a data collection system based on an area sampling frame, and establishing a computerized data management system.

The area sampling frame (ASF) methodology, used successfully for years in the United States and many other countries, will be adapted to the particular conditions in Upper Volta. This technique provides accurate information on agricultural parameters using detailed data obtained from representative small-scale samples of the total land area. These data can be extrapolated to the regional and national level to obtain large-scale, or macro-level statistics. Procedures to apportion the data to sub-regions (sectors) can be employed. The detailed data in its disaggregated form can be used to perform micro-economic analysis including gender-specific studies.

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The ASF technique will work in Upper Volta as well as it does in other countries. However, as demonstrated by the more successful development interventions, fine tuning of procedures is required to take into account local specific environmental and cultural conditions. This activity of the Project will consist of two phases. During Phase I, an area sampling frame will be constructed for one region in the Central Plateau. Through the growing season, several pilot surveys will be conducted in this region to obtain early season crop area estimates for the major crops, objective yield information for sorghum and millet, and end-of-season area harvested and production for the major crops. The lessons learned during these pilot surveys will provide the basis for fine tuning the system to conditions in Upper Volta. Phase I will require approximately 15 months, including time for the technical review.

During Phase II, the area frame will be expanded to full country coverage over a two to three year period. Throughout this period of expanding activities, surveys similar to those conducted during Phase I will be carried out, refining the crop area and production procedures and building on the base of information for crop production forecasts. Collection of data on farm inputs, labor, consumption, trade, socio-economic factors or other parameters of importance will be incorporated into the program, as determined appropriate by a five person review panel. The panel will consist of the Director General of DEP, and two members each from the Statistics Unit and the Policy Analysis and Project Evaluation Unit. It is recommended that one expatriate resident technical advisor from each Unit sit on this panel, in an advisory capacity, throughout the life of the Project.

Starting small, providing adequate training, and testing procedures employed, is the key to building the Statistics Unit into an institution capable of meeting data requirements in a time, cost and accuracy effective manner. This approach does not immediately fulfill all the perceived data requirements, but ensures that the data collected are utilized, and avoids the pitfall of many data collection projects which "collect data for the sake of collecting data" with no well developed plan for how the information will be utilized. Most data requirements will be able to be satisfied within three to five years. The major emphasis will be on recurrent data requirements, but the capability will be developed to conduct special purpose surveys if warranted. Frequently, special data requirements can be integrated into the recurrent survey program, but care must be taken to make sure these items are discontinued when no longer justifiable.

The Implementation Schedule in Annex I provides a detailed discussion of how Phases I and II will be executed and by whom.

Technical Assistance will include one long-term statistician for 54 person months. Short-term assistance will be provided by area frame experts for 2 pm, survey management experts for 3 pm, a survey operations expert for 1 pm, data processing experts for 3 pm, an objective yield expert for 2 pm, and a sample survey analysis expert for 1 pm. An additional three person months of technical assistance are programmed to test the computer system, install software, and perform other activities in the U.S. which are necessary for successful Project implementation.

Training will consist of long-term training in the U.S., coupled with short-term training in Upper Volta and extensive on-the-job training to increase the capability of the Statistics Unit to effectively carry out its mandate. These statisticians will each participate in one-year training program in the U.S. The major emphasis will be on non-degree academic training to improve their statistical skills. Participation in applied short-courses and the opportunity to observe and

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study procedures employed by statistical agencies in the U.S. will be integrated into this training. Participation will be staggered, with one person in training each year starting in September 1984. A one-year training program in the U.S. will also be developed for the systems analyst/computer specialist. Again, the program will consist of a mixture of academic coursework and short courses in the use of different software packages which will be utilized by the Project, and a training course in isolating and repairing computer hardware problems.

A four to six week course in agricultural statistics will be conducted in Upper Volta for the eleven data collection personnel and the core professional staff. This short course, currently being developed by USDA/Statistical Reporting Service (SRS), provides an overview of all aspects of developing an agricultural information system.

Extensive on-the-job training will be provided in area frame construction, sample selection procedures, questionnaire design, survey manual preparation, data collection, survey data processing, and sample survey analysis procedures. The core staff will be involved in all these activities, and the data collection personnel will be involved in most.

(3) Linkages between Activities (a) and (b)

There is a strong linkage between activities (a) and (b), both of which will be implemented by the DEP. The Statistics Unit is responsable for collecting the information needed by the Policy Analysis and Project Evaluation Unit. Feedback from these data users and other data clients will be used by the Statistics Unit to determine data to be collected. Both Units will share the computer system. Data collected by the Statistics Unit will be entered, "cleaned" and stored on this system. Statistics to be disseminated will be computed, stored and output tables generated. The survey data processing system will interface with a statistical analysis package to facilitate appropriate analyses. The other Unit will have access to both the aggregated and disaggregated data to enable them to perform their studies and analyses. The other activities will interface other analysis packages to this data management system when appropriate. The specifications for the procurement of this hardware and software must be closely coordinated by the various entities implementing these activities.

(4) Outputs

By the end of this five year activity, the Statistics Unit within DEP will be fully functional. The Unit will have an operational recurrent survey program for crop area and production, and other agricutural information needed for policy planning, policy analysis and project evaluation. The Unit will be capable of identifying other primary data clients, establishing priorities to meet these data requirements, and identifying and executing time, cost and accuracy effective methods of data collection.

C. Administrative Support

As discussed earlier, annual investments in the rural sector of Upper Volta more than tripled in numbers and value from the early to late 'seventies. Such expansion placed tremendous pressures on traditional systems of administration in the MRD, particularly systems of budgeting, personnel, and materials procurement, systems for financial monitoring and control, and systems for documentation and records. Some systems simply broke down , while others continued to operate but in a highly inefficient manner. Unfortunately, the MRD has not had the financial resources to introduce adequate new systems. As the donor community introduced investments downstream, the MRD has had to add new staff as counterparts to the projects, which has utilized the bulk of the GOUV budget resources. For example, in the 1983 budget, excluding ORDs and the parastatals, over seventy percent of the budget was allocated to personnel costs in four departments -- those for agricultural services, livestock services, water and irrigation services and rural vocational training.

As the problems of administration within the MRD continued to grow throughout the 'seventies, it became clear to the MRD that substantial changes had to be introduced. Finally, in 1981, the MRD reorganized. The functions of budgeting, personnel management and materials procurement coordination for the entire MRD system were concentrated in the Direction des Affaires Administratives et Financieres (DAAF). The functions of financial monitoring and control of all projects were concentrated in the Direction du Controle de Gestion des Organismes et Projets (DCG). The functions of documentation and records were placed into a new Service de la Documentation. To strengthen the administrative functions even further, both the DAAF and DCG were elevated from functions located within the purview of the Secretary General to Departments under the direct control of the Minister. Since 1981, progress has been made, each remains somewhat under-financed and under-staffed and could profit from the introduction of computer/automatic management and control systems.

The donor community has recognized the insufficiencies in MRD administrative capabilities, yet no single donor has been prepared to provide assistance at the central level. On the contrary, each donor views the management problem from the perspective of the individual project and provides support only in that context. The I.B.R.D. and U.S.A.I.D. were the first two major donors to break from this bias.

The I.B.R.D. prefers to finance investments at the ORD or other downstream level (i.e. Rural Development Fund). However, as a result of the I.B.R.D.-financed Coopers and Lybrand audit of the ORDs, the I.B.R.D. has come to recognize the importance of strengthening the MRD system of financial control. Therefore, the I.B.R.D. is currently introducing advisory assistance to the DCG. Similarly, USAID, after a series of delays in project implementation and negative audits on several projects, came to recognize the importance of strengthening both administrative capabilities of the MRD as well as the financial monitoring and control system. In this context, we are completing a protocol with the DCG which provides advisory assistance and training under the Sahel Regional Financial Management project (625-0950). No other administrative assistance has been forthcoming, with the exception of the Dutch, who made a contribution for renovation of space for the new Documentation Service and some limited management assistance under the various projects themselves by various donors.

Therefore, as we began discussions with the MRD, we carefully reviewed the situation in terms of central administration and concluded further assistance was

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required. In the first instance, administrative assistance is required to implement the ADS Project, particularly in the area of budgeting counterpart and procurement of services and materials. Secondly, further institution building in terms of efficient administrative systems is required and the U.S. is an excellent source of such advisory assistance and training. Finally, the MRD remains short on financial support to implement their reorganization due to heavy demands elsewhere. Using PL 480 Section 206 local currency generations appears to be an ideal way to assist them and ensure that the necessary counterparts to the I.B.R.D. and Sahel Regional Financial Management projects are available.

(1) The AID Response

The sub-purpose of this component is to improve the management of sector resources and investments. This activity supports the objectives by strengthening the MRD capability to manage projects more effectively and efficiently. More specifically, it is argued that by strengthening administrative capabilities of the MRD, projects will be implemented with fewer delays. Fewer delays will of course result in greater efficiencies in the productive investments being introduced to increase agricultural productivity.

The Project activity will address administrative problems across the MRD spectrum of Departments, regional organizations and parastatals. However, it will focus on three key administrative units. In the DAFF, the objective is to improve the budgeting system, the personnel system, and the services and materials procurement system. In the DCG, the activity will focus on providing further required assistance to improve financial monitoring and control systems. In the Documentation Service, the focus is on improving the accessability of documents and records. Assistance under this activity provided to other groups within the MRD will be aimed at complementing the administrative systems described above.

The assistance provided for under this activity is fully complementary to other administrative assistance being provided to the MRD and is also fully integrated with the assistance being provided by other components of the ADS Project. With respect to the former, this activity will be providing the necessary counterpart financing for the DCG as it expands its staff to meet its responsibilities under the Sahel Regional Financial Management project as well as the I.B.R.D. project and its own mandate by law. With respect to the latter, the non-academic training assistance under this Project activity will be implemented through the DAAF-administered scholarship funds and the annual allocations of operating expenses in support of administrative improvements in each and every MRD unit will be reviewed as part of the annual Sector 206 budgeting and review process. Finally, in general terms, the assistance under the activity aims at reinforcing the already reorganized administrative staff of the MRD. That is, aside from the modest yet necessary expansion envisioned. On the contrary, the Department is to move towards more automation of systems in order to reduce, rather than increase, staff requirements.

(2) Inputs

The Project activity outputs will be achieved with the introduction of four categories of assistance: advisory services, training, commodity assistance and operating expenses support.

Advisory services will be provided under a modest administrative management support contract. More specifically the contract will be let to provide one long-term advisor in business management and administration for a period up to three years plus various short-term administrative specialists (computer programming, contracting, inventory control, budgeting, personnel management, etc.) for a total of approximately twenty-four months during the contract period. The contract will be a direct USAID cost-reimbursement type contract with a firm specializing in public administration and a history of francophone West African experience. The contractor will begin providing services on or about September of 1984 and will be located in the DAAF, the unit through which administrative support to all projects is ultimately, to be coordinated (i.e. contracts, customs, budgets, etc.). The contractor will not have the responsibility to directly procure goods and services under the various components of the ADS Project as each activity has designed its

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own procurement procedures utilizing mainly USAID direct procurement (see Annex H). Nonetheless, the contractor will be responsible for addressing administrative and related problems in all the Project activities, as it introduces a system of procurement procedures acceptable to USAID. Also, during the first evaluation of the ADS Project, falling about the end of the second year of the contract, progress in introducing acceptable procurement and tracking systems will be reviewed. If sufficient progress has been made, efforts will be undertaken to shift from direct USAID procurement to greater host country procurement where possible. The contractor's role in facilitating this shift will be examined closely in the evaluation and the contract possibly amended. The contractor's major responsibility during the period however, remains the introduction of the budgeting system, which requires working closely with the DAAF, the DCG, and the other MRD units. The contractor will also provide advisory services as necessary to the Documentation Service.

The training input under this activity is limited to long-term academic training. It is proposed that seven M.S. level degrees be offered in fields such as business and management, public administration, accounting and library science. Of these scholarships, four will be for the DAAF, two for the DCG and one for the Documentation Center. It is recognized that improved administration throughout the MRD system will also require a great deal of short-term training. This training will be furnished by the ADS Project under the managerial and technical training skills scholarship fund which is handled by DAAF and more fully discussed in component 2.

This Project activity also supports commodity assistance,which will be financed by both the AID grant and by the PL 480 generated GOUV counterpart funds. The commodities to be procured by the AID grant include vehicles, computers and related equipment and other larger items of business equipment. More specifically, approximately fourteen vehicles will be purchased, including the replacements in the fifth year, and three MRD system-compatible micro-computers will be introduced. Some of the vehicles will be procured immediately under the Project using AID PIO/C procedures. However, the bulk of all commodity procurement will await a more in-depth specification of needs after the arrival of the contract advisor. Some equipment will also be procured by the GOUV using PL 480 generated funds. This equipment is locally available and specific requests will be reviewed under the same system utilized for all the budgeting of PL 480 generations.

Lastly, the Project will provide operating expenses support to DAAF, DCG and the Documentation Service plus other Departments and units within the MRD for upgrading administrative management units. The support is largest for the DCG, which must significantly expand staff to more adequately financially monitor the ORDs and other organizations within the MRD. The operating expense support provides for supplies, minor equipment, field per diem, gas and oil and related operational expenses. The requests from each Department and unit will be made to the MRD PL 480 support review committee in August/September of each year so that the specific request can be reviewed in light of the normal budget requests for personnel and material which is coordinated by DAAF. Requests in 1983 will be considered and allocated from previously generated and unallocated PL 480 funds in OFNACER blockeed accounts.

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(3) Outputs

The Project activity envisions three rather broad outputs resulting over the Project period. The first is a body of procurement and tracking procedures for contract services, equipment and supplies which meet USAID standards. With such a set of procedures in place, projects should move more smoothly and USAID can shift a greater proportion of the costly administrative and implementation burden on the MRD itself.

The second output is a computerized program budgeting system currently being introduced. Such a system will not only cover the annual GOUV budget of personnel and materials, but also includes the programming of extra-budgeting resources such as those from the Section 206 program as well as other donor sources. A prerequisite to longer term fiscal and administrative reform is clarification of the budgeting process.

The third output is an automated system of agricultural data and information documentation, storage and retrieval. Improvements in data quality and studies are of little impact when the information is not accessible in timely fashion. Other specific outputs may be forthcoming, but will necessarily result from the evaluation and subsequent modification in design if any (such as, administrative reform in the personnel system).

2. Component two

This component is designed to meet the sub-purpose of expanding the managerial and technical skills base in the agricultural sector. As such it consists of three activities: (a) managerial and technical skills training for rural youth, (b) managerial skills training for adult pre-cooperatives, and (c) a technical and managerial skills training fund.

A. Managerial and Technical Skills Training for Rural Youth

Two educational systems exist in Upper Volta. One is a formal system structurally similar to systems found throughout francophone West Africa; the other is a system of agricultural education for rural youth. The formal system consists of six years of primary school, followed by a secondary school program in two cycles, the first being a four-year cycle culminating in the BEPC* and the second being the three-year upper cycle culminating in the baccalaureat degree. The Ministry of National Education and Culture is responsible for primary and secondary formal education, overseeing about 700 public and 60 private primary schools (mostly in urban or large village areas). The primary schools have some 3,000 teachers and 160,000 pupils, meeting the needs of about 15% of the primary school age group. There are 23 public and 24 private secondary schools, with about 650 teachers and 16,000 pupils, meeting only 2% of the needs of this age group. An additional 4,141 students attend technical education and vocational training courses.

To deal with the problem of the large number of rural youth who have no access to the formal education system, in 1961 the Ministry of National Education developed an innovative approach of establishing a number of "Centres d'Education Rurale" for the purpose of providing education more closely related to rural needs. However, these centers developed into inferior limitations of the traditional primary school. In the early 1970s the Government sought donor assistance to reform the system and give it a more production-oriented direction. Responsibility for rural education was transferred from the Ministry of National Education to the Ministry of Rural Development, which in 1975 established a Direction des Services de la Formation des Jeunes Agriculteurs (DSFJA) for rural youth training.

The DSFJA consists of a small Administrative and Financial Services, and a Rural Pedagogical Service responsible for the two instructor training centers (Centre de Formation pour les Formateurs - CFF) and research and evaluation. The "Centres d'Education Rurale" became Rural Youth Training Centers ("Centres de Formation des Jeunes Agriculteurs - CFJAs), offering a three-year program of basic education and agricultural training. There are now some 700 of these centers, although only 562 are operational due to lack of equipment and teachers, with teaching staff of 840, meeting the needs of about 19,000 students.

The CFJAs are separated into mixed (boys and girls), all boys and all girls centers as illustrated in Table 3 below:

Table 3

Type	Number of CFJAs
All boys CFJAs	473
All girls CFJAs	21
Mixed CFJAs	68
TOTAL	562

* BEPC - Brevet des Etudes du Premier Cycle

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Girls represent only 10% of total CFJA enrollment. This low percentage is attributed to tradition, which favors education for boys, and the difficulty which the Government has encountered in recruiting and retaining women teachers. The Social Soundness Analysis in Annex G (4) discusses this issue more thoroughly.

As part of the reform, the DSFJA also provided support for the revival of traditional rural youth groups through Groupements des Jeunes Agriculteurs (GJA), formed by CFJA graduates. These voluntary organizations were assisted in starting up revenue-earning activities, providing work opportunities and further education for CFJA graduates during the difficult transitional period between "school" and adult life in the villages.

(1) Formal Primary School System vs. FJA System

The FJA system differs from the formal primary school system in several respects. Whereas the formal primary curriculum is of the type found throughout francophone West Africa, in the FJA system approximately 60% of the time is spent on agriculture and related production activities, with the remaining time devoted mostly to functional literacy, simple arithmetic, basic health and environmental studies. In primary school, French is the language of instruction from year one; in the CFJAs, most of the initial instruction is in the local language and French is introduced only gradually. The normal age for entering primary school is seven, whereas under the FJA program the average entry age is 14. There is also a difference in the number of pupils per class. In primary schools, which usually serve towns and large villages and hence greater catchment areas, the class size averages 53, compared with 30 in the CFJAs which service rural areas.

It is difficult to compare the efficiency of primary education provided by the formal system and the basic education and agricultural training offered by the FJA system, not only given the lack of statistics, but also because the two systems deal with different age groups, are of different duration and have quite different objectives. Primary school provides a foundation for reading, writing and arithmetic in French which enables a limited number of the better graduates to undertake further education and training to prepare them for positions of responsibility in the modern sector. Most primary school graduates living in rural areas become dissatisfied with rural life and tend to seek employment in urban areas or to migrate to other countries. The rural youth training program is specifically directed at the rural areas and is targetted to the young people whose future will be in the rural areas of Upper Volta.

Within the formal education system three out of four pupils entering primary school fail to complete the program; the annual dropout rate averages 9% and the repetition rate is 19%. As described in Table 4 below, statistics on the CFJAs (such as they are) indicate the annual dropout rate averages 21%, but there is no repetition.

Table 4

Years	No of Operating CFJA	No of Registered	No of Dropout
1979-1980	569	19,100	4,700
1980-1981	507	17,436	3,952
1981-1982	562	18,608	3,050

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The costs per CFJA student are similar to those in primary schools, in spite of the fact CFJAs have lower enrollments and higher supervision costs given the distance of most CFJAs from urban areas. As the total number enrolled in CFJAs increases, costs per student should be reduced. Moreover, revenues from the centers' agricultural production should reduce the financial burden on the Government. The net cost to the Government per CFJA graduate represents about 25% of the cost of a primary school graduate because of the shorter training program and the revenues from farm production at CFJAs.*

Teacher quality is generally higher in the primary schools, where 94% of the staff have received at least two years of teacher training. The CFJA instructors have normally been recruited at a lower educational level (BEPC: lower secondary pass) and have received less training. Under the formal education system, control and supervision are carried out by substantial headquarters and regional inspectorate staffs. For the CFJAs there are only 34 senior Voltan administrative personnel in the DSFJA and support staff in the regions are few in number. In-service training under the FJA program to date has covered most of the instructors, but there is still a great need in this area.

Peace Corps Volunteers have been working in the FJA system since 1979. There are presently ten volunteers in the FJA system. All of them are at the FJA assistant (animateur) level, providing technical assistance to teachers at the CFJAs. The PCVs provide expertise in such activities as poultry production, small stock production, and well construction. The volunteers are directly supervised by FJA conseillers based at the ORD. The DSFJA is quite pleased with services provided by the volunteers and has requested additional volunteers to serve as teachers at the new teacher training center at Kamboinse.

(2) GOUV Agricultural Education Program Objectives

The objectives of the Government's agricultural education program are as described below.

(a) for the CFJAs: the provision of better-trained staff, complete sets of farm equipment, and improved buildings and water supplies; the linkage of all teaching to the needs of rural life and the use of local languages for initial instruction; increased time allocation for students on their own family farm; and integration of the centers with village life by setting up an elected village council (CVC) to each center, which is responsible for management and supervision of the instructor.

(b) For graduates upon completion of FJA training: the provision of technical advice through more and better-trained staff to help groups to establish themselves on the land and/or in other revenue-earning enterprises; integration of group activities with those of the ORDs and provision of credit for the acquisition of draught animals, farm implements and supplies.

(c) For overall management and support: the strengthening of the DSFJA with the recruitment and training of additional staff for the regions; and the design of new buildings, making use of local construction materials.

(3) The AID Response

This activity is designed to increase agricultural productivity by strengthening the capacity of the MRD to manage and promote young farmer training and development

* World Bank, Education Project II.

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through the Formation des Jeunes Agriculteurs (FJA) system. One of the key constraints to Voltan agricultural development is the critical lack of a literate populace at the grassroots level capable of fully participating in the development of their milieu.

This activity will focus on improving, expanding and equipping the three FJA teacher staff training centers (CFF); equipping and improving 155 rural youth training centers (CFJAs); training of staff at all levels of the FJA system, including instructors and administrators of CFFs, teachers and inspectors of CFJAs, graduates of CFJAs, and village councils which manage CFJAs; and providing technical assistance to the evaluation branch of the DSFJA to better monitor and evaluate the impact of the FJA program.

The direct Project beneficiaries will be 9,839 men and women, who will receive training and benefit directly from improved facilities and systems provided under the Project. The country as a whole will also benefit from the increase in trained agricultural manpower in the rural areas, which will lead to an increase in agricultural productivity and increased rural employment opportunities. There is also the potential impact of this activity on diminishing the increasing rate of rural to urban migration.

The activity consists of the following elements:

(a) renovation and support to the teacher training centers at Kamboinse and Farakoba;

(b) support to the newly built female teacher training center at Kamboinse;

(c) provision of agricultural production and educational equipment to 155 CFJAs, of which 55 will be either mixed or all-female centers;

(d) training of 9,839 people at all levels of the FJA system; and

(e) techncial assistance to the Evaluation and Studies branch of the DSFJA

(a) Renovation and Support to the two CFJA Teacher Training Centers at Kamboinse and Farakoba

Both centers were built with French assistance in the mid-1960s, but since then there have been no improvements or maintenance at the centers. Whereas the centers were originally built for a capacity of 80 students, they are currently accepting 50 students each per training cycle. Even at these low levels of intake the centers are hard-pressed due to lack of equipment, no documentation center/library, a non-existent water and sanitation system, and buildings in all states of disrepair. Under this activity AID will finance the renovation of the two training centers to a functional level. This will include the construction of a classroom/library/student hall block; renovation of the classrooms, kitchen/dining hall and dormitories including the bathing and toilet blocks; supplying a partially new, partial ly renovated water system for both human consumption and school production activities, equipping the library/student hall, classrooms, kitchen/dining hall, agricultural mechanics shed, and dormitories for a capacity of 50 students per center; supplying the two centers with local currency for recurrent cost expenditures to operate the centers and replanting the campus area with fruit trees. We have also programmed 20 pm of short-term advisory assistance in the areas of management systems, library science, curriculum development, agricultural mechanics, income-

generating activities, etc.. Twelve pm of short-term third country or U.S. training have been included to upgrade the skills of the teacher training staff and other DSFJA staff.

(b) Support to the newly built Female Teacher Training Center at Kamboinse

A female teacher training center was built with Swiss funding in the late 1970s/early 1980s to increase the number of female teachers. The lack of female teachers has been cited as the main reason for the low female student attendance levels in the current CFJA system. Given current cultural practices, there seems to be a reluctance on the part of parents to have male instructors teaching female students and having their daugters mixing with boys their age unless there is a female instructor present. Many of the mixed CFJAs have both a male and female instructor, each teaching the same curriculum (except handicrafts).

Although the Swiss funded the construction of this new center and equipped it with basic educational equipment, the center is not functional due to lack of agricultural equipment and operating funds. Under this activity we will be providing the necessary funding to make the school operational at a capacity of 40 students per cycle.

(c) Equipping the CFJAs

One hundred and fifty-five CFJAs throughout five ORDs* will be equipped with agricultural production and educational equipment. Of the 155 CFJAs, at least 55 will be mixed or all-female centers. Fifty-five will be equipped in year one of the Project, 50 in year two, and 50 in year three. The Project will also finance 15 photo-voltaic light units to experiment with providing light to 15 mixed CFJAs.

(d) Training

In-service training will be provided to 1000 CFJA teachers (formateurs), 200 junior FJA staff (assistant FJA), 434 instructors/supervisors of teachers (conseillers) and 60 FJA administrators (ingenieurs). In addition, 3875 FJA committee (CVC) members will be trained in management and administrative skills. 4250 GJA members will be trained in further agricultural production and management skills. A total of 9839 people at all levels of the FJA system will be trained under the Project over a five-year period, as illustrated in Table 5.

* Centre, Centre-East, Centre Nord, Est and Sahel

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Table 5

Number of people trained over 5 years

Type of people	CFJA teachers	G.V.C. members	G.J.A. members	Assistants FJA	Conseil-lers FJA	Inge-nieurs FJA	Total
Year 1	180	775	300	-	71	-	1,326
Year 2	190	775	550	35	71	10	1,631
Year 3	200	775	800	35	91	15	1,916
Year 4	210	775	1,050	75	91	15	2,216
Year 5	220	775	1,550	75	110	20	2,750
TOTAL	1,000	3,875	4,250	220	434	60	9,839

(e) Technical Assistance

The DSFJA is strengthening its Evaluation and Studies branch. It is particularly concerned with assessing the impact of the FJA program on rural life and determining the extent to which the system has improved the quality of life and access to income in rural areas. The Evaluation and Studies Unit has the technical assistance of a World Bank-funded expert through winter 1983. In response to DSFJA's request for AID assistance in this area following the departure of the World Bank-financed expert, we will provide an evaluation/monitoring specialist for 24 pm.

The Project will also finance operating costs for the three teacher training centers, maintenance of three mini-buses and two mini-computers along with the salaries of two people who will work with the mini-computer in the Studies and Evaluation Unit of the DSFJA.

(4) Outputs

By the end of this five-year activity it is anticipated that (a) 4,650 young agriculturists with literacy, numeracy, and rural production skills will have graduated from Project-funded centers; (b) 4,250 CFJA graduates (GJA members) will have acquired additional managerial and technical skills, of whom at least half will be involved in productive agricultural or rural enterprise activities; (c) two teacher training centers will be equipped and renovated;(d) one all-female teacher training center will be fully operational; (e) 155 CFJAs will be equipped and operational; (f) 1,700 teachers will have been trained; and (g) 3,875 C7C members will have been trained.

A. Managerial Skills Training for Adult Pre-cooperatives

The effectiveness of the MRD's extension service and other types of outreach programs to Voltan farmers is limited by several constraints characteristic

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of developing countries, i.e. inadequate national budgets, lack of available trained manpower, and an underdeveloped physical infrastructure. In an attempt to alleviate the constraints affecting the MRD's ability to serve the rural sector, the Project is focusing a substantial amount of support on developing central MRD management capacity and its manpower base. The objective of this approach is to make the MRD more efficient and effective in the delivery of services to its target groups among the rural population. Similarly, the target groups must have the technical and managerial capacity to use central and regional MRD services in a productive way. Several MRD extension and training programs have been implemented in the past in an effort to improve the farmers' abilities to use the central services effectively, but for the reasons mentioned above, the various programs met with modest success.

Over the past decade the MRD has promoted the Groupements Villageois (GVs) as the focus for MRD extension efforts. GVs are pre-cooperative village groups of an economic and social nature, managed on a democratic basis, and consisting of private Voltan producers. The MRD rationale for working through the GVs is to facilitate the technical information diffusion process and to enhance the individual farmer's ability to benefit from other MRD services. As GVs become more sophisticated (technically, economically, and financially) in terms of the activities they become involved in, it is envisioned they will be able to undertake much of the initiative for acquiring technical and market information themselves by seeking out advice from the ORDs and the research network as they need it. This will greatly relieve the central MRD and the ORDs from many of these responsibilities for which they are already overextended, but more importantly, it will put many of these agricultural support services in the hands of the private sector.

Village-level farmer organizations have always played a prominent role in Voltan rural life. Within the Voltan social structure there have always been such farmer groups cooperating to facilitate agricultural operations, especially for communal labor during weeding and harvesting periods. GVs have incorporated these traditional forms of cooperation into the present-day GV organization. GVs elect their governing officials - usually a President, a Treasurer, Secretary and Accountant. The types and number of activities any particular GV undertakes depends on its membership and the resources, both financial and natural, available to it. There are no standard rules which govern GVs. Each GV develops its own structure and management based on membership consent. GV financial resources are usually derived from individual member contributions and the profits obtained from collectively produced crops.

GVs have developed most rapidly where members have already adopted new technologies and improved agricultural practices, and successful GVs are usually found in areas of Upper Volta where natural resources and MRD services have promoted the production of highly remunerative cash crops (cotton being a good example in the West and Southwest regions). This has enabled farmers to perceive the need to organize themselves for production purposes in order to take full advantage of the market opportunities available to them. Usually, cash surpluses are reinvested back into the village community for wells, schools, clinics, bulk input purchases, etc.. GV development in the cotton zone has progressed to a stage where the GVs have already assumed most of the responsibilities for production and input marketing.

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As mentioned above, the principal activity common to all GVs is communal labor on individual and communal fields during the cropping season. The concentration of collective efforts is usually for the cultivation of cash crops, such as peanuts and cotton. However, with the promotion of cereal banks by the MRD, communal efforts have been devoted to increasing the emphasis on cereal production both for the market and as a security stock during the "soudure" period (food shortage) usually before the advent of the rainy season. Evidence from the cotton zone suggests GVs can become sound economic organizations and financially self-sustainable. Current MRD statistics indicate that approximately 50% of the villages in Upper Volta have officially registered GVs. Although many villages claim to have GVs, the number of actual groups which have permanent membership and are self-sustaining financially outside the cotton zone are few.

As the GV capacity for commercial enterprises grows, credit becomes an important consideration, along with more sophisticated adminstration and financial management. Based on the encouraging success of GVs in Upper Volta to date, the Direction des Institutions Rurales et Credit (DIRC) was created by the MRD in 1978 to promote GVs by developing and coordinating training programs and credit services. DIRC recently submitted proposed legislation to the Council of Ministers for the formalization of the legal status of GVs. This will give GVs a juridical character and allow them access to credit from the Caisse Nationale du Credit Agricole (CNCA). With improved access to capital, GV activities can grow and support services can be more effectively used. Many of these services will ultimately be assumed by the GVs themselves.

Appropriate training programs will need to be developed for GVs to enable them to properly manage their financial resources and to more efficiently use technical knowlege. This is extremely important given the MRD policy of developing cereal banks for the decentralization of cereal marketing. Most training programs for GVs are currently implemented by extension agents or DIRC agents called "animateurs". The numbers of extension agents and animateurs at present are considered insufficient given the increased importance and growing number of GVs. In addition the DIRC has not yet developed training programs which have adequately permitted GV management officers to learn accounting and elementary bookkeeping techniques for efficient management of their commercial affairs and finances. Normally, GVs use the available extension agents,or DIRC animateurs for this purpose, but if GVs are to grow and expand commercially, this responsibility will need to be assumed by GV management.

Given the increased importance of GVs in MRD outreach strategies, the MRD has requested AID to provide support to the DIRC in developing a comprehensive training program for the GV network in Upper Volta. The training will need to be able to address the village-level technical and managerial constraints of GVs for efficient financial management. The Project will also develop within DIRC a cadre of qualified staff capable of implementing the GV training program, and will support DIRC efforts in developing more effective training materials and curricula for GV management officers.

(1) The AID Response

This activity will support DIRC efforts in increasing the capacity of Groupements Villageois (GVs) to receive and use MRD information and support services more efficiently and effectively by developing more appropriate training programs for GVs. The foci of the training programs will be on managerial training

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for GV officers, agricultural skills training for GV members, and DIRC village-level trainers of GVs. The initial two years of the Project will concentrate on developing pilot programs which can be more widely disseminated in the later years of the Project. The Project area will concentrate on the Central Plateau region of Upper Volta. The Central Plateau has received priority consideration by the MRD because over 50% of Upper Volta's population is concentrated in that area and it is thought improved GV training programs can have an immediate impact on a large number of Voltan farmers. The Central Plateau, has, for the most part, a homogenous population, and DIRC efforts at promoting GVs have had reasonable success. Furthermore, the Central Plateau has become a food-deficit region of Upper Volta and is very susceptible to severe fluctuations in production due to erratic rainfall. The MRD's implementation of a wide network of cereal banks is seen as one way to decentralize food security stocks and put them under village management. AID-financed inputs will be in the form of technical assistance and some commodities. The GOUV, through DIRC, will provide support in the form of in-country training, salaries and operating expenses.

(a) Technical Assistance

The Project provides two long-term advisors to DIRC: an Agricultural Economist for 36 pm and an Audio-Visual Specialist for 36 pm. It is anticipated these technicians will be based at DIRC's head office in Ouagadougou, but will spend a large part of their time traveling with the Project zone.

The Agricultural Economist should have a strong background in cooperative development of agribusiness management. His/her main responsibility will be to assess the various training needs of GVs given the production possibilities and market opportunities available to them and to aid in the design and development of improved training programs and materials for GV managers and the general membership. The emphasis of the training will be on accounting, bookkeeping and related financial management techniques.

The Audio-Visual Specialist should have a strong background in non-formal education and rural sociology. His/her main responsibility will also be to aid in the design and development of improved training programs for GVs. The main emphasis will be on developing training materials and effective training methods given the proposed substance of the training delineated by the Agricultural Economist.

In addition to the long-term technicians, the Project will provide 15 pm of short-term technical assistance. The short-term assistance will be problem-specific oriented and the programming will be flexible depending on the needs of the Project.

(b) Training

All training provided under the Project will be carried-out in-country. The major training programs will be for GV managerial training in accounting and bookkeeping, general GV membership training in technical related fields and DIRC village-level agent training in more effective training methods. All training will take place at DIRC's Saria Training Center in the Koudougou ORD, with the exception of the general GV training which will take place at the village-level.

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(c) Commodities

The Project will finance 6 mini-buses or vans over the LOP to be used as mobile training units (3 furnished in year one, and 3 furnished in year four). DIRC will provide training material, including audio-visual equipment, which can be procured locally.

(d) Miscellanous

PL 480 counterpart funds will finance the local currency costs of salaries of newly recruited village-level agents and other DIRC staff, vehicle maintenance costs, and some construction materials (i.e. cement, re-rod, lumber) to be used by GVs to upgrade their grain storage facilities.

(2) Outputs

(a) A pool of trained managers

At the DIRC training center located at Saria in the Koudougou ORD, DIRC will sponsor annual training programs for GV management officers. The training will emphasize simple accounting, bookkeeping, financial management and related administrative and management skills. This training will better enable the GV managers to deal with an array of management problems encountered by GVs as they grow financially. The training will be tailored around cereal bank management, but it is expected the techniques promoted at Saria can likewise be applied to other commercial enterprises undertaken by the particular GV. The MRD believes that by improving GV management capacity, their extension program and related sector support services will be more fully and effectively utilized.

Included in the GV manager training program given at Saria will be literacy training in Moré, the dominant language in the Central Plateau zone. Having an elementary level of literacy in the local language is considered essential to facilitating training in the other managerial skills areas. DIRC will build upon its experience during the previous training programs developed with support from the West German Government.

Literacy training will have a duration of two weeks per session, followed by eight week managerial skills training session. Each session will be able to accomodate approximately 20 participants. During the first year DIRC will hold 9 training sessions and, thus, up to 180 GV managers will be trained in the first year. Most of the training will be directed by a specially trained DIRC agent.

(b) More effective training program for DIRC village trainers

This training element will enable DIRC village-level animateurs to more effectively implement appropriate training programs using improved instructional techniques which will upgrade the overall GV membership skills base. The Project will develop an appropriate training program for its zonal-level agents (animateurs) emphasizing non-formal training and audio-visual techniques. DIRC will be able to draw upon in-country institutions which have a relatively long history in the development of non-formal rural training techniques such as INADES and CESAO. The animateur training will also take place at the Saria center. Each training session will be of 10-week duration with annual refresher courses and

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seminars. DIRC has been successful in recruiting and training about 15 animateurs per year. DIRC will eventually increase its capacity to train more animateurs over the LOP.

Most of the animateurs will receive training in educational methods designed to be effective at training village-level farmers. Specific training needs will vary across regions depending on the farming system or other economic or commercial opportunities available to the village. DIRC training will take into consideration the specific production or marketing needs of the particular GV. Subjects to be emphasized by animateurs will be new and improved agricultural techniques and how to use other agricultural services coming from the central MRD.

(c) More effective agricultural, commercial and managerial skills training for members of GV.

More appropriate training courses to be implemented by DIRC and accompanying training materials will be developed under the Project. AID will provide two long-term technicians: an Agricultural Economist with a cooperative or Agribusiness background and an Audio-Visual specialist with a non-formal education or rural sociology background. The Agricultural Economist will have advisory responsibilities for the development of training courses emphasizing management aspects of cooperative or group enterprises. These management techniques will be incorporated into GV managers' and DIRC animateurs' training. The Audio-Visual specialist will aid in the development of complementary training materials. DIRC will also have on staff a Voltan artist familiar with rural life in Upper Volta. A common theme being emphasized by DIRC is the need to develop training packages which address the specific management and skills needs of GVs. To this end, DIRC will undertake a socio-economic survey during year one of the Project to help determine the approach and specific needs to be addressed by the different types of training programs. At the end of this five-year Project it is anticipated that this activity will result in (a) a pool of trained GV managers, (b) more effective training programs for DIRC village trainers, (c) more effective agricultural, commercial and managerial skills for GV members, (d) 1200 groupements villageois or 50,000 people will have been trained, and (e) 255 DIRC zonal-level agents will have been trained.

C. Technical and Managerial Skills Training Fund

In Upper Volta the education sector accounts for 28% of total GOUV recurrent expenditures. Only 15% of the primary school age group, 2% of the secondary school age group and 1.1% of the university age group find places in the formal school system. As noted in a previous section, there are currently 4,141 students enrolled in technical and vocational schools. The following table illustrates the enrollment of Voltans in education and training institutes.

Table 6

Education and Training in Upper Volta *

Enrollments (public and private)	Number	of whom female	% of Age group enrolled
(a) Primary schools	157,580	37%	15.7
(b) Rural youth training program	22,000	10%	6.2
(c) Secondary schools including teacher training	16,128	31%	2.0
(d) Technical and vocational schools	4,141	-	0.5
(e) Higher education	3,612	-	1.1
- University of Ouagadougou	1,222		0.4
- Abroad	2,200		0.6

As discussed in our FY 1985 CDSS, almost every development effort in Upper Volta confronts a variety of interlocking constraints. Two of the most serious such constraints are the lack of trained personnel and the inability to meet recurrent costs of development projects. The former is addressed below and the latter forms part of the AID response. Upper Volta's most critical skill shortage is in the mid-level manager and technician levels for public sector people who have operational responsibilities at the Central Ministry and ORDs, and field supervisors and skilled labor for operational levels of the private sector. Development projects are serioualy hindered by the absence of adequate technical and managerial skills, particularly in areas such as construction, equipment maintenance and repair, and management.

Technical and managerial skills training is critical to increasing the efficiency of current and future investment levels at MRD operationsl units, private companies and other organizations involved in activities related to or supportive of rural development. It has been documented by all development agencies that nothing is more critical to project failure than the absence of a critical mass of technical and managerial skills at the operational level. There is growing recognition that education and technical training are not ends in themselves, but rather important means of achieving social and economic goals. There is concensus among donors and development assistance recipients alike that in a world of rapid change, a combination of basic education and specific job-related skills training is a prerequisite to enable men and women to adapt to

* World Bank Education II Project

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change and to contribute to it. The ability of people to participate effectively in development is substantially increased as they acquire basic skills, ranging from basic literacy and numeracy to vocational and technical skills required for employment.

(1) The AID response

In order to address the problem of the lack of basic technical and managerial skills in the agricultural sector, this activity of the ADS Project supports a Technical and Managerial Skills Training Fund. The Fund is to be administered by a U.S. private firm, with technical support by the Department of Administrative and Financial Affairs (DAAF) of the MRD and the Chamber of Commerce. The Training Fund has a dual function: (a) to provide scholarship for Associate Degree level training, and (b) to provide short-term skills training to mid-level managers and higher-level technicians. The fund will be available to organizations and individuals from the public and private sectors, inasmuch as they relate to rural development.

The objectives of the technical and managerial training skills Fund are:
(a) In the short-term, to increase the efficiency of current operations by strengthening and assisting the operational units in the public and private sectors; and

(b) In the long-term, to strengthen the institutional capability of these operating units by training their technicians and middle-level management personnel.

In order to attain these objectives, the Training Fund will set up a system to respond to a diversity of needs in both the public and private sectors. The Training Fund is designed to have the flexibility to respond to short-term demand, rather than fixed output numbers based on production goals. The latter would require an in-depth analysis of the manpower needs in the agricultural sector over the next five-ten years, an undertaking which is clearly beyond the scope of the Project both in terms of cost and time.

To this end, the beneficiaries in both the public and private sector organizations will be able to assist in the design and development of the training, thereby increasing the chances of the training being more directly relevant to their needs, and increasing the impact of the training on their effectiveness.

The two elements of this activity are an Associate Degree level U.S. and third-country Training Grants Fund and short-term in-country Managerial and Technical Skills Training Fund.

(a) Associate Degree Level Training Grants Fund (TGF)

The training grants fund will offer scholarships for two-year studies in the U.S. or in francophone African countries in the areas of agriculture, civil and mechanical engineering and management (accounting, financial management, marketing, production, computer programming). At least 52 scholarships will be for U.S. Associate Degrees and the additional 56 scholarships will be for training in francophone Africa. The MRD has indicated a preference for training in Africa, whereas the private sector is more interested in the U.S. training.

The criteria to be used for awarding these scholarships will be that:

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(i) the candidates are of Voltan citizenship;

(ii) the candidates have a "Baccalaureat Technique series G" for a scholarship in management or "Baccalaureat series F" for scholarships in technical engineering fields and a "Baccalaureat Science series D and D'" for scholarships in agriculture;

(iii) scholarship recipients in line for a new or vacant position in the public service must request training which is compatible in nature, in the fields of study with the level of responsibility attached to and the technical knowledge required by the position; and

(iv) the recipients admitted for studies in the U.S. will have to pass the TOEFL or ALIGU examination.

The Technical Analysis of this activity, Section IV A and Annex G (1), discuss the pool of graduates who meet the requirements noted in (ii) above.

In order to get a handle on the long-outstanding issue of equivalency between American and French degrees in Upper Volta, one of the first tasks of the contractor will be to identify the U.S. institutions which will be attended by the Project participants. The contractor will set up files by institution with relevant information about their program, including conditions of admission and the titles and qualifications of the faculty. This information will be submitted by the contractor to the DAAF, for review by the Ministry of Higher Education's Bureau of Equivalency. Those institutions which do not receive the appropriate equivalency level from the Ministry of Higher Education will not be used for Project participants. An appropriate level for the Associate Degree (BAC plus 2 years) is considered a DUT (Diplome Universitaire de Technologie) or a Technicien Superieur, levels corresponding to the cadre B 1 of the public service. At least 30% of these scholarships are earmarked for use by the private sector.

(b) Short-term Technical and Managerial Skills Training Fund (TMSF)

Short-term in-country training under this fund will take place in two ways: it can be either a straight grant to the client organization for on-going courses held by INADES, IPD and CESAO, or it can be for specially developed technical skills training courses carried out by the contractor for the client organizations. Both will be based on demand by client organizations. The onus is upon these organizations to establish the relevancy and usefulness of the training. They will do so by demonstrating the following:

(i) the importance of the client organization in the rural development sector of Upper Volta;

(ii) the relationship between the content of the training course and the skills required by the positions and activities of the participants; and

(iii) the qualifications of the training institution to administer such training courses and the steps it has taken to ensure the training materials are pertinent to the work environment of its client and to the profile of its target audience.

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The requests from public and private organizations will be submitted to the Contractor, through the DAAF of the MRD. Final clearance for the award of the training grant will be obtained from the USAID, at the contractor's request, with DAAF recommendations. At least forty per cent of the total amount of in-country technical skills funds available are reserved for private sector training needs.

(c) The AID-financed inputs to this activity include:

(i) Participant training

For two year Associate Degrees or equivalent training in agriculture, engineering and management related fields, 104 person year of U.S. training will be financed for some 52 people over a 3 year period (approximately 17 people per year). There will also be 112 person years of third-country training for 56 people over a 3 year period (approximately 19 people per year). In-country skills training grants in agriculture, engineering and management-related fields will be financed for approximately 100 people to attend regularly scheduled training courses carried out by INADES, IPD and CESAO. In addition to these on-going courses, the Project contractor will carry out a number of in-country technical skills courses for client organizations in the private and public sectors, training some 400 people.

(ii) Technical Assistance

The activity will be implemented by a private U.S. firm which will be charged with placing and providing support to all long-term and short-term participants, carrying out technical skills training courses in-country and furnishing technical assistance.

The contractor will provide:

- a training coordinator, who will be Chief of Party, for 4.5 person years;
- a Voltan/Sahelian education specialist for 4.5 person-years;
- a Voltan administrative assistant for 4.5 person-years;
- a locally hired secretary for 4.5 person-years;
- a locally hired chauffeur for 4.5 person-years;
- short-term technical assistance for 60 pm as illustrated in the table below.

Table 7

Short-term Technical Assistance	Person Months
Training needs assessment	6
Task analysis	9
Curriculum development	9
Design and production of training materials	12
Evaluation and impact measurement	6
Specialist in technical skills operations	3
Organizational development	6
Computer training specialist	3
Non-formal skills training specialist	6
TOTAL	60

- U.S. backstopping support by the firm, at 50 per cent of the time of one person, over 4 person years.

(iii) Equipment

- DAAF local currency will be used to purchase office equipment for the DAAF to improve its processing of candidates. Annex H provides a detailed list of these commodities;
- Contractor - all equipment necessary for the contractor to carry out its tasks will be procured by the contractor on the basis of PIO/Cs. the sole exception will be the purchase of vehicles and micro-computers which will be procured directly by the USAID.

(iv) Operating Costs

As mentioned in the introduction to this activity, one of the chief constraints in this context is the inability of the GOUV to meet recurrent costs of projects. The Project is therefore programming local currency from the counterpart generations to pay operating costs of the DAAF (office supplies). In the U.S. contractor's contract there will be a line-item to fund local operating costs (office rent, office supplies, vehicle maintenance, etc.).

(2) Outputs

By the end of this five-year Project it is anticipated there will be the outputs described below.

(a) 108 people in the public and private sectors will have received Associate Degrees or the equivalent;

(b) 500 mid-level managers and high-level technicians from the public and private sectors will have been trained in short-term technical and managerial skills;

(c) training course materials will have been developed in areas such as heavy equipment operation, welding, soil erosion control, road maintenance, etc.. for use by client organizations, including INADES, CESAO, IPD, etc.; and

(d) public and private development entities will be reinforced by the newly acquired technical and managerial skills of the 108 people trained to the Associate Degree level or equivalent in agriculture, engineering and management.

3. Component Three

This component is designed to meet the sub-purpose of accelerating the transfer of productive technologies into the agricultural sector. As such, the component consists of three activities: (a) the introduction of the farming systems research approach to research and extension, (b) the development and extension of nutritionally sound food production and processing practices, and (c) the development and extension of environmentally sound soil, water and land use practices.

A. The Introduction of the Farming Systems Research Approach to Research and Extension

Since the drought years of the early 'seventies, most reliable agricultural statistics indicate that per capita agricultural production in Upper Volta has, at best, remained constant. Some advances in production have been experienced in the relatively resource rich Southwest where cotton, and to a more limited extent, sorghum have exhibited increases in yields. However, in the Central Plateau area, during the same period of time, agricultural production has exhibited low growth rates in areas cultivated and a stagnation of yields for the major cereal crops of sorghum and millet. This is particularly true for millet, the major staple, which shows no growth in areas cultivated and an overall declining trend in yields of 5%. The major reasons cited for the overall poor performance of Voltan agriculture in general, and the Central Plateau in particular, are generally poor rainfall, depleting soil fertility and other natural resources in the face of an increasing population, out-migration of large segments of the agricultural labor force, a weak extension service, and the lack of any significant improvements in productivity-increasing agricultural technologies. Continued negative growth is forecast for the Central Plateau due to the continued depletion of the natural resource base and the absence of improved technological packages that can achieve significant production increases.

An essential prerequisite for increasing agricultural production in Upper Volta is the development of appropriate agricultural technologies which can be effectively disseminated to farmers. Presently, almost all crops are grown using traditional manual methods on small family farms, with land and labor being the two most important inputs. New technologies for increasing the productivities for land and labor must be embodied in modern inputs such as seed, fertilizers, and equipment. Furthermore, the development of improved cultural practices for water control and soil erosion must be addressed. Although the use of modern inputs and related agronomic technologies remains low, the annual growth in the use of these inputs since 1970 has been impressive. The case of cotton production in the Southwest is one example of how the use of modern inputs such as fertilizers and insecticides, complemented by strong research and extension efforts, can lead to significant increases in production. The use of animal traction equipment has become extremely popular in the Southwest region and is becoming increasingly important in the Central Plateau area.

Although modest progress has been made in introducing modern inputs to the Voltan farmer, there are still no fully developed packages for rainfed agriculture in the drier areas with poorer soils (the Central Plateau primarily) which can raise yields significantly, under average farm conditions. To overcome this technological constraint, improvements in the organization and focus of the Voltan agricultural research system are required.

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(1) Organization of Agricultural Research

The organization of agricultural research in Upper Volta remains disjointed, in spite of several attempts to create a more coordinated system. There are presently some twenty different agricultural research entities carrying out programs in Upper Volta (see Table 8). For the most part, these research organizations remain semi-autonomous with their own budgets. They are heavily staffed with expatriate scientists and they carry out research as they choose. Upper Volta has no national research policy into which the various research organizations fit their work. Although policies and recommendations are discussed during annual meetings, there are few means of enforcement if research institutes do not follow policy recommendations. This inability to guide agricultural research results from a poorly defined agricultural development policy, inadequate national research institutions, lack of trained Voltan scientists and the preponderance of donor financing.

Prior to 1979, research was coordinated by the MRD under the "Service de la Recherche Agronomique" (SRA) within the Direction des Services Agricoles (DSA). The function of the SRA was to develop a program of research with the various research institutes and coordinate their activities. In addition, the "Comite Specialise de la Recherche Agronomique" (CSRA) was created and met on an annual basis to discuss research findings and make technological recommendations to the extension service for dissemination to farmers. However, most recommendations were developed without the extension service or the Regional Development Organizations' (ORD) interaction, and there was no mechanism by which information relating to actual on-farm constraints or the inadequacies of recommended varieties or other inputs could be retransmitted to the research organizations. As a result, research objectives were not necessarily focused on immediate problems faced by farmers, and the research organizations did not provide extension services with much, if any, support.

In an effort to reorganize the Voltan research system, the "Institut de la Recherche Agronomique" (IRA) was created in 1978 in the Direction Generale de la Recherche Scientifique et Technologique" (DGRST) under the Ministry of Higher Education. The IRA was charged with coordinating all agricultural research and undertaking some research itself. This change was an attempt to shift research from the Ministry of Rural Development, however, IRA had only nominal control over most of the research institutions, and most internationally-funded research institutes continued to report to the DSA within the MRD. Furthermore, the DSA and the various foreign research institutes still owned and operated the four main research stations in Upper Volta. Thus, IRA lacked the means and power to direct or control agricultural research.

In March 1981, the GOUV created the "Institut Voltaique de la Recherche Agronomique et Zootechnique" (IVRAZ), under the Ministry of Higher Education and Scientific Research, to replace IRA. IVRAZ's mandate is to, once again, supervise and coordinate all research efforts in the country. However, the real control over resources remains confused because the research stations and most of the personnel remain under the MRD. Coordination and policy development between the Ministry of Higher Education and the MRD continues to be an important issue in the redirection of agricultural research, and the resolution of the inherent organizational conflicts between the two ministries is essential to the development of a better and more coordinated research policy.

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(2) Focus of Agricultural Research

Over the past 20 to 30 years, research in Upper Volta and many other countries in francophone West Africa, has been carried out on research stations with a commodity orientation. Most research emphasized the development of cash crops in the more favored areas of the country, and there was no integrated plan to assure a geographic balance to cover most food crops and agroecological and demographic zones. The recognition of on-farm constraints, the socio-economic influences on farmer decision-making and an emphasis on agroecologically defined production systems were not an integral part of research methodologies. Extension recommendations based on on-station research were often inappropriate and rejected by farmers as not being viable technological alternatives.

As noted above, there are currently no functional linkages between agricultural research and extension. The CSRA's function is simply to synthesize research results on an annual basis and make recommendations to the National Extension Service for dissemination to farmers. There remains no feedback linkage from extension to research for the transmission of information related to actual on-farm conditions. Moreover, the absence of farmer participation in evaluating on-station research results and determining research priorities remains a major shortcoming of agricultural research in Upper Volta. The need for more effective linkages between research programs and extension was a heated point of discussion at the most recent CSRA meeting held in Ouagadougou the week of April 25, 1983 and chaired by IVRAZ. The Director of the DSA lamented the fact that with the number of national and international research institutes carrying out programs in Upper volta and after much investment and many years of research efforts, agricultural production has not substantially improved and in the most populated area of the country it has, in fact, deteriorated. The Director went on to suggest that more adaptive research related to Upper Volta's food needs and extension service collaboration were necessary, and that research institutes in Upper Volta must be made more accountable to the needs of the agricultural sector and, ultimately, the farmer.

There still remains a paucity of research results related to technological improvements for the production of the major staple food crops in Upper Volta. This lack of research is a result of a general historic neglect of food crops such as millet and sorghum until the last ten years, as well as the basic problem of overcoming constraints placed on improving plant growth by an environment of low and erratic rainfall and low and continually declining soil fertility. The changes one can realistically expect over the next ten years would involve a series of gradual or evolutionary steps. The spread of animal traction is one of the most positive examples of an improved technology adaptable to Upper Volta's various farming systems. The important consideration in redefining research is the identification of technically and economically feasible innovations and their integration into the existing farming systems. To do this, research efforts must consider the farm families' environment, objectives and the principal constraints affecting their resource mix to better devise site-specific technological interventions.

(3) GOUV Research Priorities

The MRD recognizes the inadeqacies of the present institutional structure of agricultural research in Upper Volta and the failure of the traditional approach in determining research needs. The National Service of Experimentation and Applied Studies (NES) was recently created in the MRD as a first step in providing the necessary coordination between the Ministry of Higher Education and the MRD. In an attempt to make research carried out by the research institutes more responsive

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to the needs of the MRD, the agricultural sector and Voltan farmer, the NES will participate on several technical commissions which have been established by IVRAZ, in collaboration with the MRD, to complement the CSRA. These commissions will address various crops and problem areas in the context of the dominant farming systems in Upper Volta.

The MRD has further expressed the need to incorporate a Farming Systems Research (FSR) perpective into the national research network to make research as well as extension efforts more responsive to farmers' needs. To this end, and based on AID support to the successful development of the Farming System Unit (FSU) under the Semi-Arid Food Crop Research and Development project (SAFGRAD), the MRD requested AID support for the NES in its efforts in establishing similar FSUs at the regional levels. The main functions of the NES are to make research more adaptive to on-farm conditions, to redirect farm-level constraints to research and to assure transmittae of proven technological opportunities to all extension service for dissemination to farmers.

(4) The AID Response

Given the failure of the Voltan agricultural research network and extension service to respond effectively to on-farm production constraints, this activity of the ADS Project will use the Farming System Research (FSR) approach in determining research needs and priorities for the development of appropriate agricultural technologies. The National Service of Experimentation and Applied Studies (NES) has been given the mandate by the GOUV to establish a program of adaptive, on-farm trials of research station recommendations, emphasizing farmer participation in the process, to determine the viability of recommended technologies for farmer adoption. This approach is expected to lead to a greater emphasis on developing new crop varieties and production methods under conditions more closely reflecting those of the small farmer.

The NES will establish Farming Systems Units (FSUs) in the three ORDs comprising the Central Plateau:Yatenga, Ouagadougou and Centre Nord, and a fourth ORD, the Sahel, in the semi-arid North. The adaptive trials will cover several agro-ecological zones and numerous agroecological production systems, and will concentrate on food crop research. Furthermore, the Project will seek to improve the overall effectiveness of agricultural research in Upper Volta by strengthening the functional linkages between research and extension. The NES will feed back to research information related to constraints identified by farmers. It will also collaborate closely with the National Extension Service to develop appropriate technological packages for dissemination to farmers.

This activity is designed to reinforce and develop the capacity of the National Service of Experimentation and Applied Research (NES) to make agricultural research in Upper Volta more closely linked with the extension service and farmers, to improve the transfer of agricultural technologies, and to enable the Voltan research network to be more responsive to the needs of farm families. The Project will provide support to the NES in the form of technical assistance, training and commodities, for the establishment of FSUs at the regional levels to implement a program of adaptive research, to identify on-farm production constraints and farmer needs to the Voltan research institutes and to aid in the development of extension packages where results are proven compatible with farmers' needs.

(a) Technical Assistance

The Project provides a four-member, long-term technical assistance team comprised

of an Agricultural Economist, a Research Agronomist, a Rural Sociologist and a Computer Science specialist. It is anticipated that this team will be provided by a major Title XII U.S. Land Grant University. The technical assistance team will be based at the NES head office in Ouagadougou, but will spend a large part of time traveling to the four ORDs included in the Project zone. They will have responsibility for developing and implementing an annual plan of agronomic trials, collecting, processing and analyzing resultant research data, and coordinating an annual NES training program emphasizing farming systems research methods.

In addition to the long-term advisors, the Project will provide 36 person-months of short-term specialists to work in such areas as soil conservation, water management, vegetable production, irrigation engineering and other problem-specific areas. The planning for the short-term technical assistance will be flexible depending on the needs of the Project.

(b) Training

Long-term: Four Voltan long-term participants will be selected in year one of the Project for training in the four disciplines of the technical assistance team: Agricultural Economics, Agronomy, Rural Sociology, and Computer Science. It is programmed that the participants will return in year four of the Project to assume the duties of the technical assistance team.

Short-term: Several of the international research centers such as CIMMYT, IITA, and ICRISAT offer practical 3 to 6 month courses in farming systems research, specialized crop production, and research and extension administration. The Project will also send participants to relevant USDA short-courses. In addition, there will be an annual in-service training program developed for research assistants and the field-level technicians. The emphasis of the in-service training will be on techniques for administering research trials, and data collection and processing techniques. Under the AID-supported FSU program with the SAFGRAD project, the Purdue University technical assistance team has developed training for their research personnel which emphasizes an FSR orientation. The NES will build upon the SAFGRAD training approach with a program of periodic seminars for its research staff.

In addition to the training programs, a program of periodic seminars will be implemented by the NES to establish more effective information flows between research and extension. Presently only the CSRA offers this type of forum for discussions of research results and future programs. The NES will expand the number of contacts between itself, research, and the extension service. These seminars are seen as a first step in sensitizing the Voltan research community to the FSR approach and for forging stronger linkages between research and extension.

(c) Commodity Assistance

Commodities provided under the Project will include vehicles (including small motorcycles), data processing equipment, furnishings for the U.S. technical team's houses, NES office furnishings and supplies, and miscellanous equipment such as animal traction implements, fencing, survey equipment, etc.. Annex H contains a detailed list of commodities.

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(d) Construction

AID-financed construction will be limited to a new office building for the NES.

(e) Miscellanous

This category of costs will include minor operating expenses, rents and *per diem* for NES personnel.

(f) GOUV contribution

The GOUV contribution to the Project will be for salaries of NES personnel, vehicle operating and maintenance expenses, and utilities.

(5) Outputs

At the end of this five-year Project it is anticipated that the following outputs will have been realized.

(a) A fully staffed NES trained with requisite technical and managerial skills to effectively implement an adaptive research program at the ORD level

At the present time the NES is staffed with 12 people: 8 technicians and 4 support staff. In order to fully staff both the headquarters office and the four initial regional-level FSUs, an additional 42 people will be required. Additions to the NES staff will include: four technicians who will receive long-term training in Agricultural Economics, Rural Sociology, Agronomy, and Computer Science; three Ingenieurs Agronome (Bachelor's Degree equivalent in an agricultural science); four Agents Technique Specialise (an advanced agricultural extension officer with special training in agricultural sciences); two accountants; one Documentalist/Librarian; one Computer Operator; and a cadre of village-level agents and administrative assistants.

Along with the addition of personnel will be a program of short and long-term training over the LOP. Training will emphasize agricultural and social science disciplines for the home office and field-level technicians, and in-country and other forms of short-term training will emphasize skills training in management and accounting for the administrative staff. A major aspect of the proposed training will be programs developed by the AID-supported FSU program under the SAFGRAD project. The SAFGRAD program was successful in developing a cadre of intermediate level research personnel with an FSR orientation. The NES will emphasize and build upon the FSU approach to training, and FSR methodologies.

(b) Functioning Farming Systems Units (FSU) established at 4 regional ORDs

The FSUs will be the primary mechanism for developing stronger information linkages between the agricultural research institutions, the National Extension Service and the farmer. They will provide a means of collecting from farmers information about specific problems and potential improvements in local farming systems. The FSUs will be situated at the regional level and will collaborate with the four ORDs comprising the Central Plateau zone and Dori (Sahel Region) in a program of multi-local varietal and related agronomic trials and farmer demonstrations. Each FSU will be staffed by an Ingenieur Agronome, 2 or 3 Agents

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Technique Specialise, depending on the geographic size of the ORD, and a cadre of village-level informants and observers. The ORD-level structure of the FSUs will be backstopped by the NES head office in Ouagadougou. The head office will provide logistical and technical support to the ORD-level FSUs, establish with IVRAZ an annual research plan based on research station recommendations, analyze the research data coming in from the field, and collaborate with the extension service in developing appropriate extension packages.

(c) Established Agricultural Research Documentation Center

The Project will support the NES in establishing an Agricultural Research Documentation Center for Upper Volta and other countries in the Sahel with similar agroecological characteristics and constraints. Given the plethora or research organizations in Upper Volta, research data, reports and related publications are scattered throughout the country. The NES will organize, document and store research-related information in one central location at its head office in Ouagadougou and make it available for use among the research community. This is seen as an initial step in increasing the overall efficiency of all organizations in Upper Volta carrying out research. It will aid in preventing much duplication of effort among organizations and in directing research efforts into priority areas.

(d) Functional Liaison with the National Extension Service for the Collaboration and Development of Appropriate Extension Packages

Previously, the NES and the National Extension Service were combined as one service. The MRD believes, however, that the increased importance of carrying out Farming Systems Research and linking it to the research infrastructure in Upper Volta required the NES to be separated from extension and to be more autonomous. However, in the creation of the NES, and in the redefinition of the National Extension Service, each organization has a strong mandate for mutual collaboration in the development and dissemination of appropriate extension packages based on findings using the Farming Systems Research approach. The Extension Liaison Unit within the NES structure provides this link with extension. Likewise, in the "note de service" which redefined the Extension Service's mandate, a similar liaison unit was created in extension. Thus, the formal linkage is established, and given the NES mandate to carry out a program of essentially pre-extention farm-level research, the capacity for the Extension Service to formulate more appropriate technical packages and training programs is enlarged and enhanced.

(e) Functional Linkage with Agricultural Research Organizations for more efficient and accurate Assessment of Research Priorities, Technological Development, and National Research Agenda

Under the structure of agricultural research in Upper Volta at the present time, IVRAZ chairs the Comite Specialise de la Recherche Agronomique (CSRA) on an annual basis, at which time research institutes present their findings, extension recommendations and an agenda for future research. As pointed out earlier, research usually prepares its program without incorporating extension feedback. The inadequacy of this arrangement has become a major area of controversy between IVRAZ and the DSA within the MRD, and the DSA has repeatedly expressed its concerns to IVRAZ that research is not addressing important farm-level constraints. This was the major reason for the creation of the NES. Under the Project,

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Table 8

Agricultural Research Personnel and Financing 1/

Organization	Researchers 2/ Expatriate	Researchers 2/ Voltaic	Technicians 2/	Other 2/	Annual Budget (millions CFAF) 3/	(% foreign)
DSA	0	1	0	0	1.3	(0)
IRA	0	3	0	2	9.7	(0)
IRAT	5	4	11	85	170.7 4/	(64)
IRCT	1	4	1	n.a.	52.0 4/	(54)
IRHO	2	1	6	n.a.	54.8	(51)
CTFT	2	0	7 5/	20	54.3 4/	(62)
AVV	5 6/	0 7/	0	5	-	(100)
Livestock stations	0	0	4	30	5.0	(0)
Livestock laboratory	1	3	5	5	3.0 9/	(0)
CERCI	6 10/	4 11/	14 12/	n.a. 13/	190.7 14/	(68)
FAO - Fertilizer trials	4	0	0 15/	0 15/	32.2 16/	n.a.
ICRISAT	12 17/	5 18/	22 19/	55	210.0	(88)
SAFGRAD - Purdue	4	1	4	8	105.0 20/	(100)
SAFGRAD - IITA	3 21/	1 17/	10	11	262.5	(100)
SAFGRAD - Accelerated Crop Production	1	0	0	15/		
MSU - Fada 23/	3 24/	1	5	0	17.5 22/	(100)
WARDA	n.a.	n.a.	n.a.	20	64.1 25/	(100)
CRTA (IEMVT)	10 26/	0	n.a.	n.a.	n.a.	n.a.
CILSS/FAO Fodder Project	1	0	2	n.a.	205.0 27/	(100)
UNDP Soil Service	2 3/	3	12	0	1.3 28/	(100)
TOTALS	64	33	103	n.a	145.0 32/	(64)
				241	1,584.1 30/	(100)

Sources: Personal conversations by the mission in May 1980 with the Direction des Services d'Elèvage et Industries Animals, (Ministry of Rural Development), Direction Générale de la Recherche Scientifique et Technique (Ministry of Higher Education), CERCI, IRHO, IRA, ICRISAT, SAFGRAD, the MSU project, AVV, IRAT, and the FAO. See also IRAT, Rapport de Synthèse, 1979, no place, March 1980; Centre Technique Forestier Tropical, Rapport Annuel 1979, no place, March 1980. UNDP/FAO, Création d'un Service des Sols- Haute Volta," Conclusions et Recommendations du Projet," (AG:DP/UPV/74/007) Rome, 1980.

Notes:

1/ Not all institutions and activities related to research are included. Among those excluded are the Dutch- financed animal traction studies, ORSTOM projects in the north, and the work of the Institut de Recherche sur Fruits et Agrumes (IRFA).
2/ 1979 levels, unless otherwise noted.
3/ Usually for 1980, unless otherwise noted. Does not always include salaries of Voltaic researchers and technicians who are paid by the central government's personnel budget. Researchers each cost about 1.2 million CFAF/year and technicians cost about 0.6 million CFAF/year. US$ converted at 210 CFAF/US$.
4/ Provisional.
5/ Includes 5 expatriates.
6/ Includes 2 furnished by IRAT.
7/ One is currently in training.
8/ Includes 4 furnished by IRAT.
9/ Estimate excluding all salaries.
10/ Includes 1 furnished by IRAT. 3 more will be added after 1980.
11/ There are also 2 unfilled vacancies.
12/ Includes 3 expatriates.
13/ Not available.
14/ Average for 1980 and 1981, which is about 60% higher than average for previous 2 years.
15/ Program relies on ORD staff for these personnel.
16/ Average over 4 years (1977-81). Excludes 3 associate experts (expatriate) and some administrative costs.
17/ Staffing level planned for 1980.
18/ Includes 4 paid by government.
19/ Includes 5 paid by government.
20/ 2-year project beginning in December 1978.
21/ 1 paid for by IDRC.
22/ 1980-82 average.
23/ 3-year project, of which 2 1/2 were research in Upper Volta, ending in 1980. Figures are yearly averages.
24/ Includes only 1 Ph.D.
25/ Excludes cost of 5 ORD agents (technicians).
26/ Estimate.
27/ Covers estimated average annual funding for research on the biological control of tse-tse flies (a project beginning in 1974 lasting 5 years at a cost of CFAF 900 million) and research on immunology for trypanosomiasis (a project beginning in 1978 lasting 4 years at a cost of CFAF 500 million).
28/ This project covers 3 countries for 3 years (1978-81) for a cost of CFAF 11.5 million. Costs are prorated equally among countries. The second phase is expected to have twice the financing.
29/ Excludes unavailable data.
30/ At least 17.6 million CFAF should be added to cover the 21 Voltaic researchers and technicians paid for by the agricultural budget.
31/ Not always for life of project
32/ Based on five year project (1975-79); includes construction and equipment.

the NES will attempt to sensitize the Voltan research community to the need and applicability of the FSR perspective and the importance of research-extension information flows. NES will initiate a series of intermediate-level seminars and contacts with extension and research organizations' participation to improve the movement of information relating to off-station research results. The MRD will likewise recommend and leverage for changes which would make research programs more accountable to the needs of the rural sector.

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B. The Development and Extension of Nutritionally Sound Food Production and Processing Practices

The spector of malnutrition haunts all programs for improving the quality of human life in the Sahel. This particular constraint on the development process, the most agonizing one in human terms, has been clearly recognized and documented. However, the process necessary to alleviate this problem has only advanced slowly, at best.

The nutrition problems of Upper Volta are uncontestably among the worst in the world. The causes of the problem are multiple and interrelated and include:

1. Inadequate and highly variable food production;
2. High losses through storage, processing, preservation, etc..;
3. Geographically inadequate marketing systems;
4. Insufficient effective demand;
5. Inadequate resources to utilize available food (especially women's time and energy, fuelwood, water);
6. Improper use of available food: transformation (toxicity, contamination, palatability, nutrient density) and serving (breastfeeding and weaning practices);
7. High human requirements due to losses to infectious disease and parasites; and
8. Hygiene, impure and inadequate water supplies.

The evidence for chronic malnutrition in children is abundant; 27% of all children in Upper Volta die before they reach the age of five. The cause of death is usually a disease linked to malnutrition, or because parents are unaware of which foods are nutritious and how to retain nutritional value through proper preparation of foodstuffs.

The problem of malnutrition is addressed by the GOUV through the Ministries of Health, Social Affairs, and Rural Development. To date most efforts have been concentrated around the maternal and child health care (PMI) centers located throughout the country. Catholic Relief Services and the Ministries of Health (MOH) and Social Affairs (MSA) play an active role in the operation of these centers, where children's growth performance is monitored, in many cases PL 480 foodstuffs are distributed, and demonstrations and talks on health and nutrition are given. Women who participate in the program pay for the operations of the center through fees of 50 FCFA per month. Within the government and other organizations there is a growing relief that nutrition improvement should be based on better use of local foods, rather than continued dependence on imports.

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The first three causes of undernutrition are being addressed through direct agricultural and rural development efforts. The last two causes are being dealt with through the water and primary health care system. Causes 4-6 are most appropriately addressed through nutrition, including the programs of the MRD, MOH and the voluntary agencies which distribute food.

While effective demand may be addressed through rural development projects, it is also appropriate to consider some income-generating projects as part of the nutrition strategy (particularly income-generating programs for women). By the same token, some programs which address improper use of available food, are appropriately carried out through MCH clinics (e.g. education about infant feeding practices) while others fit better into the MRD (such as technological solutions to bacterial contamination of foods). The substantive focus of the MRD emphasizes income-generating efforts to improve nutrition, resource constraints in utilizing available food, and the improper use of available food which is amenable to research and development of technological solutions.

In February 1976 the MRD created the Food and Nutrition Section of the Permanent Secretariat of the Coordination Committee for Rural Development. In 1979, during a Ministerial reorganization, the Food and Nutrition Section became the Food and Food Technology Service (FFTS) under the Direction of Agricultural Services (DSA). The Ministry justified the creation of such a service, which complements the nutrition activities already in the Health Ministry, by virtue of the nutrition problem's close association with food production and utilization. Nutrition intervention in the therapeutic area, such as in oral rehydration therapy, is not presently in the hands of nutritionists, but rather doctors, paramedics, and nurses handle diarrhetic problems and the management of acute malnutrition. However, a larger and more lasting impact in nutrition can only be achieved through increasing food production and income.

The FFTS is charged with:

- promoting the integration of food and nutrition activities within rural development projects;
- assisting in the design of a National Food Plan;
- assisting production planners to incorporate food/nutrition parameters into the national development plan to achieve food self-reliance;
- investigating food transformation processes, studying and testing improved techniques for locally available foods and recommending a nutritionally sound technical package for extension activities;
- ensuring quality control and inspection for locally produced and marketed food as well as for imported commodities; and
- providing training to rural workers and administrators within the food and nutrition area.

(1) <u>The AID Response</u>

The Project will provide support to the Food and Food Technology Service (FFTS) of the MRD to carry out its mandate. Support will consist of:
<u>Technical Assistance</u> from a Title XII University or a private firm, including:

- a Nutrition Specialist , who will be Project Manager for AID, for 48 pm;
- an Audio-Visual Aids Specialist for 24 pm;

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- an Agricultural Economist familiar with intrahousehold allocation of resources for 24 pm;
- a Rural Sociologist for 24 pm; and
- a Food Inventory Nutritionist for 24 pm.

Short-term technical assistance will be provided in the areas of Library Science (to set up the documentation center), laboratory technology (chemistry), laboratory technology (micro-biology), Rural Sociology, Computer Science (micro-processor), Audio-Visual Aids, Consumption Economics, Nutrition Education, Food Equipment Testing, and Home Economics in applied resources.

Two FFTS agents will be sent to a U.S. university to do M.S. degrees in Nutrition Planning and Communications/Community Organization/Marketing. Under equivalent training in the areas of vehicle mechanics and repair, electronics repair, chemistry laboratory technology, home economics, audio-visual arts, graphic arts/printing, library science and accounting. In-country training in the areas of nutrition education delivery, communications, laboratory testing, home economics etc.., is described in Section (b) below.

The Project will also furnish commodities, the construction of a new FFTS headquarters building and local operating costs as described in the Procurement Plan (Annex H) and the Financial Plan (Section II).

Three elements of this activity will enhance the capability of the FFTS to plan, test and promote nutritionally sound practices leading to an increase in the nutritional self-reliance of the Voltans. The three elements are (a) planning and surveys, (b) training, and (c) food technology research and development.

(a) Planning and Surveys

A number of essential surveys will be carried out in order to assist in planning, especially in the identification of at-risk groups, development of a practical early warning system for impending food shortages, and development of baseline national food consumption data. The surveys will also assist the development of technology necessary to improve nutrition, and improvement of training and training materials for young farmers, village organizations and agricultural extension agents.

The survey information will be updated using feedback from workers in the villages. Field staff will gather the necessary information on needs and constraints to be used in the research and development efforts, deliver and test new technologies developed to the field, and communicate back to the FFTS adaptations needed in technology and new needs. The studies will be used to "prime the pump" of the Research Section of FFTS, to provide sufficient information to initiate research and development in the Technology Unit of FFTS, and to devise and refine training materials for the Training Section.

The Project will finance three small studies and one national-level survey:

1. a study of household allocation of time and energy, particularly of women relative to food;
2. a study of food sources and processing methods and intrahousehold allocation of food;

.../...

3. a study of income sources and production systems and their effects on food consumption; and

4. a national sample survey of income, production, food prices, household food consumption, and simple measure of nutrition status.

Each of the studies will be carried out in a small number of ecologically, agriculturally, and ethnically representative villages. Study and survey villages will be some subset of the twenty groupements villageois which are to be targeted for credit and income generation programs in this Project under Components Two and Four. Lessons learned from the results of the small studies will be used to establish necessary sampling methods, variables, and survey instruments for the national survey. It is anticipated the studies will be undertaken on a staggered schedule, beginning 6-9 months apart.

The Technical Analysis in Annex G (1) provides a detailed discussion of each of the studies, the survey, how they will be carried out, by whom and when.

Briefly, the study on household allocation of time and energy, especially of women relative to food, will be carried out in order to determine major resource constraints to using available food in the household. The study on food resources and processing methods, and intrahousehold food allocation, will be carried out in order to identify foods consumed by the family, to determine their nutritional value and the methods by which the foods are acquired, transformed, stored and served.

The study is also designed to describe the intrahousehold allocation of food. The study on income, production and food consumption is being undertaken in order to determine the amounts, sources and disposition of income by men and women in the household. The study will also establish a basic market basket of foods consumed by the household. Finally, the purpose of the food consumption survey is to quantify the rural consumption problem, identify high risk areas and groups, and help develop a nutrition surveillance system.

(b) Training

Under the Project the Training Division of the FFTS will implement an in-country program designed to provide food and nutrition training for agents of the MRD. The Unit will also develop audio-visual training aids. Finally, it will train members of groupements feminins (GFs) in the use, operation and maintenance of experimental food technology equipment. Technical assistance in communication skills, nutrition education and rural sociology will be funded under the Project.

(1) MRD Agent Training

This program will provide short-term training for agents responsible for food supply and preparation in the various vocational agricultural schools (Matourkou, Kamboinse, Farakoba, the University, CFJAs), for agents in the ORD extension services, and for supervisory personnel in the ORDs (sector and sub-sector chiefs).

For the field agents, in-service training will last from ten to fourteen days. Training will focus on the following themes:

a. incidence of nutrition problems in Upper Volta, symptoms, and causes;

b. food consumption and dietary balance for a complete diet;

c. nutritional needs and changes over life cycle;

.../...

d. concept of nutrient density and young children's diets;

e. principles of food preparation;

f. results of poor food preparation and improper hygiene;

g. nutritional significance of food produced, purchased and foraged; and

h. improvements in food conservation and storage.

The Technical Anslysis in Annex G (1) contains a detailed description of who will carry out the training, when and where.

For the agricultural school training program, short-term courses on comparable themes will be offered to students at the CAP Matourkou agricultural extension agents school and the teacher training college for CFJAs (Kamboinse and Farakoba). Again, for this and the following section, see Annex G (1) for a detailed discussion of the training program.

For the training and demonstration program for women's groups the objective is to deliver to the rural milieu training, demonstration and credit activities in food technology and nutrition. The FFTS will focus on twenty selected women's groups (GFs) over the LOP. Criteria will be developed by the FFTS during thefirst year to guide the selection of these groups to ensure all climatic zones and major etchnic groups are covered. As these groups will also be the sites for the surveys planned by the Survey Division, it is important that they be chosen in a statistically prudent manner. As these groups will benefit from a credit program introducing improved food technology practices such as the use of grain mills and oil presses, it will be required that the groups have prior experience with other projects and have demonstrated their ability in management and implementation.

The FFTS will introduce an innovative credit system to provide labor-saving food technologies to the GFs which will not only give women more free time, but will generate income for the group and increase the nutritional value of food prepared and consumed by the family. A set of experimental equipment will be purchased by the GFs (the exact terms of the purchase agreement is the subject of one of the C.P.S.) at which time the FFTS will train the operators selected by the group in machine operation and maintenance. Fees received by the group from users will be set aside to run the machines, provide maintenance and repay the credit agreement.

Once in use, these technologies will provide the extra free time needed by the women to attend classes and group demonstrations. The training effort will concentrate on subject areas such as:

- the causes of nutrition problems in children;
- appropriate infant feeding practices;
- improved preparation, preservation and storage practices;
- necessary technical knowledge to run and maintain the food technology equipment;
- economics of equipment operations (costs, inputs, volume of output, hours of operation, etc.); and
- money management for other income-generating projects;

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(c) Food Technology Research and Development

The Food Technology Research and Development Section of the FFTS will carry out the testing of food storage, preservation, transformation and processing technologies. The section will also have a modest capacity to chemically test foods for nutrient composition and for the presence of microbial contamination and toxic substances.

The food technology testing activity will test the efficiency and effectiveness of various home and village technologies which can be used to transform foodstuffs, such as de-hullers for sorghum and millet, diesel-driven oil presses and extruders, and hand operated peanut shellers. This section will interact directly with the Survey Section to respond to the needs of the rural sector as indicated through survey results. Based on these results, this section will also target ideas for generating new technologies. In addition to analyses on machine operations (costs, maintenance, output capacity, amortization rates, efficiency ratios), studies will be undertaken to determine the socio-economic returns to such machines. As labor-saving devices, these machines can impact directly on women in their daily lives. Depending on availability of parts and services, the machines will be procured locally or in the U.S.

The Project will also support the establishment of a food machinery laboratory at FFTS headquarters. This section will study the feasibility of local production of food technology equipment by private Voltan firms, such as SOVICA.

The home economics laboratory will:

(i) generate food recipes consisting of local foodstuffs which have a high nutritional value and balanced nutrient profile;

(ii) determine maximum conservation times for foods already cooked and stored in locally available containers in light of the climatic conditions prevalent in Upper Volta, will also determine the cooking time required to destroy microbiological growth after a foodstuff has been conserved;

(iii) study and make an inventory of traditional methods for food storage (raw products), conservation (drying, smoking, fermentation), and processing/transformation (oil production, production of Tô, flour production), with the help of the survey section; and

(iv) carry out R & D to develop new cooking, storage and processing methods which minimize serious contamination and which save women's time.

A home economist long-term technical assistant will be needed to set up this section and provide the guidelines for the lab's activities. Start-up of the activity will be in year two. This will allow the Survey Section the opportunity to become established, so that survey data and results will be available as indicators for the direction the home economics lab should take. Annex G (1) provides further details on the implementation of this activity.

Finally, the establishment of a Chemical and Microbiological lab will permit the FFTS to determine the basic level of chemical composition of foodstuffs (raw, cooked or preserved) and to identify the presence of toxic substances in foodstuffs which are locally produced and /or imported. The lab will be equipped to analyze bacteriological contamination, toxin content, nutritional content, and

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basic chemical parameters.

The lab will not be equipped until year three of the Project. Analyses required prior to that time will be handled by the shipment of food samples to the ORANA Laboratory of the Institute of Food Technology in Dakar or the FDA, in Washington, D.C. The technical requirements for sending such samples (required by the food inventory survey to be done in the first two years of the Project) will be determined by the technical assistance team during year two. If Senegal and Upper Volta were virtually ecologically identical, and only a few analyses of local foods remained to be performed, a good argument would exist for performing the remaining analyses in Dakar. Senior Voltan nutritionists who have studied at the Institute in Dakar, do not believe this to be the case, but rather that the number of varieties of Voltan foods to be analyzed for nutrient content is too large to make the constant shipping of samples back and forth a practical procedure. The effects of food preparation and storage methods on nutrient content also would be difficult to determine in Dakar because of the time required for transportation of samples.

It is anticipated that this lab will provide testing services for other organizations such as CRS, the Nutrition and Family Health Service of the Ministry of Health and the ORDs. Although the purpose of the food laboratory is not to establish a Voltan Food and Drug Administration, frustration on the part of Government authorities who lack the basic equipment to confirm the existence of highly toxic substances currently being marketed to a naive public, made the establishment of the laboratory highly appealing to civic-minded government leaders. The wide-spread sale in the countryside of amphetamines as "power"pills advertised as helping peasants to work harder; a popular tasteless red powder suspected of being Red Dye Number 2 now advertised and sold as "tomato powder"; a patent medicine for internal use which smells strongly of ammonia; and local soft drinks with murky sediments and bitter aftertastes are only a few examples.

The program priorities of the Food Technology R & D Division during the first phase of the Project (years 1-3) will be to concentrate on establishing an inventory of existing traditional methods by region which are used in the transformation of cereals, fruits, vegetables, and other local foodstuffs. This study in conjunction with other surveys being carried out by the FFTS, will provide a factual portrait of current food preparation and consumption patterns in Upper Volta. This information will then serve to form the basis for the generation of a realistic National Food Strategy and Food Plan. It will be the responsibility of the FFTS to ensure that the line of communication between itself and the inter-Ministerial Committee for the National Food Plan remains open and well-used.

Second priority will be given to the Food Machinery Testing group. The lab will begin work in conjunction with the experimental training foreseen for the twenty women's groups with respect to testing, operating and maintaining food transportation machines. At the same time, this division will also be investigating the feasibility of local production of food technology equipment by local private firms.

Third priority will be given to the establishment of the food testing lab. Experience gained during the first couple of years in sending samples out of the country will dictate how rapidly the lab will take shape.

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(2) Outputs

At the end of this five-year Project it is anticipated that the FFTS will have:

(a) a capacity to provide accurate information regarding consumption by Voltans which will help guide national level planning in the allocation of resources at both the micro and macro levels;

(b) an in-country nutrition training program for extension agents (men and women), vocational agricultural teachers, members of selected women's cooperatives, agricultural school students, and selected young farmer pre-cooperatives; and

(c) improved food technology and basic home economic guidance to deliver to the rural men and women in practical, sanitary skills of preserving newly harvested food, increasing the quality and efficiency of food transformation, and enhancing the nutrition impact of the current diet consumed.

The basic thrust of this institution building effort is to build two-way communication between the FFTS and the villagers. Through data gathering activities and the presence of trainers, technology transfer agents, and the survey chiefs in the villages, the people will be able to communicate their needs directly to Ouagadougou, groupements feminins leaders will also be given training to facilitate articulation of needs. The laboratories will then respond to expressed needs by developing new techniques and technologies. Through the training and extension activities those new ideas will be transmitted back to villages and tested there. Initially, twenty villages with groupements feminins will be included in the Project. Once a number of self-sustaining activities are going in these villages, a new set of villages will be selected.

To produce the first output, the Survey and Planning Unit will carry out studies and surveys described earlier which will determine not only the level of need and the neediest groups, but also the constraints to improved nutrition.

The results of these surveys will be used to establish national food policy and nutritional priorities, to inform the R & D efforts of the FFTS, to establish communication between villagers and FFTS staff, and to commence a system of adaptive research in home economics of food. It could also help to identify new indigenous sources of food and nutrients for the family.

The FFTS will establish a documentation center to make available to policymakers and planners all available information on Upper Volta's food and nutrition problem. It will also serve as a focal resource center on related information for use by nutritionists, trainers, teachers, and extension agents in Upper Volta.

To accomplish the second objective the FFTS will translate its findings about qualitative efficiencies along the food chain from harvest to consumption into instructional materials and training seminars. These materials will be used by extension agents, vocational agriculture teachers, women's cooperatives, and young farmer groups. Developing these leading materials involves skill in presenting the guidance in a form in which it can best be understood. It will also require that the material be available in sufficient quantities for widespread dissemination. This is a multipronged approach to communicating the educational message: trainers will be trained, curricula of agricultural extension training programs will be augmented and direct training will be given to selected extension workers and representatives of community groups participating in the food technology

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studies. Furthermore, a national conference will be held to review the training program and work out solutions to problems encountered. These nutrition education efforts will be coordinated with and complementary to other nutrition education efforts in the country (MOH,MSA, voluntary agencies) through a subcommittee of the National Food Plan Committee.

To accomplish the third objective the FFTS will establish three "laboratories": technology, home economics, and food testing. The technology laboratory will test machinery and other technologies for use in the villages for food transformation (grain mills, oil presses, etc.) and it will engage in research and development activities to design new technologies for which villagers have expressed interest.

The home economics laboratory will research, develop, and test new recipes, methods of transforming and preserving food, and other time-saving techniques in food preparation for which rural women have expressed need. The "experimental kitchen" will consist not only of modern food processing equipment, but also of traditional stoves and utensils. Tests will be carried out by indigenous cooks representing the major ethnic groups.

The food testing lab will address only the most pressing needs for microbiological, toxicological, biochemical and nutrient analyses. In order to keep this effort modest and responsive to the remainder of the activities of the FFTS, only those laboratory analyses which are of highest priority and unable to be carried out by private or university laboratories will be undertaken in the FFTS laboratory.

B. The Development and Extension of Environmentally Sound Soil, Water and Land Use Practices

The semi-arid zone of the Sahelian region of West Africa has an extremely delicate ecology and is susceptible to periodic droughts which have a devastating effect on the human and natural resource bases. During these droughts, the human population of the Sahel faces severe constraints with respect to food and animal production and in obtaining sufficient quantities of water and firewood. In Upper Volta, population pressures on the land further exacerbate the degradation of the natural resource base by reducing soil fertility through continuous cropping without allowing a sufficient fallow interval and by abetting wind and water erosion through overgrazing of pasture lands and reducing the vegetative cover to meet fuelwood needs.

Problems associated with continually decreasing soil fertility and erosion pose significant problems for Upper Volta because over 90% of the population is involved in rained agriculture. The problem of declining soil fertility is particularly acute in the Central Plateau area where over 50% of Upper Volta's population is concentrated. The Central Plateau area has become a food-deficit zone for cereal grains, and population pressures restrict the length of fallow and continued cultivation removes from the soil key nutrients required for sufficient plant growth. As long as the situation remains as is, the potential for increasing agricultural production is very limited.

As regards the potential for irrigated agriculture, many of the current donor activities related to soil and water management in Upper Volta emphasize the development of water resources, i.e. dams, wells, irrigation and bottom-land (bas-fond) development. However, donors have paid relatively little attention to problems

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associated with soil erosion and conservation. Furthermore, Upper Volta has no national water use or environmental monitoring policy which governs water resource development.

It is estimated there are now some 500 large dams and reservoirs in Upper Volta. Approximately 350 of these dams have structures which allow down-slope irrigation. However, to date, there are no efforts to protect the reservoirs' watersheds from erosion. Erosion and sedimentation rates are extremely high, and it is estimated that 80% of the reservoirs constructed during the past 20 years have lost capacity to the extent that they can no longer be fully utilized for their planned purpose. The scientific data base in Upper Volta is woefully incomplete in describing the process and the rates of soil degradation. Nor is it sufficient to identify specific priority regions which require immediate attention. Without such information, GOUV planners and donors cannot hope to accurately identify the crucial constraints, develop technologies and practices to address these constraints, and develop effective central government service delivery systems to combat these constraints.

The National Soils Service (NSS) of the MRD was created in 1976, set up under the DSA and charged with (1) determining the potential outputs of soils in Upper Volta; (2) assisting in the diversification and intensification of crop production through improvements in soil fertility and soil conservation with respect to rural development projects; (3) assisting in the establishment of projects for water, crop production, forestry and range management based on types of soils found therein; and (4) assuring the training of local technicians in applied soils science methodology. To date, the NSS has received aid from UNDP/FAO and the Dutch Government and has established modest programs for fertility analysis and soil testing. Those activities are due to terminate in December 1983 and the NSS is without resources to continue its work.

(1) The AID Response

Given the plethora of donors involved in water development projects and the lack of any significant interventions related to soil conservation, this Project will support the NSS in developing and strengthening its capacity to carry out its mandate for an improved national soil and water conservation program. This will be done by creating a national soils and data base as a result of a national soils survey, developing a soil and water conservation program and coordinating the delivery of soil and water conservation activities to targeted ORDs.

This activity will contribute to the achievement of the sub-purpose of Component Three, accelerating the process of transferring productive technologies into the rural sector, by providing a data base which can serve as the basis for the formulation and execution of a national policy for soil, water and related natural resource use to sustain the development of agricultural production, and to strengthen the system for delivery of information, education and technical services necessary to implement a national soils and water policy.

AID-financed inputs will be in the form of advisory assistance, training, and commodities.

(a) Technical Assistance:

The Project provides a four-member long-term technical assistance team comprised of a Soils Cartographer (36 pm), Soils Scientist in genesis and morphology

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(24 pm), Soils Conservationist (36 pm), and Computer Technician/Programmer (24 pm). The Project will also provide 19 pm of short-term technical assistance in the fields of soil conservation, soils science, soil cartography, a USDA/ Soil Conservation Service (SCS), computer specialist, financial management, irrigation engineering, monitoring and evaluation, and agricultural economics.

(b) Commodities:

Project commodities will be procured locally and in the U.S. Local procurement will consist largely of office supplies and equipment, mopeds, and survey supplies. U.S. procurement will consist of 4 wheel-drive vehicles, spare parts, a computer, survey equipment, cartography equipment, soil conservation equipment, office equipment and documentation center equipment.

(c) Training

Long-Term -- Two long-term participants from the NSS will be sent to a U.S. university, preferably in the Southwest, for M.S. degrees in soil conservation. Upon return they will assume leadership roles in the conservation unit. Five NSS agents will be nominated for long-term technical training either at the A.A. degree level or in-the-field training. Two of the five will spend 6-9 months in a Soil Conservation Service state-level in-service field training in a Southwest state of the U.S.. The remaining three will be trained in computer technology/ programming, irrigation technology, water management, and automotive mechanics. Other disciplines may also be appropriate later in the Project.

Short-Term -- Each year the NSS will send two agents to participate in various short-term courses sponsored by USDA.

(2) Outputs

At the end of this five-year Project it is anticipated that the following outputs will have been realized.

(a) Established National Soil and Water Data Base

To better enable the GOUV and the MRD to formulate more rational national natural resource policies and procedures, the development of a sound resource data base will be required. This output will expand the current information base and create the opportunity for the MRD to delineate important priority areas for soil and water management efforts. An improved and more accurate data base will provide resource management analysts (consultants, universities, etc..) with information upon which more credible recommendations for soils and water management improvements can be based. This output includes four elements:

(i) acceleration and modification of the current national progress in soils survey: a national soil survey plan-of-work (POW) will be prepared in consultation with the Director of Agricultural Service, the Chief of the Soils Service, representatives of Dutch aid working with the National Soils Service, ORSTOM, IGHV, the Inter-Ministerial Mapping Committee, and FAO Soils Service technicians. The POW will establish the long-term national collaborative program for the implementation of a progressive soils survey program, will document the intergovernmental agreement to accords which are reached, and will provide for a process of annual review and adjustment. At a minimum, the POW will set the following:

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- the methodology and technical standards to be used in implementing the survey;

- the intensity of mapping to each land use, i.e. rangeland, rainfed cropland, and irrigated cropland;

- how soils series will be established;

- the priorities for progressively mapping Upper Volta consistent with agreed upon intensities;

- the program logistics including, but not limited to, management of field survey teams, preparation of soil survey reports, cartographic services, and publication of reports;

- the interpretive reports and maps which will be prepared from the soil survey, i.e. land use, sensitivity to erosion, severity of erosion, etc.. and

- how the soil survey will be used.

The AID assistance will be used to leverage GOUV adoption of the international soil taxonomic system and advanced mapping and display system. USAID/UV and the National Soils Service will draw upon assistance available through the USDA Soil Conservation Service (SCS) for the development of the POW. Based on agreements reached in the POW, a progressive mapping program will be initiated in 1985.

(ii) Initiation of an on-going soil and water resources monitoring and evaluation system: a monitoring and evaluation (M & E) system will be initiated during the Project period to track status, conditions and trends associated with the natural resources which are most critical to the implementation of a soil and water conservation program. The system will be based on a POW which will be developed by potential users. At a minimum the POW will include the following:

- the statistical sampling procedures which will be used;

- the resources to be tracked;

- the procedures to be used to collect the data at the sample sites;

- the frequency of data collection;

- the provisions for data storage and management;

- the provisions for making the data analyses available to user groups; and

- how the system will interface with similar systems as proposed in the area sample frame of Component one.

Assistance will be requested of the USDA SCS and/or a consulting firm experienced in the design of data collection, storage and retrieval systems in the development of the POW. Based on agreements reached in the POW, a monitoring and evaluation system will be initiated in 1987.

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(iii) Completion of an inventory and evaluation of the potential for further development or improvement of existing small dams and reservoirs: this activity is part of the effort to provide data for more rational and effective national policy information for irrigated agriculture and related surface water management. At a minimum the study will include:

- an inventory of small reservoirs, including a map;

- an assessment of the physical condition of the resource, including the extent of undesirable vegetation on the dam, the degree of sedimentation of the reservoir, the condition of the watershed, the projected useful life of the reservoir, the extent, efficiency and potential for irrigation, and the method used and condition of the irrigation water delivery system;

- an assessment of the potential of the resource under alternative improvement schemes; and

- a set of recommendations for long-term actions.

The study will be carried out by the present NSS personnel, with assistance from ONBI, and as necessary, outside technical assistance on a short-term basis.

(iv) The establishment of a soil and water conservation data base management system: this activity is in harmony with the overall effort to strengthen the capability of the GOUV to formulate and implement national policy based on sound technical data and analyses. A specific POW for this activity, to be developed in cooperation with the DEP, will determine the type of hardware to be used, software acquisition and development, scope of the data base, training plan, analyses to be generated, and an acquisition schedule.

(b) Established Soil and Water Conservation Service Delivery System

Even though the GOUV needs to implement a nationwide soil, water and related resources conservation and development program, the capacity and technical expertise needed to implement such a program is not readily available, nor is such a program practical in the short term. Our plan opts for an incremental approach which will lead towards a more complete and comprehensive program. The initial efforts will be highly targetted to those areas where the soil and water conservation problems are the greatest and where the on-going effort indicates a high level of farmer acceptance and potential for success. Preliminary data indicate the general Project area should be the Mossi Plateau where erosion rates are the highest, population pressures are the greatest, existing donor efforts are currently underway which can be improved, and the attitude of the dominant ethnic group, the Mossi, is progressive.

This activity includes the following elements:

(1) financial assistance to the MRD to strengthen the capacity at the national level to formulate sound soil and water conservation policy and support of the Dutch-funded FDR* field delivery system in a way which makes effective follow-up possible;

* FDR - Fonds de Developpement Rural

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(2) provision of technical assistance at the national level in the form of an experienced soil and water conservation advisor to work directly with the DSA and the Soil Conservation Section of the National Soil Service; and

(3) provision of technical specialists to work with the FDR-Dutch volunteers and the extension agents in converting the present terracing approach to a conservation systems approach. This effort will be targetted to the Yatenga ORD. To the extent the intervention is successful in Yatenga, it will be expanded to another ORD and based on the availability of personnel and resources, to other ORDs and, in time, to the entire Mossi Plateau.

4. Component Four

Component four consists of two activities designed to achieve the sub-purpose of decreased food insecurity at the national, regional and local level. The activities are (a) decreased food insecurity at the village-level and (b) decreased food insecurity at the national-level.

Decreased Food Insecurity at the Village-level

When one examines the structure of the grain markets in Upper Volta, one is struck by the fact that 85% of the grain produced within the country is consumed by the producers household. Of the approximately 200,000 MT that are marketed annually, the National Cereals Office (OFNACER) handles 30,000 MT, inter-regional trade dominated by large scale merchants comprises 150,000 MT, and intra-regional trade dominated by small traders, households, and village cooperatives represents about 20,000 MT. A review of market patterns indicates that due to poor infrastructure, the seasonal demand for liquidity, and the lack of rural financial intermediaries, 80% of grain marketed is sold by the producer from November through March. This marketing pattern results in extreme intra-annual price variations. For example, post-harvest prices in the Southwest are found to be in the 40-45 F CFA/kg range, while those in the central regions are 45-55 F CFA/kg range and in the north 55-65 F CFA /kg. In April, markets generally begin to constrict and prices increase until they peak in August at levels which are often as much as 100% higher than the post-harvest price. In order to remedy this marketing pattern and develop market systems which are conducive to increased productivity and cereal security, the rural producer/consumer should benefit from increased competition in the local cereals market. One such source of competition is the village operated cooperative cereal bank. These institutions, which closely resemble the village grain cooperative structure in the United States, serve four basic functions: (1) they serve as an alternative purchaser of the farmers' grain which tends to increase producer prices, (2) they serve as a local level grain reserve which assures cooperative members of adequate supplies throughout the consumption year, (3) they serve to stabilize consumer prices through increased local supplies and elimination of transportation costs, and (4) they serve as a social-welfare distribution agent that can assure adequate availabilities to those members (the poor, aged, ill, etc.) who would otherwise not have access to supplies.

The beneficiaries are therefore the members of the cooperatives or Groupements Villageois (GVs), which are small-scale private sector institutions of an economic and social character. Cooperative activities are consistent with traditional village structure and organizational patterns. The individual GV has the right and responsibility to determine its structure and management practices based on the members' consent. The GVs are democratic institutions that elect their governing boards, which usually consist of a President, Treasurer, Secretary, and Accountant. The village elders usually occupy the positions of President, Treasurer, and Secretary, while a younger person who has the necessary math skills often serves as the accountant.

The GVs have formed spontaneously with the encouragement of the GOUV. Historically, the most successful cooperative activities have been associated with the production and marketing of the traditional cash crops of cotton and peanuts. In recent years however, the GOUV has also been encouraging the development of small-scale cooperative cereal banks (grain elevators) as an alternative marketing agent. There are three basic reasons for such encouragement:

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(1) the GOUV appreciates the necessity of a more commercial agricultural sector to assure growth, (2) cooperative cereal banks permit the village to retain a greater profit which can be invested in community development activities, and (3) the GOUV has found that it is not cost-effective for OFNACER to provide village-level cereal security.

A major constraint to the positive socio-economic development of cooperatives is the lack of capital to finance the development and/or expansion of marketing activities. Currently most cereal banks (approximately 300) have been financed by PVOs or GOUV regional structures (Eastern ORD, AVV, etc). The Department of Rural Institutions and Credit (DIRC) was created in 1978 to promote the GVs by developing and coordinating complementary training programs and credit services in order to assure that the maximum benefits possible are earned.

The development of a cooperative movement in Upper Volta is a positive trend which should be encouraged. We believe village owned/village operated cooperatives are financially viable and offer producers and consumers a market alternative that should increase cereal security.

(1) The AID Response

The overall USAID/Upper Volta Mission-level goal is that of nutritional self-reliance, while the goal of the Agricultural Development Support Project is increased agricultural productivity. It is argued that an increase in agricultural productivity will increase nutritional self-reliance directly via the increased availability of foodstuffs and indirectly through the increased disposable incomes earned from the sale of agricultural commodities. In order to meet these goals, the purpose of the ADS Project is to reinforce the capacity of the Ministry of Rural Development to manage and promote a more efficient use of resources in the agricultural sector.

The sub-purpose of this Project activity is decreased food insecurity at the national, regional and local levels. It is argued that the introduction of insecurity or risk as an exogenous variable into the decision-making process will tend to shift resource allocation away from the economically optimal point for long-term growth in production towards a less optimal point which minimizes risk. While there are many uncertainties which enter the decision-making process of both the farmer and the policy-maker, by far the most important in the Voltan setting is the availability of cereals.

Briefly, given Upper Volta's existing physical, human, and capital resource base, we expect the necessary increases in agricultural productivity will be generated by increases in coarse grain yields in areas where there is a comparative advantage, and the shift of crop-mix from lower-value commodities (coarse grains) to higher-value commodities (oils, vegetables, tubers, and small ruminants) in those areas which do not have a comparative advantage in coarse grain production.

Since coarse grains are the staple of the Voltan diet, insecurity in their availability has a direct impact on crop-mix decisions for both the producer and the policy-maker. The effect on the producer in a deficit potential area is to plant his marginal land to coarse grain commodities in order to ensure that the family will have greater availabilities and be less dependent upon the market. Such a farming pattern may maximize short-term coarse grain production, but not agricultural productivity and over time will result in decreasing productivity as soils become depleted from over-cultivation. Therefore, it is argued that for the farm household to increase its agricultural productivity, it must be confident that adequate supplies will be made available on the local and regional markets.

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The activity is also expected to have an indirect impact upon the policy-maker's decisions. An examination of the GOUV reveals that the population has effectively transmitted its concerns to the Central Government through the traditional and modern political systems. It is therefore reasonable to believe that as village-level officials become more confident regarding cereal availabilities, this confidence will be transmitted to the policy-makers.

We believe, therefore, that this Project activity, complemented by the national and regional focus of OFNACER, contributes directly to the Mission-level goal of nutritional self-reliance and the Project goal of increased agricultural productivity. The activity also contributes directly to the Project purpose of reinforcing the capacity of the Ministry of Rural Development to promote a more efficient use of resources in the agricultural sector by both the reduction of cereal insecurity experienced by the policy-makers as well by the encouragement of the private sector in those areas in which the public sector cannot and should not play an active role.

The support to private sector cereal banks is also expected to reinforce the capacity of the Ministry of Rural Development to better allocate its scarce financial resources. Given the importance of food security within the Voltan context,it is imperative that the GOUV implement programs to assure the population that it minimum requirements will be met. Historically, the GOUV attempted to provide such assurances through the local storage and market interventions of OFNACER. Such an approach was found to be extremely costly, not very effective, and may have resulted in market distortions which discouraged subsequent years production. We therefore support the GOUV efforts to move OFNACER away from local level storage and market interventions and believe that the provision of capital to cereal bank activities will reduce the necessity of the states intervention and encourage the utilization of public resources for production oriented activities.

(2) Inputs

The activity is an effort to utilize the appropriate channels of the Ministry of Rural Development to make credit available to the rural private sector for the activities of village-level storage and marketing which can be most efficiently achieved by the private sector. The activity has two indirect objectives which are consistent with the overall Project purpose : (a) to strengthen the capacity of the GOUV to provide the necessary goods and service of credit to the private sector for those activities in which the private sector has a comparative advantage, and (b) to encourage the GOUV to develop viable credit policies that will ensure that the credit can be remunerative to the borrower while the fund does not decapitalize.

As discussed in the Technical Analysis in Annex G (1), the only inputs that are necessary at this time include the progressive capitalization of a loan fund ($ 520,300) for cereal bank construction using improved traditional technologies and grain purchases and a small amount ($ 13,500) of local currency over the life of the Project to permit the DIRC to evolve into an autonomous financial institution.

(3) Other Donors

The only other donor currently involved with the DIRC is the Swiss Government, which has provided the initial capital for the Community Development Fund [FDC] which financed 7 cereal banks, 4 grain mills, 10 warehouses. 1 maternity clinic, and 5 wells at a cost of approximately 15 million CFA.

4. Outputs

In order for the activity sub-purpose of decreased cereal insecurity at the village-level to be realized, we expect as outputs of the Project a minimum of

40 functioning cereal banks with a storage capacity of approximately 4,000 MT. Due to the fact that individual village's security requirements and economic conditions vary, we cannot state unequivocally that there will be 40 cereal banks of 100 MT capacity each. Rather, we can say that there will be equivalent funds for 4,000 MT which will be available for village cooperatives on a demand basis. Whether these funds are lent to 40, 60, or 80 cereal banks is inconsequential in that the provision of local level grain reserves will increase cereal security.

A second output of the Project activity will be the generation of funds through interest and principle to permit the development of a revolving fund capable of lending funds for the purchase of a minimum of 500 MT and an average of at least 800 MT per year for the years following the Project intervention.

B. Decreased Food Insecurity at the National Level

The appropriate role for Government to play in cereal markets has been widely debated within the GOUV as well as the international forum. By way of background. we present a brief discussion of the conditions which justify public intervention, the evolution of the GOUV strategy since 1970, and the precepts for our continued support to the National Cereals Office (OFNACER) under this Project.

(1) Justification for Public Intervention

As discussed in numerous reports, including the IBRD Agricultural Issues Study, our CDSS, and the Investment Rationale for the Agricultural Development Support Project, available information supports the hypothesis that grain markets in Upper Volta are reasonably well integrated over space and time, prices are determined by conditions of supply and demand, and in general the private sector's selling price does not greatly exceed the sum of purchase price, storage and transportation costs, and the opportunity cost of capital. Furthermore, unlike its neighbors of Mali and Niger, the GOUV does not try to enforce official prices on private sector markets. Such limited market intervention is justifiable in three areas :(a) a security stock or emergency grain reserve of 30,000 MT which is sufficient to satisfy 1.5 million people with 33% of the daily minimal cereal consumption for 120 days until commercial imports or food aid could arrive ; (b) a strategy of offering a remunerative price to producers in surplus potential areas which will encourage domestic production and a market-oriented economy in subsequent years ; and (c) a distribution plan which is capable of assuring adequate supplies of grain at the national and regional level with targetted relief for those villages or households which do not have the financial resources to purchase grain from the private sector.

The maintenance of a 30,000 MT national security stock, and a distribution plan for assuring adequate grain availability to the poorest of the poor is clearly a role which can only be fulfilled by the State as such programs do not offer economic incentives to the private sector, but provide a necessary public good.

However, the role of offering a remunerative producer price is questioned more often. Briefly, economic theory states that over the long-run the producer will only sell his grain at a price which is remunerative and will increase his supply of grain to the market as prices increase. This theory is somewhat modified in Upper Volta by two factors::the wide swings in marketable supply from small variations in total output and the shortage of capital in rural areas. The large variations in marketable supply result in low prices for output in good harvest years and high prices in poor harvest years.

Decisions to sell or hold grain are largely functions of the demand for liquidity. Therefore, given the pent-up demand for liquidity which is inherent in an agricultural system which has minimal opportunities for off-farm employment, the lack of rural financial institutions, and the fact that the months of January through March require the greatest cash disbursements for taxes, school fees, and social and religious obligations, the farmer finds that his available

stocks are the most convenient means of generating needed revenues. This then results in a situation where post-harvest supply often exceeds post-harvest demand and prices may be consequently depressed below the remunerative level. The table below indicates the average market conditions for the western regions of Volta Noire, Hauts Bassins, and Comoe in December of the respective years for the three principal commodities of sorghum, millet and maize.

TABLE 9
COMMODITY PRICES, 1979-1982
(CFA PER KILOGRAM)

	1979	1980	1981	1982
A. Sorghum				
Break-even Price Improved Technology	47	49	50	55
Average Market Price Pre-OFNACER entry	46	52	43	45
Official Prices OFNACER	40	45	50	58
B. Millet				
Break-even Price Improved Technology	49	52	55	58
Average Market Price Pre-OFNACER entry	46	55	45	48
Official Prices OFNACER	40	45	50	60
C. Maize				
Break-even Price Improved Technology	44	47	50	53
Average Market Price Pre-OFNACER entry	55	57	40	45
Official Prices OFNACER	40	45	50	55

(Sources :I.B.R.D., Agricultural Issues Study, P. 199, DSA Production Cost Estimates ;and OFNACER and PVO-Supplied Market Information)

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While we do not believe OFNACER should attempt to become a true price support mechanism which would require a significant increase in OFNACER's capacity and increase the financial burden on the State, we do believe the efforts to offer a remunerative price in surplus potential areas is fully consistent with the GOUV's objectives and an appropriate role for OFNACER.

It must also be acknowledged that the GOUV appreciates the complexity of the problem of highly variable supply, supportive of the development of rural financial institutions, private sector cooperatives to manage village-level cereal banks, off-farm employment and rural roads for isolated parts of the country. As these innovations develop within the rural milieu, the importance of OFNACER as a producer price support mechanism will decline. In the short-term, however, OFNACER is a valuable and relatively effective tool for the GOUV's objective of increased cereal production. An indication of its effectiveness is that during the 1981/82 campaign, OFNACER was able to bid up producer prices in the Southwest from December through early May. When OFNACER had depleted its financial resources the private sector price fell by 5-10%. Partially as a result of this intervention, farmers in the Southwest increased the area planted to cereals by 5%. This has permitted increased production in the region and resulted in a situation where emergency food aid is not required even though the northern parts of the country suffered a severe drought which reduced production by approximately 30% this year. An effective floor price will elicit a supply response which contributes directly to the goals of cereal security and nutritional self-reliance.

In summary, we believe that given Upper Volta's resource base and socio-economic conditions, the State has a legitimate role in domestic grain markets. While this role should be relatively small, it is nonetheless critical in assuring adequate cereal availabilities and increases in domestic production.

(2) The Evolution of OFNACER

The organization responsible for grain market intervention is the National Cereals Office (OFNACER). A short review on OFNACER's history reveals that while OFNACER's mandate has remained largely unchanged, the emphasis in implementation has evolved through a number of phases over the past thirteen years.

OFNACER was created in 1970 in part due to the GOUV's and the international community's perception that the wide fluctuations in intra-annual market prices reflected excess profits for grain merchants. To remedy this situation the countries of Senegal, Mali, Niger, and Upper Volta created cereals offices (with the support of AID, the FAO, and WFP) which were charged with the objectives of stabilizing grain prices, protecting consumers and producers from presumed exploitation by traders, and smoothing out regional grain imbalances through the management of stocks.

Shortly after OFNACER was created, the drought of the early 1970s began. Cereal scarcity drove up prices and OFNACER became primarily concerned with the distribution of food aid (137,862 MT between 1971 and 1975) and consumer price stabilization. In 1974, the GOUV declared that the ORDs and traders licensed by OFNACER would monopolize sales to consumers. The private sector reacted strongly to this policy as it limited grain availabilities and effectively circumvented the State's monopoly power. The ORDs did not turn out to be effective market agents due to the lack of transport, storage facilities and personnel. Moreover, it was found the ORDs used advances from OFNACER to finance their recurrent costs rather than for purchasing grain. A final factor is that through 1978 OFNACER was under the Ministry of Commerce and primarily concerned with the stabilization of consumer prices. In 1978 the GOUV determined that in order to better achieve the objectives

of food security and price stabilization, it was preferable to work with the private sector and attempt to realize a supply response by having OFNACER place its emphasis on the producer market. In light of these changes the GOUV defined its market strategy as an attempt to :

- guarantee a just price to producers ;
- permit liberal private trade ;and
- promote overall cereal production in keeping with the national objective of food self-sufficiency.

The years 1978-81 were a period of adjustment. As can be seen in Table producer prices increased by 25% after the transfer to the MRD ;however, the increase in consumer prices was not sufficient to cover the costs of storage, transportation, and administration. This lack of financial resources, plus the lack of organizational capacity, and limited support from the central Government reduced OFNACER's effectiveness greatly.

In 1981/82 OFNACER began to revitalize itself as an organization oriented towards the producer and began to develop the organizational and management systems capable of assuring a more effective implementation of policy. These years have been marked by increasing producer prices to a level which is in fact remunerative for the surplus regions in the Southwest, publicity campaigns to assure the producer that OFNACER would be present to bid-up prices to the official producer price, and follow-up purchases permitted by the financial assistance of the donor community. During this period, OFNACER began to turn away from the concept of a fixed market share and started to monitor private sector prices in order to gauge its purchasing activities. The result has been that OFNACER successfully supported the official price in 1982 through mid-May, and actually budgeted surplus funds in 1983.

It should also be noted that the increases in the official consumer prices has effectively priced OFNACER out of the consumer market. Consequently, in 1982 OFNACER sold only 16,000 MT (7% market share), which was primarily food aid on the domestic market and exported surplus stocks to Mali, Ghana, and Niger. This year, when there are more pronounced regional deficits but a lack of effective demand, OFNACER has begun to sell, on an ad hoc basis, grain to PVOs for emergency distribution. This approach is consistent with the role of Government and we intend

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TABLE 10 THE EVOLUTION OF OFNACER PRICES AND QUANTITIES PURCHASED BY YEAR

	71/72	7273	73/74	74/75	75/76	76/77	77/78	78/79	79/80	80/81	81/82	82/83
Domestic Purchase(000MT	1.5	0.8	2.8	15.4	16.8	9.8	8.8	15.3	9.5	2.6	28.9	26.5(E)
Producing Prices (FCFA/kg												
- Millet	12	14	18	22	18	21	32	40	40	45	50	60
- White Sorghum	12	14	18	22	18	21	32	40	40	45	50	58
- Red Sorghum	-	-	-	-	-	-	-	30	32	37	42	50
- Corn	13	15	18	22	18	21	32	40	42	45	50	55
Consumer Prices(FCFA/kg		26	30	32	30	35	45	57	57	69	80	80
- Millet	20	26	30	32	30	35	45	57	57	69	80	80
- White Sorghum	20											
- Red Sorghum	-	-	-	-	-	-	-	47	47	61	75	75
- Corn	20	27	30	32	30	35	45	57	57	69	80	80

Source;OFNACER

to encourage such activity with the Ministry of Interior as well as PVOs through the Self-Help Measures of the PL 480 Title II Section 206 Program.

OFNACER has therefore become a relatively effective, though not yet efficient, policy instrument for the GOUV. In the years to come OFNACER will continue to evolve. Not only will it be responsible for assuring incentives to increased production, but it will also work with the central Ministry and the Department of Agricultural Services (DSA) to develop a coordinated program in light of the National Food Plan which will assure adequate cereal availability to the population. We therefore expect that while OFNACER will continue to purchase 20,000-35,000 MT/year (depending on local market conditions) to assure a remunerative producer price and an emergency grain reserve, the planning unit of OFNACER which was initiated by the AID-financed Grain Marketing Development Project (686-0243) will become increasingly important at a macro as well as micro level. The strengthening of OFNACER's planning capabilities should encourage a more modest intervention by the State.

(3) Rationale for Support to OFNACER

As discussed above, we believe the current focus and magnitude of public intervention is appropriate. Given OFNACER's physical resources, the current availability of market information, and rural infrastructure conditions, we believe a market share of 15% (30,000 - 35,000 MT) is appropriate in years of good harvest to stabilize producer prices at a remunerative level. We do believe, however, that over time, as information and infrastructure conditions improve, OFNACER should be able to maintain its efficacity while limiting its market share to 7-10%. We therefore support OFNACER as it attempts to become a more efficient organization. Having worked with OFNACER through the 1970s and closely since the development of the Grain Marketing Development Project in 1979, it is our assessment that the most critical areas of the operation at this time are human and financial resources. For OFNACER to become the effective and efficient organization envisioned by the GOUV requires the development of a mid-level cadre capable of implementing policy, an up-grading of lower-level agents in order that they may be more productive, and the systematic release of surplus personnel. In the area of financial resources, OFNACER has been successful the past two years due to external financing of the donor community. Beyond the initial capitalization, such financing is inappropriate and should be curtailed. We therefore support the OFNACER position, that OFNACER must be able to cover its intra-annual costs through more efficient operation. We do believe that since OFNACER is providing a social good of insurance policy to the GOUV in the form of the security stock, OFNACER should be compensated by the State for the costs of maintaining this stock.

In summary, it is our intention to assist OFNACER to become an efficient and effective organization capable of: maintaining a 30,000 MT emergency reserve, inducing a supply response by offering remunerative floor prices, assuring adequate domestic availabilities to increase food security, and developing the in-house analytical capabilities to ensure that the policies of OFNACER and the GOUV have the maximum positive impact given the constraints facing the agricultural sector.

(4) The AID Response

The sub-purpose of this Project activity is decreased food insecurity at the national, regional, and local levels. The argument set-forth in support of

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decreased food insecurity at the village-level is equally appropriate here. To wit, it is argued that the introduction of insecurity or risk as an exogenous variable into the decision-making process will tend to shift resource allocation away from the economically optimal point for long-term growth in production towards a less optimal point that minimize risk. While there are many uncertainties which enter the decision-making process of both the farmer and the policy-maker, by far the most important in the Voltan setting is the availability of cereals.

To recapitulate, given Upper Volta's existing physical, human, and capital resource base, we expect the necessary increases in agricultural productivity will be generated by increases in coarse grain yields in areas where there is a comparative advantage, and the shift of crop-mix from lower-value commodities (coarse grains) to higher-value commodities (oils, vegetables, tubers, and small ruminants) in those areas which do not have a comparative advantage in coarse grain production.

Since coarse grains are the staple of the Voltan diet, insecurity in their availability has a direct impact on crop-mix decisions for both the producer and the policy-maker. The effect on the producer in a deficit potential area is to plant his marginal land to coarse grain commodities in order to ensure that the family will have greater availabilities and be less dependent upon the market. Such a farming pattern may maximize short-term coarse grain production, but not agricultural productivity and over time will result in decreasing productivity as soils become depleted from over-cultivation. Therefore, it is argued that for the farm household to increase its agricultural productivity, it must be confident that adequate supplies will be made available on the local and regional markets.

Historically, OFNACER attempted to intervene to some extent at the local wholesale market. It has been found, however, that such interventions are not cost-effective. Therefore, this Project activity will strengthen OFNACER's capability to monitor stock levels in order for it to be able to assure adequate supllies (private and public) at the regional level. While OFNACER itself will concentrate primarily on the regional supply level, it is also intended that by working with the Food and Food Technology Service of the Department of Agricultural Services (Component 3), the Department of Studies and Projects (Component 1), and the Ministries of Interior and Finance (PL 480 Self-Help Measure), the GOUV will develop the criteria for participation and means of financing a national targetted food aid plan which will reduce cereal uncertainty for the disadvantaged.

As was discussed in the ADS, PID,CDSS, and the Investment Rationale paper, we believe that while the GOUV does not have many policies that constrain agricultural growth, the policies to date have not really encouraged growth either. A major exception to this rule is the increase in official producer prices to a remunerative level for cereal producers in the Southern and Western regions of the country. Assuming (a) the GOUV continues to maintain prices at a remunerative level, (b) farmers in the surplus potential regions are price responsive and do not experience greatly adverse growing conditions, and (c) the market system which is 85-90% private can effectively deliver commodities to deficit areas, it is expected agricultural policy-makers will become more confident in the availability of coarse grains. Such an increase in confidence or security is expected to permit the GOUV to pursue more actively policies which will encourage increases in long-term agricultural productivity, particularly in the areas of soil conservation, inter-cropping, and a shift in the crop mix.

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(5) Inputs

In order to ensure the outputs of an improved planning and management capability, a reduction in post-harvest losses, and improved distribution planning. the Project activity will provide the inputs of technical assistance, training, commodities, and local cost financing. These inputs are believed to be the minimum necessary levels to realize statisfactory Project completion.

(a) Technical Assistance

The Project will finance three technical advisors for a total of 46 person months. The warehouse sanitation expert (2 person months) will work closely with the West German-financed sanitation expert and OFNACER's Director of Stocks in order to assess the storage needs of OFNACER and develop a uniform storage and sanitation program which will ensure maximum and uniform protection of all stocks. Once this program has been developed the implementation of the program will be the responsibility of the Department of Stocks.

The second technical advisor will be a computer specialist (8 person months) who will be responsible for programming OFNACER's financial, economic, storage, and logistic information. OFNACER and the technical assistance team financed under the Grain Marketing Development project will be responsible for determining the necessary information which should be entered into the computer memory. The computer specialist is scheduled to arrive 2 months after the computer system arrives.*

The computer specialist will be responsible for coding data, programming, testing, and cleaning data, as well as providing on-the-job training for his/her counterparts. OFNACER will provide one counterpart each from the Department of Marketing, Financial Affairs, and Stocks who will become the Department employees responsible for computer use.

The final technical advisor will be an Economist (36 person months) with a professional background in market analysis and policy planning who will work with OFNACER's Planning Unit to assist in the evolution from a micro to macro orientation. It is expected this technical advisor and the Planning Unit will build upon and expand upon the data base and studies completed under the Grain Marketing Development project as well as utilize data gathered by the Departments of Agricultural Services (DSA), and the Department of Studies and Projects (DEP) to develop the necessary analytical capabilities.

(b) Commodities

Under this Project activity the basic support commodities of a 3-terminal mini-computer system (and back-up), two four-wheel drive vehicles, a sedan, and commodities for 30 grain storage facilities will be provided.

A computer system is required to facilitate the financial and economic analyses necessary for improved management and planning. Due to the scope of OFNACER's activity and information needs we have budgeted for a mini-computer system and back-up; however final selection will be based on the recommendations of the review committee composed of USDA, university, and MRD personnel who will be charged with the selection of compatible computer systems for the Ministry of Rural Development. The vehicles are replacements for the vehicles provided to

* The computer system selected will be standardized with those supplied to the rest of the Project

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OFNACER under the Grain Marketing Development project and are to be used by the Planning Unit (CEPS) personnel for AID project activities.

The commodities for 30 grain storage facilities are detailed in Annex H, the Procurement Plan. These commodities are expected to contribute to the reduction of losses once OFNACER and the GOUV develop financial and economic plans which will avoid further decapitalization.

(c) Training

The Project will provide the following training: three Economists will receive 36 pm U.S. training, 9 pm in-country English training; two Analytical Accountants will receive 24 pm U.S. training; 6 pm in-country English training; one Auditor will receive 6 pm training in an Abidjan-based audit firm; fifty accountants will receive 100 pm of in-country refresher training; and forty warehouse managers will receive 80 pm of in-country refresher training.

(d) Local Cost Financing

In addition to the inputs described above, we will program with the GOUV the necessary PL 480 generations to provide salary support for the expansion of OFNACER's Planning Unit (three persons - 36 pm each), office costs of the Planning Unit, and vehicle maintenance. The local training costs discussed above will also be financed by PL 480 revenues.

(6) Outputs

In order for the sub-purpose of decreased cereal insecurity to be realized, OFNACER must continue to improve its efficiency and effectiveness in fulfilling its mandate of the maintenance of a 30,000 MT emergency reserve, inducing a supply response through the offer of remunerative producer prices, and the assurance of adequate cereal availabilities at the national and regional levels. In addition to this traditional mandate, the GOUV is turning to OFNACER as a source of information and analyses regarding grain market conditions. Such a role is appropriate for a technical office to play. Grain marketing is a technical subject which can best be analyzed and understood by those technicians who have a vested interest in the product. Moreover, we believe the decentralization of analyses by function, i.e. consumption/nutrition by the Food and Food Technology Service, production by the Department of Agricultural Services and markets and stocks by OFNACER should permit a more comprehensive understanding of the complexities of the food chain in Upper Volta and contribute to an improvement in analyses and policy formulation and implementation. Finally, we believe the new focus of OFNACER is consistent with our position of minimal market intervention and the role of the State as a guiding hand in the development process.

The responsibility of market analyses is clearly within the jurisdiction of OFNACER. However, OFNACER does not currently have the resources to permit it to assume such responsibilities. Historically, OFNACER has not had the resources necessary to perform analyses and has tended to be a policy and price taker, i.e., the Inter-Ministerial Committee declared the official policy and prices which OFNACER attempted to implement. It is expected that as a result of this Project activity OFNACER will be capable of playing a more active and positive role in policy formation and will have improved its implementation capabilities.

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In order for OFNACER to improve its planning and management capabilities it must develop institutionally and have the necessary resources (human, material, and financial) to permit such developments. As such, an expected output of the Project activity is that OFNACER's Planning Unit (the Cellule des Etudes, Planification et Statistiques or CEPS) will be adequately staffed and functioning to permit micro and macro-level analyses of market conditions as well as assess the expected impact of government policies. This Planning Unit (CEPS) was created under the Grain Marketing Development project (686-0243) and currently consists of one AID-financed Marketing Economist, two AID-financed Voltan Economists, one FAO-financed Management Specialist, one West German-financed Researcher, and one OFNACER-financed Statistics gatherer. Currently, this Planning Unit is fully occupied with micro-level analyses which will permit OFNACER to become more effective and efficient within its traditional mandate. The Grain Marketing Development project is also financing the University of Michigan/CRED market research effort which has a more macro-orientation. It is expected these efforts will develop the baseline information which OFNACER, THE MRD, and the GOUV can utilize to improve its management. While such expatriate efforts permit an acceleration of the development process, we are fully cognizant that for Upper Volta to realize its development potential the GOUV institutions including OFNACER must be strengthened in order that they may build upon the baseline information.

At the end of the Project activity, a Planning Unit Staff consisting of five mid-level economists (including two currently financed under 686-0243, who are to be financed by OFNACER beginning June 1986), two statisticians contributed by OFNACER, and a secretary contributed by OFNACER, are the minimal staff personnel necessary to generate analyses contributing to the Project purpose.

A second dimension of improved planning and management is an upgrading of the human resource base. This upgrading will include the advanced training of three Economists for 12 months each in the subjects of macro- economics, micro-economics, agricultural economics, marketing, applied statistics, regression and linear programming analyses, and if possible introductory computer programming for the computer system standardized under this Project.

The training component will also include training for two accountants for 12 months each in the subject area of analytical accounting. As a result of the AID-funded financial management technical assistance under the 686-0243 project, OFNACER has greatly improved its financial management capabilities. Due to poor financial management practices from 1975-81, OFNACER was unable to close its books or assess its operations. A recent inspection revealed that the books kept from October 1, 1981 on were acceptable by international standards. More importantly from a management perspective, OFNACER is currently implementing a financial management system capable of generating monthly reports for over 40 commodities and 100 selling centers within fifteen days after the close of the month. While such developments are necessary preconditions to improved management, we believe there is currently a lack of analytical accounting skills within OFNACER. This lack of analytical skills is believed to result in delays in necessary actions which reduces OFNACER's efficiency. This project activity will also permit the upgrading of fifty accountants' skills through an in-country training program financed by PL 480 generated revenues.

A final output under improved planning and management is applied training of an audutor within the OFNACER structure. For OFNACER to become more effective and efficient the Department of the Controller General must develop and enforce

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greater internal control, particularly in the areas of financial management and logistics.

The second broad area of outputs is the reduction in post-harvest public losses. Improvements in this area are expected to increase the absolute availability of grain as well as increase in OFNACER's capability to deliver a quality product. Our assessment of the cause of the current unacceptably high (15%) level of losses is the lack of resources (human, material, and financial).

In terms of human resources, we have found the mid-level cadres who have been trained by Kansas State University, France and Canada have a good understanding of basic techniques which have been communicated to the lower-level cadres through the training of trainers programs. At this level, the greatest constraint is the lack of material, a problem closely associated with the financial recurrent cost problem which will be discussed below. Our assessment is that the greatest need for human resource development is at the top, in other words, the Director of Stocks. The incumbent of this position is believed to be the most qualified person available who has a good understanding of the technical problems and has shown initiative in resolving those problems. He is limited, however, by a lack of advanced technical and managerial skills which, compounded by the lack of material resources, greatly reduces the effectiveness of OFNACER's storage program. Therefore one output of this activity will be 36 pm of training for the Storage Director for OFNACER to develop a comprehensive storage program. In order to ensure the warehouse managers' skills are maintained we propose to utilize PL 480 generated revenues to finance the on-going training of trainers program in storage.*

A second output which should contribute to the reduction in post-harvest public losses is the development of a uniform warehouse storage and sanitation plan. While the West Germans have financed a sanitation expert for OFNACER's security stock operations, a uniform program has never been developed or enforced. Such a program is absolutely essential and should be developed as quickly as possible to reduce OFNACER's losses.

The final factor which affects storage conditions is the lack of protective, detective, and treatment materials. As stated above, this lack of materials is closely associated with OFNACER's recurrent cost problems. Briefly, the warehouses constructed by the West Germans Security Stock program, and those to be financed by the USAID Grain Marketing Development project are fully equipped. There are however, 30 storage facilities which do not have adequate materials to protect existing stocks. This lack of materials is attributed to the decapitalization of OFNACER, which is a result of GOUV determined pricing policies which do not permit OFNACER to cover the costs of operation. As noted above, we support the OFNACER position that it must be able to cover the intra-annual costs of operations. We believe however that given the high cost (22,500 FCFA/year) of maintaining the security stock which is a public good, the GOUV has a responsibility to compensate OFNACER for these services. We are therefore insisting as a condition precedent for the purchase of warehouse commodities that OFNACER and the GOUV develop and implement financial and economic plans which will ensure that OFNACER experiences no further decapitalizations.

The final output or objective is that of improved distribution planning. This objective is expected to be partially net through realization of the output of improved planning and management, but will also require coordination with the Ministries of Interior and Finance as well as PVOs to ensure that there will be adequate cereal availabilities for the relatively disadvantaged.

* Training will be financed through 1984 by the Grain Marketing Developing project

F. HOW THE PP DIFFERS FROM THE PID

The PID proposed support to the Seed Service, the Department of Livestock Service and the Fonds d'Assistance ARCOMA/COREMA (FAAC). During the design of this PP it was decided, for reasons explained below, not to proceed with such support at this time. The rest of the PP was developed along lines proposed in the PID. It was decided to add an Administrative Support Contract under Component 1 in order to institutionalize the capacity of the DAAF to carry out procurement and provide logistical support.

1. The Seed Service

The PID proposed a continuation of USAID assistance to the Seed Service with modest expansion of foundation seed services to commodities. We are presently implementing the Foundation Seed Production Project (686-0245), a $1,600,000 project with a PACD of May 31, 1984. A mid-term evaluation of that project is scheduled for August 1983. It was decided to await the results of the evaluation before planning future activities with the Seed Service. Support to the Seed Service under this Project is therefore not planned at this time, but will be considered following the evaluation of the Foundation Seed Project and the mid-term evaluation of the ADS Project.

2. The Department of Livestock Services

The PID proposed support to the Department of Livestock Services in developing a fully integrated systems approach to the provision of services to producers and to research. Since the PID, our discussions with the Department of Livestock Services and the World Bank on the proposed I.B.R.D. Livestock Sector Loan have led us to drop this activity from the ADS Project for the time being. The $14.5 million I.B.R.D. Livestock Sector Loan is currently under design. The Bank intends to use the loan to negotiate what it believes to be significant changes in service program and financial arrangements. There are some areas of potential overlap between what we were considering and what the Bank's loan is proposing to cover. A high level GOUV commission was created recently to coordinate, design and identify necessary reforms in the Livestock Sector.

Given such a major planned investment in the Livestock sector by our colleagues at the IBRD, we are dropping this activity from the ADS Project. Components 1 and 3 of the Project will contribute towards improving the environment within whcih livestock sector development can be enhanced.

3. The Fonds d'Assistance ARCOMA/COREMA (FAAC)

The PID proposed assistance to FAAC, a quasi-independent parastatal responsible for manufacturing and sales of animal traction equipment. We had planned to support FAAC in expanding its line of equipment, improving its financial management operations and decentralizing its sales and services by introducing wider private participation.

There is no useful role for USAID to play in supporting FAAC at the present time. The IBRD, the French Caisse Centrale de Cooperation Economique, the Swiss, and the Dutch are working with FAAC to improve its management and accounting. We informed the World Bank we will not support FAAC until the IBRD/CCCE/Swiss condition, that FAAC be established as an independent operation under streamlined management, is met. Once this condition is met we will want to wait until

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FAAC has proven itself to be financially self-sustaining and well-managed before we undertake any assistance.

USAID assistance at this time would undercut the IBRD/CCCE/Swiss negotiating position, and would perhaps increase FAAC's management problems by putting FAAC managers in the position of having to spend an inordinate amount of time dealing with various procedures and requests for information and meetings with too many donors. The mid-term evaluation of the ADS Project will assess developments in FAAC for future planning purposes.

G. BENEFICIARIES

The Project will benefit various types of people, to differing degrees, at different times. As the Project is primarily designed to strengthen the MRD as an institution, immediate benefits will directly impact MRD personnel. Deliberate attempts have been made to ensure benefit flows ultimately reach various sectors of the economy, particularly the rural sector. Within the rural sector, measures have been taken to ensure benefits are not accorded a " favored few". The attainment of growth with equity is one of the principal features of this Project. Attainment of this objective will be demonstrated through the regional redistribution of GOUV and donor investments, so that regions other than the Southwest begin to receive an equitable share of development assistance.

Under Component 1 of the Project there are three activities, each of which benefits the personnel of the MRD directly. The staff of DEP will directly benefit from short-term and on-the-job training provided under the improved policy, planning, and programming capability activity. This will also benefit from carrying out policy analyses, project evaluations and agricultural planning. Improved policies and planning capability will benefit farmers (both men and women), livestock raisers, the agribusiness sector (cereal banks and private traders), the ORDs, and the donor community. By improving the programming capability of DEP, a regional redistribution of development investments can occur. This would diffuse the current concentration of investment funds in the Southwest, thereby resulting in benefits to other regions of Upper Volta.

Strengthening the monitoring and evaluation capability will directly benefit the staff of DEP whose capabilities will be improved through training. Each Department of the MRD will benefit from the harmonization and strengthening of the overall MRD project monitoring and evaluation systems. The intended project-level beneficiaries in the field will benefit from the redirection of project inputs and thrusts, as a result of improved capabilities at the DEP.

The direct beneficiaries of the agricultural data and data distribution activity are the personnel of the Statistics unit of DEP who will receive training in improved data collection and computer processing. The timely release of accurate statistics will be beneficial to a wide range of people who rely on the availability of agricultural data to formulate plans, policies, and production or marketing studies. These beneficiaries include the MRD in general, OFNACER, the donor community, the agribusiness sector, and in the long run the farmers.

The entire agricultural and livestock sector in general will indirectly benefit from the proper translation of agricultural data by the users into rational plans and policies. Gender-disaggregated information can ultimately benefit women and the society as a whole if used as a guide to where more micro-level and detailed research is needed.

Finally, the personnel of DAAF will benefit from the technical assistance and training in procurement procedures and logistical support skills provided by the administrative support contract.

Under Component 2 of the Project, the direct beneficiaries of the Rural Youth Training activity include (1) the DSFJA, which will receive financial assistance in equipping and refurbishing its schools and training facilities, (2) the

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CFJA teachers who will receive improved training, (3) the CFJA students who will received improved and more relevant training in agricultural techniques and other income-generating skills, and (4) GJA members, CVC members and FJA assistants and ORD-level supervisors who will receive management training. Improved skills training for the CFJA students will enhance their income-generating opportunities in the rural areas, resulting in benefits for them, their parents and their schools. More rural youth, particularly girls, will benefit directly from increased access to the FJA system through the construction of additional CFJAs. Access for girls will be improved by the availability of additional female teachers.

The support provided under the managerial training of adult pre-cooperatives activity will provide direct and fairly immediate benefits to the farmer members of the groupements villageois in the Mossi Plateau. Other direct beneficiaries include (1) the leaders of groupements villageois who will receive training in literacy, leadership skills, and simple financial, accounting and related management skills; (2) the DIRC zonal -level trainers whose training skills will be upgraded; and (3) the DIRC central office personnel who will receive training in financial management, accounting, educational and communication techniques and assistance in the development of appropriate training courses.

The availability of the mid-level technical and managerial training fund will provide direct benefits to (1) individuals in the public and private sectors who will receive management and technical training; and (2) organizations in the public and private sectors whose personnel will be trained in management and technical skills.

Indirect beneficiaries will include (1) the trainee's family, who will presumably benefit from any income increases the trainee will receive from having acquired improved skills; and (2) public and private organizations whose technicians and managers will be better trained to handle their responsibilities.

Under Component 3, the direct beneficiaries of the Farming System Research (FSR) activity will be the farmers and their households residing in selected villages in three ORDs of the Mossi Plateau and one ORD in the Sahel region. Given the nature of FSR the benefits of this activity will not be immediate. With the development of proven improved packages of agriculture/livestock production technologies, the returns to the investment (land, labor, and capital) of participating farmers and their households will be improved. However, increases in farmers' incomes will depend on the existence of favorable pricing policies and marketing conditions. The NES and extension agents will also benefit from learning FSR techniques. Over the long-term the benefits of FSR will be spread to farmers in other ORDs throughout the country. Through increases in agricultural productivity resulting from FSR, Upper Volta's economy will be improved.

Under the Development and extension of nutritionally sound food production and processing practices activity the personnel of the central-level FFTS will benefit from training in-country and in the U.S. The personnel of the Survey and Planning Unit of the FFTS will benefit from having acquired an improved capacity to undertake and analyze nutrition-related surveys and studies. The FFTS will benefit from receiving financial assistance to construct headquarters and laboratory facilities and purchase equipment. The male and female extension agents, vocational agricultural teachers, members of selected women's and young

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farmer pre-cooperatives, and agricultural school students will benefit from training programs conducted by the FFTS. Rural women belonging to selected women's groups will benefit from gaining access to improved food preparation techniques and food processing equipment. It is envisaged these will result in improved nutrition status for the participating women and their families. Access to food processing equipment will not only reduce women's workloads, but will also provide an additional source of income. Over the long-term, the benefits derived by the participating women's groups should spread to other women's groups throughout the country.

The activity to develop and extend environmentally sound soil and water management and conservation practices will assist the NSS in developing the necessary data base to formulate a nationwide soil, water and related resources policy. A selected group of villagers in an ORD on the Mossi Plateau will participate in a pilot intervention for soil and water management conservation. The ability of the participating villages to maintain the installed conservation systems will result in improved soil and water conditions in their areas. In the long-term the availability of a proven system for soil and water conservation will result in improved overall agricultural productivity and rural welfare in Upper Volta.

Under Component 4 of the Project, the credit fund for cereal banks will provide unsubsidized credit to 40 cereal banks operated by men's and women's pre-cooperatives throughout the country, to fund their grain purchases and construct storage facilities. This will result in increased cereal availabilities at the village level (particularly during the "hungry season"), improved nutritional status and increased disposable incomes. Following this pilot effort it is envisioned that additional cereal banks throughout the country will benefit from this credit availability. An indirect benefit of this intervention will be the GOUV adopting an expanded system of unsubsidized credit, which will benefit the overall economy of Upper Volta by setting a larger share of credit service on a financially viable footing.

The direct beneficiaries of increasing the efficiency of OFNACER are the personnel of OFNACER who will receive training to collect, organize and analyze statistics on stocks and prices, and to formulate policy recommendations on the timing and location of cereal purchases and sales. With improved policies, cereal farmers will benefit from improved incomes. Cereal consumers will also benefit from the increased availability of cereals.

The direct beneficiaries of the PL 480 Title II Section 206 Program include OFNACER, which will receive and sell the commodities (wheat and oil), and the Grands Moulins Voltaique (GMV), the only mixed-capital flour milling company in Upper Volta. Another group of beneficiaries includes the private sector baking and oil industries which will purchase the commodities from OFNACER and GMV and resell at the retail level. Finally, consumers (mostly urban) will benefit from the availability of wheat and oil.

On the hypothesis that the availability in the markets of wheat and U.S. vegetable oil will reduce growth in demand for corn and domestic oil, lower-income consumer groups will indirectly benefit from the increased availabilities of coarse grains (primarily corn) and domestic oils. The PL 480 local currency generations will be used to support all the Project activities. Consequently, the beneficiaries identified in those activities also benefit from the Section 206 Program.

H. POLICY REFORM ISSUES

The Investment Rationale paper describes the macro-economic policy framework in the narrow sense of those economic pricing and marketing policies which shape the incentives for economic actors. In the discussion of constraints to growth the paper also treats the shortcomings of national policies in the broader sense of rational planning, resource allocation decisions and coordination of investment activities. Policies in the sense of pricing, marketing and allocation of credit, inputs and outputs can be broadly characterized as being not far from the appropriate set of policies for the country, with the exception of credit policies which are partially beyond the country's authority and ability to change. Furthermore, available evidence suggests that to the extent policies are not optimal they have only a small negative effect on input use, choice of crop mix and the total amount and value of output.*

The conclusion of the policy setting section was that it is important to achieve some reform of price and marketing policy in the interest of long-term economic efficiency, but there are only modest short-term gains in efficiency to be obtained through policy reform. In this respect, no particular policy stands out as a high priority for reform. By contrast, policy-making in the broader sense of improving the policy framework of sound economic planning, national resource allocation and coordination of investment to achieve the country's economic objectives is in need of improvement.

The Investment Rationale paper identified several areas where efficiency of resource use could be improved by greater reliance on private enterprise or closer approximation of market prices. The areas where there are economic gains to be made through reform are price setting and marketing of inputs, credit and exported outputs.

Pricing and marketing of food produced for the national market cannot be improved upon except by measures such as investment in infrastructure and improved market information dissemination. There is no significant policy reform question in this area except for the refinement of OFNACER's intervention strategy. OFNACER's role continues to be limited to competition with private sector buyers in order to buoy up producer prices in surplus areas. The activity entails national market intervention, i.e. 10-15% of marketed coarse grains. Furthermore, consumer prices are set to cover expected intra-annual grain manipulation costs and OFNACER has consciously sought to avoid depressing consumer prices by exporting surplus stocks or selling grain to PVOs for targetted local distribution. Our on-going project with OFNACER has significantly improved its financial management and has begun to improve its capacity to develop and analyze market information in order to improve its marketing strategy.

Two areas in which there are obvious and persistent market distortions are air freight service to Europe (i.e. Paris) and credit allocation.** We will continue to discuss these constraints with GOUV officials in our general discussions about policy, however we recognize we will have virtually no influence in air freight service and that influence in credit allocation is constrained by other donors' interventions.

* See IBRD, Upper Volta Agricultural Issues Study, March 1982, pp 10-12 for a summary of these issues.

** For a discussion of these constraints please see Annex K, the USAID/Upper Volta Investment Rationale paper, p. 50

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The two economic policy areas which Upper Volta has some control over and upon which we intend to exert influence through the Project are pricing and marketing of inputs and, to a lesser extent, pricing and marketing of exported crops. Our highest priority area for reform is the pricing and marketing of agricultural inputs, which we intend to pursue in two ways. First, by not becoming involved at this time in assistance to the MRD's animal traction equipment producer, we are supporting the position of the World Bank and the Swiss as described in Section F. Secondly, through our support to strengthen the analytical capacity of the Department of Studies and Projects within the MRD, we will support the Department's efforts to investigate the economics of input supply and formulate appropriate policy recommendations. Our second priority area is the pricing and marketing of export crops which we also intend to influence indirectly through development of the MRD's analytical capacity.

With respect to our top priority, our own experience with input marketing (seeds, animal traction equipment and fertilizers) and the IBRD's economic analysis lead to two similar conclusions. First, the tendency to subsidize inputs has sometimes resulted in uneconomic uses of the inputs and has not encouraged efficient use of scarce inputs. Secondly, the public agencies charged with distribution of inputs have functioned inefficiently, which has resulted in unmet demand for inputs and no alternative sources of supply. This second observation does not apply to cotton-farming areas which are covered very well by SOFITEX. SOFITEX recovers most of the subsidy through its low purchase prices for cotton. No similar structure exists for other crops, nor should any be created. Rather, to increase the efficiency of input use and improve the availability of inputs in non-cotton farming areas and for other crops in cotton areas, input subsidies should be gradually reduced and private trade in inputs should be encouraged.

The World Bank is negotiating a phased reduction of fertilizer subsidies over a five year period and has recommended greater use of private licensed traders in the distribution system. We believe there are significant gains to be made in extending price reform and marketing structure reform to other inputs. We have already undertaken this process with respect to improved variety seeds under the Foundation Seed Project. Thus far we have succeeded in promoting the adoption of a process for setting seed prices which takes into account costs of production and marketing as well as the results of the annual seed use survey to determine demand.

Significant gains are also feasible with respect to animal traction equipment, farm implements and carts of various sizes. The four producers of such materials, two public and two private, have failed to meet demand for the past three years and yet they function below capacity. They blame input supply problems, including long lead times for raw materials. The unmet demand indicates prices may be generally too low. An increase in prices would encourage producers to carry larger inventories of raw materials and finished products without chocking off demand. A more fully developed analysis of the supply conditions for this particular set of inputs would clearly be useful in recommending appropriate pricing and marketing policies.

With respect to insecticides, we are not prepared to advocate private distribution networks at this time given the serious health hazards and the general ignorance of proper precautions for use among the illiterate farming population. We expect use of these dangerous chemicals to remain mostly limited to cotton farming and/or to be applied by trained MRD personnel in fighting specific types of insect infestations.

Our second priority for policy reform is the pricing and marketing of export crops. While Upper Volta cannot affect world market prices for its exports, it does have some control over the marketing structures for its exports and, through its marketing policies, the GOUV can affect both the farm-gate prices of export crops and farmers' planting decisions. The case for removing the market distortions which now exist for cotton, sheanuts and oilseed exports is not easily made since the profits of the marketing boards are returned to the rural sector through input subsidies, support for the ORDs and rural investment. However, these distortions discourage private marketing and thereby reduce the efficiency of the market. Against this consideration, the marketing boards provide an easily administered source of rural taxation and a system to reduce fluctuations in export earnings. Consequently, our second priority is to develop the capacity in the MRD to commission the needed policy studies, interpret the findings and formulate policy alternatives for GOUV decision-makers.

Once in place, the policy review and formulation capacity can be applied to all the policy issues which arise in agriculture. Currently the MRD does not have the capacity to analyze policy issues, to determine the appropriate role for the private sector in agriculture and to make informed judgements about price and subsidy policies, marketing policies, interest rates and the optimal use of public sector resources. Without being directly involved in the promotion of export crops, we can most effectively influence policy-making by improvement of policy analysis capacity in the MRD. It is through our assistance in developing this capacity that we may expect to influence the policy-making process in the direction of economic rationality, just as we have done at the National Seed Service and within OFNACER

In summary, there are several areas where policy reform would be clearly beneficial, but over which we cannot expect to exercise significant influence. The most notable examples of this are the air freight monopoly and the financial structure and credit policies. There are several other areas where we have already exercised positive influence on policy, namely the pricing and marketing of improved variety seed and a more positively oriented public intervention in the grain market. We have identified two other areas of policy reform which we believe hold considerable promise for economic gain. These are the pricing and marketing of agricultural inputs and of export crops. Both of these priority reform areas require redefinition of the roles of public and parastatal entities active in marketing to encourage competition within the market structure.

Expected Project Impact on Policy Reform

USAID/Upper Volta has had excellent working relationships with several agricultural sector institutions over the past few years and has been influential in the adoption of policy reforms mentioned earlier, e.g. improved variety seed pricing, transfer of OFNACER to the Ministry of Rural Development in 1978 and the subsequent raising of official farm-gate prices and OFNACER's operating margin. We are a relatively important donor in rural development and we tend to find ourselves in agreement with policy positions adopted by the Dutch and the World Bank and sometimes, but not always, the European Development Fund, the French and the Germans. We believe we can continue to exert a positive influence on agricultural policies, but we cannot expect to bring about increased liberalization in either input marketing or export crop marketing without a long-term commitment to technical assistance and training programs. With a long-term approach, we can reasonably expect to see liberalization of the input distribution network within the time frame of this Project and the phase out of most subsidies. We can also expect to raise the policy issues surrounding both

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input supply and export crop promotion within the MRD, but we are unlikely to make serious progress towards the proposal of alternative policies for export crops until the analytical capacity has been put into place by the end of the first phase. The prevalence of marketing boards throughout Africa, including capitalist success stories like the Ivory Coast, means alternative policies and/or better pricing policies for the marketing boards must be well conceived and cogently argued to be accepted.

The Project is thus likely to foster some liberalization on input supply markets and to put into place the analytical capacity to propose alternatives to the current pricing and marketing structure for export crops. Further progress on these important policy issues will be part of our long-term continuing assistance to the agricultural sector.

.. ROLE OF THE PRIVATE SECTOR

In this section we highlight the role of the private sector, a role which is largely one of beneficiary of the Project activities, but also one of participant in some Project activities.

Strengthening policy analysis within the MRD should result in a greater appreciation for the role of the private sector in agricultural development. Such an appreciation will then lead to public agricultural policy appropriate to an expanded private sector. To ensure that this consideration is continually addressed, the Project includes a special covenant which requires all policy and projects to be reviewed in the context of the implications to the private sector.

The private sector may also benefit more directly by the uniform system of project analysis that will be introduced into DEP. Here projects will be systematically reviewed in terms of pre-feasibility and feasibility. Summary information will then be made available to the private sector for consideration, with appropriate safeguards to ensure competition.

The planning process, private as well as public, requires accurate information. Therefore, assuming free access to the information and wide public dissemination, the private sector will benefit from the improved information on crop statistics at the national, regional, sub-regional levels. To ensure freedom of information, the Project will include a special covenant that all information will be made public in a timely fasion.

Improved management operations in the MRD system will benefit the private sector only marginally. Perhaps the greatest impact will be in the area of improved financial control and disbursements. Currently, businesses working with the MRD often have to wait lengthy periods to receive payments for goods and services sold on credit. An improved system of budgeting, cash flow transfers and financial control should markedly reduce such problems which are often encountered by the private sector.

The rural youth training program is specifically directed to rural Upper Volta and is targetted to the young people whose future will be in the rural areas, as producers. In supporting the rural youth training program USAID is directly providing production and management skills to future rural producers and allowing them the skills to help themselves. In many cases the pre-cooperatives formed by the graduates of these rural youth training centers have shown initiative in generating income-producing activities in their villages including poultry operations, vegetable production, transportation and water carrying services. These activities in turn result in micro-level development in what is otherwise a static economy.

In addition to the direct beneficiaries from the rural youth training program, all of the AID-financed equipment for the 155 CFJAs will be locally produced and procured. This equipment includes such things as desks, blackboards, plows, hoes, axes, donkey carts, etc.. which are produced by local manufacturers. Therefore, the spin-off effect of these equipment purchases should be quite positive on a slow growing private sector.

The Ministry of Rural Development (MRD) is focusing many of its agricultural extension and related outreach programs on Groupements Villageois (GVs),

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pre-cooperative village groups. GVs are considered by most Voltan development planners as the most cost-effective means of reaching the majority of Voltan farmers given the MRD's limited budgetary and manpower resources. The Directions des Institutions Rurales et Credit (DIRC) is responsible for promoting GVs and developing the MRD's training and credit programs for them. USAID/UV's support to DIRC will promote GV involvement in expanded agricultural and commercial enterprises throughout Upper Volta as well as develop the capacity of GVs to assume responsibilities for acquiring and more effectively using agricultural sector support services. This will relieve the central MRD of many of these responsibilities and place them in the hands of GVs.

As GVs develop commercially, their ability to effectively manage their financial resources will be important. The Project will upgrade and expand DIRC's training capacities for GV management officers. Training in accounting, bookkeeping and related financial management will better enable these private groups of small farmers to more effectively manage the resources available to them and to grow financially.

Improving training programs for GVs will further enable the overall GV membership to use technical and market information coming from the MRD more effectively. This will enable GVs to take advantages of new productivity-increasing technologies, respond more effectively to market opportunities and promote agricultural production and commercial enterprise in the rural areas.

Through more appropriate DIRC training programs for GV management officers and overall membership, GVs will become more economically involved in farm and non-farm enterprises. The MRD has recently instituted a program of cereal banks by which GVs will become a market intermediary for cereal grains. GV involvement in cereals marketing is considered a means of relieving OFNACER and the ORDs of the burdensome and costly annual cereal purchasing campaign for a national price stabilization and food security program. By using GVs as market intermediaries, the GOUV is putting the cereal grain price stabilization and grain reserve function into the hands of private rural producers. GVs' involvement in grain marketing will further decentralize food security stocks and put them closer to the rural populations, gradually relieve the central MRD of grain marketing responsibilities and increase the overall efficiency of the marketing infrastructure in Upper Volta.

DIRC training activities designed to upgrade the management capacities of GVs will help them achieve the maximum economic benefits flowing from cereal banks. GV management officials will gain practical knowledge of basic accounting and bookkeeping techniques. These skills will be similarily applied to other commercial endeavors. The development of a competent cadre of GV trainers and more economically active and better trained farmers will enhance rural income potential and overall economic growth in rural areas of Upper Volta.

Technical and managerial skills training is critical to increasing the efficiency of current and future investment levels in government, private companies and other organizations involved in activities related to or in support of rural development under this training grants fund. AID will provide scholarships for Associate Degree level training and short-terms skills training in agriculture, engineering and management. Of the 108 scholarships offered, some 30% of them will go to private sector individuals. Of the 500 people trained under the short-term skills training, 40% will come from the private sector. The Chamber of Commerce will be used extensively for identifying private sector candidates.

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agricultural research is regarded as a public good. In other words, it has traditionally been the responsibility of national and regional governments to finance efforts at improving agricultural production. As a more modern agricultural system develops there is greater dependence by farmers on the use of industrially manufactured inputs, as well as input and production marketing services. It has usually been the case that these inputs manufacturing and input and product marketing and related support services are supplied by private entrepreneurs, usually located in rural areas close to the client farmers.

USAID/UV's support under the ADS Project for the development and institutionalization of farming systems research into the national Voltan research structure will lead to a more effective evaluation of the potential of new agricultural technologies and farming practices. It is expected that as a result of farming systems research, there will be an expanded use among Voltan farmers of more modern inputs. In addition, the use of modern inputs in the various farming systems will require expanded agricultural sector support services. As most public institutions serving the agricultural sector are under-staffed and over-extended, the support for a more modern agricultural system must come from the private sector. The private sector will have an important role in supplying new and improved agricultural inputs and maintaining and repairing agricultural equipment and tools. Also, as production increases are forthcoming, there will be a need for more efficient and expanded marketing capacities and services for both cash and food crops.

Evidence over the last decade has shown that the GOUV has encouraged a greater role for private traders in grain marketing, and it is expected that more of the marketing functions will be transferred to the private sector. An example is OFNACER's attempts to gradually transfer its grain reserves and price stabilization functions to village-level local farmer organizations via cereal banks. Another example is the network of private rural artisans in the cotton zones of the West and Southwest regions which has developed in support of animal traction usage.

USAID/UV's support to the Food and Food Technology Service will primarily be concerned with the implementation of a baseline nutrition survey for Upper Volta. The proposed survey will be conducted to identify the various needs for nutrition planning and policy development for the long-term and provide a means for monitoring the Project's impact and future improvements in the nutritional status of the Voltan population. The Project will also test the social, technical and economic feasibility of an array of food processing equipment. If the equipment is viable as an appropriate technology for food processing, rural private processing enterprises will develop. This will enable another marketing function to remain in the rural areas by providing a value-added service for agricultural production. These food processing enterprises will particularly benefit women and women's groups by increasing their labor productivity and allow them to become more active economically and commercially.

The establishment of a soil and water conservation program in Upper Volta is just getting underway. A multitude of public organizations are currently implementing limited soil and water projects (mostly dams, and bas-fond construction with minimal soil conservation activities). There is a real need to establish a coherent national policy towards the execution of the diverse activities and their coordination. With such a policy, a united effort involving the public and private sectors can evolve.

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The private sector has neither the desire nor the ability to provide national policy and planning. This is clearly the domain of the GOUV-MRD as it has been with every developing country including the U.S. Unfortunately, the GOUV has not yet been able to develop such a policy. The AID-financed intervention will assist the GOUV in making progress towards the establishment of a technically sound soil and water conservation policy and implementation plan. AID inputs will set in place a data base system (the national soil survey, the water resources assessment, and word processing system). With the information generated, the GOUV will have the technical basis for establishment of a national soil and water conservation program.

Once in place, the policy will guide planners in creating an implementation plan incorporating both government and private organizations. This plan will have as its major elements the following:

1. Data base establishment.
   - (a) Soil Survey maps and Soil testing
   - (b) Land use capability maps
   - (c) Water resource assessment
2. Benchmark evaluation system for natural resource base (permanent resource inventory sites).
3. Data base management system (ADP system)
4. Soil and water conservation technology research and development
   - (a) Anti-erosion technical base
   - (b) Cropping patterns
   - (c) Irrigated water management
5. Delivery of soil and water conservation technology
6. Adoption of long-term soil and water activities by the rural population.

The public sector (mainly through the National Soil Service) will concentrate on the first four activities as they affect the nation as a whole and are, therefore considered public goods. The private sector has a major role to play when it comes to the delivery and adoption of soil and water conservation activities.

The private sector can deliver construction of soil and water programs such as dam construction, irrigation structures, anti-erosion terraces, land leveling and maintenance of existing structures. The decision to deliver these services in the market place will obviously be determined by demand from the rural population for these services. Ultimately, the rural population must be persuaded as to the validity of any soil and water conservation practices before they allocate their scarce (labor) resources to such a program. However, if one assumes that the technologies developed by the GOUV are technically sound, then, it has been demonstrated in many other countries that the private sector will provide the resources needed to install and maintain the structures and practices required to conserve soil and water resources. The hitch here is to prove the validy of the technology required to implement soil and water conservation programs.

.../...

The bulk of the proposed Project activities in this component will be concentrated in the first four elements cited above. As such the private sector involvement for the next five years will be relatively small. However, the process will not simply stop after five years, but rather, will move forward for the next twenty years with increasing levels of private sector involvement.

The direct beneficiaries of the cereal banks activity are private sector village cooperatives who own and operate the local level cereal banks. One of the preliminary findings of the AID-financed Private Sector Assessment Team* currently in Upper Volta is that one of the primary constraints limiting rural private sector activity is the lack of access to credit. The cereal banks activity addresses the problem directly and should facilitate the development of small-scale private enterprises. The financial analysis of the activity indicates that in a normal year the activity is sufficiently profitable to permit dividends and/or cooperative diversification. Either of these results should increase supply of capital in rural areas and have a multiplier effect which will increase the range of goods (investment as well as consumption) and services available to the rural population.

The largest single industry in Upper Volta is that of coarse grain production which represents approximately 20% of GDP at factor costs. The coarse grain production industry consists entirely of small-scale private sector producers. An effective OFNACER, capable of offering a remunerative producer price with minimal intervention in the consumer market, will elicit greater production and revenue for farmers in surplus potential areas. The shift to higher-value commodities in areas which do not have a comparative advantage in coarse grain production, is expected to result from this activity. This will in turn encourage the private sector revenue potential.

Finally, the evolution of OFNACER away from market intervention to a role of market monitoring and analyses, should encourage the private sector merchants who currently have an 85 to 90 per cent market share. It is expected that as a result of this activity the marketable surplus will increase, thereby encouraging private sector trade and increasing the total revenue potential of the sector.

* The Private Sector Assessment Team is in Upper Volta from May 21 to July 2, 1983.

II. FINANCIAL PLAN AND FINANCIAL ANALYSIS

A. Summary Cost Estimate and Financial Plan

AID's financial contribution to the ADS Project is $30,000,000 from Development Assistance Grant funds, of which $26,550,000 (88.5 %) will be used to fund foreign exchange costs, and the remaining $3,450,000 (11.5 %) will be used to fund local currency costs.

The GOUV's financial contribution to the ADS Project is $9,750,000 generated from the sale of P.L. 480 commodities under Section 206 of P.L. 480.

Financial Table I summarizes AID's contribution by major inputs:

- Technical Assistance: $6.7 million
- Training: $7.5 million
- Commodities and Vehicles: $5.3 million
- TA Support: $5.0 million

Financial Table II summarizes the GOUV's contribution by major inputs, including:

- Salaries and Office Expenses: $1.9 million
- Training: $1.1 million
- Commodities and Vehicles: $1.4 million
- Vehicle Maintenance: $2.4 million

Financial Table III summarizes the cash flow of foreign exchange and local currency of both AID and the GOUV. Financial Tables III (a - k) provide the cash flow of foreign exchange and local currency by each activity of the ADS Project. The major local currency expenditures to be funded by AID are for training, construction and locally procured commodities.

Financial Table IV summarizes the "total effort" to be put forth by the GOUV. During the 5-year life of the ADS Project the GOUV is expected to budget $22 million to the Ministry of Rural Development, $9.75 million of which is the incremental cost of the ADS Project. If the GOUV maintains the same level of effort for the ADS Project in the 5-year, post-LOP period, the GOUV will budget $10.2 million. The recurrent costs to the GOUV directly attributable to the ADS Project during the LOP amount to $7.5 million; recurrent costs during the 5-year post-LOP are expected to be $10.2 million.

B. Financial Analysis

The ADS Project does not lend itself to being evaluated in the traditional financial sense. This is due to its purpose of increasing the institutional capabilities of the Ministry of Rural Development. At the present time, no method exists to accurately measure (financially) the value of an individual's output or value to society resulting from this project.

The ADS Project is not envisioned to produce significant revenues which will be used to supplement the GOUV's contribution.

We believe the ADS Project should be incrementally funded over the five-year life of the project as presented below:

Fiscal Year:	1983	1984	1985	1986	1987
Request ($ 000)	8,365	4,760	6,000	7,700	3,175

C. Inflation Basis

a) Basis for Salary Increases: 4 % to 11 % depending upon present salary level. Salary increases normally take place every three years.

b) Vehicles: Buses and automobiles - 15 % increase in price usually every three years; mobylettes - 10 % increase in price every three years.

c) Annual Maintenance Cost of Vehicles: 15 % increase every three years (based on average operating costs for vehicles in Upper Volta).

d) Commodities: 20 % increase after the first three years.

FINANCIAL TABLE I

ADS - Budget of AID Funds
(US $ 000)

	1984	1985	1986	1987	1988	Total	%
Technical Assistance							
- Long Term	970.0	1,429.0	1,084.0	982.0	395.0	4,860.0	16.2
- Short Term	451.0	434.0	361.0	387.0	234.0	1,867.0	6.2
TA - Support	900.0	1,500.0	1,400.0	900.0	300.0	5,000.0	16.7
Training Support							
- In-Country	100.0	275.0	285.0	160.0	90.0	910.0	3.0
- Long Term	943.7	1,710.3	1,789.0	1,265.0	311.0	6,019.0	20.1
- Short Term	112.0	137.0	110.0	165.0	71.0	595.0	2.0
Construction	500.0	100.0	-	-	-	600.0	2.0
Commodities	1,198.6	1,532.5	1,016.4	325.2	43.1	4,115.8	13.7
Vehicles	427.5	237.0	-	318.1	177.2	1,159.8	3.9
Evaluations	-	-	125.0	-	125.0	250.0	.8
Supplies	46.0	70.5	62.5	62.5	51.0	292.5	1.0
Other	108.3	56.8	86.8	43.4	36.9	332.2	1.1
Sub-Total	5,757.1	7,482.1	6,319.7	4,608.2	1,834.2	26,001.3	86.7
15 % Contingency	942.9	1,067.9	930.3	741.8	315.8	3,998.7	13.3
Grand Total	6,700.0	8,550.0	7,250.0	5,350.0	2,150.0	30,000.0	100.0
%	22.3	28.5	24.2	17.8	7.2	100.0	

FINANCIAL TABLE II

ADS - Budget of GOUV Funds
(US $ 000)

	1984	1985	1986	1987	1988	Total	%
Salaries	199.4	388.4	462.2	400.2	378.2	1,828.4	18.8
Office Expenses	18.9	23.1	27.1	31.5	34.4	135.0	1.3
Training	118.6	230.0	282.9	256.6	218.6	1,106.7	11.4
Commodities	421.8	412.3	388.3	85.0	10.0	1,317.4	13.5
Supplies	83.1	63.5	33.5	28.5	48.2	256.8	2.6
Vehicles	42.0	40.0	-	24.2	-	106.2	1.1
Vehicle Maintenance	328.1	516.8	520.4	554.4	513.7	2,433.4	25.0
Evaluations	-	-	25.0	-	25.0	50.0	.5
Construction	225.0	288.0	93.0	2.0	2.0	610.0	6.3
Financing of Cereal Banks	102.3	118.2	107.3	116.9	75.6	520.3	5.3
Other	34.5	38.3	43.3	48.3	49.3	213.7	2.2
Sub-Total	1,573.7	2,118.6	1,983.0	1,547.6	1,355.0	8,577.9	88.0
15 % Contingency	206.3	281.4	262.0	222.4	200.0	1,172.1	12.0
Grand Total	1,780.0	2,400.0	2,245.0	1,770.0	1,555.0	9,750.0	100.0
%	18.2	24.6	23.0	18.2	16.0	100	

FINANCIAL TABLE III

n Exchange and Local Currency - Summary
(US $ 000)

	A.I.D.		GOUV.	
	FX	LC 1/	LC	TOTAL
e	6,727.0	-	-	6,727.0
	4,000.0	1,000.0	-	5,000.0
	6,614.0	910.0	1,106.7	8,630.7
	-	600.0	610.0	1,210.0
	3,815.8	300.0	1,317.4	5,433.2
	1,159.8	-	106.2	1,266.0
	250.0	-	50.0	300.0
	259.0	33.5	519.0	811.5
	-	-	1,566.2	1,566.2
	-	-	135.0	135.0
	-	-	2,433.4	2,433.4
Banks	-	-	520.3	520.3
	152.2	180.0	213.7	545.9
	22,977.8	3,027.5	8,577.9	34,579.2
	3,572.2	426.5	1,172.1	5,170.8
	26,550.0	3,450.0	9,750.0	39,750.0

ed local currency will be disbursed by AID directly, via USAID/Controller's Office,
rs submitting vouchers directly to the USAID for reimbursement. No AID-generated
funds are to flow directly or indierctly through the GOUV.

FINANCIAL TABLE III (a)

Cash Flow of Foreign Exchange and Local Currency - Policy Analysis and Project Evaluation Activity
(US $ 000)

	A.I.D.		GOUV	
	FX	LC	LC	TOTAL
Technical Assistance	770.0	-	-	770.0
TA Support	402.0	100.0	-	502.0
Training	420.0	40.0	-	460.0
Construction	-	-	-	-
Commodities	130.0	-	80.0	210.0
Vehicles	57.0	-	-	57.0
Evaluations	-	-	-	-
Supplies	-	-	-	-
Salaries	-	-	-	-
Office Expenses	-	-	-	-
Vehicle Maintenance	-	-	158.8	158.8
Financing of Cereal Banks	-	-	-	-
Other Costs	12.0	-	110.0	122.0
Total	1,791.0	140.0	348.8	2,279.8
15 % Contingency	280.2	20.0	40.0	340.2
Grand Total	2,071.2	160.0	388.8	2,620.0

FINANCIAL TABLE III (b)

Cash Flow of Foreign Exchange and Local Currency - Agricultural Statistics
(US $ 000)

	A.I.D.		GOUV	
	FX	LC	LC	TOTAL
Technical Assistance	655.0	-	-	655.0
TA Support	325.0	75.0	-	400.0
Training	135.0	-	-	135.0
Construction	-	-	-	-
Commodities	158.8	-	10.4	169.2
Vehicles	129.1	-	-	129.1
Evaluations	-	-	-	-
Supplies	34.0	20.0	321.5	375.5
Salaries	-	-	431.4	431.4
Office Expenses	-	-	-	-
Vehicle Maintenance	-	-	256.4	256.4
Financing of Cereal Banks	-	-	-	-
Other Costs	148.5	-	45.7	194.2
Total	1,585.4	95.0	1,065.4	2,745.8
15 % Contingency	318.1	16.5	159.8	494.4
Grand Total	1,903.5	111.5	1,225.2	3.240.2

FINANCIAL TABLE III (c)

Cash Flow of Foreign Exchange and Local Currency - Administrative Support Activity
(US $ 000)

	A.I.D.		GOUV	
	FX	LC	LC	TOTAL
Technical Assistance	400.0	-	-	400.0
TA Support	250.0	34.0	-	284.0
Training	-	-	-	-
Construction	-	-	-	-
Commodities	50.0	-	-	50.0
Vehicles	19.0	-	-	19.0
Evaluations	-	-	-	-
Supplies	-	-	50.0	50.0
Salaries	-	-	-	-
Office Expenses	-	-	-	-
Vehicle Maintenance	-	-	60.4	60.4
Financing of Cereal Banks	-	-	-	-
Other Costs	-	-	-	-
Total	719.0	34.0	110.4	863.4
15 % Contingency	80.0	5.8	28.9	114.7
Grand Total	799.0	39.8	139.3	978.1

FINANCIAL TABLE III (d)

Cash Flow of Foreign Exchange and Local Currency - Young Farmer Training
(US $ 000)

	A.I.D.		GOUV	
	FX	LC	LC	TOTAL
Technical Assistance	304.0	-	-	304.0
TA Support	175.0	25.0	-	200.0
Training	54.0	-	738.0	792.0
Construction	-	-	520.0	520.0
Commodities	659.0	-	877.0	1,536.0
Vehicles	-	-	60.0	60.0
Evaluations	-	-	-	-
Supplies	-	-	67.5	67.5
Salaries	-	-	34.6	34.6
Office Expenses	-	-	-	-
Vehicle Maintenance	-	-	119.2	119.2
Financing of Cereal Banks	-	-	-	-
Other Costs	-	-	-	-
Total	1,192.0	25.0	2,416.3	3,633.3
15 % Contingency	180.0	3.0	247.4	430.4
Grand Total	1,372.0	28.0	2,663.7	4,063.7

FINANCIAL TABLE III (e)

Cash Flow of Foreign Exchange and Local Currency - D.I.R.C.
(US $ 000)

	A.I.D.		GOUV	
	FX	LC	LC	TOTAL
Technical Assistance	800.0	-	-	800.0
TA Support	468.0	100.0	-	568.0
Training	-	-	200.0	200.0
Construction	-	-	10.0	10.0
Commodities	-	-	-	-
Vehicles	-	-	-	-
Evaluations	-	-	-	-
Supplies	-	-	10.0	10.0
Salaries	-	-	165.6	165.6
Office Expenses	-	-	-	-
Vehicle Maintenance	-	-	136.3	136.3
Financing of Cereal Banks	-	-	-	-
Other Costs	-	-	-	-
Total	1,268.0	100.0	521.9	1,889.9
15 % Contingency	367.0	15.0	78.3	460.3
Grand Total	1,635.0	115.0	600.2	2,350.2

FINANCIAL TABLE III (f)

Cash Flow of Foreign Exchange and Local Currency - Scholarship and Training Fund
(US $ 000)

	A.I.D.		GOUV	
	FX	LC	LC	TOTAL
Technical Assistance	1,036.0	-	-	1,036.0
TA Support	696.0	164.0	-	860.0
Training	4,388.0	380.0	-	4,768.0
Construction	-	-	-	-
Commodities	43.0	-	30.0	73.0
Vehicles	24.5	-	-	24.5
Evaluations	-	-	-	-
Supplies	-	13.5	5.0	18.5
Salaries	-	-	-	-
Office Expenses	-	-	-	-
Vehicle Maintenance	-	-	-	-
Financing of Cereal Banks	-	-	-	-
Other Costs	-	156.7	-	156.7
Total	6,187.5	714.2	35.0	6,936.7
15 % Contingency	800.0	98.3	5.3	903.6
Grand Total	6,987.5	812.5	40.3	7,840.3

FINANCIAL TABLE III (g)

Cash Flow of Foreign Exchange and Local Currency - National Experimentation Service
(US $ 000)

	A.I.D.		GOUV	
	FX	LC	LC	TOTAL
Technical Assistance	1,000.0	-	-	1,000.0
TA Support	684.0	200.0	-	884.0
Training	395.0	-	-	395.0
Construction	-	200.0	-	200.0
Commodities	450.0	30.0	-	480.0
Vehicles	347.0	-	-	347.0
Evaluations	-	-	-	-
Supplies	-	-	-	-
Salaries	-	-	366.6	366.6
Office Expenses	-	-	-	-
Vehicle Maintenance	-	-	666.3	666.3
Financing of Cereal Banks	-	-	-	-
Other Costs	15.0	-	-	15.0
Total	2,891.0	430.0	1,032.9	4,353.9
15 % Contingency	498.8	55.2	154.9	708.9
Grand Total	3,389.8	485.2	1,187.8	5,062.8

FINANCIAL TABLE III (h)

Cash Flow of Foreign Exchange and Local Currency - Food and Food Technology Service
(US $ 000)

	A.I.D.		GOUV	
	FX	LC	LC	TOTAL
Technical Assistance	600.0	-	-	600.0
TA Support	300.0	100.0	-	400.0
Training	700.0	-	-	700.0
Construction	-	400.0	10.0	410.0
Commodities	1,070.0	-	290.0	1,360.0
Vehicles	214.8	-	-	214.8
Evaluations	-	-	-	-
Supplies	75.0	-	50.0	125.0
Salaries	-	-	242.3	242.3
Office Expenses	-	-	27.0	27.0
Vehicle Maintenance	-	-	396.2	396.2
Financing of Cereal Banks	-	-	-	-
Other Costs	-	-	58.0	58.0
Total	2,959.8	500.0	1,073.5	4,533.3
15 % Contingency	411.6	128.6	161.0	701.2
Grand Total	3,371.4	628.6	1,234.5	5,234.5

FINANCIAL TABLE III (i)

Cash Flow of Foreign Exchange and Local Currency - National Soils Service
(US $ 000)

	A.I.D.		GOUV	
	FX	LC	LC	TOTAL
Technical Assistance	850.0	-	-	850.0
TA Support	550.0	148.0	-	698.0
Training	600.0	112.0	-	712.0
Construction	-	-	70.0	70.0
Commodities	825.0	-	30.0	855.0
Vehicles	328.9	-	46.2	375.1
Evaluations	-	-	-	-
Supplies	150.0	-	15.0	165.0
Salaries	-	-	273.7	273.7
Office Expenses	-	-	8.8	8.8
Vehicle Maintenance	-	-	519.4	519.4
Financing of Cereal Banks	-	-	-	-
Other Costs	-	-	-	-
Total	3,303.9	260.0	963.1	4,527.0
15 % Contingency	440.0	36.1	144.5	620.6
Grand Total	3,743.9	296.1	1,107.6	5,147.6

FINANCIAL TABLE III (j)

Cash Flow of Foreign Exchange and Local Currency - Food Security (DIRC/Cereal Banks)
(US $ 000)

	A.I.D.		GOUV	
	FX	LC	LC	TOTAL
Technical Assistance	-	-	-	-
TA Support	-	-	-	-
Training	-	-	-	-
Construction	-	-	-	-
Commodities	-	-	-	-
Vehicles	-	-	-	-
Evaluations	-	-	-	-
Supplies	-	-	-	-
Salaries	-	-	-	-
Office Expenses	-	-	13.5	13.5
Vehicle Maintenance	-	-	-	-
Financing of Cereal Banks	-	-	520.3	520.3
Other Costs	-	-	-	-
Total	-	-	533.8	533.8
15 % Contingency	-	-	51.2	51.2
Grand Total	-	-	585.0	585.0

FINANCIAL TABLE III (k)

Cash Flow of Foreign Exchange and Local Currency - Food Security (OFNACER)
(US $ 000)

	A.I.D.		GOUV	
	FX	LC	LC	TOTAL
Technical Assistance	312.0	-	-	310.0
TA Support	150.0	54.0	-	204.0
Training	250.0	50.0	168.7	468.7
Construction	-	-	-	-
Commodities	700.0	-	-	700.0
Vehicles	39.5	-	-	39.5
Evaluations	-	-	-	-
Supplies	-	-	-	-
Salaries	-	-	52.0	52.0
Office Expenses	-	-	85.7	85.7
Vehicle Maintenance	-	-	120.4	120.4
Financing of Cereal Banks	-	-	-	-
Other Costs	-	-	-	-
Total	1,451.5	104.0	426.8	1,982.3
15 % Contingency	229.5	15.0	100.8	345.3
Grand Total	1,681.0	119.0	527.6	2,327.6

FINANCIAL TABLE IV

ADS Project Budget by Component

	LOP AID $(000)	LOP[1/] Total H.C. $(000)	LOP [2/] Incremental Cost to GOUV	POST-LOP Incremental Cost to GOUV	GOUV Recurrent Costs LOP 1984-88	GOUV Recurrent Costs Post-LOP 1989-93	GOUV Recurrent Costs Total 1984-93
Component 1							
Policy Analysis and Project Evaluation Activity	2,231.2	388.8	388.8	494.1	388.8	494.1	882.9
Agricultural Statistics	2,015.0	2,933.9	1,225.2	1,387.1	1,238.6	1,387.1	2,625.7
Administrative Support Activity	838.8	139.3	139.3	210.2	139.3	210.2	349.5
Component 2							
Young Farmer Training	1,400.0	12,166.0	2,663.7	1,084.2	1,172.2	1,084.2	2,256.4
D.I.R.C.	1,750.0	1,174.6	600.2	764.4	588.7	757.5	1,346.2
Scholarship & Training Fund	7,800.0	40.3	40.3	--	40.3	--	40.3
Component 3							
National Experimentation Service	3,875.0	1,368.4	1,187.8	1,998.0	1,187.8	1,998.0	3,185.8
Food and Food Technology Service	4,000.0	1,420.5	1,234.5	1,510.1	1,234.5	1,510.1	2,744.6
National Soils Service	4,040.0	1,377.5	1,107.6	1,933.5	1,027.1	1,933.5	2,960.6
Component 4							
Food Security (DIRC/Cereal Banks)	--	585.0	585.0	20.0	15.0	20.0	35.0
Food Security (OFNACER)	1,800.0	527.6	527.6	805.9	490.8	805.8	1,296.6
Evaluation	250.0	50.0	50.0	--	--	--	--
GRAND TOTAL	30,000.0	22,171.9	9,750.0	10,207.5	7,523.1	10,200.5	17,723.6

1/ The anticipated total GOUV budget for the Ministry of Rural Development
2/ The GOUV contribution to the ADS Project

III. IMPLEMENTATION PLAN

1. Component One

A. Policy, Planning and Programming/Evaluation and Monitoring

The only aspects concerning implementation of this Project which can be firmly established at this point are the design and start-up of the Project and the evaluation schedule leading to proposed extensions. The actual implementation schedule of major events under the contract must of course wait for the design to be completed.

* * *

B. Agricultural Statistics

(1) Phase One

To ensure the attainment of the Project objectives the timing of the execution of a PASA is very important. The PASA should be signed by December 1, 1983 in order to allow the preparation time needed to conduct the pilot surveys during the 1984 growing season.

(a) GOUV Staff Requirements

Three statisticians and one systems analyst/computer specialist will form the core central staff of the Statistics Unit. At least one of the statisticians must be Cadre A level. It is desirable but not essential for the systems analyst and one other statistician to be Cadre A level, but if none are available, Cadre B level can be utilized. Over time, it is envisioned that this core staff will all become Cadre A level.

Eleven Voltans shall be contracted to perform the data collection activities during this phase. These personnel shall fulfill the basic requirements for Cadre B level government service. They should have a strong background in agriculture and some university level training in mathematics and statistics. It is envisioned these people will become the regional survey supervisors in Phase II. Training and experience gained during this Phase will prepare them for the duties to be performed at that level. This approach to building staff will facilitate successful institutionalization of the prescribed capabilities. Support level personnel required include a bilingual secretary and two part-time data entry personnel.

The Cadre A level statistician designated as the Statistics Unit manager should be on staff by December 1, 1983 and the remaining professional staff by January 15, 1984. The eleven data collectors should be on contract by March 15. The secretary will be needed by February 1, and the data entry personnel by June 15.

(b) Technical Assistance

One long-term resident statistician shall be assigned to the Project. This statistician shall be fluent in French at the FSI 3 level. Language training at FSI shall be provided under this Project, if required. Due to the time required to staff the position, obtain necessary concurrence, and complete language training, it is not expected that the resident statistician will be in-country before July 1. Anything which can be done to facilitate the earliest arrival of the person will benefit the Project. Project implementation will proceed in the interim period with assistance and training to be provided during Phase I as follows:

- Area Frame Experts for 2 PM
- Survey Management Experts for 3 PM
- Survey Operations Experts for 1 PM
- Data Processing Experts for 3 PM
- Objective Yield Expert for 2 PM
- Sample Survey Analysis Expert for 1 PM

When necessary, an English-French interpreter familiar with the technical terminology will accompany the TDY experts. The extent of interpretation assistance necessary will depend upon the availability of French-fluent technical experts and the level of English fluency of the GOUV staff. Six person-months are programmed if needed. In addition, three person-months of technical assistance are programmed to test the computer system, install software, and perform other activities in the U.S. which are necessary for successful Project implementation.

(c) Training

Long-term training in the U.S. will be coupled with short-term training in Upper Volta and extensive on-the-job training to increase the capability of the Statistics Unit to effectively carry out its mandate. The three statisticians will each participate in one-year training programs in the U.S. The major emphasis will be on non-degree academic training to improve their statistical skills. Participation in applied short-courses and the opportunity to observe and study procedures employed by statistical agencies in the U.S. will be integrated into this training. Participation will be staggered, with one person in training each year starting in September 1984. A one-year training program in the U.S. will also be developed for the systems analyst/computer specialist. Again, the program will consist of a mixture of academic course work and short courses in the use of different software packages which will be utilized by the Project, and a training course in isolating and repairing computer hardware problems. English proficiency will be required for these four professionals. If possible, this should be accomplished in-country, but funds are programmed if this training must be provided in the U.S. English training in the U.S. will necessitate adding up to three months to the proposed 12 month training programs. These long-term training programs will commence during Phase I and overlap considerably into Phase II. The implementating agency will coordinate these training programs and provide counseling for academic course work.

A four to six week short-course in agricultural statistics will be conducted in Upper Volta for the eleven data collection personnel and the core professional staff. This short-course, currently being developed by USDA/Statistical Reporting Service (SRS),provides an overview of all aspects of developing

an agricultural information system.

Extensive on-the-job training will be provided in area frame construction, sample selection procedures, questionnaire design, survey manual preparation, data collection, survey data processing, and sample survey analysis procedures. The core staff will be involved in all these activities, and the data collection personnel will be involved in most.

(d) Plan for Implementation

The GOUV, with consultation from the implementing agency, will select the region to use for the pilot surveys in this phase. It is recommended that one of the regions in the Mossi Plateau be selected, since the ADS Project will be concentrating activities in that area, and because of the geographical proximity to Ouagadougou. Black and white aerial photo prints will be obtained from IGHV and color composite Landsat scenes from CRTO. The Statistics Unit Staff, with technical assistance, will construct an area frame for this region. This entails dividing the region into land use strata based on interpretation of the aerial photos and Landsat images. The strata are further divided into discrete segments. The size of the segments will depend upon the population density in the strata, the degree of homogeneity of cropping patterns, and the availability of suitable boundaries. Stratified random sampling procedures will be used to select approximately 50 of these segments which are statistically representative of the region. These areas will be enumerated during the pilot survey. The CRTO will enlarge aerial photos for these segments, and these enlargements will be used by data collection personnel to locate the sample areas and delineate field boundaries.

The short-courses in agricultural statistics for the data collection personnel and professional staff will include practical exercises in developing data collection forms, specifying survey procedures, and specifying data processing requirements (including consistency tests) for use in the pilot surveys. Due to their extensive experience in collecting agricultural information in Upper Volta, the SAFGRAD/FSU personnel will be consulted to take advantage of lessons previously learned.

The first survey, to be conducted in early June, will collect information on land ownership, cultivatorship and area planted for the major crops. Objective area mensuration procedures will be employed. Information on area for other land uses will also be gathered, i.e. houses, forests, pastures, swamps, etc. The data obtained from this survey will provide the basis for early-season crop area statistics. This information in conjunction with observable plant characteristics, weather parameters and historic yield data, provides the foundation for pre-harvest crop production forecasts.

Developing a reliable crop production forecast system requires applied research. Data will be collected on a sub-sample of sorghum and millet fields for observable plant characteristics several times throughout the growing season. Weekly weather parameters will be obtained from the AGRHYMET weather stations in the region. Crop cutting trials will be conducted near harvest time. Relationships between these parameters and the final yield will be studied to determine appropriate objective yield procedures.

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A post-harvest survey will be conducted, interviewing farmers for crop production in the sample segments. This data will be extrapolated to obtain regional statistics of farmers' reported production.

Sampling errors will be computed for the early-season crop area statistics, and the post-harvest reported production. This provides a measure of the reliability of the estimates. A statistical evaluation will be conducted following these surveys. This evaluation, to be conducted by the Statistics Unit and implementing agency, will provide the basis for fine tuning the procedures to Upper Volta's unique environmental and cultural conditions. This evaluation will assess the appropriateness of the size of segments and the strata definitions. Possible sources and magnitude of non-sampling errors will be evaluated since this is the major source of inaccuracy in most statistics, and procedures will be recommended to minimize them. Cost and reliability of alternate sample sized will be estimated. This information will provide a basis for ensuring the cost-effective collection of suitably accurate and reliable information as the system is expanded to the national level. A schedule of activities for Phase II will be developed. Trade-offs between staff levels, training costs, and timeliness of information will be assessed to determine the appropriate staffing level and mechanism for data collection personnel.

A team consisting of one member from each participating institution will assess short-term and long-term anticipated data processing requirements, review hardware and software capable of meeting these requirements, and prepare procurement specifications. This activity will be conducted within the first three months of the Project. A lag time of six to nine months, from the beginning of the Project until the computer is installed in-country, is expected. Expeditious accomplishment of this activity will provide short-term and long-term benefits to the Project.

If the system is not in-country with software fully interfaced by June 1, 1984, an alternative approach can be used for processing survey data during this phase. USDA/SRS has developed a microcomputer based survey data processing system. The system can be carried as accompanied baggage, requires minimal training to use, and has sufficient processing power to easily handle the small volume of data to be processed for the pilot surveys in a timely manner. The system does not have the processing requirements of DEP. USDA/SRS has agreed to loan the Project a system to process the pilot survey data, if necessary, until arrival of the Project-financed system.

Funding is included for purchasing reference books in the fields of statistics, mathematics, and data processing. This small reference collection will be maintained in the Statistics Unit, and will help to minimize the amount of technical assistance required in the future.

(2) Phase II

During this phase, beginning early in the second year of the Project, the area frame will be expanded to provide national coverage. Data collection activities will be expanded to include livestock, prices paid by farmers for inputs, prices received by farmers for produce, labor, on-farm grain stocks, socio-economic factors and/or other parameters required by the public and private sectors. The schedule of activities for this phase will be determined by the technical evaluation team at the end of Phase I, and is subject to approval by the AID/Upper Volta Project Officer.

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(a) GOUV Staff

Conditioned upon GOUV approval, the eleven data collection personnel will be converted from contract employees to Cadre B level staff. This conversion will be phased in to provide one data collection supervisor for each region as the area frame is completed for that region. If the GOUV does not approve, alternative forms of staffing will be explored to ensure institutionalization of the capabilities. However, use of an autonomous staff is considered so crucial to the development of a credible Statistics Unit, that the risk of having to train another group of supervisors, and the costs associated with that risk, are warranted.

It is presently estimated that 100 data collectors will be required to execute national scale surveys in a timely manner. Experience gained during Phase I will provide a more precise estimate of the number of contract employees needed, and the timing and duration for employment. An assessment will be made of advantages and disadvantages of full-time versus part-time contracts. The trade-offs between increased turnover rates and the associated retraining costs for part-time personnel, and the occupation of full-time personnel during slack periods will be examined before making a final determination of staffing levels for data collection personnel.

No increase in the central professional staff is anticipated during this phase. Up to ten part-time data entry people will be contracted for during peak periods.

(b) Technical Assistance

The staffing level for long-term technical assistance will remain constant throughout the Project with one resident statistician. The quantity of support and short-term TDY technical assistance will be determined during the Phase I technical evaluation. The maximum anticipated requirements are as follows:

- Area Frame/Sampling Experts	1 PM
- Systems Analyst/Programmer	4 PM
- Survey Management Experts	4 PM
- Survey Operations Experts	1 PM
- Objective Yield Experts	4 PM
- Sample Survey Analysis Experts	3 PM
- Remote Sensing Experts	3 PM
- Bilingual Interpretation/Translation	3 PM

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(c) Training

The long-term training programs started during Phase I will be completed during this phase. One additional one-year training slot is budgeted for in the event of professional personnel turnover. Several short-term training programs will be conducted in-country. These will include short-courses on the use of the various software packages for professional staff; quality control and other agricultural survey operations procedures for the regional supervisors; and map reading and photo interpretation for orienteering purposes for data collection personnel. During this phase, greater emphasis will be placed on utilizing the Statistics Unit staff to conduct short courses when feasible. By the end of the Project, the Unit will have an in-service training program established to ensure that, as personnel turnover occurs, their replacements will be able to be adequately trained with minimal external assistance. This approach to training facilitates institutionalization of the agricultural information system.

On-the-job training will continue to be of major importance during this phase. TDY experts will continue to work with the GOUV staff, training them to perform the various activities. The use of TDY experts to accomplish staff functions will be guarded against, since it would undermine the institution building aspects of this activity. On-the-job training will be provided in all facets of planning, executing, analyzing, disseminating and managing an agricultural survey program.

(d) Plan for Implementation

Construction of the area frame for the rest of the country will be completed during this phase (Phase II). The regional supervisors (data collection personnel from Phase I) will do the area frame construction during the dry season when survey activities are not underway. During this time, these personnel will be temporarily stationed in Ouagadougou.

The surveys for estimating crop area planted, area harvested and production will be conducted on an annual basis with regions incorporated as the area frame is completed. Applied research in crop production forecast procedures will be continued, as appropriate, for sorghum, millet, and other crops of major importance. Other parameters of importance will be incorporated into the survey program once the area frame is completed for the entire country.

Small-scale applied research in utilizing digital forms of satellite data to improve the crop area and/or production estimates may be conducted toward the end of the Project. The launching of the SPOT satellite, the installation of a receiving station at CRTO, and completion of software currently being developed by USDA/SRS and NASA/Ames provides a basis for economically evaluating the feasibility of incorporating these procedures into the estimating system. Implementation of this research activity is conditioned upon successful completion of the above three activities, the capability of the Statistics Unit to pursue this activity, the potential benefits perceived by the implementing agency, and the approval of the AID/Upper Volta Project Officer.

Opportunities will be provided for professional staff to visit agricultural statistics agencies in other countries, i.e. Botswana, Cameroon, U.S., Canada and France. This exposure will provide the staff an opportunity to observe how other countries deal with similar problems, and provide a basis for the

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continued improvement of their system. Limited participation in professional societies and conferences will be supported to ensure continued professional development.

(3) Constraints to Implementation

As noted earlier, the Director of the Planning and Studies Unit (DEP) envisions utilizing ORD personnel, including the extension agents, for the data collection activities. There are two problems in utilizing ORD personnel which merit consideration.

First, in order to develop a system for early-season crop area estimates and forecasts of production, data collection personnel will be utilized extensively throughout the cropping season. In the Agricultural Sector Assistance Strategy for Upper Volta, it is reported that "in 1979 a commission to review ORD activities found they were overextended. Their role was subsequently revised to include only functions directly related to agricultural production." Performing the proposed data collection activities will seriously impede the ability of the agricultural extension agents to fulfill their primary functions during the crop growing season. Secondly, regardless how meticulous the ORDs are in adhering to the prescribed procedures, or how honestly they report the data, the credibility of the information will always be suspect as long as there is any potential for conflict-of-interests, i.e. between reporting production and attaining production quotas. It is proposed that contract employees be used for data collection in Phase I of this activity. In the evaluation at the end of Phase I, the AID Project Officer, GOUV and Project personnel will jointly determine the long-term staffing mechanism for data collection.

The other major constraint to Project implementation is the ability to import the necessary computer equipment. Advance approval is required by CENATRIN, and is essential to timely reporting and analysis of agricultural data.

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C. Administrative Support

As discussed in the description of the activity in Section I. E, the contract for advisory services will be procured through AID procurement procedures. Commodity assistance will also utilize AID procurement procedures early on during the Project, but may change to host country procedures as a result of the mid-term evaluation. Academic training will utilize normal AID PIO/P procedures and all technical and managerial skills training will be introduced under the scholarship fund in Component Two. Requests for operating expense support to facilitate improved administration of DAAF, DCG, the Documentation Service or any other MRD Department, Service or related parastatal will follow the prescribed PL 480 budget review procedure. The schedules for specific events for the near term are presented in Annex I, Implementation Schedule and followed by a rough schedule of other events.

The request and review process for operating expenses will occur in the same sequence every year. Two additional long-term academic participants will be identified in May of 1985 and sent off in September of 1985 and one final

participant will be identified and sent similarly in 1986. Computer and related equipment will be ordered at least six months after the contractor has started or around March 1985. Lastly, replacement vehicles will be ordered in November of 1986 and arrive in March of 1987.

2. Component Two

D. Rural Youth Training

(1) Constrution

Renovation and construction of the two teacher/staff training centers will be by local competitive bidding procedures for a contractor to be selected by the GOUV with USAID input and supervised by HER, Ministry of Rural Development. This will be funded by local currency generations under PL 480 Section 206.

(2) Procurement

(a) One hundred and fifty-five CFJAs

All procurement for the CFJAs will be carried out by the DSFJA administrative section using the procurement system already in place. A monitoring system will be established by the long-term technical assistance to make sure that the equipment has gone out to the centers and is in place. CFJA equipment is standardized. All CFJA procurement will be locally purchased on a competitive basis with local currency generations under PL 480 Section 206.

(b) Two CFFs

Most of the procurementfor the two teacher training centers is expected to be purchased in the US using a PIO/C through a GOUV designated purchasing agent and/or a PIO/T and C. Some procurement will take place locally under DSFJA with local currency generations from the PL 480 Section 206 Program.

(3) Technical Assistance

(a) Twenty PM short-term technical assistance will be procured by USAID through IQCs or other contractual methods using PIO/Ts, perhaps using the same mechanism as for the long-term technical assistance under the DIRC activity described in E below.

(b) Twenty-four PM of an evaluation/monitoring specialist will be procured by USAID through a PIO/T, perhaps using the same mechanism as the long-term technical assistance under the DIRC activity, described in E below.

(c) Twelve PM short-term training will be processed through the contractor who has the responsibility for implementing the DAAF skills management training fund (see F below) using USAID PIOPs.

(4) Operating Costs

Operating costs will be funded through PL 480 Title II, Section 206 generations which will be jointly programmed by USAID and MRD and managed by the

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Ministry of Rural Development. The DSFJA will apply to the central Ministry using the standard GOUV system to apply for operating costs authorized under this activity.

(5) GOUV

This activity will be implemented by the Direction des Services de la Formation des Jeunes Agriculteurs (DSFJA) in the Ministry of Rural Development. Their headquarters are in Ouagadougou with a regional office in Bobo-Dioulasso. There are four technical offices and an administrative/financial branch as shown in the organigram in Annex G (7). All local procurement will be handled by the DSFJA through their administrative service. All construction will be handled through the DSFJA.

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E. Groupements Villageois Managerial and Technical Skills Training

(1) Government of Upper Volta (GOUV)

Ministry of Rural Development (MRD)

The Direction des Institutions Rurales et Credit (DIRC) within the Ministry of Rural Development will be the GOUV's primary implementing agency for the Project. DIRC was created in 1978 to coordinate MRD support services and training programs for GVs and other rural organizations. Under the Project DIRC will implement the training programs for GV managers, GV general membership and DIRC village-level trainers. DIRC will also develop more appropriate and effective training methods and materials. To this end, DIRC will draw on resources available from other training institutions in Upper Volta. The AID-provided technical assistance team will aid DIRC in this effort.

(2) USAID Project Support

(a) Technical Assistance Contract Team

An AID-financed technical assistance team will be provided through a direct AID contract with a U.S. contracting firm. To facilitate the contracting procedures, USAID will seek a single firm capable of providing the required technical assistance personnel for this activity as well as for the Young Farmer Training activity (D above), as the type of skills required for both are similar. USAID expects to begin contractor selection at the earliest possible date after the signing of the Project Agreement and expects to finalize the contract and field the technical assistance team within six months after signing.

The technical assistance team will consist of an Agricultural Economist and Audio-Visual Specialist. The two specialists will be required for a 4 year period. The team leader will be determined pending a list of proposed candidates, and presumably, the most senior person or the one with the most relevent experience will be designated team leader.

(b) USAID/UV Office of Agriculture

The USAID/UV designated Project Officer working under the direction of the USAID/UV Agricultural Development Officer within the Office of Agriculture

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will have monitoring responsibilities for Project implementation. The contract team leader will report to the Project Officer on a regular basis to inform him of activities, problems and project implementation status. In addition, the contract technicians will be required to submit an annual work plan and periodic reports for USAID/UV review. The Project Officer will also havefrequent contact with the DIRC personnel and will visit Project sites periodically.

(c) REDSO/WCA

REDSO regional technicians will be requested to make periodic visits to monitor Project progress and to address problem-specific issues related to technical and implementation matters.

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F. Managerial and Technical Skills Training Fund

The Training Grants Fund will be administered by a U.S. contractor with technical support of the Ministry of Rural Development's Direction des Affaires Administratives et Financieres (DAAF) and the Chamber of Commerce. All government candidates will process their request through DAAF, which is charged with overseeing all training requests for the Ministry of Rural Development.

(1) Training Grants Fund

To ensure an efficient and fair process of scholarship distribution, the following mechanism will be put into place. The contractor will carry out an assessment of the training needs of the operational units of the MRD of private firms involved in rural development programs, soon after arrival. This assessment will be derived from visits to the central Ministry, the ORDs, meetings with managers and directors of private firms, and an understanding of their operational context, rather than by carrying out a formal manpower survey. At the same time, the contractor will identify institutions in the U.S. and in francophone Africa offering relevant technical training programs and assessing the scholastic capabilities of these institutions for accreditation of equivalency with French degrees.

The contractor will send an announcement to the DAAF on an annual basis with the following information:

- the types of scholarships which will be available in the coming year in the U.S. and Africa;
- the conditions specific to each of them;
- the total funds available; and
- a reminder of the general conditions for the Training Fund as stated in the Project Agreement. The Contractor will suggest a distribution of scholarships by category, based on the needs assessments.

A list of training institutions in Africa which might be considered for third country training is provided in Annex L. Their programs are formally equivalent to the Associate Degree level of the community colleges and land grant colleges of the U.S. The quality of training however might not be equivalent.

DAAF, based on its own planning process and after consultation with its operational units and the Chamber of Commerce representative, will make a final decision about the distribution of scholarships by sectors (MRD and private sector) and by category. The distribution of scholarships by category for the private sector will be based upon a survey of private companies conducted by the Chamber of Commerce with the help of the contractor. This survey will inquire about the kinds of employees the companies plan to recruit in the next 3-6 years.

DAAF will select the MRD candidates according to its own in-house selection process. DAAF, assisted by the Chamber of Commerce, will select candidates for the private sector scholarships, according to their individual merits and their language aptitudes. DAAF will transmit the list of selected participants to USAID for final clearance.

The contractor will check to make sure that all candidates meet the basic requirements set up by USAID. The contractor will then process the PIO/Ps according to U.S. government guidelines using the dossiers provided by DAAF. These PIO/Ps will then be cleared by USAID and a MRD representative such as the Director of DAAF or his representative. They will then be processed by the contractor for the participant's placement and departure for the said institution. All prospective participants going to the U.S. will be required to take the TOEFL or ALIGU examination to assess the length of English training which will be required.

(2) Skills Training Fund

Under this activity short-term in-country training will be carried out by established training institutions (i.e. INADES, IPD, CESAO, USDA, University of Pittsburgh, ORD, etc.) and by the contractor, who will hold in-country technical training courses when these courses are not available in Upper Volta. All short-term training funds will be placed under the contract. They will receive requests for short-term training from DAAF, for the MRD divisions, and from the private sector firms directly, for their training needs. The contractor will then get DAAF and USAID clearances for these requests.

INADES and IPD were interviewed about their interest in implementing short-term training courses in Upper Volta under Component Two of the ADS Project. Both are very interested in cooperating with the Project and reiterated their long standing relationship with AID in Africa.

INADES has experience in training of farmers and extension agents in basic agricultural skills. IPD has developed a capability in management training focusing on management of small agricultural development. Both institutions will cooperate fully as implementors of technical skills training courses prepared by specialists other than their own, should there be a need to do so. They are positive to any efforts to upgrade their capabilities in hard educational technology skills such as task analysis, design and production of training materials, which are geared toward technical skills training courses addressing lower and middle-level employees.

For those technical courses for which there is no capacity in Upper Volta, the contractor will design and implement them. The areas where this system might be particularly applicable are for the following skills: foremen,

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supervisors, masons, plumbers, irrigation and soil conservation technicians, surveyors, maintenance operators, etc.

The training courses will be implemented on-the-job, for the purpose of increasing the productivity of the client-organization in activities related to specific rural development. The courses will be tailored to the needs of the client organization and developed with the participation of clients' managers and engineers. Courses will be executed either by the client itself whenever it has the capability, by a local training institution, and/or by the contractor itself. This capability will require the utilization of specialists in task analysis, curriculum development, instructional systems design, production of training material, performance test design, impact measurement and evaluation, and instructors' training which will be provided by the contractor and funded by their contract under short-term technical assistance. The selection of the contractor will depend on their capability to deliver such training services (or in the design and implementation in Upper Volta of such delivery systems).

(3) English Training

There are currently three options for providing English training to participants going to the United States. The first is to train the participants in English in the U.S. This option is too expensive. The second option is to send the participants to Ghana or Nigeria. Due to the unstable political situation in Ghana, this does not appear to be a good idea. Nigeria, however might be an option worth considering. The third option is to put the English training under the contractor's in-country short-term training courses. The contractor will then implement this course just like all other courses they are to implement. We have opted for this last proposition given the low cost and tailored approach to English training, until such time as USIS/ Upper Volta starts their English program.

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3. Component Three

G. Farming Systems Research

(1) Government of Upper Volta (GOUV)

Ministry of Rural Development (MRD)

The National Service of Experimentation and Applied Studies (NES) under the Direction des Services Agricoles (DSA) in the MRD will be the GOUV's main implementing agent. The NES is responsible for establishing Farming Systems Units (FSU) at the ORD levels to implement a program of adaptive research. the ORDs of Yatenga (Ouagigouya Region), Centre Nord (Kaya Region), Centre (Ouagadougou) and Sahel (Dori) will participate in the initial phase of the Project. The NES will also be responsible for establishing stronger linkages between the National Extension Service and the Institut Voltaique de la Recherche Agricole et Zootechnique (IVRAZ) in the Ministry of Higher Education and Scientific Research, which is responsible for coordinating agricultural research in Upper Volta. The NES will be a permanent member of the Comité Specialisé de la Recherche Agricole (CSRA) and the Departement de

Recherche du Developpement (DRD) fora organized by IVRAZ to discuss research results and set priorities for further research. The NES will likewise have input into the various crop commissions also established under IVRAZ.

The AID-financed technical assistance team leader will help coordinate the NES annual adaptive research programs. The DSA will give its concurrence to the general plans and lines of research NES will undertake.

(2) USAID Project Support

(a) U.S. University Contract Team

An AID-financed technical assistance team will be provided through a contract with a Title XII U.S. land grant university. USAID/UV will submit a waiver requesting proprietary procurement of the services of Purdue University. Purdue has provided technical assistance for the development of the FSU under the SAFGRAD Project since 1978. USAID believes Purdue has the predominant capability and believes it would be beneficial for Purdue to continue in implementing FSR in Upper Volta. USAID/UV expects to begin contract negotiations with Purdue as soon as possible after execution of the Project Agreement and a PIO/T between USAID/UV and the GOUV.

The contract team will consist of a research agronomist, agricultural economist, rural sociologist and a computer specialist. It is expected that the technical assistance team will be required for a period of 4 years. The team leader will be determined pending a list of proposed candidates. Presumably, the most senior member of the team to be designated by Purdue once all the staff are recruited will be the team leader and will be the T.A. team's official spokesperson with the GOUV and USAID/UV. The T.A. team will arrive in Upper Volta on/about month 6 following the signing of the Project Agreement.

(b) USAID/UV Project Officer

The USAID/UV Project Officer, working under the direction of the USAID/UV Agricultural Development Officer within the Office of Agriculture, will have the primary monitoring responsibilities for Project implementation. The Project Team Leader will report to the Project Officer on a regular basis to inform him of activities, problems, and Project implementation status. In addition, the contract team will be required to submit an annual work plan and periodic reports for USAID/UV review. The Project Officer will, likewise, have frequent contact with other members of the T.A. team and NES personnel and will visit Project sites periodically.

(c) REDSO/WCA

REDSO regional technicians, such as an engineer or contracting officer, will be requested for periodic visits to monitor Project progress and to address problem-specific issues related to technical or implementation matters.

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H. Food and Food Technology

As this is a new start-up of the FFTS the bulk of equipment, infrastructure,

and personnel necessary for Project activities are not in place. A gradual build-up of required Project personnel will occur during the life of the Project. To the extent that new equipment, construction, training and technical assistance are involved, the appropriate documentation will be prepared during the first 9 months of the activity. Such documentation includes PIO/Ps for training, PIO/Cs for equipment, PIO/Ts for technical assistance with host country construction contracting.

Arrangements for procurement, contracting, construction, training and disbursements for local operating costs are detailed below.

(1) Procurement

Project commodities will be procured both locally and in the U.S. Local procurement, which will consist largely of office supplies, food processing equipment for cooperatives, garage equipment, library supplies, survey supplies and spare parts, will be carried out directly by the FFTS. U.S. procurement, consisting largely of four-wheel drive vehicles, some spare parts, computers, audio-visual equipment, office equipment, library equipment, duplication and printing equipment, laboratory equipment and food processing equipment for cooperatives, will be undertaken through PIO/Cs, with AAPC, Inc. or similarly suitable U.S. companies as procurement agents.

(2) Contracting

Following the obligation of Project funds, PIO/Ts will be drawn up to provide services for the following needs:

Long-term Technical Assistance

48 PM Project Manager Nutrition Specialist

24 PM Audio-Visual Aids specialist

24 PM Agricultural Economist familiar with intrahousehold allocation of resources

24 PM Rural Sociologist specialist in computer science

24 PM Nutritionist to carry out the food inventory

Short-term technical assistance

3 PM Library science (to set up the documentation center)

3 PM Laboratory technician (chemistry)

3 PM Laboratory technician (micro-biology)

6 PM Rural Sociologist

6 PM Computer technician (micro-processor)

3 PM Audio-Visual Aids specialist

8 PM Consumption Economist

8 PM Nutrition educator trainer

8 PM Food Equipment testing apecialist

8 PM Home Economist in applied resources

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It is anticipated that services listed above may be obtained from either a Title XII University or a private U.S. Firm.

(3) Construction Arrangements

The construction of a new FFTS headquarters building with office and laboratory space as well as a conference room, library and warehouse will be through a host country contract and as such will follow Host Country contract guidelines from AID/W. A condition precedent to disbursement of funds for construction activities will require USAID approval of detailed plans, specifications and construction schedules, engineering supervisory services and contracting procedures. Plans should be submitted by the GOUV by November 15, 1983. Based upon preliminary designs, construction should take about 18 months to complete.

(4) Training Arrangements

The following arrangements will be made concerning the different types of training.

(a) U.S. Training

For Short-term training:

The FFTS will send two FFTS staff members to participate in various courses each year of the Project. The USDA TC 150-7 Determination and Prevention of Post-harvest Food Losses, is a four-week course held at Cornell University. Total cost is anticipated at $14,000 per participant with two months of English training in the U.S. The USDA TC 120-7 Soybean Processing for Food Uses, is a six-week course held at the University of Illinois. Total cost is anticipated at $16,000 per participant including English training. The University of Pittsburgh Sahelian Management Seminar is held each year in French. A total of $70,000 is planned for 36 PM of short-term training.

Long-term training:

Two FFTS agents will be sent for the M.S. degrees in Nutrition Planning offered by Cornell University, as well as for Communications/Community Organization/Marketing courses. Four months of English training will be required prior to enrollment. Once these two agents return, they will assume control of the Survey and Planning Section, and the Training Section of the FFTS. A total of $130,000 is planned for 56 PM. Agents of the FFTS will also be chosen to complete 200 PM of AA degrees or the equivalent in vehicle mechanics and repair, electronics repair, chemistry laboratory technology, home economics, audio-visual arts, graphic arts/printing, library science and accounting. Upon their return these technicians will serve in the documentation center, the survey unit, the training section and in the food technology section laboratories.

(b) In-Country

Over the life of the Project, two Food Technology Seminars will be held in-country for staff of the FFTS and other nutrition specialists. These seminars will cover the areas of nutrition education delivery, communications, food processing technology, laboratory testing and home economics. The detailed plans will be drawn up during the first year with the first seminar occuring in late 1985. It is anticipated to have 20 participants in each

seminar with instruction by the long-term technical team with assistance from USDA and/or a university for a total of 20 PM. These seminars will be two weeks in duration.

(5) Local Operating Costs

Local operating costs will be managed by the FFTS accountant and will be provided through the PL 480 generations. The FFTS will request the necessary funds for operations through the DSA and each year a mutually agreed upon withdrawal statement will allow transfer of PL 480 funds to an operational account in the name of the FFTS. The FFTS will follow standard GOUV procedures for financial operations and will coordinate its activities through the DEP. USAID will monitor the DEP through regular audits. As such, the GOUV will provide logistical support for Project activities which will include maintenance of Project buildings, maintenance and operations of vehicles, procurement of office supplies and other Project materials, and salaries and travel per diem of GOUV civil servants, contract personnel and travel expenses for participants of the in-country training program.

(6) AID Logistical Support

AID will provide office space and secretarial services for the contract Project Manager within the Office of Agriculture. AID will also provide logistical support for the long-term technical assistance contract team according to their contract provisions.

(7) GOUV Logistical Support

The GOUV-provided logistical support for Project activities will include rent of a suitable office space (while waiting for construction of a new headquarters building), maintenance of this new structure to include electricity and water and telephone, salaries of GOUV personnel, maintenance of vehicles and their operations, and travel per diem for FFTS agents and for training participants. The GOUV will also provide office space and secretarial support to long-term expatriate technical advisors. The FFTS will also ensure customs clearance for Project commodities.

(8) Responsibility for the direct Project implementation at the level of Project outputs falls almost entirely on the FFTS, with USAID/Upper Volta and AID/W playing limited supporting roles chiefly in training, contracting and commodity procurement. However, for the activity to achieve its purpose of planning for, testing and promoting nutritionally sound practices, a number of other organizations have important roles to play. A brief summary of the role to be played by each is described below.

(a) The DEP will ensure that the surveys undertaken by the Planning and Survey Section of the FFTS are standardized to permit data base compatibility with others generated through the ADS Project such as the area sample frame and socio-economic survey planned by the experimentation service. The DEP will also provide guidance on the standardization of data processing equipment provided for under this activity.

(b) The DSFJA will coordinate with the FFTS the proposed training for GJA's in food technology and nutrition. It will also coordinate the training pro-

posed for CFJA teachers at the teacher training schools at Kamboinse and Farakoba.

(9) Inter-Ministerial Cooperation

Collaboration among different Ministries is necessary for effective utilization of several outputs of this Project - nutrition education, training, and nutritional survey. In the case of nutrition education, the Ministries of Health and Rural Development are already collaborating and providing both kinds of subjects in training sessions. This effort will be reinforced by the creation of a subcommittee of the National Food Plan committee which will guide and coordinate the MOH, MRD, MSA, and the voluntary agencies toward a common nutrition education strategy.

In terms of the training effort, the FFTS is already coordinating with the ORDs, the CFJAs, the agricultural training centers, and the groupements villageois training systems through the Secretary General of the MRD. Further coordination with the MOH, voluntary agencies, and the Ministry of Education will be formalized through establishment of an interministerial coordinating committee on training.

The interests of the MOH and MRD in carrying out a nutrition survey are complementary. Contact has already been established between the FFTS and the Family Health and Nutrition Service of the MOH to ensure common sampling methods will be used and that the data are compatible for integrated analysis. Because of the timing of the World Bank loan to the MOH which will fund the MOH survey, it is not possible to combine both surveys into one. Furthermore, it is not clear that such a move would be desirable. To combine information on the socio-economic, production, and consumption aspects of household level nutrition with morbidity, mortality, health behavior, and specific nutrient deficiencies of individuals would undoubtedly overwhelm an already fragile institutional capacity to carry out any kind of data collection effort. Subjects of the survey would most assuredly become uncooperative before all the questions were asked. A logical alternative would be to conduct the two surveys as a staged sample one or two years apart. In this manner one would be able to collect all of the necessary information and the second survey could build upon the lessons learned and institutional capacity strengthened during the first survey.

(a) Catholic Relief Services

CRS's extensive outreach program provides an outlet to the public for nutrition education as related to health and to agriculture. This infrastructure will allow rapid dissemination of information as provided by the different organizations in the Ministries of Health and Rural Development.

(b) ORDs

Most programs aimed at the villager will pass through the ORD structure. Therefore, the ORD must play an important role in the proposed training, survey and demonstration activities. The FFTS will provide direct support to various cooperatives and pre-cooperatives under the purview of the ORD. The ORD must take an active interest in these activities if they are to have any hope of success.

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(c) Beneficiaries

Finally, if the Project goal of increased self-reliance is to be achieved, then the intended beneficiaries, rural farmers and their families, must participate actively. They are the ones who will translate the adoption of nutritionally sound practices into increased agricultural output and increased nutritional self-reliance. The Project activity with the FFTS will encourage this participation in several ways. First, the training provided will, to the maximum extent possible, respond to the expressed needs of these people, as determined by the various surveys on consumption and food technology. Secondly, the use of improved food technology will be based on prior sound testing so that those techniques advocated solve real needs at the family level. Thirdly, the rural public will judge the quality of the practices advocated which can be shown by the rate of their adoption, spreading mostly through word of mouth. Finally, the rural farmer and his family will provide crucial feedback to the FFTS and the other involved organizations as to what technologies are preferred and why.

* * *

I. Soil and Water

As this Project activity is an add-on to the on-going effort at the National Soils Service the bulk of the equipment, infrastructure and personnel necessary for Project activity start-up are already in place. It is intended that the inputs under this Project will reinforce and complement the current program as these inputs become available.

To the extent new equipment, training and technical assistance are involved, the appropriate documentation will be prepared during the first 9 months of the activity. Such documentation includes PIO/Ps for training, PIO/Cs for commodity procurement, PIO/Ts for technical assistance.

(1) Procurement

Project commodities will be procured both locally and in the United States. Local procurement, which will consist largely of office supplies and equipment, mopeds, and survey supplies will be carried out directly by the NSS, U.S. procurement, consisting largely of four-wheel drive vehicles, spare parts, computers, survey equipment, cartography equipment, soil conservation equipment, office equipment and documentation center equipment, will be undertaken through PIO/Cs, with suitable U.S. companies as procurement agents.

(2) Contracting

Upon obligation of Project funds, PIO/Ts will be drawn up to request the services for four long-term specialists, a soils cartographer (36 PM), a soil scientist in genesis and morphology (24 PM), a soil conservationist (36 PM) and a computer technician/programmer (24 PM). PIO/Ts will also be drawn up to request the services of the following short-term technical assistance:

A USDA state conservationist (2 PM), a USDA state level soil scientist (2 PM), a soils cartographer (2 PM), an SCS soils computer specialist (4 PM), a financial mangement specialist (2 PM), an irrigation engineer (3 PM), an SCS monitoring and evaluation specialist (2 PM), and a water resources agricultural economist (2 PM).

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(3) Construction Arrangements

Construction of a warehouse, garage and enclosure will be executed through local counterpart funding. As such, the process will adhere to GOUV standard procedures. Contracting will be the responsibility of the NSS through the H.E.R.

(4) Training Arrangements

The following arrangement will be made concerning the different types of training.

(a) For short-term training the NSS will send two NSS agents each year to participate in various short-term courses sponsored by the USDA. Some of the courses include:

USDA COURSE	PLACE	TITLE
TC-120-10	University of Idaho	Land use planning
TC-140-26	New Mexico State University	Establishing data bases
TC-120-8	University of Arizona	Development of watershed lands
TC-120-1	Colorado State University	Irrigation problems & management
TC-120-5	Not known	Soil testing classification and fertility management

plus the University of Pittsburgh management seminar.

The NSS agents will need two months of English training prior to departure.

(b) For long-term training two NSS agents will be sent to a U.S. university to complete MS degrees in soil conservation, preferably at a southwestern institution. Upon return they will assume leadership roles in the conservation unit. A total of $175,000 is planned for 72 PM (including 4-6 months of English and a 2½ year academic program). Five NSS agents will be nominated for long-term technical training either at the Associate Degree level or in-the-field training level. Two of the five will spend 6-9 months in-the-field training* in soil and water conservation with a USDA state conservation office in the southwest. Prior English Training will be required. The other three will be trained in computer technology/programming, irrigation technology/water management, and automobile mechanics. Other subject areas may also be appropriate later in the Project life. As such, a total of $300,000 is planned for 240 PM of LT training.

(5) Local Operating Costs

Local operating costs will be managed by the NSS accountant and will be provided through the PL 480 generations. The NSS will request the necessary funds for operations through the DSA and DEP each year. A mutually agreed upon withdrawal statement will allow transfer of PL 480 funds to an operational account in the name of the NSS. The NSS will follow standard GOUV procedures for financial operations and will coordinate its activities

* SCS State-level in-service field experience.

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through the DEP. USAID will monitor the DEP through regular audits. As such the GOUV will provide logistical support for Project activities which will include maintenance of Project buildings, maintenance and operation of vehicles, procurement of office supplies and other Project materials, and salaries and travel per diem of GOUV civil servants, contract personnel and travel expenses for participants in the in-country training program.

(6) AID Logistical Support

AID will provide office space and secretarial services for the Project Manager within the Office of Agriculture. AID will also provide logistical support for the long-term technical assistance contract team according to their contract provisions.

(7) GOUV Logistical Support

The GOUV-provided logistical support for Project activities will include maintenance of the headquarters to include electricity and water and telephone, salaries of GOUV personnel, maintenance of vehicles and their operations, and travel per diem for NSS agents and training participants. In addition, the GOUV will provide office space and secretarial support to long-term expatriate technical advisors. The NSS will also ensure customs clearance for Project commodities.

(8) Implementation Roles

Responsibility for direct Project implementation at the level of Project outputs falls almost entirely on the NSS, with USAID/Upper Volta and AID/W playing limited supporting roles chiefly in training, contracting, and commodity procurement. However, for the NSS to achieve its purpose of developing and extending environmentally sound soil, water and land management practices, a number of other organizations have important roles to play. A brief summary of the roles to be played by each is set forth below.

(a) The Inter-Ministerial Mapping Committee will play an important role in coordinating mapping activities with respect to soils and topography. Through them, mapping priorities for Upper Volta will be determined. As these efforts are long-term in nature and very costly, it is essential that this committee exercise its responsibility prudently so as to maximize the value of the maps being generated.

(b) The Geographic Institute of Upper Volta, financed by the FAO, is responsible for topographic mapping. As such, they have the capacity and are executing a program to cover the entire country by aerial photography. These photographs are used to create actual maps. They are also available for sale to the NSS and will help the NSS in all their soil mapping efforts.

(c) The ORDs: for a full discussion of the role of the ORDs, please see the institutional constraints section under the Technical Analysis Annex G (1).

(d) The AID role in daily Project implementation is a relatively limited one. As the Mission moves forward on its vehicle standardization policy, procurement of vehicles should be expeditious. The consolidation of commodity procurement activities in the ADS Project as a whole will also be expeditious for the NSS needs. Technical backstopping and training will be readily

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available by the institution selected to provide long- and short-term technical assistance, in addition to support by the USDA/Soil Conservation Service (SCS) over the life of the Project.

(e) On the GOUV side the NSS is the primary implementing agency. Over the past five years, the NSS has grown substantially through assistance from the Dutch and UNDP. The NSS's structure and function are well suited to execute the objectives of this activity. The change in administrative nature in becoming a National Bureau will enhance its efficiency with respect to the implementation of a Soil and Water Conservation Policy (which would be highly constrained if it remains within the DSA).

* * *

H. Component Four

J. Decreased Food Insecurity at the Village-Level

The proposed activity is an effort to utilize the appropriate channels of the Ministry of Rural Development to make credit available to the rural private sector for the activities of village level storage and marketing which can be most efficiently achieved by the private sector. The activity therefore has two indirect objectives which are consistent with the overall Project purpose: (1) to strengthen the capacity of the GOUV to provide the necessary goods and services of credit to the private sector for those activities in which the private sector has a comparative advantage, and (2) to encourage the GOUV to develop viable credit policies which will assure that the credit can be remunerative to the borrower while the fund does not decapitalize.

As discussed in the analyses of this activity, the only input to be provided at this time is the local cost financing for the loan fund and a modest amount of $7,500/year to upgrade the DIRC's work environment. These costs will be managed by the DIRC accounts office and provided through the PL 480 generations. The DIRC will request the funds for agreed upon operations through the Department of Studies and Projects (DEP) each year. A mutually agreed upon Project budget will permit the transfer of funds into a newly established operational account in the name of the DIRC. DIRC will follow standard GOUV procedures for financial operations and will report these operations to the Department of Administrative and Financial Affairs (DAAF). USAID will monitor the DAAF through regular audits.

GOUV Logistical Support

The GOUV-provided logistical support for Project activities will include maintenance of the headquarters to include utilities (electricity, water and telephone), salaries, maintenance of vehicles, travel and *per diem* for DIRC agents.

* * *

K. Decreased Food Insecurity at the National Level

This activity is an effort to reinforce OFNACER's planning and management capabilities in order to ensure adequate availabilities of cereals at the

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national and regional level. Since OFNACER has most of its equipment, infrastructure and personnel in place, this activity will focus primarily on the upgrading and redirection of the existing resources.

To the extent that additional inputs (training, commodities, and technical assistance) are required, the appropriate Project Implementation Orders will be prepared once the necessary conditions precedent are met.

(1) Commodity Procurement

Project commodities will be procured both locally and in the United States. Local procurement will consist primarily of office supplies for the AID-supported Studies, Statistics and Planning Unit (CEPS) as well as spare parts and gasoline for Project vehicles. U.S. procurement will include two replacement four-wheel drive vehicles and one sedan to be used by the CEPS, a mini-computer and back-up to be used by OFNACER's financial and commercial offices as well as the CEPS,and warehouse materials for 30 warehouses not financed by USAID or the Federal German Republic (RFA). These commodities will be procured through AAPC or other capable U.S. companies as procurement agents.

(2) Technical Assistance

Once Project funds have been obligated, a PIO/T will be drafted to request the services of an expatriate macro-economist for 36 PM (August 1985-1988). Additional PIO/Ts will be drafted to request specialized short-term technical assistance for warehouse sanitation (2 PM) and a computer programmer (8 PM). OFNACER is to be responsible for the recruitment of Voltan Economists to staff the CEPS.

(3) Training

The following training arrangement will be made to upgrade OFNACER's managerial skills. The Director of Stocks will be trained in Grain Storage Management at Kansas State University. The proposed candidate has an Associate Degree plus seven years' work experience in the grain processing and storage industry. It is believed that following 2-3 months of intensive English training prior to departure, he will be able to earn an M.S. degree after 3 years of study. It has been recommended by FAO that the candidate return to Upper Volta and OFNACER to complete his thesis research. Given the priority of research on grain storage in Upper Volta, USAID supports this recommendation.

It is programmed that three economists and two accountants receive supplementary training in the fields of Agricultural Economics and Analytical Accounting at a U.S. university. These individuals will also require approximately three months of intensive English prior to departure and one year of formal education in the U.S.

A six-month applied training program (internship) is proposed for OFNACER's Controller General with an Abidjan-based audit firm, and it is expected that on-the-job training will be conducted by technical assistance personnel.

(4) Local Operating Costs

Local operating costs will be managed by the OFNACER accountant and will be provided through the PL 480 generations. OFNACER will request the necessary

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funds for operations through the DEP each year. A mutually agreed upon withdrawal statement will allow transfer of PL 480 funds to an operational account in the name of OFNACER. OFNACER will follow standard GOUV procedures for financial operations and will coordinate its activities through the DEP. USAID will monitor the DEP through regular audits. As such, the GOUV will provide logistical support for Project activities which will include maintenance of Project buildings, maintenance and operation of vehicles, procurement of office supplies and other Project materials, and salaries and travel per diem of GOUV civil servants, contract personnel and travel expenses for participants within the training program.

(5) The GOUV-provided logistical support for Project activities will include maintenance of the headquarters to include electricity and water and telephone, salaries of GOUV personnel, maintenance of vehicles and their operations, and travel per diem for OFNACER agents and training participants. The GOUV will provide office space and secretarial support to the long-term expatriate technical advisors. OFNACER will also ensure customs clearance for Project commodities.

(6) Implementation Roles

Due to OFNACER's limited procurement capabilities on the international market, USAID/Upper Volta and AID/W will be responsible for assuring the timely arrival of U.S. origin inputs (technical assistance, training and commodities). OFNACER will be responsible for the procurement of local commodities and services. The responsibility for direct Project implementation and ensuring that the outputs of the Project are maximized is the responsibility of OFNACER's management.

(7) GOUV Capacity

OFNACER is the implementing agency for the GOUV. As discussed in the Description of the Project, OFNACER was created in 1970. While during the early years OFNACER suffered from poor management, at the present time, as a result of USAID and RFA efforts to strengthen its institutional capacity, OFNACER is fully capable of managing the activity. More importantly, the expected activity outputs will permit a strengthening of linkages not only with the Ministry of Rural Development (DSA and DEP in particular) but also with other Ministries (most notably Commerce and Interior) to better serve the rural population.

IV. SUMMARIES OF ANALYSES

Given the complexity of this Project and the fact each of the eleven activities has been subjected to thorough technical, financial, economic, recurrent costs, social soundness, institutional, administrative, environmental, and energy production/consumption analyses, the bulk of those analyses are in Annex G (1-9). This section merely summarizes what is to be found in the Annex.

A. Technical Analysis

Thorough technical analyses were done for each activity. Rather than summarize each technical analysis we direct the reader to Annex G (1).

B. Financial Analysis

Section II, the Financial Plan and Financial Analysis, contains the overall financial analysis of the Project as a whole. Only the "decreased food insecurity at the village-level" activity supporting cereal banks, merited a full blown financial analysis. That analysis is in Annex G(2).

C. Economic Analysis

Economic analyses were developed for each activity of the Project and are presented in Annex G (3). This section summarizes the economic rationale for the Project. Most of the Project's outputs are non-quantifiable, but for each activity there is a discussion of how the Project will contribute to minimizing the cost of achieving greater efficiency of resource use in agriculture.

The Investment Rationale paper of May 5, 1983 stated the case for strengthening the Ministry of Rural Development in its central management functions in preference to direct investment in agriculture given the constraints under which the financial institutions and the Regional Development Organizations (ORDs) are operating. The improvement of agricultural productivity in Upper Volta has been hampered by the dearth of economical productivity-enhancing techniques for farming systems in semi-arid tropical conditions. The farming systems currently employed by Voltan farmers have been found to be efficient given the technologies available to them. In order to focus upon the "long-term changes consisting of incremental improvements in the farming system and in the agricultural resource base"*, the Project attacks constraints which slow down or prevent the development and application of improvements in the farming system and in the agricultural resource base. Those constraints are (1) the management of available sector resources and investments, (2) the managerial and technical skills base within agriculture, (3) the development and extension of productive technologies and (4) the effect of food insecurity on resource use.

For the investment to make good economic sense, the magnitude of the increase in return to other investment should be on the order of 1.5 to 2.0 percentage points above the return which would be realized without our Project. This figure is derived by assuming the fifteen percent target internal rate of

* IBRD, Upper Volta Agricultural Issues Study, October 1982, p. 11.

return to the 40 million dollars Project investment over five years and spreading this return over the approximately sixty to eighty million dollars currently invested annually in Voltan agriculture and rural development. In other words, if without this Project the internal rate of return to investment in agriculture were 15 percent on average, this average return should rise to 16.5 to 17.0 percent with the Agricultural Development Support Project. Given the institutional weaknesses identified in this paper and in the major studies of the agricultural sector,* this increase in return to other agricultural investment does not seem unreasonable to expect.

In fact, the average rate of return to investment in agriculture during the 'seventies appears to have been below the fifteen percent level. Some of the reasons for the low return are the absence of coherent marketing and import policies and general policy guidance from the MRD to the ORDs. Thus, to the extent this Project improves central policy making, the investment allocation process and project preparation, we may expect a much larger effect on the returns to all agricultural investments than would be necessary to justify our investment.

Each activity analysis presents arguments for the level of effort chosen and discusses the alternatives considered and the technical or economic (higher cost for same results) reasons for the rejection of unsatisfactory alternatives. There has been a conscious, rigorous effort to minimize the cost of achieving the target levels of output, including minimization of the post-Project recurrent operating and maintenance costs to be borne by the GOUV (or other donors).

Each activity of the Project can stand on its own as an activity with an appealing rationale for engaging in it. Thus, unanticipated problems with any one activity will not cause delays in implementation for other activities with only a few exceptions. One exception to this rule concerns the policy studies, the quality of which depends upon generation of a richer, more accurate agricultural data base. The second major exception is the generation of PL 480 counterpart funds which are needed to finance the operating costs of the Ministry's new and/or expanded activities under the Project. Alternatives to the PL 480 source of funds are discussed elsewhere in this paper. Because of the independence of the activities, the design of least-cost methods for achieving the sub-purposes of the Project is at the same time appropriate for achieving the least-cost design for the overall Project.

For the reasons presented in the Investment Rationale paper (Annex K), most of the activities appropriate to this Project approach have an indirect effect on agricultural production by increasing the knowledge base, improving managerial and technical skills within the MRD and generally in the sector, and improving management and planning by the MRD. The indirect result of these improvements should be an increase in the rate of return to investment in agriculture or an increase in the rate of growth of agricultural output.

* DAI, Agricultural Sector Assistance Strategy for Upper Volta, March 1982
IBRD, Report No. 3296 UV, Upper Volta Agricultural Issues Study, October 29, 1982.

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D. Recurrent Costs Analysis

In the "Recurrent Costs of Development Programs in the countries of the Sahel: Analysis and Recommendations",* recurrent costs are defined as:

> "the set of annual flows of gross expenditure of the government and its agencies, in local currency or foreign exchange, undertaken in order to generate socio-economic benefits in connection with the operation and maintenance of a unit of installed capacity, regardless of the source of finance of the expenditures in question, domestic or foreign".

The heart of this definition is "the operation and maintenance of a unit of installed capacity". Expenditures for this purpose may be contrasted to non-recurrent expenditures incurred in installing, developing or establishing this capacity. In the case of a road it is easy to distinguish between the installation of capacity (the road) and the maintenance of that capacity. In the case of something like agricultural research, it is harder to distinguish between the developmental or installation phase and the maintenance phase. In the sense that research is always directed towards increasing the productive capacity there is never a phase of maintaining an established capacity. Nonetheless, there are continuing expenditures required to operate a research program.

In Annex G (4) we discuss how we treat this case and similar kinds of current expenditures as if we have established units of installed capacity for all components, in order to get the full recurrent expenditure implications of the Project. We then explain why certain expenditures should be considered as non-recurrent costs and therefore, for reasons not entirely clear, more worthy of financing by donors. We then compare the full recurrent expenditures with the current and expected Ministry of Rural Development budgets and the PL 480 counterpart funds to be made available in covering operating costs associated with the expansion of the Ministry's activities.

Each activity of the Project has been designed from the perspective of minimizing the necessary additions to personnel while at the same time providing adequate material support and equipment for them to achieve the expected levels of output. While the recurrent cost implications of the Project are not insignificant, they have been constrained to amounts which do not radically alter the relative importance of the Ministry of Rural Development within the overall budget and which do not require a major departure from the projected trend of GOUV resources committed to the MRD.

The PID approval cable (STATE 033844) of February 5, 1983 requested a clarification of "whether conditions in Upper Volta are consistent with the four criteria for AID funding of recurrent costs described in the Agency Recurrent Costs policy paper" of May, 1982. While this Project generates the recurrent costs which are estimated in Annex G (4), it does not call for the financing of recurrent costs, strictly speaking, with only a few exceptions. What the Project does call for is the financing of operating and maintenance costs

* CILSS/Club du Sahel, August 1980

during the installation or Project development phase. It is the USAID's perception that this installation phase for several of the activities described above will require more than that allotted and our strategy calls for a ten-year approach to these activities through a follow-on project. Consequently, a discussion of the four criteria is somewhat inappropriate with respect to recurrent cost financing in this Project. Such a discussion would be appropriate if the Project involved significant levels of funding to support on-going MRD activities. Instead, in almost all cases, the Project will increase the level of activity or begin new activities.

Since this Project begins to expand certain basic activities and generates a significant level of future recurrent costs, it is nonetheless instructive to examine the four criteria in looking ahead to the future, and in considering the funding of operating costs with PL 480 counterpart funds. Annex G (4) includes the full recurrent costs analysis and examination of the four criteria for AID funding of recurrent costs.

E. Social Soundness Analysis

Upper Volta is a land-locked country with a population of approximately 6,300,000. There are nine major ethnic groups in the country, of which the Mossi comprise the greatest percentage (some 48% of the population). The climate, soils and water resources of the country provide a difficult setting for the people. Between 85% and 92% of the population is rural and they are almost all principally occupied in food and cash-crop production, with animal raising as an important secondary activity. The latter is the primary activity in the case of certain ethnic groups.

Annex G (5) provides a detailed discussion of socio-economic considerations, including issues concerning land availability, population density, the migration movement, the level of literacy, the health and nutritional status, employment, and ethnic factors in Upper Volta.

1. The socio-cultural context of the Project

Agricultural and rural development projects, particularly those which are designed to build or strengthen national institutions' capacity to develop and mobilize local resources more effectively, must necessarily articulate themselves in two different settings. The "culture" of the bureaucratic institution which will be supported by the Project must be understood. Without assurance that an institutional will and orientation exist to pursue the Project goal and purpose, the likelihood of sustained success will be negligible. The local setting must also be understood as it provides the ultimate parameters against which Project success will be measured. Without a clear understanding of local level dynamics there can be no firm expectation that efforts to increase agricultural productivity and rural welfare will succeed. The institutional setting is described in the institutional analysis, Annex G (6), and the rural setting is described in Annex G (5), the Social Soundness Analysis.

2. Potential for Spread Effect

In projects attempting to increase agricultural productivity over an entire country, it is necessary, for purposes of achieving a broad spread of benefits, to ensure that interventions are technically and economically sound, as well

as being socially acceptable. Equally important, project interventions and benefits must be sustainable and replicable within reasonable limits of cost and management expertise. In this connection, several constraints in the Upper Voltan context need to be considered: the GOUV's limited ability to underwrite recurrent costs from its own budget; a limited cadre of trained personnel from the national to the local levels; and differences in regional production systems.

With careful attention to these constraints, the Project has incorporated specific activities to ensure sustainability, replicability and an overall spread effect. On-the-job, and long- and short-term training activities have been included in all the interventions of the Project. This will ensure that a cadre of trained personnel, both in the public and private sectors, and from the national to local levels, will be developed, to sustain and spread the activities of and the benefits from the Project. To further ensure replicability, the Project will provide training programs to upgrade the skills of local trainers. Training area and training content will be carefully identified and developed to ensure relevancy to Upper Volta's most immediate needs in the agricultural sector. Badly needed infrastructure and equipment support will be provided, as in the case of the activity to strengthen the rural youth training program. This assistance will enable the DSFJA to upgrade its training program and expand its beneficiary coverage.

Baseline, socio-economic and other types of village-level studies will be undertaken to support several Project activities in developing interventions or packages of technology which are relevant and responsive to beneficiary needs. By being relevant, chances of sustainability are of course increased. These Project activities are namely the FSR, Managerial Training for Adult Pre-Cooperatives, Food and Food Technology, Soil and Water Management and Conservation and the overall Project Monitoring and Evaluation undertaking. The FSR, Soil and Water Management and Conservation, and the Food and Food Technology activities will develop a replicable system of assessing beneficiary needs and constraints in conjunction with the development and extension of adoptable technological packages.

Selected cereal banks will be provided unsubsidized credit from a revolving fund to be managed by DIRC. Credit extension will be implemented with caution to ensure that adequate management develops at the same time the financial viability of small scale private sector involvement in grain procurement is being tested. This approach, if successful, will establish a replicable mechanism for expanding village-level involvement in grain marketing, through the extension of unsubsidized credit to cereal banks.

The replicability of area frame sampling as a means of collecting agricultural statistics has been demonstrated in numerous LDCs, including West African countries with environmental conditions similar to Upper Volta's. Pilot surveys however, will be conducted in order to fine-tune procedures before nationwide application.

All the proposed Project activities have been subjected to rigorous tests of cost-effectiveness to ensure replicability and sustainability while at the same time minimizing the recurrent cost burden on the GOUV. In the short, and most likely, in the medium-term however, the use of PL 480 Title II Section 206 local currency generations has been proposed, to assist the GOUV in meeting investment, and to a certain extent, recurrent costs, while interventions

are being tested for maximum relevance to the objective of achieving agricultural growth.

Lastly, assistance will be provided to strengthen the MRD's policy, planning and programming capabilities. The implication of this activity for achieving a broad-based spread of benefits is noteworthy. Through the formulation of more informed development plans and policies, considerable economic benefits to the economy as a whole, and to the agricultural sector in particular, may be realized. Better programming of GOUV and donor funds for agriculture will realign current regional investment disparities. This activity will therefore ensure the distribution of development assistance and benefits across all regions in a more coordinated and equitable manner.

3. Participation

USAID/Upper Volta has sought to maximize the participation of immediate Project beneficiaries from the outset. Throughout the development of the PID and PP the Mission worked on a collaborative basis with the principal Departments of the MRD which will receive assistance from, and will manage the Project. The modus operandi was for the USAID ADO, his staff, and the PDO to meet regularly with the Secretary General of the MRD, the Director of the Studies and Projects Department, and with each Direction to discuss requests of assistance drawn up by the latter. During the development of this PP our collaborative approach included discussions with selected potential beneficiaries at the village level.

Several features have been designed into the Project to ensure effective beneficiary participation during project implementation. The provision of on-the-job and short-term training will increase the level of participation of MRD/OFNACER personnel and members of the groupements villageois in the administration of various Project activities. FSR is a highly participatory approach to technology development and extension, requiring close collaboration among researchers, farmers, and extension agents in the Mossi Plateau. A similar type of village level participation will be sought in the development of environmentally, socially and economically sound soil and water management and conservation practices, as well as in the development and extension of food preparation and processing techniques. The conduct of baseline, socio-economic and other village studies, as well as the implementation of monitoring and evaluation activities, are means of soliciting beneficiary feedback, and thus participation, in shaping the thrust of Project inputs. The extension of credit to cereal banks is envisioned as a means of expanding the involvement of village level cereal banks in national grain procurement.

Finally, careful attention has been given to ensuring women's active participation in Project activities. Equal access to training opportunities, to be provided to CFJAs, pre-cooperatives, the MRD and the private sector, will be ensured. Where appropriate, data to be collected during Project implementation will be disaggregated by sex, in order to gain the necessary information to determine women's potential and constraints in the agricultural sector. Since women contribute significantly to agricultural production, the FSR activity will ensure they are involved in technology development. The Food and Food Technology activity, is predominantly women-oriented. Further details on measures designed into the project to increase women's involvement are discussed in Annex G (5).

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4. The socio-cultural feasibility of Project interventions

Some of the activiites in the Project will have immediate impact on beneficiaries and participants; others will have to undergo testing and evaluation before positive impact can be determined. Annex G (5) discusses the potential of and constraints in the agricultural sector which need to be considered in planning and policy making, implementation of training activities, development of technological packages, and in the overall management of development interventions in agriculture. The social feasibility of the Project is assessed on the basis of these factors and we refer the reader to the Social Soundness analysis in Annex G (5) for this discussion.

F. Institutional Analysis

The institutional analysis in Annex G (6) describes the role of agriculture in the national economy, the overall policy setting, the underlying causes for slow growth of agriculture and the institutions serving the agricultural sector. The analysis then describes institutional performance and constraints and ends with the USAID/Upper Volta strategy for improving the productivity of Voltan agriculture.

G. Administrative Analysis

The administrative analysis in Annex G (7) discusses the legal status, the financial status, patterns of organization and administrative capacity of each entity under the Ministry of Rural Development which is supported by the Project. The analysis also describes the USAID/Upper Volta role in implementing the Project.

H. Environmental Analysis

As discussed in Section I. F, a number of activities which were orginally planned in the PID have since dropped out. Consequently, we have done a revised IEE for the PP. Both the original and revised IEEs are in Annex G (8).

I. Energy Production and Consumption Analysis

The current identifiable energy requirements of the Project fall into three broad categories:

1. Fuel and associated petroleum products for support vehicles, small agricultural equipment power supplies and small absorption refrigerators (non-renewable);
2. Electrical power for the construction and continuing operation of planned office and laboratory facilities (non-renewable); and
3. Photo-voltaic power supplies to provide light to selected isolated rural schools (renewable).

No other specific energy requirements have been identified in the Project, other than the possible experimental use of three or four ultra-light aircraft for use by agricultural statistics enumerators. These units would use small quantities of gasoline on the same order of magnitude as a 250 cc motorcycle.

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The energy systems proposed to provide power to the various elements of the Project are appropriate and reasonable for the anticipated tasks. The selection of the diesel engine for both stationary and motive applications, even though slightly more expensive in initial cost, makes sense for reasons discussed in the analysis (see Annex G [9]). There is a greatly reduced likelihood of the necessity for vehicle replacement during the life of the Project as the prime factor in vehicles usually involves power plant problems. This applies equally to small agricultural power supplies. There are additional advantages, such as the safety of diesel fuel, both in storage and use.

For the construction and power supply of office and laboratory facilities, there is no practical substitute for public utility power, even at the inflated electric rates in Upper Volta, as long as the supply can be brought economically to the point of use.

The photo-voltaic power supply proposed for limited school lighting (CFJAs) is a first step in promoting the extended and efficient use of school facilities. The photo-voltaic approach was selected because it represents the lowest maintenance requirement for the projected life of any system which might be utilized. Furthermore, the exposure of this burgeoning technology to large numbers of students and teachers is expected to have a beneficial impact in a country which has dependable year-round insolation and the possibility of numerous photo-voltaic applications. This may serve as a pilot effort in introducing photo-voltaics, which could possibly be manufactured in Upper Volta at some point in the future.

V. CONDITIONS AND COVENANTS

The Project Agreement will include the following conditions and covenants.

Article 4: Conditions Precedent to Disbursement

Section 4.1: First Disbursement

Prior to any disbursement of funds under the Grant, or the issuance of any commitment documents with respect thereto, the Cooperating Country shall furnish to USAID, in form and substance satisfactory to USAID, the following:

(a) An opinion of counsel acceptable to AID that this Agreement has been duly authorized and/or ratified by, and executed on behalf of, the Cooperating Country, and that it constitutes a valid and legally binding obligation of the Cooperating Country in accordance with all of its terms.

(b) The name and specimen signatures of the following:

(1) The Minister of Rural Development and the Secretary General of the Ministry of Rural Development;

(2) The officials who will be assigned to act on behalf of each of the above named officials in their absence; and

(3) The GOUV Project Managers of each of the Project's eleven activities.

Section 4.2: Additional Disbursements

(a) Prior to the disbursement of funds under the Grant, or the issuance of any commitment documents with respect thereto for any training in each activity outside Upper Volta, the Cooperating Country shall furnish to USAID, in form and substance satisfactory to USAID:

(1) Evidence that the institution at which the training will be carried out will be accredited by the Ministry of Higher Education and Scientific Research; and

(2) Training plans and local currency budgets for each activity for that Project year. The plans should specify the objectives of the training, the institution providing the training, and as accurately as possible the names, qualifications and present positions of the candidates.

(b) Prior to the disbursement of funds under the Grant, or the issuance of any commitment documents with respect thereto for any building construction activity financed under this Grant (except disbursement of funds for the preparation of plans and specifications), the Cooperating Country shall furnish to USAID, in form and substance satisfactory to USAID, the following:

(1) Evidence that suitable sites have been selected, that the land is owned by the Cooperating Country, and that such land has been provided to the Project;

(2) Detailed plans, specifications, and construction schedules with respect to such activities;

(3) A description of the arrangements made to provide construction services for such activities; and

(4) A description of the arrangements made to provide engineering supervisory services for such activities.

(c) Prior to the disbursement of funds under the Grant, or the issuance of any commitment documents with respect thereto for procuring any word processing or computer equipment, the Cooperating Country shall furnish to USAID, in form and substance satisfactory to USAID, a plan or report to ensure that such equipment is compatible with similar equipment owned or used by the MRD and explaining how it will interface with the Government-wide computer systems if at all.

(d) Prior to the disbursement of funds under the Grant, or the issuance of any commitment documents with respect thereto for the procurement of any items of equipment and/or commodities financed by USAID under the Grant, and not as already specified in other Conditions Precedent to this Project Agreement, the Cooperating Country shall furnish in form and substance satisfactory to USAID, the following:

(1) Detailed specifications for such equipment and/or commodities; and

(2) If such equipment and/or commodities are to be procured from sources other than Upper Volta, an executed contract for the services of a procurement agent or other arrangement satisfactory to USAID for procuring such equipment and/or commodities.

(e) Prior to disbursement of funds under the Grant, or the issuance of any commitment documents with respect thereto to establish and equip the food testing laboratory, the Cooperating Country shall furnish to USAID, in form and substance satisfactory to USAID, the following:

(1) An assessment of alternatives to such a laboratory based on needs, economic analysis and other donor activity; and

(2) A detailed equipment list and recurrent cost analysis for operating the laboratory.

(f) Prior to the disbursement of funds under the Grant, or the issuance of any commitment documents with respect thereto for purchasing any food processing equipment, the Cooperating Country shall furnish to USAID, in form and substance satisfactory to USAID, an economic analysis, including a cost/benefit analysis therein, on the utilization of this equipment and the proposed terms on which it will be provided to women's cooperatives.

(g) Prior to the disbursement of funds under the Grant, or the issuance of any commitment documents with respect thereto for a national soils survey, a water resources assessment, a natural resources monitoring program, or any survey or study financed under this Grant, the Cooperating Country shall furnish to USAID, in form and substance satisfactory to USAID, a work plan and proposed methodology for such activity.

(h) Prior to any disbursement of local cost funds, under the Grant, or the issuance of any commitment documents with respect thereto, or the release of any such funds to the Project for the capitalization of a credit fund the Cooperating Country shall furnish USAID, in form and substance satisfactory to USAID, a financial plan assuring the continued capitalization of

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any credit fund established or financed by the Project. This plan will include a detailed analysis of costs and expected revenue which will determine the interest rate to be applied.

(i) Prior to the disbursement of funds under the Grant, or the issuance of any commitment documents with respect thereto for warehouse equipment/commodities, the Cooperating Country will furnish USAID, in form and substance satisfactory to USAID, a financial and economic plan which will assure adequate revenues to cover the recurrent and replacement costs of such equipment/commodities.

Article 5: Special Convenants

(a) The Cooperating Country will provide adequate office space for all expatriate technicians, short-term and long-term, assigned to and financed by the Project, unless otherwise stated in this Agreement.

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

(1) An evaluation of progress towards attainment of the objectives of the Project;

(2) Identification and evaluation of problem areas or constraints which may inhibit such attainment; and

(3) Evaluation, to the degree feasible, of the overall development impact of the Project.

(c) Two years prior to the end of the Project, the Cooperating Country will furnish USAID, in form and substance satisfactory to USAID, a written strategy to cover the recurrent costs of the Project.

(d) The Cooperating Country agrees OFNACER will remain within the MRD and serve as a policy instrument to ensure remunerative prices to producers and adequate grain availabilities at the national and regional levels.

(e) The Cooperating Country will make available a significant number of qualified candidates for long-term academic training in the United States.

(f) The Cooperating Country, through the MRD, will provide USAID, no later than May of each year during the Project, for its approval, a proposed annual program of Farming Systems Research to be carried out by the National Experimentation and Applied Studies Service.

(g) All equipment, including vehicles procured under the Project, will be used exclusively for the Project activities, and the use of all vehicles will be under the joint direction and supervision of the USAID and the Cooperating Country, the exact persons to be decided by agreement in writing of the Parties.

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VI. PROJECT MONITORING AND EVALUATION ARRANGEMENTS

A. Monitoring

The USAID/UV Office of Agriculture (OAG) Project Officers will have the primary implementation monitoring responsibilities for their individual activities. This will be done through Quarterly Project Progress Reports, contractor annual work plans, training plans and other relevant Project documents. To ensure that the monitoring process is fully integrated and coordinated with the MRD and the technical assistance advisors, OAG Project Officers will participate in a Joint Technical Committee* consisting of MRD representatives and the contract team to monitor the overall implementation process.

The Title XII university Contractor selected under Component One will design and implement a project under a collaborative mode arrangement aimed at improving the MRD's central management for policy and program analysis. To this end, the contractor working in collaboration with the Department of Studies and Projects (DEP) will develop monitoring procedures and formats for all MRD project activities to be implemented over the LOP. The contractor-DEP will assure that the monitoring procedures and formats for all activities are compatible so all project input-output data necessary for project evaluations are gathered on a regular basis.

As the Project develops this capacity within DEP, it is estimated that DEP will be able to assume full responsibilities for all monitoring and evaluation procedures in year three of the Project. At the beginning of the implementation process, however, there will be a need for an evaluation officer to immediately install a monitoring system at DEP to track this Project's inputs and outputs, as well as those of other MRD projects. This responsibility will gradually be transferred to DEP during the LOP, but at the initial stages of the Project most monitoring and evaluation responsibilities will be assumed by the Evaluation Officer. The Evaulation Officer will most likely be provided by the Title XII contractor or else USAID/UV will procure the services of someone under a Personal Services Contract. The Evaluation Officer will use the implementation plans developed by the individual Project Officers for each activity during the design phase, and on a periodic basis will review the plans to identify implementation delays and readjust the implementation schedule.

In establishing an improved management unit within DEP the contractor will track Project inputs by monitoring Project Implementation Orders: PIO/Ts for technical assistance; PIO/Cs for commodities and PIO/Ps for participant training. In addition to PIO's, contractor quarterly reports, and AID/W training reports, the USAID/Upper Volta Quarterly Project Progress Review System will be used to monitor Project activities. The monitoring of construction activities under the Project will be the responsibility of the USAID/Upper Volta Project Managers and Mission Engineer.

* The functions of the Joint Technical Committee are explained below.

Monitoring of the PL 480 counterpart generation will also be the responsibility of DEP. Within DEP there will be a PL 480 Committee comprised of representatives from USAID/Upper Volta and the MRD. Requests for counterpart funds from other collaborating MRD services and Departments will be sent to the PL 480 Committee where decisions regarding the allocations of these funds will be made. USAID/Upper Volta's responsibility for monitoring the PL 480 input will end once the funds have been allocated and released. These funds will be allocated on a quarterly basis.

The Department of Financial and Administrative Affairs (DAAF) within the MRD is responsible for monitoring the individual budgets of the Departments and services, which are allocated to the MRD by the Voltan Government. However, it is the DEP which is responsible for monitoring development assistance funds coming into the MRD from donors and other sources. To complement and assist the contractor and DEP, the MRD will designate a Project Management Committee to monitor the overall implementation of the Project. Given the size and complexity of the Project, sveral sub-committees will also be formed to address component-specific issues. Members of the MRD's Project Management Committee will also participate on a joint Technical Committee comprised of the Title XII contract team, representatives from DEP, DAAF, DCG, and other Departments and services within the MRD who have implementation responsibilities, and USAID/Upper Volta. The Technical Committee will be formed at the onset of Project implementation and will remain active throughout the LOP. The Technical Committee will be chaired jointly by the Chef de Service of the DEP and the university contractor working on the policy analysis and project evaluation activity. The function of the committee is to overview the coordination among Project components and activities, which on a day-to-day basis will be assured by the DEP and the Title XII university, and to ascertain that all necessary measures are taken to ensure the compatibility of the surveys and data bases under each component. At the beginning of the Project, the committee will approve the standard monitoring procedures, format and reporting calendars for all Project activities and during the LOP it will periodically review monitoring reports and findings of special studies and eventually discuss possible changes in implementation procedures and schedule as well as Project redesign when unusual bottlenecks and new opportunities for activities are identified. The committee will serve a technical advisory role for mid-term and end-of-Project evaluations and eventual Project redesign, extension, and follow-on.

B. Evaluation Plan

The primary objective of the evaluation program is to ensure that information at the output-purpose and goal levels are analyzed, synthesized and made available to GOUV and AID decision-makers during the LOP while the Project can still be adjusted, curtailed or expanded as necessary, and when an extension of some activities or a follow-on Project can be arranged to avoid a break in funding and assistance at year five.

The second long-term objective is to provide data for an analysis of Project achievements and impact on beneficiaries which will contribute to more effective planning by the GOUV and USAID/Upper Volta.

To reach these objectives the evaluation program includes a systematic information flow from within and outside the Project activities throughout the LOP, in addition to two major evaluations at mid-term - about May 1985 and at the

end of the Project -- about June 1987.

Each evaluation will be conducted under the leadership of USAID/UV and the Joint Technical Committee with the assistance of outside experts -- consultants and/or AID/W. To the extent possible, the same experts will serve on the two evaluations. The experts will be evaluating the Project as a whole, therefore the same individuals will look at achievements according to their areas of expertise across components as appropriate. Areas of expertise likely to be necessary are training, information systems, agricultural planning and agricultural research. Economics (with a specialization in marketing) might be provided by the contract team or outside expert.

The scope of work for each expert will include assessing the achievements and difficulties under each component falling under his/her area of expertise, the likelihood of reaching expected achievements by the end of the Project, assessing progress toward the purpose and goal of the Project. The team should present recommendations for extension, redesign, or curtailing of each activity.

Each evaluation will be a four-phase exercise:

(1) Preparation

The Office of Agriculture, the contractor and DEP will be responsible for ensuring the availability of both up-to-date information on inputs and outputs, and preliminary reports from Project surveys. The Mission will also ensure the availability of up to date information of policy changes, updated private sector assessment, and all other economic data necessary to place the Project achievements and remaining activities in the context of the macroeconomic situation. The Mission will identify and contract with the outside consultants so that they come as a team and participate in phases 2, 3 and 4 as a team;

(2) Round table

USAID/UV will organize a one to two days round table session attended by the Joint Technical Committee, the Project technical assistants, the expert team, and possibly representives from Ministries related to Project activities. The agenda of the round table will be organized around the contribution of AID assistance on key issues pertaining to nutritional self-reliance, especially;

- information flow (collection, analysis, synthesis, dissemination, utilization for planning purposes);
- manpower requirements;
- generation and utilization of appropriate technology for food production and processing, and for long-term resource management; and
- marketing and security stock: policies and procedures.

(3) Evaluation of Project achievement and impact

The outside consultants will have the main responsibility for this phase, including interviews of Project implementors and beneficiaries and leaders in the public and private sectors. The experts will visit Project sites of their own choice, and will interview individuals in every category of beneficiaries.

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(4) Evaulation report and recommendations

The evaluation report will be drafted primarily by the consultant team with review and suggestions by the Joint Committee and Mission staff. The report of the mid-term evaluation will include specific recommendations for redesign, cut-off or extension for every activity, and for an eventual follow-on Project if simple extension is not viewed as sufficient. In such cases, the recommendations will include a description of activities to be added to the first Project as well as those to be extended. The evaluation report will also reconsider the linkages between all activities originally proposed in the PID, including those (agricultural implements, livestock, and seeds) not incorporated in the current Project, and the policy and institutional situation at the time of the evaluation to eventually recommend inclusion of all or some of these activities (or new ones) in the Project redesign and/cr follow-on.

All Project evaluation reports will conform with the format prescribed by AFR/DP and will include a PES summary. In addition to the two AID evaluations, the Technical Committee will also conduct annual in-house assessments to provide more periodic monitoring and implementation readjustments.

Annex A

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USAID/OUAGADOUGOU

ACTION: OPR

INFO:

DATE ACTION REQUIRED: 25 FEB 83

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CHRGE: AID

DISTRIBUTION: OFM OPR DIR D/DIR R.F.

REMARKS: Cable answered O-1026 State 2/17 Malcolm OPR 2-22-83 Pfenner

ACTION AIDE INFO AMB DCM ECON CHRON/MF

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FM SECSTATE WASHDC
TO RUEHCC/AMEMBASSY OUAGADOUGOU PRIORITY 1557
INFO RUEAAB/AMEMBASSY ABIDJAN PRIORITY 2733
BT
UNCLAS STATE 033844

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E.O. 12356: N/A
TAGS:
SUBJECT: UPPER VOLTA AGRICULTURAL DEVELOPMENT SUPPORT PROJECT (686-0255): PID APPROVTW

1. SUMMARY: AN ECPR WAS HELD ON JANUARY 25 TO REVIEW THE UPPER VOLTA AGRICULTURAL DEVELOPMENT SUPPORT PID. THE PID WAS APPROVED AND USAID/OUAGADOUGOU IS HEREBY AUTHORIZED TO PROCEED WITH DEVELOPMENT OF THE PP SUBJECT TO GUIDANCE BELOW. END SUMMARY.

2. ACTING AA/AFR F. CORREL CHAIRED AN ECPR MEETING ON JANUARY 25 WHICH REVIEWED THE SUBJECT PID. IN ADDITION TO MISSION PERSONNEL, REPRESENTATIVES FROM AFR/SWA, AFR/PD, AFR/TR/ARD, AFR/TR/EHR, AFR/DP, BIFAD, FVA/FFP,

PPC/PE, PPC/PDPR, AND AF/EPS ATTENDED THE MEETING. ISSUES PAPERS HAD BEEN PREPARED BY BOTH THE AFRICA BUREAU AND PPC. PPC AND AFR/DP HAD SEVERAL CONCERNS, PARTICULARLY WITH RESPECT TO POLICY AND INSTITUTIONAL ANALYSES. THOSE ISSUES AND OTHERS WERE DISCUSSED AT THE ECPR, AND THE FOLLOWING GUIDANCE IS PROVIDED TO THE MISSION FOR PROCEEDING WITH DEVELOPMENT OF THE PP.

3. RATIONALE FOR INVESTMENT -- THE PP WILL HAVE TO MORE FULLY DISCUSS THE RATIONALE FOR THE INVESTMENT. IT IS AID/W'S UNDERSTANDING THIS INFORMATION ALREADY EXISTS IN SEVERAL BACKGROUND PAPERS, THEREFORE THE MISSION IS REQUESTED TO PULL ANALYSIS AND DATA TOGETHER IN ONE PAPER FOR EARLY SUBMISSION TO AID/W (PERHAPS IN APRIL), SEPARATE FROM THE DETAILED PP PREPARATION. UPON RECEIPT OF THIS PAPER, IT WILL BE REVIEWED PROMPTLY BY AID/W AND THE MISSION WILL BE ADVISED OF FURTHER GUIDANCE AS NECESSARY AND APPROPRIATE FOR INCORPORATION IN THE PP. THIS PAPER SHOULD INCLUDE THE FOLLOWING:

-- A. A DISCUSSION OF THE UNDERLYING CAUSES FOR THE LACK OF AGRICULTURAL GROWTH AND PRODUCTIVITY;

-- B. OPTIONS FOR IMPROVING PRODUCTIVITY AND THE RATIONALE FOR SELECTION OF IMPROVING THE EFFICIENCY OF THE MINISTRY OF RURAL DEVELOPMENT (MRD) AS THE OPTIMAL INVESTMENT FOR THE U.S. THE PAPER MUST MAKE CLEARLY

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UNDERSTOOD LINKS BETWEEN THE MRD AND REMOVAL OF CAUSES OF LOW PRODUCTIVITY;

-- C. AN ASSESSMENT OF THE POLICY CONSTRAINTS (AS OPPOSED TO THE TECHNICAL AND INSTITUTIONAL CONSTRAINTS) FROM BOTH THE MACROECONOMIC AND THE SECTORAL PERSPECTIVES, REGARDLESS OF WHETHER THESE CONSTRAINTS CAN OR WILL BE ADDRESSED BY THE U.S. OR OTHER DONORS. THIS WILL PROVIDE A FRAMEWORK FROM WHICH THE MISSION CAN SELECT APPROPRIATE POLICY REFORM TARGETS AND AID CAN JUDGE THE MERITS OF THE SELECTED REFORMS. THE ANALYSIS SHOULD REFLECT ANY CONSTRAINTS WHICH UPPER VOLTA'S MEMBERSHIP IN INTERNATIONAL COOPERATIVE AGREEMENTS (SUCH AS UMOA) MAY PLACE ON THE GOUV;

-- D. AN ANALYSIS OF THE FACTORS, OTHER THAN THE LACK OF TRAINED PERSONNEL, WHICH EXPLAIN INSTITUTIONAL WEAKNESSES, AND ADDRESS THE RELATIONSHIP BETWEEN THE INSTITUTIONAL AND POLICY CONSTRAINTS. THE PAPER SHOULD PRESENT A CLEAR STRATEGY FOR ESTABLISHING PRIORITIES AND SEQUENCING THESE INSTITUTION-BUILDING ACTIVITIES IN AN INTEGRATED AND MUTUALLY REINFORCING PATTERN.

-- E. THIS PAPER WILL SERVE TO (1) PRIORITIZE AND SPECIFY POLICY ISSUES, AND (2) PROVIDE A QUALITATIVE DISCUSSION OF THE EXTENT TO WHICH THE PROJECT WILL AFFECT CHANGE.

4. RECURRENT COSTS -- IN ADDITION TO A FIRM ESTIMATE OF THE PROJECT'S RECURRENT COST BURDEN TO THE GOUV, FOUR ASPECTS OF THE RECURRENT COST PROBLEM SHOULD BE CLARIFIED DURING PP DESIGN:

-- A. WHETHER CONDITIONS IN UPPER VOLTA ARE CONSISTENT WITH THE FOUR CRITERIA FOR AID FUNDING OF RECURRENT COSTS DESCRIBED IN THE AGENCY RECURRENT COST POLICY PAPER;

-- B. AN ACTIVITY-BY-ACTIVITY DESCRIPTION OF THE GOUV'S INCREMENTAL PERSONNEL AND NON-SALARY RECURRENT COSTS RESULTING FROM THE PROJECT, WITH PARTICULAR JUSTIFICATION OF THOSE PROJECT ACTIVITIES MAKING SUBSTANTIAL NEW PERSONNEL OR NON-SALARY DEMANDS ON THE GOUV BUDGET;

-- C. AN ASSESSMENT OF THE MINISTRY OF RURAL DEVELOPMENT'S CAPACITY TO BEAR THE INCREMENTAL RECURRENT COSTS FIVE AND TEN YEARS FROM NOW, WITH AND WITHOUT THE UTILIZATION OF PL 480 COUNTERPART CURRENCY GENERATIONS FOLLOWING THE COMPLETION OF THE PROJECT. THE PP SHOULD ALSO DESCRIBE WHAT MECHANISMS EXIST, OR WILL COME INTO EXISTENCE, TO ENSURE THAT THE MRD HAS SUFFICIENT CONTROL OVER ITS BUDGET TO ENSURE THE LEVEL OF SUPPORT NEEDED;

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AND

-- D. IN ORDER TO ADEQUATELY ADDRESS THE PROBLEMS CAUSED BY DECAPITALIZATION OF CREDIT INSTITUTIONS, THE PP SHOULD CRITICALLY EXAMINE THE ABILITY OF THE GOUV TO ALTER INTEREST RATES SUFFICIENTLY GIVEN THE CONSTRAINTS POSED BY UPPER VOLTA'S MEMBERSHIP IN THE WEST AFRICAN MONETARY UNION (UMOA).

5. PRIVATE SECTOR ASSESSMENT -- IT IS CLEAR THAT THE ATTEMPT TO DEMONSTRATE THE RELEVANCE AND IMPORTANCE OF THE MRD SHOULD NOT RESULT IN ATTEMPTING TO HAVE A GOVERNMENT MINISTRY HANDLE ACTIVITIES WHICH WOULD BE BETTER HANDLED BY THE PRIVATE SECTOR (E.G. MARKETING, STORAGE, PRICE DETERMINATION, ETC.). THEREFORE, CONCURRENT WITH THE DESIGN OF THE PP, IT IS AID/W'S UNDERSTANDING THE MISSION WILL BE CONDUCTING A PRIVATE SECTOR ASSESSMENT IN UPPER VOLTA. THE PRIVATE SECTOR ASSESSMENT SHOULD INITIALLY LOOK AT AGRICULTURAL SYSTEMS, ESPECIALLY MARKETING, IN ORDER TO ALLOW THE PP DESIGN TO TAKE ACCOUNT OF RELEVANT FINDINGS AND CONCLUSIONS WHICH EVOLVE DURING THE ASSESSMENT. THE PRIVATE SECTOR ASSESSMENT ITSELF SHOULD REFLECT AND ADDRESS PUBLIC POLICY AND BUSINESS CLIMATE OBSTACLES TO ENTERPRISE, AS WELL AS OPPORTUNITIES BOTH TO REMOVE THESE CONSTRAINTS AND TO PROVIDE FOR GREATER PARTICIPATION BY PRIVATE ENTREPRENEURS IN DEVELOPMENT. RESULTS OF THE PRIVATE SECTOR ASSESSMENT SHOULD ALSO BE INCORPORATED INTO OTHER PROGRAMMING OF THE AGRICULTURAL SECTOR AND REPROGRAMMING AS A RESULT OF THE EVALUATION OF THIS PROJECT IN YEAR TWO.

REGARDING THE PROPOSED SUPPORT TO OFNACER, SONEA, OR OTHER SUCH ORGANIZATIONS, THE PP MUST MAKE CLEAR THE ROLES IT ENVISAGES FOR PUBLIC AND PRIVATE SECTORS WITH RESPECT TO FOOD PRICING AND MARKETING, AND WITH RESPECT TO AGRICULTURAL EQUIPMENT. PROJECT COMPONENTS SHOULD BE JUSTIFIED IN THIS LIGHT. THE PROJECT MUST BE CONSISTENT WITH POLICY, WHICH NARROWLY LIMITS SUPPORT TO PUBLIC SECTOR TRADING AND MANUFACTURE. JUSTIFICATION OF ANY SUCH SUPPORT MUSTINCLUDE ANALYSIS OF THE FACTORS WHICH PREVENT THE PRIVATE SECTOR FROM PERFORMING ADEQUATELY, AND THE FACTORS WHICH PERSUADE THE MISSION TO TURN TO THE PUBLIC SECTOR INSTEAD OF, OR IN ADDITION TO, REMOVING CONSTRAINTS ON THE PRIVATE SECTOR.

6. ENVIRONMENTAL THRESHOLD DECISION -- THE AFR BUREAU ENVIRONMENTAL OFFICER CONCURRED WITH THE FOLLOWING RECOMMENDATIONS CONTAINED IN THE REVISED IEE:

-- A. FOR COMPONENT ONE, A CATEGORICAL EXCLUSION;

-- B. FOR COMPONENT TWO, A CATEGORICAL EXCLUSION;

-- C. FOR COMPONENT THREE, A NEGATIVE DETERMINATION FOR

CONSTRUCTION, A CATEGORICAL EXCLUSION FOR NUTRITION RESEARCH, AND A DEFERRAL OF THE THRESHOLD DECISION UNTIL PP DESIGN FOR EXTENSION ACTIVITIES, AT WHICH TIME AN IEE AMENDMENT, AND IF NECESSARY AN EA, WILL BE PREPARED;

-- D. FOR COMPONENT FOUR, A DEFERRAL OF THE THRESHOLD DECISION AS FOR THE EXTENSION ACTIVITIES; AND

-- E. FOR COMPONENT FIVE, A NEGATIVE DETERMINATION.

THE MISSION MAY WISH TO REQUEST THE TDY SERVICES OF REDSO/WCA ENVIRONMENTAL ADVISER VERNITA FORT, OR ANOTHER ENVIRONMENTALIST KNOWLEDGEABLE ABOUT ANIMAL TRACTION, DURING THE DEVELOPMENT OF THE PP, PARTICULARLY FOR ENVIRONMENTAL REVIEW OF THE EXTENSION ACTIVITY IN COMPONENT THREE. OTHERWISE, THE PP DESIGN EFFORT IS APPROPRIATELY STAFFED TO PREPARE THE IEE AMENDMENT AND, IF REQUIRED, A SCOPING STATEMENT AND AN EA.

7. LINKAGES -- THE PP SHOULD DISCUSS LINKAGES BETWEEN THIS PROJECT AND OTHER ON-GOING AND PLANNED AID AND OTHER DONOR-FUNDED ACTIVITIES IN THE AGRICULTURAL SECTOR, PARTICULARLY IN RESEARCH AND TRAINING INSTITUTIONS.

8. THE MISSION MUST JUSTIFY THE USE OF MULTI-YEAR PL 480 TITLE II SECTION 206 COMMODITIES PER GUIDANCE IN STATE 172822 (JUNE 29,1981). FURTHERMORE, BASED ON THE MISSION'S EXPERIENCE FROM ITS PREVIOUS SECTION 206 PROGRAM, THE PP SHOULD DEVELOP A CONTINGENCY PLAN TO PROVIDE FOR THE NECESSARY AVAILABILITY OF LOCAL CURRENCY FINANCING IN THE EVENT PL 480 FOOD AID COMMODITIES ARE NOT REQUIRED IN A GIVEN YEAR. IN THE EVENT THE PL 480 TITLE II COMPONENT IS NOT, FOR WHATEVER REASON, APPROVED, OR IF APPROVED COMMODITIES ARE NOT AVAILABLE IN A PARTICULAR YEAR TO SUPPORT THE PROJECT, AID/W REQUESTS THE MISSION TO IDENTIFY ALTERNATIVE SOURCES FOR THE REQUISITE LOCAL CURRENCIES.

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25. AFR/DP HAS EXPRESSED CONCERN OVER THE TIMING FOR THE DEVELOPMENT OF THE PP, PARTICULARLY GIVEN THE INTENT TO USE THIS DOLS 3% MILLION DA AND DOLS)% MILLION PL 480 PACKAGE AS THE MEANS OF NEGOTIATING A SERIES OF ADMINISTRATIVE AND POLICY CHANGES IN THE AGRICULTURAL SECTOR, AND AS THE FY 83 PLANNED OBLIGATION FOR THIS PROJECT REPRESENTS APPROXIMATELY NINETY PERCENT OF FUNDS TO BE OBLIGATED IN UPPER VOLTA THIS FISCAL YEAR. THEREFORE, THE MISSION IS REQUESTED TO KEEP AID/W ADVISED IF THERE ARE SLIPPAGES IN THE MISSION'S TIME TABLE FOR PP DESIGN AND THE PLANNED SUBMISSION DATE OF JULY 1. DAM

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NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Program Goals: 1. Nutritional self-reliance 2. Enhancement of the natural resource environment	1. Absence of stunting and wasting except as they may be caused for non-nutritional reasons and the elimination of low birth weights for babies carried to term. 2. a. increased soil fertility b. stemming the negative trend in soil erosion c. more efficient use of water resources		
Project Goals: Increase agricultural productivity	1. Increase in cereal yields from 550kg/ha to 585 kg/ha 2. Changes in cropping patterns to higher value commodities. 3. Increased effective demand in rural areas.		1. Rainfall distribution will not adversely affect domestic production. 2. GOUV maintains policy of food self-sufficiency goal.
Purpose: Reinforce the capacity of the Ministry of Rural Development to manage and promote a more efficient use of resources in the agricultural sector.	EOPS: 1. A strengthened agricultural data base and data distribution system. 2. A strengthened policy, planning and programming capability of the MRD. 3. A strengthened project monitoring and evaluation capability of the MRD. 4. A pool of public and private sector Voltans trained in rural development related technical and managerial skills. 5. A strengthened system of skills training for young farmers. 6. A strengthened system of managerial training for adult pre-cooperatives. 7. A more effective information transfer system between agricultural research extension and the farmers. 8. An operational Food and Food Technology Service capable of implementing surveys, nutrition education & food technology R + D. 9. A strengthened soil & water conservation program based on sound survey and technical support programs.		1. Farmers in surplus potential areas are price responsive. 2. GOUV can meet domestic shortfall through food aid and commercial imports.
Input: Generation of PL 480 Counterpart Funds	10. Increased coarse grain per capita availabilities on the national level from an average of 167 kg/capita in 1980/81 - 1982/83 to the level of demand for 1987-88 (expected to be 173 kg/capita). 11. Increased cereal availability at village level for those receiving cereal bank loans. 12. Reinforced capacity of OFNACER to efficiently carry out its mandate. 13. Increased supply certainty of preferred cereals and oils.	10a. GOUV production, import and stock estimates consumption levels. b. Market prices 11. OFNACER records 12. Cereal bank monitoring information 13a. Import and Food Aid records b. Market prices	Input level: 1. AID and GOUV will make all resources available in a timely and effective manner. 2. All CPs

ANNEX B

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Sub-Purpose No 1: Improve the management of Sector resources and investments.	1. A functioning Statistics Unit generating scientifically sound agricultural statistics. 2. An expanded Analytical Unit making policy planning and programming recommendations at national and regional levels. 3. A fully operational Agricultural Documentation Center. 4. A fully coordinated project analysis, monitoring and evaluation system. 5. A reinforced management operations unit.	1. Reports, plans and budgets. 2. Staffing pattern.	1. Improved statistics will be used by all analysts and accepted by policy makers. 2. Agricultural reports will be distributed free or on an "at cost" basis. 3. Other donors will agree to MRD coordinated system of hardware and software.
Outputs: 1. A scientifically sound recurent crop survey. 2. An area sample frame which can be utilized to generate other agricultural and rural socio-economic information. 3. A series of studies contributing to the development of the National Food Plan. 4. A series of studies contributing to the development of the 1986-91 Agricultural Sector Plan. 5. A computerized system of agricultural data and information documentation, storage and retrieval. 6. A project analysis and evaluation system. 7. A computerized project monitoring system. 8. A computerized program budgeting system fully compatible with the financial monitoring and control system. 9. Standard operating procedures for procurement and tracking of contract services and equipment.	1. Crop survey providing a coefficient of variation of approximately 5% at the national level and 8-10% at the regional level for major crop area & production. 2. An area sample frame of 900 segments. 3. The number of types of studies, the computer systems for data/information management and project monitoring, and project analysis and evaluation system will all be determined jointly by the MRD and a selected University using a collaborative design mode during the first year of the project. 4. The budgeting program will cover all MRD units. 5. A procurement and tracking system in place.	1. Survey results, studies and procedures. 2. PASA/University/ other contractor reports.	1. Remainder of photography for the country will be flown in 1984 or 1985. 2. The MRD will work closely with CENATRIN to obtain approval to introduce appropriate hardware and software systems.
Inputs: 1. Advisory Assistance. 2. Training 3. Commodities GOUV: Personnel, operating expenses, supplies and equipment	See Project budget in Section II.		

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
SUB-PURPOSE NO. 2 Expand the managerial and technical skills base in the agricultural sector.	1. Strengthened and more efficient system of rural youth training. 2. 3875 village council members with managerial skills. 3. 4250 groupements villageois trained in agricultural production techniques. 4. DIRC has the capacity to implement a program of training and extension for development and promotion of pre-cooperative village groups. 5. Supplementing critical vocational skills and manpower requirements in the rural development-related public and private sector.	4. A fully developed training curriculum for DIRC personnel, groupements villageois managers, and groupements villageois members. 5. An improved and expanded DIRC training network.	
OUTPUTS 1. Young farmers trained in agricultural production and literacy skills. 2. A pool of trained groupements villageois managers. 3. More effective agricultural, commercial and managerial skills for members of groupements villageois. 4. More effective training programs for DIRC zonal-level trainers. 5. A pool of public and private sector Voltans trained in rural development-related technical and managerial skills.	1a. 2 Teacher Training Centers equipped and renovated. b. 1 female Teacher Training Center operational. c. 155 CFJAs equipped and operational d. 1700 teachers trained e. 8125 GJA and CVC trained f. 4650+ graduates of CFJAs trained 2. 1200 groupements villageois trained 3. 50,000 people 4. 255 DIRC zonal level agents trained 5. people for LT training 108 people for ST training 500	1. Annual training plans PIO/Ps - interviews 2. Annual training plans interviews DFJA records 3 a. DIRC annual training plans 4 b. DIRC personnel records 5 c. Returned participants	1. Pool of qualified candidates is available 2. More appropriately designed training will have a more effective impact. 3. Minimal investments in physical infrastructure will enhance training programs.
INPUTS 1. Advisory assistance 2. Training 3. Commodities GOUV: Personnel, operating expenses, supplies and equipment	See Project Budget in Section II		

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Sub-purpose No 3 Accelerate the process of transferring productive technologies into the agricultural sector.	1. Reinforced capacity of the National Experimentation Service to make agricultural research in Upper Volta more closely linked with the extension service and the farmers. 2. Reinforced capacity of the NES to transfer agricultural technologies. 3. Reinforced capacity of the FFTS to plan, test and promote nutritionally sound practices. 4. Rate of soil survey mapping will increase from the current level of 40,000 ha/year to 4 million ha/year. 5. GOUV will have a water resource inventory and assessment. 6. GOUV will be moving towards the adoption of improved technical soil and water conservation activities. 7. Increased rate of conservation activities in the field from 2000 ha/year to 14,000 ha/year per ORD.	4. Soil surveys maps 5. Irrigated crop productivity increases per unit land area. 6. Rainfed crop output productivity increases per unit land area for treated areas. 7. ORD annual statistics	
OUTPUTS			
1. Operational National Experimentation Service coordinating and implementing a farming systems research program	1a. Program being carried out with multi-local, pre-extension trials and farmer demonstrations established in 4 ORDs. 1b. 120 pm LT (4) 78 pm ST (15)	1a. ORD annual reports 1b. Annual training plans and interview.	1. Pool of qualified candidates is available.
2. Establishment of farming systems units at the ORD level.	2. Four	2. On-site verification	2. SAFGRAD/FSU farming systems research methodology is appropriate.
3. Establishment of an Agricultural Research Documentation Center.	3. One	3. On-site verification	3. National and International research institutions will collaborate with the National experimentation service.
4. A functional relationship established with the National Extension Service for collaborative development of appropriate extension packages.	4. Established	4. Interview and extension recommendations.	4. GOUV maintains commitment to Farming Systems Research approach.
5. A functional relationship established with IVRAZ for more efficient and accurate assessments of research priorities, technological developments and the national research agenda	5. Interministerial committees for agricultural research meet on at least a quarterly basis.	5a. Minutes from technical sub-committee meetings b. Interviews	5. GOUV maintains commitment to the institutional reorganition of agricultural research
6. A National Food Plan	6. Established	6. Document printed and distributed	6. Women use free time to attend classes
7. National food inventory and nutrition tables for food consumption	7. Established	7. Documents	
8. A National consumption survey	8. Carried out	8. Documents	
9. FFTS agents trained in nutrition, communications & financial management	9. 50 pm ST training (10) 90 pm LT training (3)	9. Annual training plans PIO/Ps interviews	

NARRATIVE SUMMARY	OBJECTIVELY VARIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
10. ORD extension agents, sub-sector chiefs, sector chiefs, home economic agents, & food distribution managers receive training.	10. 700 pm ST training in-country (800)	10. ORD records . interviews	
11. Members of agricultural cooperatives receive food processing equipment and training.	11. Food processing equipment and training for 20 women's cooperatives (4000 women)	11. Interviews	
12. National Soil Survey Plan	12. Established	12. Documents	
13. National Soil Survey	13. By 1989 7000 km^2 will have been surveyed at 1: 50,000	13. Maps	
14. National Soil and water management policy and system.	14. Established	14. Document printed and distributed	
15. Assessment of agricultural water resources.	15. Carried out	15. Document printed and distributed	
16. Delivery of soil and water conservation technology	16. 30,000 ha of treated cropland	16. ORD annual reports	
17. Establishment of an automated data base management system.	17. Automatic data processing system in place.	17. On-site verification	
18. NSS agents trained in soil and water conservation, soil survey and computer science etc.	18. 210 pm US LT training (7) 60 pm US ST training (10)	18. PIO/Ps, interviews and annual training plans.	
19. ORD level agents trained in soil and water conservation.	19. 50 pm for 25 ORD agents.	19. Annual training plans and interviews.	
<u>INPUTS</u> 1. Advisory assistance 2. Training 3. Commodities COUV: Personnel, operating expenses, supplies and equipment.	See Project Budget in Section II		

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NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Sub-Purpose No 4: Decreased Cereal Insecurity at the national, regional and village levels.	1. OFNACER has developed and implemented systems permitting the analyses of cereal market conditions, particularly expected supply response as a function of production price, and stock levels. 2. OFNACER and other GOUV entities have developed systems which will permit adequate availabilities of stock at the regional level. 3. OFNACER is capable of generating an increase in domestic availabilities through the offer of a remunerative floor price. 4. OFNACER has developed programs to minimize the loss of public stocks and increase cereal availabilities. 5. Increased cereal availabilities at the village level.	1. Studies, analyses, reports completed by OFNACER. 2. Stock estimates, prices analyses. 3a. GOUV area production and yield reports. b. Micro-level studies 4. OFNACER records and stock reports. 5a. Baseline data as part of loan feasibility study. b. Follow-up data provided by DIRC.	5a. Cereal bank stocks represent a net addition to existing levels. b. Free market conditions prevail.
Outputs: 1. Improved Planning & Management Capability a. OFNACER's Planning Unit (CEPS) adequately staffed and functioning to permit micro and macro-level analyses. b. OFNACER's staff trained in economic analyses, analytical accounting, and audit. 2a. Improved distribution planning. b. Development of an emergency relief capacity to target cereal availability to the relatively most disadvantaged. 3. Increased domestic coarse grain availabilities. 4. Reduction in post-harvest public losses. a. National warehouse planned. b. Trained storage personnel 5. Private sector local level Grain Elevators (Cereal Banks) 6. Revolving fund for expansion of cereal bank activities	1a. CEPS staffed with 5 mid-level economists, 2 junior statisticians, 1 secretary. b. 3 economists trained a total of 36 PM in US; 2 Analytical Accountants trained 24 pm in US c. 1 auditor trained 6 pm in Abidjan d. Local training for 50 accountants (100 pm) 2a. Public and private sector stock levels. b. Formation of an Interministerial Relief Committee with criteria for relief assistance established. 3. Increase of 16% from 1980/81--1982/83 average of 963,000 MT to 1,117 MT average availibility in 1985/86 to 1987/88. 4. Reduction in losses by 33% over life of project. a. National Warehouse Plan b. 1 person trained 36 PM in US. c. 40 persons trained, 80 PM in-country 5. 40 cereal banks with 4000 MT capacity 6. Revolving fund equivalent to expansion of at least 500	1a. OFNACER personnel records b. Training records c. Training records d. Training records 2a. OFNACER stock reports, ATA consumption studies. b. GOUV reports, decrees. 3. GOUV production, good, losses, and other uses records. 4. OFNACER records a. OFNACER documentation b. Training records (US University, OFNACER) 5. DIRC records, Cereal Banks records, field visits. 6. DIRC records.	
Inputs: 1. Advisory assistance 2. Training 3. Commodities GOUV: Personnel, operating expenses, supplies and equipment	See Project Budget in Section II		

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5C(1) - COUNTRY CHECKLIST

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

A. GENERAL CRITERIA FOR COUNTRY ELIGIBLITY

1. FAA Sec. 481. Has it been determined that the government of the recipient country has failed to take adequate steps to prevent narcotic drugs and other controlled substances (as defined by the Comprehensive Drug Abuse Prevention and Control Act of 1970) produced or processed, in whole or in part, in such country, or transported through such country, from being sold illegally within the jurisdiction of such country to U.S. Government personnel or their dependents, or from entering the U.S. unlawfully? NO

2. FAA Sec. 620(c). If assistance is to a government, is the government liable as debtor or unconditional guarantor on any debt to a U.S. citizen for goods or services furnished or ordered where (a) such citizen has exhausted available legal remedies and (b) the debt is not denied or contested by such government? NO

3.	FAA Sec. 620(e)(1). If assistance is to a government, has it (including government agencies or subdivisions) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities?	NO
4.	FAA Sec. 532(c), 620(a), 620(f), 620D; FY 1982 Appropriation Act Secs. 512 and 513. Is recipient country a Communist country? Will assistance be provided to Angola, Cambodia, Cuba, Laos, Vietnam, Syria, Libya, Iraq, or South Yemen? Will assistance be provided to Afghanistan or Mozambique without a waiver?	NO
5.	ISDCA of 1981 Secs. 724, 727 and 730. For specific restrictions on assistance to Nicaragua, see Sec. 724 of the ISDCA of 1981. For specific restrictions on assistance to El Salvador, see Secs. 727 and 730 of the ISDCA of 1981.	N/A
6.	FAA Sec. 620(j). Has the country permitted, or failed to take adequate measures to prevent, the damage or destruction by mob action of U.S. property?	NO

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7.	FAA Sec. 620(l). Has the country failed to enter into an agreement with OPIC?	NO
8.	FAA Sec. 620(o); Fishermen's Protective Act of 1967, as amended, Sec. 5. (a) Has the country seized, or imposed any penalty or sanction against, any U.S. fishing activities in international waters? (b) If so, has any deduction required by the Fishermen's Protective Act been made?	NO
9.	FAA Sec. 620(q); FY 1982 Appropriation Act Sec. 517. (a) Has the government of the recipient country been in default for more ~~than~~ six months on interest or principal of any AID loan to the country? (b) Has the country been in default for more than one year on interest or principal on any U.S. loan under a program for which the appropriation bill appropriates funds?	NO NO
10.	FAA Sec. 620(s). If contemplated assistance is development loan or from Economic Support Fund, has the Administrator taken into account the amount of foreign exchange or other resources which the country has spent on military equipment? (Reference may be made to the annual "Taking into	N/A

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Consideration" memo: "Yes, taken into account by the Administrator at time of approval of Agency OYB." This approval by the Administrator of the Operational Year Budget can be the basis for an affirmative answer during the fiscal year unless significant changes in circumstances occur.)

11. FAA Sec. 620(t). Has the country severed diplomatic relations with the United States? If so, have they been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption? — NO

12. FAA Sec. 620(u). What is the payment status of the country's U.N. obligations? If the country is in arrears, were such arrearages taken into account by the AID Administrator in determining the current AID Operational Year Budget? (Reference may be made to the Taking into Consideration memo.) — 1982 not in arrears

13. FAA Sec. 620A; FY 1982 Appropriation Act Sec. 520. Has the country aided or abetted, by granting sanctuary from prosecution to, any individual or group which has committed an act of international terrorism? Has the country aided or — NO

	abetted, by granting sanctuary from prosecution to, any individual or group which has committed a war crime?	NO
14.	FAA Sec. 666. Does the country object, on the basis of race, religion, national origin or sex, to the presence of any officer or employee of the U.S. who is present in such country to carry out economic development programs under the FAA?	NO
15.	FAA Sec. 669, 670. Has the country, after August 3, 1977, delivered or received nuclear enrichment or reprocessing equipment, materials, or technology, without specified arrangements or safeguards?	NO
	Has it transferred a nuclear explosive device to a non-nuclear weapon state, or if such a state, either received or detonated a nuclear explosive device, after August 3, 1977? (FAA Sec. 620E permits a special waiver of Sec. 669 for Pakistan.)	NO
16.	ISDCA of 1981 Sec. 720. Was the country represented at the Meeting of Ministers of Foreign Affairs and Heads of Delegations of the Non-Aligned Countries to the 36th General Session of the General Assembly of the U.N. of Sept. 25 and 28, 1981, and failed	NO

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to disassociate itself from the communique issued? If so, has the President taken it into account? (Reference may be made to the Taking into Consideration memo.)

17. ISDCA of 1981 Sec. 721. See special requirements for assistance to Haiti. — N/A

B. FUNDING SOURCE CRITERIA FOR COUNTRY ELIGIBILITY

1. Development Assistance Country Criteria.

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

2. Economic Support Fund Country Criteria

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

b. ISDCA of 1981, Sec. 725(b). If ESF is to be furnished to Argentina, has the President certified that (1) the Govt. of Argentina has made significant progress in human rights; and (2) that the provision of such assistance is in the national interests of the U.S.?	N/A
c. ISDCA of 1981, Sec. 726(b). If ESF assistance is to be furnished to Chile, has the President certified that (1) the Govt. of Chile has made significant progress in human rights; (2) it is in the national interest of the U.S.; and (3) the Govt. of Chile is not aiding international terrorism and has taken steps to bring to justice those indicted in connection with the murder of Orlando Letelier?	N/A

5C(2) PROJECT CHECKLIST

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

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

A. GENERAL CRITERIA FOR PROJECT

1. FY 1982 Appropriation Act Sec. 523; FAA Sec. 634A; Sec. 653(b).

   (a) Describe how authorizing and appropriations committees of Senate and House have been or will be notified concerning the project; (b) is assistance within (Operational Year Budget) country or international organization allocation reported to Congress (or not more than $1 million over that amount)?

   IN June, 1983 AID notified Senate and House authorizing and appropriations committees by means of a Congressional Notification of its intent to authorize and obligate funds for this project.

   YES

2. FAA Sec. 611(a)(1). Prior to obligation in excess of $100,00, will there be

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(a) engineering, financial or other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?	YES YES
3. FAA Sec. 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of the assistance?	No legislative action is required.
4. FAA Sec. 611(b); FY 1982 Appropriation Act Sec. 501. If for water or water-related land resource construction, has project met the standards and criteria as set forth in the Principles and Standards for Planning Water and Related Land Resources, dated October 25, 1973? (See AID Handbook 3 for new guidelines.)	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 the country's capability effectively to maintain and utilize the project?	N/A

6. FAA Sec. 209. Is project susceptible to execution as part of regional or multilateral project? If so, why is project not so executed? Information and conclusion whether assistance will encourage regional development programs.	NO
7. FAA Sec. 601(a). Information and conclusions whether project will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; and (c) encourage development and use of cooperatives, and credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions.	YES Yes, by assisting private farmers and encouraging grain market competition through cereal banks. Yes, by direct support to cooperatives in managerial training. Yes, by encouraging reduction of the role of the State in grain marketing. Yes, through the transfer of technology component. N/A
8. FAA Sec. 601(b). Information and conclusions on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).	U.S. firms will provide some of the technical assistance outlined in the Project Paper, as well as most of the commodities and equipment (including grain and oil.)

9.	FAA Sec. 612(b), 636(h); FY 1982 Appropriation Act Sec. 507. Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized in lieu of dollars.	In a separate agreement, AID will agree to finance a PL 480 Title II Section 206 Program which will generate counterpart funds in the form of local currency to be automatically reinvested into the Project
10.	FAA Sec. 612(d). Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release?	NO
11.	FAA Sec. 601(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?	YES
12.	FY 1982 Appropriation Act Sec. 521. If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity?	N/A
13.	FAA 118(c) and (d). Does the project comply with the environmental procedures set forth in AID Regulation 16? Does	The project takes into account its impact on the enviroment and natural resouces as stated in the Project Paper. The IEE recommended a negative determination.

the project or program take into consideration the problem of the destruction of tropical forests?

14. FAA 121(d). If a Sahel project, has a determination been made that the host government has an adequate system for accounting for and controlling receipt and expenditure of project funds (dollars or local currency generated therefrom)?

AA/AFR has made a negative determination.

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

a. FAA Sec. 102(b), 111, 113, 281(a). Extent to which activity will (a) effectively involve the poor in development, by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, spreading investment out from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using the appropriate U.S. institutions; (b) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and

(a) In Upper Volta most of the poor are small scale farmers who are expected to benefit from the project activities particularly in the areas of rural human resource development, the introduction of appropriate technologies for production and investment in the form of cereal bank capital in rural areas.

(b) Yes, village cooperatives training and loan fund

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otherwise encourage democratic private and local governmental institutions; (c) support the self-help efforts of developing countries; (d) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (e) utilize and encourage regional cooperation by developing countries?	(c) The project is consistent with the Gouv's initiated self-help measures. The PL 480 Title II (section 206) Program is specifically designed to reinforce the measures. (d) Women's participation is systematically included within each Project component. The Project will also support studies of women's activities under component one. (e) Indirect support through policy dialogue.
b. FAA Sec. 103, 103A, 104, 105, 106. Does the project fit the criteria for the type of funds (functional account) being used?	YES
c. FAA Sec. 107. Is emphasis on use of appropriate technology (relatively smaller, cost-saving, labor-using technologies that are generally most appropriate for the small farms, small businesses, and small incomes of the poor)?	Yes, the Project will include farming systems research and the transfer of appropriate technologies (e. g. grain mills, oil presses, etc.) which will promote cost-effective increases in rural productivity.
d. FAA Sec. 110(a). Will the recipient country provide at least 25% of the costs of the program, project, or activitiy with respect to which the assistance is to be furnished (or is the latter cost-sharing requirement being waived for a "relatively least developed" country)?	Upper Volta is a "relatively least developed country". Therefore the 25% requirement is being waived. It is expected that the total Gouv contribution (including the contribution of HC PL 480 sales proceeds) will be greater than 25%

e. FAA Sec. 110(b). Will grant capital assistance be disbursed for project over more than 3 years? If so, has justification satisfactory to Congress been made, and efforts for other financing, or is the recipient country "relatively least developed"? (M.O. 1232.1 defined a capital project as "the construction, expansion, equipping or alteration of a physical facility or facilities financed by AID dollar assistance of not less than $100,000, including related advisory, managerial and training services, and not undertaken as part of a project of a predominantly technical assistance character.

Yes, Upper Volta is a relatively least developed country, and revised Delegation of Authority No. 140 authorized approval of projects with length of more than three years.

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

Yes, the Project Goal is increased agricultural productivity with a reasonable promise of self-sustaining economic growth.

g. FAA Sec. 281(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage

The Project recognizes that the agricultural sector affects all Voltans, and that there are particular needs and desires in the areas of improved planning and management, human resouce development, technological transfer, and food security.

The Project is designed to utilize and strengthen the country's intellectual resources to encourage

institutional development; and supports civil education and training in skills required for effective participation in governmental processes esential to self-government.	institutional development and support civil in-country, U.S. and third-country training for skills acquisition.

2. Development Assistance Project Criteria (Loans Only)

a. FAA Sec. 122(b). Information and conclusion on capacity of the country to repay the loan, at a reasonable rate of interest.	N/A
b. FAA Sec. 620(d). If assistance is for any productive enterprise which will compete with U.S. enterprises, is there an agreement by the recipient country to prevent export to the U.S. of more than 20% of the enterprise's annual production during the life of the loan?	N/A
c. ISDCA of 1981, Sec. 724 (c) and (d). If for Nicaragua, does the loan agreement require that the funds be used to the maximum extent possible for the private sector? Does the project provide for monitoring under FAA Sec. 624(g)?	N/A

3. Economic Support Fund Project Criteria

a. FAA Sec. 531(a). Will this assistance promote economic or political	N/A

stability? To the extent possible, does it reflect the policy directions of FAA Section 102?

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

c. FAA Sec. 534. Will ESF funds be used to finance the construction of the operation or maintenance of, or the supplying of fuel for, a nuclear facility? If so, has the President certified that such use of funds is indispensable to nonproliferation objectives? N/A

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

5C(3) - STANDARD ITEM CHECKLIST

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

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

A. Procurement

1.	FAA Sec. 602. Are there arrangements to permit U.S. small business to participate equitably in the furnishing of commodities and services financed?	YES
2.	FAA Sec. 604(a). Will all procurement be from the U.S. except as otherwise determined by the President or under delegation from him?	YES
3.	FAA Sec. 604(d). If the cooperating country discriminates against marine insurance companies authorized to do business in the U.S., will commodities be insured in the United States against marine risk with such a company?	N/A
4.	FAA Sec. 604(e); ISDCA of 1980 Sec. 705(a). If offshore procurement of agricultural commodity or product is to be	N/A, no agricultural products are to be purchased with funds from this Grant.

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	financed, is there provision against such procurement when the domestic price of such commodity is less than parity? (Exception where commodity financed could not reasonably be procured in U.S.)	
5.	FAA Sec. 604(g). Will construction or engineering services be procured from firms of countries otherwise eligible under Code 941, but which have attained a competitive capability in international markets in one or these areas?	All Code 941 countries, including the U.S., will be eligible sources of construction/engineering services
6.	FAA Sec. 603. Is the shipping excluded from compliance with requirement in section 901(b) of the Merchant Marine Act of 1936, as amended, that at least 50 per centum of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U.S. flag commercial vessels to the extent that such vessels are available at fair and reasonable rates?	NO
7.	FAA Sec. 621. If technical assistance is financed, will such assistance be furnished by private enterprise on a contract basis to the fullest extent practicable? If the facilities of other	Yes, primary technical assistance will be provided by a Title XII institution.

Federal agencies will be utilized, are they particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs?

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

9. FY 1982 Appropriation Act Sec. 504. If the U.S. Government is a party to a contract for procurement, does the contract contain a provision authorizing termination of such contract for the convenience of the United States? — YES

B. Construction

1. FAA Sec. 601(d). If capital (e.g., construction) project, will U.S. engineering and professional services to be used? — N/A

2. FAA Sec. 611(c). If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable? — YES

3. FAA Sec. 620(k). If for construction of productive enterprise, will agggregate value of assistance to be furnished by the U.S. not exceed $100 million (except for productive enterprises in Egypt that were described in the CP)? — N/A

C. Other Restrictions

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

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

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

4. Will arrangements preclude use of financing:

a. FAA Sec. 104(f); FY 1982 Appropriation Act Sec. 525: (1) To pay for performance of abortions as a method of family — YES

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planning or to motivate or coerce persons to practice abortions; (2) to pay for performance of involuntary sterilization as method of family planning, or to coerce or provide financial incentive to any person to undergo sterilization; (3) to pay for any biomedical research which relates, in whole or part, to methods or the performance of abortions or involuntary sterilizations as a means of family planning; (4) to lobby for abortion?

b. FAA Sec. 620(g). To compensate owners for expropriated nationalized property? — YES

c. FAA Sec. 660. To provide training or advice or provide any financial support for police, prisons, or other law enforcement forces, except for narcotics programs? — YES

d. FAA Sec. 662. For CIA activities? — YES

e. FAA Sec. 636(i). For purchase, sale, long-term lease, exchange or guaranty of the sale of motor vehicles manufactured outside U.S., unless a waiver is obtained? — YES

f. FY 1982 Appropriation Act, Sec. 503. To pay pensions, annuities, retirement pay, or — YES

adjusted service compensation for military personnel?	
g. FY 1982 Appropriation Act, Sec. 505. To pay U.N. assessments, arrearages or dues?	YES
h. FY 1982 Appropriation Act, Sec. 506. To carry out provisions of FAA section 209(d) (Transfer of FAA funds to multilateral organizations for lending)?	YES
i. FY 1982 Appropriation Act, Sec. 510. To finance the export of nuclear equipment, fuel, or technology or to train foreign nationals in nuclear fields?	YES
j. FY 1982 Appropriation Act, Sec. 511. Will assistance be provided for the purpose of aiding the efforts of the government of such country to repress the legitimate rights of the population of such country contrary to the Universal Declaration of Human Rights?	NO
k. FY 1982 Appropriation Act, Sec. 515. To be used for publicity or propaganda purposes within U.S. not authorized by Congress?	YES

DK/KC

Annex D

/SG

Requête de financement
du secteur agricole.

onsieur l'Ambassadeur
des Etats-Unis en Haute-Volta
s/c de Monsieur le Ministre
des Affaires Etrangères et
de la Coopération

OUAGADOUGOU

Excellence,

L'assistance au secteur agricole est souvent intervenue sous forme de projets d'envergure limitée et axée sur des problèmes spécifiques ou des sous-régions géographiques.

Si des résultats prometteurs et encourageants sont apparus dans plusieurs projets, l'approche multi-projets n'accorde pas suffisamment d'importance aux relations entre différents aspects du secteur agricole et les résultats sont des fois en-dessous de l'optimum souhaité à cause des contraintes et des goulots d'étranglement dans le secteur, qui se situent en dehors du cadre d'un projet particulier. Par conséquent, il nous est apparu nécessaire d'intégrer l'assistance à des activités reliées à la production alimentaire, dans un tout plus cohérent au moyen d'un programme agricole avec comme point focal, un projet de secteur agricole.

Cette préoccupation est aussi celle de l'US-AID qui, au cours de l'année fiscale 1981, a commencé l'examen de la stratégie d'assistance au niveau sectoriel, afin d'élaborer les composantes appropriées de la subvention au secteur agricole dont l'objectif principal est d'améliorer l'efficience des investissements du secteur public tout en développant le rôle des investissements du secteur privé, le but étant d'effectuer des investissements directs dans les secteurs public et privé visant à l'élimination partielle des principales contraintes du secteur agricole au niveau des ressources humaines, de la technologie et de l'infrastructure.

Aussi, c'est avec plaisir que par la présente, je sollicite auprès de l'US-AID le financement de la subvention au secteur agricole et la contrepartie générée par l'aide alimentaire.

.../...

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L'ensemble de ce financement qui sera étalé sur cinq (5) ans sera utilisé pour :

- le financement de l'assistance technique sollicitée
- la formation des cadres du Département
- la mise en place d'un système informatisé de collecte et de traitement des statistiques agricoles
- l'analyse des politiques agricoles et l'évaluation des projets
- la formation du monde rural
- le soutien à la commercialisation des céréales en vue de la sécurité alimentaire
- l'expérimentation, la technologie alimentaire et les sols.

Je vous saurais gré de la suite qu'il vous plaira de réserver à ma requête.

Veuillez croire, Excellence, à l'assurance de ma haute considération.

Dr Edouard K. [illegible]

Annex E

UNITED STATES GOVERNMENT

memorandum

DATE: June 8, 1983

REPLY TO ATTN OF: Allan W. Strom, General Engineering Officer, OPR

SUBJECT: 611 (a) Certification, Agricultural Development Support Project No 686-0255

TO: Patricia Lerner, Project Development Officer

There are three main construction components plus renovations/ improvements to existing buildings and water systems all of which are described as follows:

1. Construction of a headquarters office for the National Nutrition Service consisting of 3 separate closely grouped buildings for a total of about 850m^2. Location is not definitely determined at this time but it is planned to be on the eastern edge of Ouagadougou in the Bois de Boulogne area where water and electric service are available.

2. Construction of a headquarters office for the National Experimentation and Applied Studies Service consisting of one office building plus a garage for automobile maintenance and some storage. The office building is about 540m^2 and the garage is about 130m^2. The location is also planned to be in the Bois de Boulogne area but the precise site is not yet selected. It may be grouped with the buildings for the National Nutrition Service.

3. Additional buildings to the Young Farmer Training Centers at Kamboinse and at Farakoba. The buildings at each center consist of a meeting/ class room and a library. The buildings at each center are about 150m^2. There is no plumbing required for these buildings and some electricity is available for lighting and ceiling fans.

4. Cost estimates have been made for certain improvements at the Kamboinse Young Farmers Training Center such as painting, repairs, remodeling, improving plumbing and improvements to the water systems at both Kamboinse and at Farakoba. The cost estimates are very rough but they are as good a guesstimate as can be made at this time. The improvements are all necessary but some are not so critical to success of the project that if required, the extent of the improvement could be modified, giving attention to priorities, to stay within the funds available.

Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan

OPTIONAL FORM NO. 10
(REV. 7-76)
GSA FPMR (41 CFR) 101-11.6
5010-112

The preliminary construction plans for the above described buildings are satisfactory for cost estimating purposes and the total estimated costs are reasonable. Planning is adequate to carry out preparation of final construction plans, bidding documents and to manage the construction phase. I have visited the sites at Kamboinse and Farakoba although at this time an exact location of the new building at Farakoba is not selected.

The requirements of FAA Section 611 (a) as amended are deemed to have been satisfied for the above described work except that an AID direct hire engineer will be required to approve the specific building sites, when selected, for the headquarters offices for the National Nutrition Service and the National Experimentation and Applied Studies Service as well as the site for the building for the Young Farmer Training Center at Farakoba.

VOLUME TWO

AGRICULTURAL DEVELOPMENT SUPPORT PROJECT

(686-0255)

USAID/UPPER VOLTA
June 25, 1983

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(1) Technical Analysis

Given the complexity of this Project, technical analyses for each of the eleven activities were prepared. Those analyses are presented below.

A. Component One

1. Policy Planning and Programming/Evaluation and Monitoring

There are almost no technical issues involved with this Project activity. The only technical dimension relates to the introduction of micro-computers. A minor technical issue is that of assuring a sufficient dependable power source to run the equipment. The cost of related equipment (transformers, voltage regulators and the like) nearly equals the cost of the micro-computer. In the design stage the university can address this issue. A related issue is the harmonization of the micro-computer equipment within DEP, with the MRD system and within the GOUV. The technical compatibility of all systems will be addressed by DEP with the assistance of the university in terms of both the hardware and software. No pre-ordained positions have been established on technical compatibility at this point however and arguments for standardization will have to address technical as well as economies of scale arguments.

* * *

2. Agricultural Statistics

The existing system for collecting agricultural statistics in Upper Volta has numerous shortcomings. Scientific sampling procedures are not employed which makes it difficult to assess the accuracy or reliability of the information. Many data users, including donor institutions, seriously question the statistics. The World Bank Agricultural Issues Study, the AID/Upper Volta CDSS, and numerous other reports point out the need for increasing the quality, quantity and timeliness of agricultural information, with the emphasis on strengthening the institutional capability to meet these data requirements. No system exists to evaluate or control the existent and potential sources of bias in the current system. Computer facilities are not available to check data for consistency, aggregate, or analyze the data. Data are aggregated and extrapolated at the sector and regional level, and only regional estimates are transmitted to the MRD, so disaggregated data is not available for micro-level analysis. Maintaining comparability of a data series is frequently a matter of major concern when proposing the implementation of new procedures. However, due to technical and other problems in the existing system, the data series is of little value. This is not a complete description of all the technical shortcomings in the existing system, but should give the reader a general idea of just how weak the system is.

One approach to collecting agricultural information is a complete census. A census provides a wealth of detailed information, and until the last few decades they were the primary source of most agricultural information. As statistical theories and sampling procedures were developed and gained credibility, there was a major shift away from complete enumeration to sample survey procedures, except when a census fulfilled legal requirements. Today, so called agricultural censuses in many countries are actually sample surveys. Factors which precipitated this procedural migration include costs, difficulty controlling non-sampling errors, and the length of time required to complete the census

and disseminate the results. Of these factors, the latter was probably the most critical. When farmers began to exploit their economic advantages and shifted from subsistence to market-oriented agriculture, the worldwide agricultural economy became more dynamic and individual countries became more interdependent, which resulted in an increased demand for more timely information. Considering the economic position of Upper Volta, and the inadequacy of a census to provide cost-effective, timely information on the status of the agricultural economy, an agricultural census is not considered appropriate.

The area frame and list frame are the two most commonly used systems to provide a basis for scientific sampling for agricultural information. Each system has advantages and disadvantages, and the appropriate choice depends upon the situation. The strengths and weaknesses of each are examined below, in the context of developing a cost-effective, timely and reliable agricultural information system for Upper Volta. Considerable effort will be required to avoid patent generalizations while maintaining the appropriate brevity for the purposes of this analysis.

Typically, a multi-stage approach is used for list sampling in developing countries. This approach eliminates the need to conduct a complete census to develop a list of all persons engaged in agriculture, and is the only cost-effective approach unless a population census has just been conducted, which is not the case in Upper Volta. Thus, the remainder of this discussion presumes multi-stage procedures are employed. The major advantages of a list frame are as follows. First, it can be implemented on a national basis faster than an area frame. The list frame would likely require one year to develop, whereas three years are scheduled in this Project to develop the area frame. These times are not strictly comparable through, because this Project places a major emphasis on institution building and minimizing recurrent costs. Secondly, the initial cost of developing the list frame is probably less than the cost of constructing the area frame. The primary costs for list frame development are for transportation and personnel. The major cost factor for the area frame is for the copies of aerial photos and other cartographic materials. Third, the list frame approach can be used when the infrastructure for providing current aerial photography does not exist.

The major disadvantages of the list frame are as follows. First, in developing a list frame, there are problems of duplication and incompleteness. These factors result in biases which are not easily eliminated. The list is "best" when first developed, and if excellent quality control procedures are employed, these biases might be minimized to a point where they are considered negligible. However, this brings us to the second disadvantage, that of frame maintenance. Considerable time, effort and expense are involved in keeping a list frame "up-to-date". When sampling from very small or extremely static populations, frame maintenance is not a major problem. Upper Volta meets neither of these criteria though, with a population of almost seven million, a 2.2% + annual natural population increase, and nearly 1% annual emigration rate. A new frame would have to be developed every three years to limit this one source of non-sampling errors to less than 10%. The impact this would have on recurrent costs quickly offsets any time or cost advantage in initially developing a list frame. The third problem with a list frame revolves around the difficulty of obtaining objective information. The reporting unit in this context is either the household or the farm, and this system relys on the respondent reporting truthfully. In conversations with numerous people conducting surveys in Upper Volta, warnings were repeatedly issued regarding difficulties obtaining truthful responses. The "head tax", a tax on each

person in the household, in conjunction with other socio-cultural factors, provides a strong disincentive to truthful reporting. Thus, any system employed here should place strong emphasis on objectively verifiable indicators. If a farmer doesn't report all fields cropped, measuring the fields reported doesn't eliminate the bias.

The advantages of the area frame are the following. First, an area frame remains valid and complete through time. The total land area of Upper Volta is static with the possible exception of a couple of minor areas where border disputes exist. Despite the fact that cropping patterns may change annually, the area frame approach continues to provide unbiased estimates. Thus the approach will allow the GOUV to maintain the quality of their data collection system through time with minimal recurrent costs for frame maintenance. Secondly, the aerial photo enlargements, used by enumerators to locate the sample areas, make it relatively simple to obtain objective measurement of crop area and facilitate implementation of objective crop production forecast procedures. Third, the ability to construct fairly homogeneous strata and maintain nearly constant size sample units within strata, permits the use of very small sample sizes to achieve the desired levels of reliability. This has impact on several factors :

(a) operating costs and staff requirements for conducting surveys are reduced;
(b) better training and supervision can be provided to reduce non-sampling errors at the same cost for the smaller staff;
(c) frequency of data processing errors is reduced due to the reduced quantity of data, and this in turn cuts data processing costs; and
(d) the time required to collect, process, and disseminate the data is reduced.

Fourth, development of an area frame lays the foundation for incorporating digital satellite data into the crop area and production estimation system, if applied research in Upper Volta determines this is cost-effective.

The major disadvantage of an area frame is its inability to provide reliable estimates for "rare items" and "extreme operations". Rare items require extremely large sample sizes regardless whether a list or area frame is used. Frequently, a complete census is required to provide reliable estimates. Rare items seldom have sufficient economic value in a national economy to warrant substantial consideration. In estimating grain stocks in Upper Volta, the area frame will provide reliable estimates for on-farm stocks, but a list of extreme operations - commercial and national storage facilities - will have to be developed to reliably estimate off-farm stocks. OFNACER, with assistance provided in component four of the ADS Project, will establish a system to monitor off-farm stocks and market prices of grains. It is expected that special procedures will have to be developed to reliably estimate livestock in Upper Volta. The environmentally-adaptive practice of transhumance migration creates special estimation problems which the area frame may adequately resolve. Emphasis will be placed on developing procedures which permit objective counts of livestock numbers to circumvent the farmers/livestock producers sensitivity in disclosing this information.(This issue is further developed in the Social Soundness Analysis in Annex G (5))

An area sampling frame is used by the U.S. Department of Agriculture's Statistical Reporting Service (USDA/SRS) as the primary source of U.S. and state crop area and production statistics. The USDA/SRS has demonstrated the utility of area frame sampling to obtain current, reliable agricultural information in developing countries throughout the world. Jamaica, Morocco,

Costa Rica and Ecuador, with technical assistance from USDA/SRS, have developed agricultural information systems based on an area sampling frame of the entire country or a major portion thereof. Many other countries are proceeding with developing the area frames, albeit, some at a much slower pace than those mentioned above. The factors which have inhibited rapid development of national scale area frames in countries where this technology has been successfully demonstrated are :

(1) recent aerial photography is non-existent, or inaccessible due to perceived military sensitivities;
(2) investment capital is unavailable; and
(3) comparability with the current data series is difficult to maintain without major procedural changes.

Each of these factors, as they pertain to Upper Volta, are discussed in detail below.

Aerial photography covering approximately two-thirds of Upper Volta was flown between 1978 and 1982. The remainder of the country is scheduled for completion in 1983-84. Contact prints of these 1:50,000 scale black-and-white photos are readily available from IGHV. The CRTO photo laboratory, recently equipped with AID funding, has first rate capabilities to produce the enlargements needed for field use. Utilization of these service-oriented institutional facilities helps ensure their continued operation and maintenance, and provides a post-facto economic justification for Upper Volta and donor investments in these facilities.

The investment costs of developing an area frame are substantial if current aerial photography does not exist, and the area frame is perceived as the only application for that photography. In a situation such as that, economic justification of an area frame is difficult. Use of available aerial photography minimizes the out-of-pocket cost to develop an area frame. Copies of photos for the frame construction, plus plastic laminated enlargements and stereo pairs for field use in 900 segments will cost approximately $ 200,000. including inflation factors and contingencies.

Any major change in procedures creates the potential for a disruption in the data series which is not necessarily indicative of real change. Considering the problems in the current agricultural information system, little value is seen in maintaining comparability with the current data series.

Based on the above discussions, there is considerable advantage in utilizing area frame sampling as the basis for a cost-effective, reliable agricultural information system. The U.S. has a strong comparative advantage over other donors in implementing this Project. The USDA/SRS "wrote the book" on area frame sampling for agricultural statistics, and has been primarily responsible for other countries adopting this system. They have a large staff with extensive experience not only in carrying out the U.S. program, but also in transferring this technology and institutionalizing this capability in numerous developing countries. They are <u>the</u> logical implementing agency since utilization of any other agency or contractor would result in "body shopping" to provide personnel without the extensive experience and technical expertise which USDA/SRS has a near monopoly on.

There is no overlap with other donor activities. Although FAO has an agricultural statistics program included in its current five-year plan, funding has not been made available, and is not anticipated by the country representative.

* * *

3. Administrative Support

The Project activity involves few technical issues. A contractor will provide advisory services, training will be provided, some equipment will be brought in and operating support will be allocated out of the PL 480 Section 206 activity. From a technical standpoint the only question revolves around the role of the computer and the introduction of compatible systems of hardware and software. Given the fact that under this activity we are considering personnel, budgeting and financial control systems, the compatibility issue with the government-wide system is even more important than the compatibility issue between various systems within the MRD. The issue will be squarely addressed under the Sahel Regional Financial Management Project as it gets underway and will also be a priority concern of the contractor for administrative support.

* * *

B. Component Two

4. Rural Youth Training

The level of training offered at CFJAs is predicated on society's demand for more productive rural dwellers. It has been known in many developing countries that traditional formal education systems, in many cases, accelerate development problems in rural areas. The FJA system is a viable positive alternative to the formal education system for rural areas.

Although there have been no evaluations to determine the impact of the FJA system on life in rural areas, the donors who have funded the FJA system and people who have worked with it are generally very positive about the type of training given in both production techniques and classroom instruction and their appropriateness to rural life.

One point which has come out over and over again in this design exercise has been the importance of the teacher in the FJA system. The success of the CFJAs and their students seem to be directly correlated with the CFJA teacher and his/her relationship with the CVC. This strongly confirms the USAID's view that strengthening the FJA system not only means strengthening the CFJAs, but also making sure that the support system to the CFJA is strengthened. This would include the training of the CFJA teachers, training of the teaching and administrative staff at the teacher training centers and regional offices, strengthening the evaluation and monitoring arm of the DSFJA, as well as training and informing the village councils (CVC) who are the management/ administrative arm of the CFJA, and providing additional training and support to the graduates of CFJAs (GJA).

Since the CFJA is not an end in itself but rather a means to the end, one must look at strengthening the management and production capabilities of the graduates of the CFJA as well as access to credit and other resources to make GJAs a viable production group. They are the future farmers with whom the hope of better rural life remains. Although USAID is not directly addressing the access to credit by GJAs, Catholic Relief Services is currently designing a proposal for an OPG to provide credit to GJAs. Also, the GOUV is in the process of recognizing groupements villageois (GVs) as a formal entity with the ability to apply for credit from commercial banks at market rates. Since GJAs are a subset of the GVs they will be able to tap this credit line once the law goes into effect.

All training proposed under this Project will be carried out by the DSFJA staff under the supervision of the Pedagogic Unit which has personnel and has been greatly strengthened by the IBRD and FAC. The type of training proposed under this activity has already been designed and installed through other donor funding sources such as FED, FAC and IBRD. Therefore the type of training proposed is not a new activity. Although other donors have funded some portions of the training needs, there are still large in-service and other training needs which will be addressed by this Project.

The revised curriculum developed for the CFJA and the teacher training centers by the IBRD and FED will continue to be used. These curricula are viewed as being appropriate to the overall development of the rural area with technologies specifically appropriate for rural dwellers in Upper Volta (See Annex L for the Curriculum).

It has been documented by the World Bank that in order to increase and modernize agricultural production, one must start by educating the producer. The Bank states that general education of a population in science, math and reading has significant bearing on the degree of productivity to be expected from this sector. (See Table 1 hereafter).

Table 1

FOUR BASIC STAGES OF AGRICULTURAL PRODUCTIVITY AND THEIR LEARNING REQUIREMENTS 1/		
Farmer-entrepreneurs technology level	Agricultural inputs	Minimum learning
Level A : Traditional farming (Techniques passed from parent to child)	Local varieties of seeds and implements.	Addition and subtraction--not necessarily acquired through formal education.
Level B : Intermediate technology	Small quantities of fertilizer.	Addition, subtraction, division, and rudimentary literacy.
Level C : Fully improved technology	High-yielding varieties proven seeds; seed rates/ acre; fertilizer rates/ acre; and pest control rates/acre.	Multiplication, long division, and other more complex mathematical procedures; reading and writing facilities, and rudimentary knowledge of chemistry and biology.
Level D : Full irrigation-based farming.	All above inputs; tubewell access during the off-season; and water rates/ acre.	Mathematics, independent written communication, high reading comprehension, ability to research unfamiliar words and concepts; elementary chemistry, biology, physics, and regular access to information from print and electronic sources.

Source : Risto Harma, "The Farmer Entrepreneur and His Prerequisite Prior Education in Agricultural Development", mimeograph, World Bank, 1979 from Heynemen, Finance and Development, March 1983.

1/ Direction from agricultural extension agents is helpful at any stage, but the essence of a farmer-entrepreneur is his ability to calculate his own production function.

The IBRD has been the major donor to the FJA program with a $ 15.3 million Education II project, which has concentrated on six ORDs (Centre Ouest, Centre Nord, Volta Noire, Haut-Bassins, Bougouriba and Sahel). Their assistance consists of construction and equipment to 300 CFJAs, two Centres de Promotion Rurale and the DSFJA Headquarters. They have also provided agricultural equipment for 600 GJAs and vehicles for DSFJA. Finally, they have constructed about 80 water points for CFJAs and provided some in-country training for teachers. Their assistance ends FY 1983 and their Education III project is expected to concentrate on the formal primary education system.

* * *

5. Managerial and Technical Skills Training to Groupements Villageois

The assistance to DIRC for the development of more appropriate training programs for GVs will emphasize essentially three areas : GV management skills training; DIRC training of trainers; and the development of more appropriate and improved training techniques and materials for GV membership training. All training programs implemented by DIRC are developed and coordinated by DIRC's Section de la Formation.

a. GV Management Skills Training :

The basic purpose of this training is to enable GVs to more efficiently manage their economic and social affairs and to use technical information coming from the MRD more effectively. A pilot project implemented by DIRC with financing from the West German Government was successful in developing training techniques and related materials for a functional literacy program for GV management officers. Under this project, the training will be expanded to cover GVs in the five ORDs of Centre Nord (Kaya), Centre Est (Koupéla), Centre Ouest (Koudougou) Nord (Ouahigouya) and Sahel (Dori). To implement this expanded program, two trained DIRC head office technicians, two agents from the Direction des Affaires Administratives et Financières (DAAF) and fifteen DIRC village-level animateurs are required for the first year. Teaching material will be jointly designed by DIRC and DAAF focusing on vocabulary research in Moré and Peulh, the two most popular languages in the Project zone, to identify words in the field of management and simple accounting or bookkeeping. Once an adequate vocabulary for the training is identified and related instructional material is developed, DIRC will organize ORD-level meetings to organize and program the interested villages in the training program. Establishing strong contacts with the participating villages is considered a very important aspect of pre-training activities so as to enable the villagers to understand the purpose of the subsequent training.

An initial estimate of the number of GV management officers who will attend the first year's training program at DIRC's Saria center is approximately 180. Between 20 and 30 GV officers will attend each training session at Saria, and 9 sessions are scheduled during the first year. The sessions will have a 60 day duration with training 6 hours a day. The previous DIRC project found this was the maximum number of trainees and the required time for the proposed training to be effective. The duration of the training is divided up as follows : the first 12 days are devoted to literacy training, i.e. reading, writing and simple arithmetic; and the next 48 days are divided into 4 twelve day sessions with each session interrupted by a 3 week interval. This scheduling takes into account the need for the trainees to return to their villages on a periodic basis to attend to their responsibilities during the non-agricultural season, i.e. off-farm enterprises, livestock, etc. Each of the 4 training

sessions will emphasize management techniques related to cereal banks, village mills and other GV enterprises and the proper use of new agricultural technologies being promoted by the extension service.

The previous DIRC project was evaluated in 1981, and it was determined that retention rates among the participant GV officers were quite high. In addition, USAID/UV experience with the literacy program of the Aménagement des Vallées des Voltas (AVV) project supports this finding. Training efforts under this component will benefit from information gained during DIRC's pilot phase. This is particularly important as it relates to the scheduling of these training sessions. Allowing the participants to periodically return to their villages to attend other concerns is important and ensures greater participation.

b. More Effective Training Program for DIRC Village Trainers :

The purpose of this training is to make DIRC's village level agents & animateurs more effective in using the new instructional techniques to be developed under the Project. There will be periodic refresher courses each year for all DIRC agents at the Saria Center. During these courses, new training material will be introduced as well as training in the most effective ways of teaching this material. The content of these courses will help the DIRC agents to reinforce the literacy and management skills training received by GV management officers and enhance the teaching of more modern agricultural practices and the proper use of new technologies for the overall GV membership. The development of the refresher course curriculum will be an on-going effort by DIRC. After each year's training programs are completed, DIRC will evaluate the effectiveness of its training methods and, based on this evaluation, try to improve and refine the training methods and techniques.

c. Development of More Appropriate and Improved Training Techniques and Materials for GV Membership Training :

USAID/UV will provide two long-term technicians who will work in the Section de la Formation under this component: an Agricultural Economist and an Audio-Visual Specialist. The Agricultural Economist will have advisory responsibilities for the development of training courses which emphasize management aspects of cooperatives and agri-business enterprises. The management techniques will be incorporated into GV management and general GV membership training. The Audio-Visual Specialist will aid in the development of the complementary materials which will be used by DIRC agents for GV membership training. A locally hired Voltan artist will aid in the development of the audio-visual materials. As mentioned in (b) above, the development of these training materials will be an on-going process throughout the LOP. After each year's training program is completed, a DIRC evaluation will take place to determine ways of improving the various training programs. The materials and techniques developed will be included in the DIRC agent training.

The basic approach used by DIRC in its training program for general GV membership was developed by the Groupement de la Recherche Appui pour l'Auto-promotion Paysanne (GRAAP). The GRAAP technique was developed in the Ivory Coast but has become standard across most of Francophone Africa for non-formal rural training programs. GRAAP emphasizes the organization of village groups for facilitating various agricultural, self-help or commercial non-agricultural enterprises. The GRAAP techniques emphasize the use of simple pictures of a particular theme which are easily understood by illiterate villagers. Also, accompanying audio programs are developed in the local language which further facilitates the learning process. DIRC with the aid of the technical assistance team will use the GRAAP method and develop

relevant materials based on the needs of the particular GV characteristic of a region. These training materials will be developed by taking into account the needs and constraints of the particular farming systems of the project zone.

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6. Managerial Training Fund

After many years of support to the formal education sector, development agencies are now beginning to realize the importance of technical skills training for the efficient operation of development projects and programs. In Upper Volta, it has been demonstrated that lack of mid-level managerial and technical skills is the major constraint at the operating level of development programs in both the public and the private sectors. Although there has been no formal survey to date, many private sector firms (both Voltan and expatriate-owned) have large numbers of expatriate mid-level technicians working in their companies due to the lack of mid-level skilled Voltan personnel. In the public sector, this need is even more easily seen as project after project becomes immobilized due to the lack of skilled personnel at operating levels of the central government and the ORDs.

The objectives of the training fund are :

a. In the short term, to increase the efficiency of current operations by strengthening and assisting the operational units in the public and private sectors, and

b. In the long term, strengthening the institutional capability of these operating units by training their technicians and middle management level personnel.

To attain these two objectives, the training fund component has set up a system capable of responding to diversity of needs of both public and private sector productive and operational units.

The fundamental implementation concept is the ability of the training fund to respond to perceived short-term demand rather than output numbers based on production goals. This latter would require an in-depth analysis of the manpower needs for the next five years which is beyond the scope of this Project both in terms of cost and time.

In this activity the main emphasis will be the idea of response to demand as an implementation concept : in other words, allowing the organizational beneficiaries of the training fund to help in the design and development of training, thereby increasing the chances of direct relevance of the training to their needs, and consequently increasing the impact of the training on their effectiveness.

In order to address these needs, this activity proposes to carry out training at two different levels. First at the Associate Degree Level or equivalent in the U.S. and Africa in the fields of management and technical skills related to rural development; secondly, with short term in-country managerial and technical skills training.

a. Training Grants Fund (TGF)

The training grants fund will offer scholarships for two year studies in the U.S. or in Francophone African countries in agriculture, civil and mechanical engineering, management (accounting, financial management, marketing, production, computer programming). At least 52 scholarships will be for U.S. Associate Degrees. The other scholarships will be offered in Francophone Africa for a total of 56 scholarships. The MRD has indicated a preference for training in Africa whereas the private sector is more interested in U.S. training.

The criteria used for awarding these scholarships are as follows :

(i) The candidates will be of Voltan citizenship.
(ii) The candidates will have a "Baccalauréat Technique" serie G for a scholarship in management or "Baccalauréat Technique" serie F for scholarships in technical engineering fields and "Baccalauréat Sciences" series D and D' for scholarships in agriculture (see Table 2)
(iii) Scholarships in line for a new or a vacant position in the public service must request training which is compatible in nature and in the field of study with the level of responsibility attached to and the technical knowledge required by the position.
(iv) The recipients admitted for studies in the U.S. will have to pass the TOEFL or ALIGU examination.

Table 2

NUMBER OF GRADUATING BACCALAUREAT TECHNIQUE IN 1982

(Source : Office du Baccalauréat)

	SCHOOL SEX	PUBLIC	PRIVATE	OTHER *	TOTAL
Serie G1 (Techniques Administratives)	M	5	-	1	6
	F	5	-	17	22
	T	10	-	18	28
Serie G2 (Techniques Quantitatives de Gestion)	M	11	12	11	34
	F	8	-	3	11
	T	19	12	14	45
Serie E (Math Technique)	M only	14	-	-	14
Serie F1 (Construction Mecanique)	M	14	-	-	14
	F	1	-	-	1
	T	15	-	-	15
Serie FE (Electro Technique)	M only	12	-	-	12
Grand Total	M	56	12	12	80
	F	14	-	20	34
	T	70	12	32	114

* Non-school affiliated individuals

NUMBER OF GRADUATING BACCALAUREAT SCIENTIFIQUE IN 1982

	SCHOOL SEX	PUBLIC	PRIVATE	OTHER*	TOTAL
Serie D (Mathématiques et Sciences Naturelles)	M	118	99	35	252
	F	20	17	2	39
	T	138	116	37	291
Serie D' (Sciences Agronomiques)	M	-	25	2	27
	F	-	-	-	-
	T	-	25	2	27
TOTAL	M	118	124	37	279
	F	20	17	2	39
	T	138	141	39	308

* Non-school affiliated individuals

DISTRIBUTION OF ALL BACCALAUREATS BY SEX IN 1982

	SCHOOL SEX	PUBLIC	PRIVATE	OTHER *	TOTAL
Candidates (sitting for exam)		989	827	1,392	3,208
Passed	M	338	213	101	652
	F	73	69	28	170
	T	411	282	129	822

* Non-school affiliated individuals

Given the issue of equivalency of American degrees to French degrees, one of the first tasks of the contractor will be the identification of the U.S. institutions which will be attended by the Project participants. The contractor will construct a file by institution with relevant information about the program including conditions of admissions, the titles and qualifications of the faculty. The contractor will submit this information to the DAAF, for review by the Ministry of Higher Education's Bureau of Equivalency. Those institutions which do not receive the appropriate equivalency level from the Ministry of Higher Education will not be used for Project participants. An appropriate level for the Associate Degree (BAC + 2 years) is considered a DUT (Diplôme Universitaire de Technologie) or a Technicien Supérieur. These titles correspond to the cadre B1 of the public service. At least 30% of the scholarships will be earmarked for the private sector.

b. Technical Skills Fund (TSF)

Short term in-country training under this fund will take place in two ways : it can be a straight grant to the client organization for on-going courses held by INADES, IPD and CESAO, or it can be for specially developed technical skills training courses carried out by the contractor for the client organizations. Both will be based on demand by client organizations. These organizations will have to establish the relevancy and usefulness of the training. They will do so by demonstrating the following :

(i) The importance of the client organization for the development of rural development in Upper Volta;
(ii) The relationship between the content of the training course and the skills required by the positions and activities of the participants; and
(iii) The qualification of the training institution to administer such training courses and the steps it has taken to ensure the training material is pertinent to the work environment of its client and to the profile of its target audience.

All requests will include a budget with the following line-items :

- Instructors' salaries and Per Diem
- Costs associated with the production and utilization of the training material.
- Participants' allowance, boarding and other expenses and
- Other operational expenditures associated with the execution of the seminar or course.

The request will also contain a detailed description of the contribution (financial or in-kind) of the client-organization.

The request from public and private organizations will be submitted to the Contractor through the DAAF of the Ministry of Rural Development. Final clearance for the award of the training grant will be obtained from the USAID at the Contractor's request along with DAAF's recommendations.

At least forty (40%) percent of the total amount of in-country technical skills training funds are reserved for private sector training needs.

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C. Component Three

7. Farming Systems Research

a. Introduction :

The MRD recently established the NES and gave it the mandate to develop a network of on-farm adaptive research programs in an attempt to accurately assess the suitability of recommended technologies coming from the numerous Voltan research organizations. Additionally, NES was given the responsibility of developing more effective linkages between research programs and extension efforts. The DSA has determined that more adaptive research was necessary, and that an FSR approach would be the most effective means of making existing research programs more attuned to actual farming conditions.

The use of an FSR approach and methodology has for the most part never been a major research tool in Upper Volta nor many other countries in West Africa. Until relatively recently, West African agricultural research and development efforts have been organized almost exclusively along commodity and disciplinary lines. Some of these efforts have met with a degree of success as with cotton in Upper Volta. However with few exceptions, they have not made significant progress in improving the region's basic staple food production. Furthermore, research and development efforts have typically focused on increasing yields and net returns per hectare by using some combination of improved seed varieties, fertilizers, pesticides and other chemicals, and associated agronomic practices including the use of animal traction. It was assumed that technical superiority and economic profitability would induce farmers to adopt improved practices.

A major reason for the mediocre record to date is the paucity of research results for major staple foods which represent clear advances over traditional agricultural methods. This lack is traceable both to the relative neglect of research on major food crops such as millet and sorghum until the last 10 years as well as the basic problem of overcoming constraints placed on improving plant growth by an environment of low and erratic rainfall, low and possibly declining soil fertility, and widespread poverty. A growing number of agricultural researchers now seriously doubt whether major progress in improved techniques for staple foods in West Africa comparable to the technical packages developed elsewhere for rice, maize, and wheat is possible in the medium term. Yet research results continue to accumulate and include at least some mildly promising results which may, with adaptation, be useful and applicable in Upper Volta.

The changes one may realistically expect to take place in the region's staple food production over the next 10 years involve a series of gradual or evolutionary steps. The spread of animal traction is one of the more dramatic examples. The key consideration here is not simply to identify technically and economically feasible innovations but also to integrate them into existing farming systems. Thus, it becomes necessary for researchers to understand the existing farming systems' character in order to intelligently and more accurately identify promising interventions. Research must consider the farm family's environment, its objectives, and its principal constraints. Only then does the often compelling rationality of existing farming systems become readily apparent. This is particularly true of systems found north of the 900 mm rainfall line where most Voltan farm families live. Their choices are relatively few and the margin for error extremely small.

Existing farming systems can be viewed as tried and true survival strategies gradually refined over hundreds of years. At the same time, changes are possible, especially if these changes are attractive to the farmer and easily integrated into the system. In fact, in some parts of the country changes are essential if further environmental deterioration is to be averted.

Accompanying a growing understanding of existing farming systems is a growing appreciation of the differences between systems and the need to devise site-specific intervention strategies. This does not mean that a radically different technical package must be designed for each village or family. It does mean that, with a few notable exceptions, technological packages suitable and acceptable for large areas are unlikely to be forthcoming. It also means there must be some mechanism to select and try appropriate interventions on an area-by-area basis which draws upon a range of readily available research results.

Finally, there is a need to strengthen the often non-existent linkages between researchers on the one hand and the extension services and farmers on the other. There must be mechanisms for farmers to participate in the process of developing technologies they are subsequently supposed to adopt.

Over the past few years attempts at developing FSR methodologies for Upper Volta were undertaken by the International Crop Research Institute for the Semi-Arid Tropics (ICRISAT) Economics Program and the USAID-supported Farming Systems Unit (FSU) under the regional Semi-Arid Food Crop Research and Development Project (SAFGRAD).

b. Farming Systems Research :

Broadly defined, FSR is research which is holistic and uses a systems approach for interpreting the complex interactions within agroecological specific cropping and livestock production systems. FSR emphasizes an inter-disciplinary approach to analyzing farmers' production constraints, consumption goals and farm management strategies within the context of the existing resource base. The focus of FSR is the rural household as a production - consumption unit and attempts to assess socio-economic as well as technical influences affecting agricultural production. The ultimate objective of FSR is to design appropriate technologies in a cost-effective manner using the farmer as an active participant in the research effort.

FSR has evolved slowly over the past 20 years and still needs testing and refinement. There is no pure FSR methodology, and many FSR efforts have adapted to specific conditions of farming environments and national research budgets and infrastructure. Under FSR, farm level research is considered a central activity in shaping national research programs which have emphasized experiment station research. However, FSR is seen as a complement, not a substitute, to national or regional commodity research programs.

In general, FSR programs incorporate all or some of the following steps :

(i) A series of socio-economic and farm management surveys are administered to assess farmer problems and constraints to achieving their production goals;

(ii) Research station trials are tested at the farm level in several different agroecological production systems;
(iii) Economic, technical and related analyses of the on-farm trials are evaluated;
(iv) A series of pre-extension trials of promising technologies are undertaken with farmer managed supervision;
(v) Extension of those technologies proven viable to a broader group of farmers.

Although there is considerable debate on the issue, it is generally felt that adaptive research aimed primarily at developing and testing strategies for specific areas does not need to be preceded by exhaustive base line surveys in each instance or involve the use of sophisticated data collection and analysis techniques. Instead, there is a tendency to rely on what is commonly referred to as "rapid reconnaissance" techniques which can be carried out with the use of relatively experienced but not necessarily highly trained multi-disciplinary teams.

Most FSR discussions imply that such activities should precede extension efforts. However, in most instances extension efforts of some sort are already in progress in most parts of Upper Volta. FRS can serve as a mechanism to assess critically the adequacy of ongoing technical packages as well as suggest and test possible modifications. Thus FSR can also serve to provide an adaptive research component for ongoing projects, provide a link with the research institutions, and continuously upgrade and refine the technical packages.

- Farming Systems Research Activities in Upper Volta :

As mentioned earlier, ICRISAT and the FSU under the SAFGRAD Project are developing FSR methodologies for Upper Volta.

Agricultural research activities carried out by ICRISAT (whose headquarters is in Hyderabad, India) are based at the Kamboinsé Research Station and include a range of applied research activities from plant breeding, agronomy and entomology to soil and water management. ICRISAT's specific commodity focus is on sorghum and millet. ICRISAT's activities in Upper Volta do not formally include adaptive or farming systems research, however, the work its Economics Program carries out is very much of this nature. Since 1979 the Economics Program staff has been engaged in the following activities :

- A reconnaissance survey of central and western Upper Volta;
- Detailed on-farm surveys that involve farm management data collection in selected villages representative of three distinct climatic zones; and
- Selective on-farm testing of potential improvements for sorghum, millet, and soil and water management practices in collaboration with scientists. The major focus of their work is to generally refine research results emerging from the ICRISAT program and help define research priorities.

The Farming System Unit (FSU) of the SAFGRAD Project is part of a regional program serving 25 countries in Africa's semi-arid tropics. Established in 1979 under the terms of an AID contract with Purdue University, the FSU has carried out a full range of farming systems research activities in several locations in Upper Volta including villages in the ORDs of Fada, Ouagadougou, Kaya, Ouahigouya, and Bobo-Dioulasso. The multidisciplinary research team includes agronomists, anthropologists, and agricultural

economists. Commodities of specific interest include the whole range of grains and grain legumes found in the semi-arid tropics.

The FSU has designated three of the villages in which it operates as laboratory villages. Detailed socio-economic and technical surveys have been carried out in these villages. These are then used as reference points for designing improvement measures. The FSU is presently concentrating on the on-farm testing of various improvements including applications of rock phosphate, a donkey- drawn planter, pure stand cowpeas with pesticide applications, and improved seed fertilizer packages for sorghum and maize. The FSU is primarily concerned with designing and testing improvements for extension to farmers in its test site areas. It is working closely with certain other institutions concerned with extending improved farming practices including the ORDs and a Dutch-supported project in Kaya. The FSU also interacts with fellow scientists in the SAFGRAD program, namely the IITA-staffed maize and cowpea improvement programs as well as ICRISAT and IRAT scientists working on sorghum, millet, groundnuts, and soil and water management practices.

The FSU has formal regional responsibilities to help develop farming systems research throughout the SAFGRAD zone, but to date virtually all activity has been confined to Upper Volta. The first phase of the program will end in mid-1983.

In addition, other organizations support and carry out farming systems-type work in various parts of the country. For the most part, these other programs emphasize trials of various farm level practices and studies of specific technical and socio-economic aspects of farming systems in selected locations sponsored by different donor agencies. Their programs do not, however, cover the full range of FSR activities, and the work is often oriented towards a single discipline or commodity. A new program recently initiated to introduce decentralized on-station research at the ORD level is the Point d'Appui de Prévulgarisation et de l'Expérimentation Multi-locales (PAPEM). The PAPEMs are to be sub-stations under the ORDs with about 10 to 15 ha. of land and will carry out on-station technically oriented trials of improved practices and varieties generated by research institutions. The PAPEM program, however, will not include farmer managed trials and, thus, does not fully incorporate an FSR perspective.

The MRD, through the NES, proposes to implement ORD level FSR activities through the establishment of FSUs. The development of the FSU under USAID support to the SAFGRAD Project provides Upper Volta with a unique opportunity to operationalize and expand this vital facet of agricultural research. The NES, with USAID support, will use the FSU FSR methodology developed under SAFGRAD.

c. The SAFGRAD Farming Systems Unit Methodology :

SAFGRAD is an Organization of African Unity/Scientific, Technical and Research Commission project receiving funding from a number of international organizations. At present, there is on-going research in the 25 African countries participating in SAFGRAD. SAFGRAD's mandate is to develop improved cereal varieties (millet, sorghum, and maize), grain legumes (cowpea, groundnut) and improved agricultural practices which are compatible with small semi-arid farming systems. SAFGRAD emphasizes the development and improvement of linkages between regional and national research programs, national research programs and extension services, and extension services and the farmer. Within the overall SAFGRAD network,

an FSU was established in Upper Volta with USAID assistance.

The development of an appropriate FSR methodology for Upper Volta has been a gradual process. As of 1982, a cadre of FSU Agronomic Assistants has been trained and they are currently carrying out a program of farm level surveys and varietal and related agronomic trials.

1) FSU Objectives :

The principal objective of FSU is to identify and test agricultural technologies with a target group of small farmers by accumulating increased information and knowledge of small farms in the semi-arid regions of Africa. To achieve this objective, an inter-disciplinary team of scientists conducts socio-economic and agronomic studies involving farmer participation at the farm level. The objectives of FSU are :

a) Analysis of small farm conditions on as regional a basis as possible, leading to the design and implementation experimentally of potential modifications (equipment, fertilizer, crop varieties, cultural practices) in the agricultural system which will be economically and socially feasible to a majority of farmers, improving their security and welfare;

b) Recommendation of improved technical packages or extension procedures which will be acceptable to large groups of farmers within select zones. Such recommendations must be within the capability of national extension services to implement;

c) Training of host country personnel at various levels appropriate to farming systems research orientation (socio-economic research investigators, field trial personnel, data analysis technicians, computer operators, and professionnals in agronomy, economics and social sciences).

2) FSU Methodology :

FSU has evolved a methodology combining experience gained through a number of intensive socio-economic surveys developed by research efforts within Upper Volta (USAID's Eastern ORD Integrated Rural Development Project) and by international research institutions (CIMMYT's use of reconnaissance surveys developed by Collinson). The major stages for conducting FSR in semi-arid zones are :

a) Preliminary Delineation of Homogeneous Zones

Using secondary data, map out for a country what may provisionally be considered to be homogeneous zones, in which small farmers could be said to practice, more or less, similar farming systems. Any zone can be expected to include a number of ecological niches. The extent and relative importance of similar niches across zones can be a basis for zonification.

b) Reconnaissance Surveys

Using this preliminary orientation, conduct a reconnaissance type survey within those zones which seem potentially feasible for further study, and which show greatest potential for successfully influencing the greatest number of farmers. Eventually, such surveys should really be conducted in all the zones of a country to provide the groundwork for future work. Initially this might not be possible. When a reconnaissance survey is completed, results may signal the presence of major differences which would necessitate redefinition of the zone. On the other hand, the survey may support the earlier definition of the zone. The limits of this zone need to be identified.

c) Detailed, Long Term Socio-economic Survey

Village sites are selected for greater descriptive, quantitative, long-term research. During the first year, a socio-economic survey is conducted, with perhaps some controlled field trials on farmer's fields. Such trials would only be possible if the research team involved felt they had the means of designing a trial which could potentially be useful in the zone concerned.

d) Research Managed Trials

During the first year, and in all subsequent years of research in a laboratory village, a number of trials will need to be placed which require a degree of control beyond the farmer's capability. Such trials are basically an extension of the types of trials placed on an agricultural research station. Here, trial procedures and controls match as much as possible those of the station trials, though the trials themselves are usually less complex. A common solution is to have an agricultural research assistant oversee the plots, and try to get the farmer to perform the necessary operations on a timely basis (or the assistant does it himself). Such trials are important because they do test out station material on a more localized basis. Fertility trials associated with such plots give useful information.

e) Farmer Managed Trials

These trials are the result of the interdisciplinary team's synthesis of the relevant available data for the farming system of the zone. This team will design a trial, using available technology and information and material (crop varieties) from the research station, which seem to articulate appropriately within the farming system of the farmers of a particular zone. One does not change a farming system outright, one can only, little by little, change components of an existing system. These little changes added over time may evolve into what may be a new system.

The FSU also emphasizes close collaboration with the National Extension Service because it is ultimately responsible for extending any new development coming from a village to the farming system as a whole.

3) Alternative Methodologies :

The only relevant alternative FSR methodology developed for Upper Volta is the approach developed by ICRISAT's Economics Program. The goals and objectives of ICRISAT and SAFGRAD's FSR program are essentially the same and the methodologies do not differ in any substantive way. ICRISAT's major focus, however, is to generally refine research results coming from its own breeding and agronomy program and to help define research priorities for its program. The SAFGRAD FSU incorporates varietal and related technological research coming from several research institutions. The most attractive aspect of the FSU, methodology, however, is its emphasis on collaborating with the extension service at the regional levels via the ORDs in its adaptive research program.

d. The Service National de l'Expérimentation et des Etudes d'Accompagnement (NES):

The MRD has given the NES the mandate to carry out FSR, and with USAID support through this Project, the NES will use the FSR methodology developed under SAFGRAD and establish FSUs at the ORD levels in the regions comprising the Central Plateau zone : Ouagadougou (Centre), Kaya (Centre Nord), Ouahigouya (Yatenga); and the semi-arid region of Dori (Sahel). The Central Plateau zone also provides a vertical stratification of Upper Volta, and, thus, several agroecological zones will be included in the NES FSU network. The Central Plateau has exhibited a long term stagnation in cereal yields and has received priority consideration for research efforts, particularly as they relate to food crop improvements. By including Dori as a region for FSR focus, information related to constraints affecting livestock production systems and development of improved forage and pasture lands can be analyzed and new technologies and approaches developed. Additionally, the potential for developing extension recommendations which could be applied to neighboring Sahelian countries with similar semi-arid farming and livestock systems is large.

1) The National Experimentation and Applied Studies Services :

The NES Farming Systems Units (FSU) will be based at the 4 ORDs of Yatenga (Ouahigouya Region), Centre Nord (Kaya), Centre (Ouagadougou) and Sahel (Dori). These ORDs essentially cover the Central Plateau area of Upper Volta. An Ingénieur Agronome will head the FSU staff at the ORD level, and he/she will be responsible for coordinating and supervising an annual plan of multi-local, pre-extension varietal, fertility and related agronomic trials; a series of selected farm management surveys; and, in collaboration with extension counterparts, periodic farmer demonstrations.

The Ingénieur Agronome will be assisted by Agents Techniques Spécialisés (ATS) who will be stationed at the sector or sub-sector level. The ATS will provide a management and advisory link between the ORD and the village-level FSR program. Their main duties will be to provide on-the-spot advice to the village level informants, observers and farmers and act as the first management link in the organization and processing of the research data.

The village level observers will provide the day to day management and oversight of the research and farmer-managed trials. They will also carry out a program of farmer interviews throughout the cropping season to evaluate farmers' perceived constraints surrounding a particular variety or related technology.

The ORD level structure of the FSUs will be backstopped by the head NES office in Ouagadougou. Under the Chef du Service and the other administrative offices are four sections responsible for a particular function of the FSR process. Each unit will be likewise directed by an Ingénieur Agronome.

It is important to note here that even though the NES organizational structure is composed of 4 sections carrying out a specific function of the FSR process, constant information flows and collaboration between units is necessary to ensure the continuity of the research process. Thus, the following description of each unit is, more or less, a description of the function within the FSR process, and any conception of these units carrying out their functions independent of any of the others must be avoided.

- Etudes Agro-Socio-Economique : This section under NES has primary responsibilities for delineating the different farming systems in which villages will be selected to implement the program of on-farm trials. In the early years of the Project the studies unit will rely on analyzing secondary data to determine the farming systems. Once the farming systems have been identified, a series of reconnaissance surveys will be administered to determine which farming system will be included in the yearly research program. Criteria for selecting a particular farming system will include potential for crop development and the size of the affected population. The reconnaissance surveys will refine the preliminary analyses regarding the mapping of farming systems.

Once farming systems and village sites are delineated a series of socio-economic surveys will be carried out to determine the resource constraints inhibiting agricultural production potential, farmer motivations and farm management strategies. It is within the context of these farmer-identified constraints that the technologies will be evaluated. The socio-economic studies will not call for sophisticated data analysis techniques or intensive surveys. If it is considered desirable to undertake more intensive data collection regarding the socio-economic characteristics of a particular farming system, the NES will contract with other capable and experienced organizations such as Office de la Recherche Scientifique et Technique d'Outre-Mer (ORSTOM) or Société Africaine d'Etudes et de Développement (SAED), which have research programs in Upper Volta.

- Prevulgarisation (Pre-extension) : This unit will have responsibility for developing a program of research managed and farmer managed trials to be implemented by the ORD FSU. The prevulgarisation Unit will work closely with IVRAZ and research institutions in determining the research programs and priorities, and it will feed back information into research information gained from the farm-level analyses relating to the technologies being tested.

- Bureau des Analyses (Analysis Bureau) : The Analysis Unit will be comprised of 3 sub units : Statistics, Laboratory and Data Processing. This unit will be responsible for processing and analyzing data coming in from the field. The data will include both production and socio-economic data. Within the Analysis Unit will be computer capacity and various programs and treatments of data will be developed. Information resulting from the analyses will be presented in a series of reports which will aid both the Studies Unit and the Extension Liaison Unit in transmitting continual information to the IVRAZ research institutions and for the development of the technical packages to be disseminated to farmers.

- Bureau de Liaison et de Conseil Technique (Extension Liaison and Technical Assistance Unit):
This unit will be responsible for transmitting information related to the development of technological packages for the Extension Service. The Extension Liaison Unit will also collaborate closely with extension in formulating the packages which will be disseminated to Voltan farmers.

- Documentation Center : In addition to the 4 sections carrying out FSR, the NES will also establish a Research Documentation Center located at the NES head office in Ouagadougou. This documentation center will organize and store research-related information at a central location and make it available to the research community.

e. Characteristics of the Central Plateau and Dori Farming Systems :

1) Central Plateau :

The Central or Mossi Plateau has a 600 to 900 mm annual rainfall, higher in the south and lower in the north. The plateau's central portion has a single peak annual rainfall of 700 to 800 mm with considerable year-to-year variation. Drought resistance and the ability to produce some crops even in relatively poor years are essential characteristics of the crop varieties farmers grow in the region's northern portions.

Central Plateau soils are generally poor in quality due to population pressures. Relative to other parts of the country, soils are generally less fertile with a thin layer of soil often covering laterite and hardpan. Drainage is a common problem in bottom land (bas-fonds) soils. Grass species in the region suggest that soil nutrient depletion may not be as severe as is often suggested. Productive forage grasses such as Andropogon gayanus are still common and may be dominant in fallow land. Species that indicate overgrazing or extreme soil exhaustion such as Sprorobolus are rare. Most important to note are the variations in fertility levels among fields farmed by a single household unit. Farms often include relatively rich bottom lands (bas-fonds), fields which adjoin compound areas where manure and other compound wastes are routinely applied, and relatively less fertile bush fields some distance from the compounds. Farmers readily recognize differences in fertility levels and their choice of crops for specific fields reflects these fertility differences.

While there are unquestionably considerable differences in detail among farm family objectives (a probability that may explain a fair portion of the diversity in farming systems of contiguous compounds and villages), it is reasonably clear that the farm family is mainly interested in improving incomes and avoiding risk. Food security is a major consideration. However, a growing number of Mossi households are dependent upon the market for a portion of their staple food needs. Moreover, production and sale of other agricultural commodities (red sorghum for beer, peanuts, cotton, sesame, roselle, and small animals) still remain important. Together these suggest that food self-sufficiency on a household unit basis may not be as important a consideration in determining the region's enterprise mix as is sometimes asserted. The fact that the average agricultural work day even during the peak labor period is only 6 to 7 hours (as compared to nearly double that figure in other countries) suggests that activities including leisure and various other non-agricultural pursuits have higher priorities.

Millet is the most important single commodity throughout the region. Sorghum (red and white) is second followed by roselle which is grown as a border crop on most fields. Although less than half the farmers have cash crops, many farmers produce peanuts, roselle, and cotton (in order of importance) for sale. Millet generally produces less yield than sorghum in an average year, but millet is more likely to produce a crop in a poor year or on poor land. This explains its preeminence in the region. The next two most important crops, peanuts and roselle, are also used in the normal Voltan diet and have reasonably good drought tolerance.

Virtually all households maintain livestock as part of their farming systems, usually chickens and small ruminants. Wealthier families own cattle which are often entrusted to Fulani herdsmen. There is a growing use of and demand for donkeys for transport and various agricultural activities, particularly

cultivation.

Total area under cultivation in a given year averages approximately 7 ha per household although there is a significant variation around the mean. The cultivated area is distributed among an average of 13 fields. Roughly half are large family fields controlled by the household head on which most of the cereal is produced. Nearly all the remaining plots are small and controlled by individual female members of the household (mostly wives of the household head).

A comprehensive discussion of cropping patterns and practices for rainfed agriculture should include the full range of activities commencing with the clearing of land before the rains start in May/June right through to crop harvesting in October/November. However, in the interest of brevity, the following comments focus on the planting and weeding period which extends roughly from June to late July. It is in this period that the labor constraint is most binding, and the activities and events (the presence or absence of rain) taking place critically affect production levels in a given year. Most proposed improvements (such as improved inputs and cultural practices) discussed in the following section must also be performed during this period. Therefore, the acceptability of specific improvements will be related not only to their profitability as calculated in conventional financial terms but also to their compatability with existing activities during this period.

A farm family's basic objective during this period is to maximize total agricultural production (with priority upon staple foods) given the fertility and size of its holdings; the size of the labor force at its command; and its ownership or access to animal traction. Except in the bas-fonds areas, households do not normally commence planting until the first major rain after the end of May. They know from experience that rains before this period are unlikely to be sufficient to support crop establishment.

As many of the large family fields as possible are planted with millet and sorghum. Intercropping these cereals with cowpeas and to a lesser extent groundnuts is common. Planting is normally done with a simple daba hoe without further seedbed preparation or plowing. Planting family fields is followed by planting individually owned bush fields with the same crops, then maize, groundnuts, and earth peas (Voandzeia). Finally roselle is planted as a border crop around the fields.

In the event that the rains arrive late, or some or all of the first planting does not survive due to insufficient moisture after the first planting rains, farmers will alter their planting strategy by replacing longer maturing crops with faster maturing ones.

Farmers do not as a rule plow their land before planting because the plowing operation will significantly reduce the amount of land they can plant immediately after the first major rain. Farmers wish to get as much of their crop planted as quickly as possible after the first rain. This will allow the crops to emerge at the same time as the weeds (rather than after) and, thus, facilitate timely weeding. Crops planted later also tend to suffer from the particularly unpredictable nature of late season rains. Farmers commonly plow or cultivate fields before planting only when there has been significant weed growth due to earlier rains. This is particularly true during or before the second planting period. This follows the second planting rains since farm households are normally unable to complete all

the planting activities before the soil becomes too dry after the first planting rains.

Farmers apply little fertilizer to crops in the region, but manure and compound wastes are used particularly on compound plots and fields nearest the compound. Millet is less frequently grown on the manured fields because it does not respond as well as other crops to the higher fertility levels. Limited amounts of engrais coton are used primarily for cotton.

Weeding is by far the most time-consuming activity in the farming calendar. The first weeding normally takes place approximately three weeks after planting, followed by subsequent weedings as required. The initial weeding is most important since the weeds compete most strongly with crops at that early period. Farm families do not plant more than can be properly weeded with available family labor even when this can be supplemented by animal traction.

There is currently an increasing demand for animal traction and some evidence, particularly from the Kaya area, that animal traction may help alleviate labor constraints during the weeding period and allow farm families to expand their arable area by at least 20 percent with existing family labor. Additional experience with animal traction is likely to improve the efficiency of the cultivation operation so that the acreage expansion can be further increased. The main constraints to the increased use of animal traction appear to be the inadequate supply of animal traction equipment and an extension package inappropriate for drier areas.

2) Dori :

The ORD of Dori lies in the Sahel ORD. It is located in the extreme northern part of Upper Volta with an average annual rainfall of 600 mm. Dori is the driest zone and the least densely populated. Livestock production is the dominant economic activity. Agrigultural production is largely limited to millet and some sorghum as well as groundnuts and sesame.

3) Research Priorities for the Central Plateau and Dori :

Central Plateau : Research priorities for the Central Plateau region must relate to the following constraints inhibiting agricultural production :

a) The need to continue rainfed production despite low and uncertain rainfall;

b) Fragile, eroded, acidic soils deficient in phosphorous;

c) Seasonal labor bottlenecks;

d) The need to raise yields because of growing land scarcity;

e) Low returns to fertilizers caused basically by poor farm practices.

Although the NES will not have the capacity to address all the research needs related to these constraints, at least in the first years of the project, there are areas where progress can be made towards alleviating some of these problems. A discussion of several possibilities follow.

Halting both soil erosion and the decline in soil fertility will be a high priority research concern for the NES in the Central Plateau. There is growing evidence that current fertilizer recommendations involving the use of engrais coton may actually be aggravating the situation by causing soil acidification. On the positive side, farm-level trials to date involving fertilizer application and anti-erosion practices have yielded promising results, which might be extended to large numbers of farmers during the 1980s. Specific measures include :

- Using locally produced rock phosphate, possibly in combination with sulphur, on groundnuts and grains, thereby reducing dependence upon soil-acidifying imported engrais coton. Response rates to rock phosphate are still unknown with certainty, since the first demonstrations were carried out only in 1976. In general, most crops respond. The yield effect is largest for cereals, among which maize appears to have the highest response. Cowpeas respond less well than millet or sorghum. Imported soluble phosphatic fertilizer tends to give a better yield response than rock phosphate alone, especially at low levels of application, but the response to rock phosphates could be improved by finer grinding, partial acidification, and the complementary use of soluble phosphates at critical stages in the plants' growth. Over the long term, application of rock phosphates may further raise yields by reducing soil acidity as the result of the large amount of calcium (Ca) they contain (estimated at about 34%). This potential has yet to be fully demonstrated and will be reduced to the extent that natural phosphates are chemically treated with various acids to improve their solubility.

- Erecting small ridges (mini dikes) with local materials (soil, rocks, grain stalks) on eroded slopes to catch and retain soil.

These actions can be strongly complemented by expanding groundnut and cowpea production in rotation with grain crops. In the case of groundnuts, research has indicated a highly profitable first year response to a mixture of rock phosphate and elemental sulphur. Residual effects of the rock phosphate will increase grain yields an average 7 percent per season over a three-year period. This does not take account of the possible beneficial effects of the groundnut crop on subsequent cereal crops through nitrogen fixation.

Research has indicated that significant cowpea yield increases are both possible under Voltan farm conditions and attractive to farmers when grown i pure stand using pesticides. Although these results should be regarded as indicative rather than definitive, they are sufficiently promising to recommend widespread pre-extension trials on farmer's fields.

An important consideration for the NES will be to investigate what effect these measures will have on the existing seasonal labor constraints. A strong assumption here is that the measures outlined in the preceeding paragraphs need not aggravate that constraint because the application of rock phosphate would take place once every 3 to 5 years, particularly if a rotation involving groundnuts were used. Additionally, expanded grain legume production may partially alleviate seasonal constraints through the addition of flexibility in planning periods and weed suppression practices. However, expansion of grain legume production would imply a reduction in land devoted to grains.

Despite the shortage of land and increasing population densities, labor availability at the planting/weeding period still emerges as the critical constraint. Overcoming this constraint will be a key factor in influencing the composition of the farming system and the acceptability of improved techniques. Given the labor scarcity problem during the cropping season, the use of animal traction becomes a key element in FSR in the Central Plateau area. It has been argued in the past that the adoption of animal traction in Upper Volta is constrained by numerous factors, including high costs and low returns. As a result, its use in the country is less than in some of its neighbors (Mali has an estimated 150-175,000 ox teams), despite efforts by various agencies to promote it. High growth rates (an average increase of over 25% per year since 1965) suggest, however, that the low use of animal traction in Upper Volta may simply reflect the fact that it was started later in the country. It is also clear that some constraints are being overcome-- including the availability of equipment, financing for purchases, and familiarity with the technique. Economically, the terms of trade have at least been neutral with respect to animal traction, and improvements in productivity may have increased them.

Specific practices relating to animal traction use either currently used by farmers or showing promise in farm-level trials include :

- Preplanting land scarification using a houe manga (a three pronged cultivator) to facilitate line planting and obtain better moisture retention and improved seeding establishment;

- Plowing land to remove early weed growth prior to planting where necessary;

- Inter-row cultivation (in some areas farmers plant "on the square" so that crops can be weeded in two directions at right angles); and

- "Tie-ridging" and bunding to encourage water conservation.

NES should also concentrate farm level research on refining an animal planter which can combine planting and preplanting scarification operations. There are several further refinements in animal traction equipment as well as animal draft husbandry considerations which will be given high priority attention by NES if the use of animal traction in the central region is to be sustained and expanded.

The improvement of varieties, particularly for cereals, which can better perform under the stress of farming conditions will be a major component of the NES annual research program. Despite the relatively small amount of research on cereal grains in Upper Volta, a number of selected cereal varieties are considered by Voltan research agencies as suitable for recommending to farmers. The major ones are summarized in Table I. No improved millet variety appears widely used. The most often cited reason for this is the need to adapt millet varieties to extremely localized conditions. There is also still a need to develop a sorghum variety that will increase yields significantly under a wide range of conditions. Considering the lack of success in improving local varieties, the NES is considering testing varieties from other countries with similar ecological conditions.

With improved locally adapted varieties developed on research stations the yields technically possible in Upper Volta are much higher than those currently achieved by farmers with traditional varieties and methods (see Table III econ analysis). These results indicate the large potentials for gains in output without increasing cultivated land. Through its adaptive research network the NES will try to push traditional yields towards the optimal frontier under farmer managed conditions. For the time being, however, improved varieties still cannot compete with farmers' own varieties of sorghum and millet.

Dori : The NES will likewise emphasize similar FSR priorities of the Central Plateau zone to the Dori ORD which has a much more arid agroecology. In addition, the FSU in the Sahel ORD will concentrate on the development of various under-exploited crops with superior nutritional value such as the Jojoba Bean, Maramo Bean, Teperacy Bean, Guayale, and Jicmamo (tuber).

Furthermore, livestock herding and livestock related enterprises are the dominant economic activity in the Dori region, and FSU activities will investigate forage crop development. The 2 predominant forage grasses in the region are Bracharia and Stylosanthes. Of particular importance will be FSR related to the use of fodder crops in the crop rotations of farmers keeping cattle. Fodder crop research will emphasize the various species of grasses and legumes which grow naturally as well as selected varieties developed on research stations.

Table 3

Crop	Name	Type	Potential (mt/ha)	Origin
Sorghum	Nongomsoha	local, improved	3.5	Upper Volta, IRAT
Sorghum	S29	local, improved	4.0	Upper Volta, IRAT
Sorghum	Gnofing	local, improved	3.5-4.0	Upper Volta, IRAT
Sorghum	Frikan	local, improved	3.0	Upper Volta, IRAT
Sorghum	Ouedezoure	local, improved	3.6-4.0	Upper Volta, IRAT
Sorghum	IRAT S13	cross, fixed line	3.5-4.0	Senegal, IRAT
Sorghum	940	cross, fixed line	4.5-5.0	Niger, IRAT
Sorghum	IRAT S8	cross, fixed line	4.0	Upper Volta, IRAT
Sorghum	IRAT S7	cross, fixed line	4.0	Upper Volta, IRAT
Sorghum	271	cross, fixed line	3.5-4.0	Nigeria, IITA
Sorghum	E-35-1	cross, fixed line	4.3	Upper Volta, ICRISAT
Millet	SRM Dori	local, selected	2.0	Upper Volta, IRAT
Millet	Zalla	local, improved	2.5	Upper Volta, IRAT
Millet	IRAT P8	synthetic	2.5	Upper Volta, IRAT
Millet	SRM P5	local, selected	2.5	Mali, IRAT
Millet	SRM P4	local, selected	2.5-3.0	Mali, IRAT
Maize	Jaune Flint de Saria	local, selected	3.5	Upper Volta, IRAT
Maize	Jaune de Fo	local, selected	4.5	Upper Volta, IRAT
Maize	Massayomba	local, selected	5.0	Upper Volta, IRAT
Maize	IRAT Z80	recombination	6.0	Upper Volta, IRAT

Sources : From RHV, MDR, DSA, IRAT, "Sorghum-Mil-Maïs--Variétés Sélectionnées Vulgarisables-- Fiches Descriptives -- Répartition Géographique" n.p. (1978?). ICRISAT variety from RHV, MDR, DSA, ICRISAT, "Annual Report 1979", Kamboinse, (1980?).

8. Food and Food Technology

As discussed in the Description of the Project, Section I.E., there will be three small studies and one national level survey :

(1) A study of household allocation of time and energy, particularly of women relative to food;

(2) A study of food sources and processing methods and intrahousehold allocation of food;

(3) A study of income sources and production systems and their effects on food consumption; and

(4) A national sample survey of income, production, food prices, household food consumption, and simple measure of nutrition status.

Each of the studies will be carried out in a small number of ecologically, agriculturally, and ethnically representative villages. Study and survey villages will be some subset of the twenty groupements villageois which are to be targeted for credit and income generation programs in this Project. Lessons learned from the results of the small studies will be used to establish necessary sampling methods, variables, and survey instruments for the national survey. It is anticipated that the studies will be undertaken on a staggered schedule, beginning 6-9 months apart.

a. Management of the Study and Survey Efforts

The Chief of the Survey Coordination and Implementation unit will have overall responsibility for execution of the studies and the survey. Under that individual will be the four principal investigators (PIs) for the studies and the principal investigator for the survey. Analysis of data will be carried out by the Statistical Analysis Unit in conjunction with the PIs using the microcomputer to be installed in the FFTS when necessary. The results of the analyses will be forwarded to the Planning Unit which will, in collaboration with the PIs, provide input to the Food Technology group in the Food Analysis and Technology Section. The results of the studies and survey will also be used in development of the national food plan in conjunction with input from the Ministry of Health.

The PIs will be professionals with advanced training in specific subject matter of the surveys and in research design. They must have had experience carrying out data collection in the field. If qualified Voltans cannot be found, expatriates will be used (e.g. graduate students, Peace Corps Volunteers or professionals). To the extent possible, the PIs should be women as much of the field staff will also be women. The PIs will be responsible for selecting and training the field chiefs and field assistants in the studies. Where possible, the same field staff should be used for subsequent studies (i.e. they all should be used for the survey).

A field chief will be used in each site. Each have had more than 8 years of schooling and the mathematical skills required for the individual studies. The chiefs must be fluent in French and the local language of the study area. It is desirable that field chiefs are women. Field chiefs will live in or near the study village. Each field chief will have two female field assistants from the study areas who will help in data collection.

The field chiefs will be trained alone for one month and the field chiefs along with their assistants will be trained for an additional two weeks during which time they will pretest the study instruments. The PIs will bring the entire field staff together twice during each study to discuss results, handle data collection problems, and maintain interest in the study.

The field chiefs will be trained to help in the analysis of data as well at the PIs discretion. On-going field tabulations of data will be used to monitor quality of data being collected.

Each study and survey will gather data during each of the distinct agricultural seasons : July-September, October-December and April-June.

In all cases the data collection effort will require two years : 6 months in design, training, and pretestings, one year of data collection, and six months of final analysis.

b. Study No.1 : Household allocation of time and energy, especially of women relative to food

- Objective : To determine major resource constraints to using available food in the household.

- Sampling : The study will be carried out in each of 8 Groupements Villageois (GVs) communities sampling a total of twenty households, ten in which the women participate in the GV and ten in which no women participate in the GV. Surrounding villages will be included if an insufficient population is associated with the target GV. Participant households will be randomly selected to represent a socio-economic cross-section of the community.

- Design : Data will be collected on daily and seasonal work schedules of women, men and children using focus group interviews, key informant interviews, activities diaries, and randomized observations of activities, in addition to questionnaires. In each season, all members of all participant households will be weighed and the age of non-adults estimated (a hospital scale with calibration weight will be shared among the areas and will be transported among them and calibrated on-site by the principal investigator at FFTS).

- Outputs : The following analyses will be performed by the study :

1) How much time women, men and children devote to agriculture, household maintenance, food processing and preparation, child care, ceremonial activities, water and fuel procurement, utilization of health and other public services, walking, leisure, and sleep; by season of the year.

2) Using available figures on energy cost of work and seasonal body weights, calculate average daily energy expenditures for each member of the family.

3) Provide a description of daily activities by season of men, women, and children including problems and constraints identified by the villagers themselves.

4) Provide a detailed description of women's involvement in food production, processing, and preparation including average time that passes between different activities on the same food. Include thorough description of technologies used.

- Costs :

  Salaries : Professional x 2 years
  Field Chief (8) x 1.5 years
  Field Assistance (16) x 1.5 years

  Per diem : Professional x 2 years
  Field Chief (8) x 1.5 years

- Equipment :

  Forms, notebooks, pencils, etc.

  Tape recorders (8) and spare tapes (240) and AA batteries (4000).
  Battery powered, waterproof watches with stopwatch function (24).

  Hospital scales (2) with 500 gm. calibration weight.
  Hand calculators with memory and programmable; statistics brain module (8)

- Transportation :

  One monthly trip for PI to every study area for one year.

- Meetings and Training :

  1 training session for 8 chiefs of 1 month in Ouaga and field.
  3 meetings in Ouaga for 8 chiefs and 16 assistants of 1 week each.

- Consultants :

  8 P.M. home economist, time-motion expert anthropologist.
  2 P.M. rural sociologist

- Analysis :

  6 months, hand calculator use
  1 month micro computer use, plus data entry and diskettes.

c. Study No.2 : Food resources and processing methods, intrahousehold food allocation

- Objective : To identify foods consumed by the family, determine nutritional value, and methods by which the foods are acquired, transformed, stored, and served. To describe intrahousehold allocation of food.

- Sampling : The study will be carried out in 4 Groupements Villageois communities representative of the ethnic and ecological diversity of the country. In each village, a socio-economic cross-sectional sample of women from 20 separate compounds will be included in the study, half of whom are not participating in the GV program and half of whom are.

- Design : A complete inventory of foods will be made for each household including quantities used, means of acquisition, and frequency of use in each season. This may require repeated visits to the households over the season due to day-to-day variations in food supplies. For foraged foods, samples of plant materials should be collected, pressed, and dried for identification purposes. For foods not listed in any existing food composition tables, the principal investigator may choose to collect, weigh, and preserve (freeze, freeze dry, or chemically fix) samples for nutrient analysis in ORANA (Dakar). The interviewers will also construct highly detailed "recipes" for preparation of major dishes in the household (staple grains, sauces, ceremonial dishes, baby foods). These recipes will describe

not only kinds and amounts of foods used but also time elapsed at each stage of processing and consumption, methods of cooking and fuel used for cooking, the ways in which food is served (in combinations with which other foods? at what times of day? using what utensils?), and the conditions under which the food is consumed (mother's time, health, holidays, specific members of the family, etc.).

The interviewers will also observe and measure feeding behavior of individual members of the household. This will include meals in the home, meals away from home, snacking, and infant feeding practices (including breastfeeding). Where possible, observed portions will be validated with volumetric or weighed measures. On a subsample of households, a 24 hour recall of all individuals' intake will be attempted.

- Outputs : The following data will evolve from this study :

1) Varieties, sources, consumption levels, and nutritional values of the major foods used by households.

2) Methods of preparation of major foods as consumed.

3) Intrahousehold allocation of food and mechanism by which allocation is effected.

- Budget :

Salaries : Principal Investigator (Ouagadougou) x 2 years.
Field Chiefs (4) x 1 1/2 years.
Field Assistants (8) x 1 1/2 years.

Per diem : P.I. x 2 years.
Field Chiefs (4) x 1 1/2 years.

- Equipment :

Metric Dietary Scales (5) with calibration weights.
Botanical Presses (8) of 2 dozen specimens each.
Form, Notebooks, pens, etc.
Airproof plastic containers (5000) 1 liter size.
Protable, airtight, frozen sample carrier (4).
Freezer (Ouaga).

- Transportation :

60 field visits by P.I.
Air freight Ouaga-Dakar (3) for frozen sample carriers.

- Consultants :

8 P.M. Nutritionist, Ethnobotanist, Anthropologist.
2 P.M. Rural Sociologist.

- Meetings and Training :

  1 training session for chiefs for 1 month in Ouaga and field.
  2 meetings and 1 training session in Ouaga and field for 4 chiefs and 8 assistants of 1 week each.

- Laboratory analyses :

  5000 nutrient analyses of frozen samples (calories, protein nitrogen, amino acids, vitamins, iron, calcium, zinc, oxalates, phytates).

- Miscellaneous :

  Purchase all major food composition tables from UN organizations, U.S. local organizations, private publishers and universities. (Could fall under purchases by documentation unit).

d. Study No.3 : Income, production, and food consumption

- Objective : To determine the amounts, sources, and dispositions of income by men and women in the household and to establish a basic market basket of foods consumed by the household.

- Sampling : The study will be carried out in eight participating Groupements Villageois communities representative of the socio-economic and ecological diversity of Upper Volta. In each an economic cross-sectional sample of twenty households will be randomly selected, including 10 households which participate in the GV and 10 which do not. Surrounding communities may be included in order to provide a larger or more representative sample.

Data will be collected on agricultural production, amounts in storage, costs of production, sources of income, and disposal of income and production by all adult members of the household. These data will be collected using formal interviews, and recording detailed household budgets. Data will also be collected on local food prices -- producer and consumer -- and on food purchases by individual members of the household. If possible land holdings will also be estimated. Using open-ended interviews and observation, an attempt will be made to determine the process by which individuals and household decisions are made on production, income, and consumption.

- Analytical Plan :

The following analyses will be made either in the field or in the analysis phase :

- Monthly income by source by household member.
- Total monthly income of household.
- Production of field crops, livestock and other economic goods by household and individual household member.
- Household expenditure per week, month, or year, as appropriate.
- Gross and net income by household member for on-farm and off-farm entreprises.
- Land holding by household and by household members.
- Average seasonal prices for a market of basic staple foods.
- Average market basket of goods and value thereof used daily by hh.

The analysis should answer the following questions :

- Does women's income get spent differently from men's income? If so how ?
- Who has control over disposition of different sources of income and production?
- How can one maximize household food supplies: through production or through income? By men or by women?

- Budget :

Salaries : Professional x 2 years
Field Chiefs (8) x 1 1/2 years
Field Assistants (16) x 1 1/2 years

Per diem : Professional x 2 years
Field chief (8) x 1 1/2 years

Equipment :

Forms, notebooks, pens, etc.
Hand calculators (9)

Consultants :

8 P.M. Agricultural Economist familiar with intrahousehold resource allocation
2 P.M. Rural Sociologist

Transportation :

Monthly trips by PI to all sites.

Meetings :

2 one week sessions in Ouaga for all field staff (25)

Training :

1 month session for field chiefs
1 month session for field staff and field chiefs and pretest of instruments.

Analysis :

2 months use of microcomptuer

e. Food Consumption Survey

- Objective : The purpose of the consumption survey is to quantify the rural consumption problem, identify high risk areas and groups, and help develop a nutrition surveillance system.

- Sampling : The survey will include all twenty of the participating groupement villageois villages and surrounding areas. In each area 50 families will be surveyed. The sample will be cross-sectional representing the spectrum of socio-economic status and ecological diversity in the area. This sampling system assumes that the 20 GV's in the program represent an unbiased sample of villages in Upper Volta. Weighting in analysis will correct for areal under or over representation but the GV villages cannot be consistently better off or worse off than the population they represent.

- Design : The survey will consist of three seasonal cross-sectional surveys of the same households. The field chiefs and assistants will have previously worked in the villages on studies 1-4 and on testing new technologies. The following data will be collected at each interview (not exhaustive) :

- Household size and composition
- Distance or time to firewood source
- Monthly income by household member
- Landholding, No. of fields, No. of crops produced
- Technology used in agriculture by household member
- Agricultural production by household and by individual fields
- Number of structures in the compound and kinds
- Livestock holdings
- Number of household members migrated to the city or another country; amount and frequency of remittences
- Weekly Household Expenditures by hh member including gifts
- Methods and capacity of grain storage
- One week Household food consumption - own production, preparation, amounts purchased, purchase price, foraged, gifts
- Number of crops grown on each holding; cash crops production
- Arm circumference of all household members
- Nomadic, semi-nomadic, sedentary, lifestyle
- Distance to water source (or time) by season
- Household participation in development projects
- Literacy and language capabilities of all hh members
- Means of off-farm income generation

In addition the following data will be provided for each distinct community in the sample :

1. Presence or absence of community health center
2. Presence or absence of any development projects
3. Average annual rainfall and average year-to-year variation
4. Distance to nearest primary school or presence in village

- Analysis : Weighted survey data will be analyzed using parametric and non parametric statistical analysis. The following results should be calculated (not exhaustive) :

1. The extent of different levels of nutritional status in the country; geographical and seasonal distribution.

2. The grand mean and disaggregated areal means of per adult equivalent nutrient consumption (using hh food consumption, household size, and food composition); annual and seasonal.

3. The average variety and amount of different foods consumed per adult equivalent and per household per day. Seasonal variations.

4. The percent of consumption from purchased, own-produced, and foraged foods (calorie percent, volume/wt percent). Seasonal variations.

5. HH consumption as a percent of expenditure; seasonal variations.

6. Correlation of average household or individual nutritional status with socio-economic, demographic, ecological, or geographical factors.

7. A functional classification of multinational risk, i.e. what characteristics or sets of characteristics are associated with poor or highly variable nutritional performance of households.

- Budget :

Salaries	: Professional 1 x 2 years Field Supervisors 5 x 1 1/2 years Field Chiefs 20 x 1 1/2 years Field Assistants 40 x 1 1/2 years
Per Diem	: Professional x 2 years Field Supervisors x 1 1/2 years Field Chiefs x 1 1/2 years
Supplies	: 60 sets arm circumference Forms, notebooks, pencils, etc. 6 hand calculators (supervisors plus PI) 60 sets volumetric measures

Transportation :

1 yr of 6; 4 WD vehicles
Gasoline, tires, etc.

Training :

1 month Chiefs, Assistants plus supervisors
2 weeks supervisors
3 1-week interim training sessions

Analysis :

9 months microcomputer
Food composition tables for computer
Daily nutrient requirements on computer

The FTTS has expressed interest in establishing an "early warning system" for nutritional problems. While the survey has been designed to facilitate such a system (through maintaining the communications links with the villages), this matter should be not be undertaken until the results and experience of the survey have been fully analyzed. The survey data should be reanalyzed with the specific purpose of identifying the most reasonable and reliable indicators of short-term nutritional risk (e.g. food prices, cumulative rainfall, grain in storage). Monitoring such variables would have to be carried out frequently (trimonthly, perhaps), and a means developed for communicating updated numbers to policy-makers.

Such a system could be expensive if permanent field staff and intricate measurements are required. Therefore, it is recommended that the costs, necessity, user needs, and logistical possibilities for such an effort be thoroughly assessed before any commitment is made to undertake a surveillance system.

* * *

I. National Soils Service

The decision to support the National Soils Services (NSS) under the ADS Project is in response to the very severe problems associated with soil erosion and the continual depletion of soil fertility in Upper Volta. As mentioned in the Detailed Description of the Project (Section I.E.) most donor agencies have given soil conservation programs little priority and have concentrated their efforts on water resource development for irrigation, bas-fond development, livestock watering, and potable human water supplies. There remains in Upper Volta a paucity of donor efforts in soil and water conservation.

The NSS has received financing from the UNDP and the Dutch Government to implement a modest soil fertility testing unit and to do some soils mapping on a contract basis. USAID support to NSS will complement and expand these activities. Given the severity of the problems associated with soils and water conservation in Upper Volta, in designing this Project we had to decide which interventions would be the most cost-effective while at the same time addressing the most severe constraints in the short and medium term, yet also building a national soils and water conservation program, improve Upper Volta's natural resource base and sustain and improve agricultural production in the long term. Thus, several intervention alternatives were investigated during the design process. Each alternative was evaluated against criteria which USAID/Upper Volta felt were required to ensure the longer term development of a soils and water conservation program. These criteria are discussed below.

The most important aspect of a soil and water conservation program is the need for it to be developed gradually and be oriented to the long-term. The focus of USAID's intervention is therefore on program development. The program will be structured in order for periodic progress reviews to enable GOUV planners to respond to priority areas on a continuing basis. In order to develop a soils and water conservation program oriented to the long-term, highest priority at an initial stage should be given to the development of a soils and water resource data base with the provision for expanding that base to include a monitoring and evaluation system, survey of the development potential for small reservoirs, and a computerized data base management system. Also, the implementation of a soil and water conservation field delivery system in the initial stages of program development should be incremental and targeted in high priority areas. The initial target should be, at a maximum, one ORD. The effort should be carried out for 2 years or longer before expansion into additional ORDs. However, the program development should be flexible enough to accelerate the rate of activity based on progress being made. Finally, in the development of the soil and water conservation program, the maximum involvement of other GOUV services and private organizations and other donors should be encouraged so that all participants in soil and water related activities follow appropriate policy directives.

- Alternative Levels of a Soils and Water Conservation Program

Alternative 1 : no USAID Intervention

Selection of this alternative would maintain the status quo with respect to the existing institutional arrangements, and the condition of the resource base would continue to deteriorate. The attainment of the GOUV's

stated objective of food self-sufficiency would not appear to be possible if this alternative were selected. The agricultural, nutritional, and economic problems would be aggravated.

Alternative 2 : Establishment of Data Collection and Management System only

The alternative is comprised of four elements. Element 1 puts a National Cooperative Soil Survey process in place, Element 2 consists of a Resource Monitoring system, Element 3 provides for computerized data management system, and Element 4 established a survey which would indicate the potential for more effective use of existing water management systems.

This alternative does not include a delivery system. Therefore, this alternative has no mechanism to ensure to any degree, that information generated by any of the components is effectively translated into useful products, thereby, justifying the investment in those components.

The Resource Monitoring system will trace resource conditions and trends. Permanent sample sites will be established, based on statistical sampling procedures that would be representative of the various land types. Parameters pertinent to such land type would be established and measured at each site on a predetermined cycle : 3 years, 5 years, 10 years.

The Computerized Data Management system will provide for data storage, retrieval and analysis. It will give decision-makers information useful in setting priorities, basing budgets and staffing patterns, and allocating these financial and human resources toward the achievement of predetermined objectives.

The survey of the potential for more effective use of existing reservoirs and small irrigation systems will include their inventory, a determination of their status, i.e. degree of sedimentation, as well as their condition, and need for rehabilitation. This will provide the background information necessary for determining the benefits relative to whatever costs would be incurred if a water development and/or management activity is undertaken. It will also provide information concerning the most effective scope of such an activity; i.e., large water development vs. small water-shed protection vs. small village reservoirs for vegetable production. This survey will be done in conjunction with ONBI's proposed inventory to be carried out in 1985-86.

More specifically, the National Cooperative Soil survey process is a long term incremental inter-governmental effort based on a national soil survey plan agreed upon by the cooperating entities, i.e. the Dutch, USAID, the GOUV, the FAO, IGHV and others. The national plan will identify such things as the methodology to be employed, the technical standards which will be adhered to, benchmarks for progress and other matters important to the cooperating entities.

Priorities must be established within Upper Volta as to which areas will be given early attention and the detail of survey anticipated.

The cooperating entities must identify the purposes for which a survey is being undertaken and agree on the inter-disciplinary input necessary and who will provide what work items within what time frames. This requires a precise framework concerning logistical delivery.

The cooperating entities must also identify the nature of the interpretive information subsequent to the national soil survey process and its contribution to the decision-making and policy development and implementation process within the rural development sector.

Alternative 3 : Data Collection and Management System plus Strengthening the Existing Field Delivery System

Alternative 2 above describes the Data Collection and Management system elements.

A first step in strengthening the existing field delivery system would appear to be the elevation of the DSA (Agricultural Services) to a position comparable to the ORDs within the MRD. The Soils Services Unit should be re-structured to make the soil conservation component more dominant. These actions would raise the profile of these entities to a level where they would have more policy influence especially as it relates to ORD programs. More effective interaction with ORD Directors appears essential to establishing the continuity throughout the organizational structure necessary to strengthen the existing field delivery system. Soils Services sections must have the "means" to work with and through the ORD Directors and their staffs providing them technical support.

The ORDs visited during the design of this Project had a technical advisor (Dutch volunteer) attached to each Director's staff. This position, whether it is filled by an expatriate or a Voltan, could easily serve as the focal point for this technical support. There are, of course, other technical contacts to be made at the ORD level. However, in the soil and water conservation area, the technical advisor appears to be the most frequent contact. It follows then that the technical advisor must also be provided adequate "means" to ensure that policies, priorities, and techniques flowing from the DSA/Soils Services sections are implemented.

Extension agents must be trained in at least rudimentary soil and water conservation technology to enable them to provide a level of follow-up sufficient to keep the village groups committed to the conservation activities they have undertaken.

Alternative 4 : Data Collection and Management System; Strengthening the Existing Field Delivery System plus Improving Technical Assistance on the Soil and Water Process Development at the National Level

Alternative 3 above describes the Data Collection and Management Section plus strengthening the Existing Field Delivery System.

The importation of technical assistance may be viewed in two time frames : long-term assistance and that of a shorter duration. If deemed necessary, long-term technical assistance designed to strengthen the national structure could be achieved by the assignement of a GS-14/15 Soil Conservationist with broad experience. This individual would work side-by-side with MRD personnel helping them evolve a national soil and water conservation process over a period of one to two years.

However, effective short-term technical assistance could be provided by experienced technicians in increments of 6 to 8 weeks. For example, a soil scientist with experience as a State Soil Scientist could concentrate his/her efforts during that time frame working with infrastructure already existing in the DSA/Soils Service portion of the MRD helping them evolve an acceptable pattern of components to be negotiated into a soil survey

work planning process. A soil conservationist with experience as a State Resource Conservationist would work in a similar manner to develop the vegetative components of a soil and water conservation program. An engineer with State Conservation Engineers experience could provide similar assistance with the engineering components.

Alternative 5 : Data Collection and Management System; Strengthening the Existing Field Delivery Systems; Importing Technical Assistance to work on the National Soil and Water Conservation Process Development

plus

A Targeted Delivery System Based on Priority Identification

Alternative 4 describes the first part of the proposal.

A process of problem identification and definition and rational decision-making must be followed in order to isolate the most critical soil and water conservation problems at the national level and develop appropriate objectives. A similar process will be followed at the ORD level. These processes are designed to ensure the effective use of scarce resources in addressing the resource problems most important to Upper Volta.

By going through this process at the national level those ORDs found to have the most critical needs may be provided additional "means" to work on these problems. By going through this process at the ORD level, ORD Directors can assure themselves that they are making the best use of the "means" alloted them by whatever sources may be available to them.

Generally, an iterative sequence may be followed along the lines discussed below :

- Provide educational information
- Receive requests for assistance
- Carry out an inventory of the resource
- Analyse the inventoried information
- Develop alternatives
- Make decisions
- Plan the activity
- Implement the plan
- Control quality
- Follow-up and evaluate

Alternative 6 : Establishment of a Comprehensive Progressive Soil and Water Conservation Process

Execution of this alternative will reinforce the capacity of the Ministry of Rural Development to manage and promote a more efficient use of resources in the agricultural sector and increase agricultural output while protecting the resource base.

This alternative builds on existing institutional and societal arrangements. It incorporates the components of alternatives 2 through 5 while reinforcing the delivery system. For example, it could provide for soil and water conservation section chiefs who would provide technical, budget, staffing and logistical support recommendations to the ORD Directors. This section chief would provide technical supervision and training to a soil and water conservation section leader. This interaction would lead to the development of a comprehensive soil and water conservation program for the ORD that would successfully blend the priorities, objectives and guidance received nationally with the Ministries, with the priorities, needs and objectives generated within

the ORD (gathered from the village-level by the extension agents, surfaced through the ORD structure).

Further, it would permeate the organization with soil and water conservation increments appropriate to the individual sections. For example, the functional literacy unit in component 2 of the ADS Project could utilize books about soil and water conservation in their reading program, and incorporate the writing of conservation essays in their primary school writing effort.

As previously mentioned, the extension agent already has a full-time job and the imposition of soil and water conservation responsibilities upon this existing workload may be less than satisfactory. This alternative provides for a counterpart soil conservationist/soil conservation technician to spend full-time on that work. These positions would allow the extension agents to perform their assignments more adequately. They would allow someone trained in the complexities of soil and water conservation to devote greater effort to that priority work.

This alternative would complete the structural design of a comprehensive national soil and water conservation process. It would work within the organization patterns already existing in Upper Volta and would not require complete reinstitutionalization.

Based on the foregoing analysis of the six alternatives for assistance to the NSS, alternative 6, establishment of a comprehensive, progressive soil and water conservation system, is the most appropriate given the need to respond to priority problems in the short-term, yet ensure a long-term program of soil and water conservation activities. Selecting one of the other alternatives would only partially address the constraints to proper soil and water resource management. Alternative 6 will institutionalize a comprehensive program aimed at stemming Upper Volta's deteriorating natural resource base.

* * *

B. Component Four

10. Decreased Food Insecurity at the Village-Level

The technical feasibility of this activity is closely linked to the institutional and economic/financial analyses. Due to the micro-economic conditions which feature an intra-annual price variation of 30-40 CFA/kg, it is argued that the GV has a sufficient price margin to permit it to bid-up producer price, protect the village consumer interests, and still finance the required principle and interest charges. As there are approximately 300 cereal banks throughout the country and more than 7000 villages, in the short-run the demand for cereal bank financing approaches infinity. The lack of credit funds or initial capital poses a serious constraint to cereal bank development.This lack of available capital is attributed to : (a) a national capital shortage, (b) the lack of rural financial intermediaries capable of delivering the necessary capital in a timely fashion and (c) the element of risk associated with unsupervised loans for non-production activities.

While it is most appropriate for the private sector to develop rural financial intermediaries and mobilize the necessary savings to finance such loans, it is an appropriate role of the State to fulfill these financial market responsibilities until such private sector markets develop. One of the small

ironies of the AVV-cereal banks project financed by the State with USAID funds is that the profits realized from these State-financed loans have been used to form village-level "Caisses Populaires" or Rural Credit and Savings Unions which have permitted village level loans for artisan industries, livestock feeding, etc. that have multiplied the initial benefits of the cereal bank loans.

* * *

11. Decreased Food Insecurity at the National Level

This section responds to the issues of whether the proposed activity is optimally located within the Ministry of Rural Development, is consistent with GOUV and USAID objectives, and is achievable given the current level of resources to OFNACER.

Both the GOUV and USAID/UV believe it is imperative for the GOUV and particularly the MRD to upgrade its agricultural statistics, improve its informational flows, and strengthen its internal analytical capability and resource management in order to encourage increases in agricultural productivity. While the policy-making process in Upper Volta was historically very centralized and the role of the technical offices has been to implement State policy, the central government has begun to turn towards the technical offices for analytical input. The Ministry of Rural Development needs better and more timely information regarding all aspects of the agricultural sector, but particularly the food chain (production, marketing, transformation, and consumption) in order for it to formulate appropriate policies which increase agricultural production and improve the rural standard of living. The technical integration of the food chain is such that while improved information in any one area is marginally useful, it is impossible to develop comprehensive or systematic policies unless all areas are addressed simultaneously.

There are three alternative locations for the placement of an improved cereal market information system: the Department of Studies and Projects (DEP), the Department of Agricultural Services (DSA), or the National Cereals Office (OFNACER). Of these three alternatives, the GOUV and USAID believe OFNACER is the preferred choice. The reasons for this selection are as follows : (a) for OFNACER to be effective in realizing its mandate it should be developing much of the necessary information and analysis for its own use, and (b) OFNACER has a comparative advantage in that it currently has a nationwide system of agents who have some market experience and knowledge. Therefore, strengthening OFNACER's existing system is the most cost-effective approach. Furthermore, by strengthening OFNACER's analytical capabilities and working with other donors to minimize foreign subsidies of the Office, OFNACER will continue to improve its efficiency of operations and become more selective in its market interventions.

Once the decision was made to strengthen OFNACER's managerial and planning capacity, it was necessary to assess the various functions of OFNACER and determine what if any reinforcement was necessary in light of the Project objectives and other donor activities. This assessment included financial management, economic analysis and planning, storage, and logistics.

The assessment of financial management is that the financial management system developed by Deloitte, Haskins and Sells under the AID-financed Grain Marketing Development project permits OFNACER to maintain adequate current financial records. While the November 1982-PL-480 Review recommends that USAID continue to finance a Financial Advisor as long as

necessary to assure adequate accounting of PL 480 commodities, given the progress to date, such technical assistance will not be necessary beyond the current contract with the SECID financial advisor. This area will be reviewed closely in future evaluations. Given the current acceptability of OFNACER reporting, we intend only to finance refresher training courses in accounting for OFNACER's accountants. A more critical problem in our view is the analysis of OFNACER's financial situation. We have found that while the reports permit analysis, due to the lack of analytical capabilities, these reports are underutilized. We therefore intend to finance two accountants for 12 pm each for additional training in analytical accounting as a necessary precondition for improved efficiency.

In the area of economic analysis and planning, OFNACER has historically been passive, relying on the central Government to determine its course of action. Given this passivity and the lack of analysis originating from the central Government, it is not surprising OFNACER was largely an ineffective organization throughout the 1970s. Beginning in 1981, however, OFNACER began to consider grain markets (prices and stocks) and use the limited information available as tools for improving its effectiveness. While such analysis have been admittedly relatively unrefined, they have been carried out. It is expected that with the creation of the Planning Unit (CEPS) and the assistance of the AID-financed Economic Advisor under the Grain Marketing Development Project, OFNACER will continue to improve its economic analytical capabilities. We stress, however, this is an evolutionary process. OFNACER must first improve its micro-economic analytical capabilities and improve its operational efficiency before attempting to complete macro-oriented studies. For this reason we have sequenced activities so that the technical assistance to the CEPS financed under this Project will not arrive until August 1985.

With regard to storage, the PL-480 Review found this to be a fundamental problem for OFNACER. As was discussed earlier, part of the problem has financial connotations, while part is the lack of an adequately trained Director. Due to the importance of well-maintained stocks in assuring the population and GOUV of adequate cereal availabilities, we intend to address both these areas under the ADS Project.

With regard to logistics, preliminary analysis indicate the bulk of OFNACER's logistical requirements transporting grain, can be most efficiently performed by the private sector. We believe, therefore, that donor support for heavy vehicles is inappropriate. Under this Project we will provide two 4-wheel drive vehicles to be used by the Planning Unit.

Finally, with respect to the provision of local currency for OFNACER's buying campaigns, we provided 750,000,000 F.CFA (10,000 MT) under the Grain Marketing Development project, which when combined with the contributions of the RFA, FED, Canadians and Dutch results in a purchasing power in excess of 30,000 MT. Further contributions are inappropriate as they implicitly discourage the Office's efficiency and create an unhealthy dependence on the donor community. Therefore, no local currency will be provided to OFNACER for its buying campaigns.

When considering the viability of the Project intervention, the only area of serious concern is whether OFNACER can afford to sacrifice valuable personnel in the short-run to improve its long-term human resource base. In order to

minimize this problem we have conscientiously programmed the economic and accounting training on a rotational basis. With regard to the storage training, OFNACER has informed us that the Assistant Storage Director is capable of managing the storage program in the Director's absence.

Given OFNACER's institutional capabilities, we do not expect problems with the receipt of commodities or providing office support for technical assistance personnel.

A second concern is the element of risk associated with unsupervised loans. This risk exists everywhere, but is especially pronounced in a setting such as Upper Volta where the potential borrower often has little experience with a monetized exchange, is unfamiliar with credit principles and practices and/or may not fullycomprehend the economic and financial realities associated with the loan request. It is for this reason that the DIRC program integrates management and basic economics training (financed under component 2) with the credit fund. It is both the Ministry of Rural Development's and our perception that this Project will be considered a success only if the DIRC maintains a financially viable revolving credit fund and the individual borrowers are able to manage their cereal banks profitably.

* * *

(2) Financial Analysis

The support to village-level cereal banks under Component Four merits a financial analysis in order to determine the technical feasibility of the undertaking, as described in the Technical Analysis (Annex G(1)). The financial analysis addresses both the village level, to ensure that the potential borrower can realize sufficient earnings to justify the investment, and the loan fund itself, to ensure the fund will be financially viable after the PACD.

(a) Analysis at the Cereal Bank Level

Due to the varying socio-economic and market conditions across the country, no two cereal bank loans are identical. While each loan recipient will first prepare an individual feasibility study which will be verified, and approved or rejected by DIRC credit agents, the following analysis is believed representative of a typical cereal bank loan based on our previous experience with cereal bank loans and market conditions in the North Central area where the loans are expected to be made.

Due to the fact that most loan recipients will not have had practical experience with cereal banks prior to the loan, the DIRC has recommended, and USAID agrees that the borrower should start small and expand as possible given the individual case. For this reason it is assumed the borrower receives a loan for 20 MT in 1984, 30 MT in 1985,and 50 MT in 1986. It is estimated that construction costs equal 10% of the value of the grain.

It is assumed for the purpose of the analysis that the DIRC will charge an interest rate of 15%. Should the DIRC be forced to charge a higher interest rate due to a greater than expected delinquency rate, higher inflation or higher administration costs, the cereal bank will be forced to charge marginally higher prices to consumers to assure repayment.

A further assumption is that life of construction is 5 years and construction replacement costs with traditional materials will increase by 5%/year.

Finally the following prices are assumed. Again the absolutes are not as relevant as the pricing margin. The margin for cereal bank activities is calculated at 20 to 25 FCFA, while the free market can be expected to have a range of 40 FCFA/kg.

Table 1

EXPECTED PRICES 1984-1992 (FCFA/KG)

Year	Market Producer Price	CB Producer Price	CB Producer Price	Market Producer Price
1984	55	65	85	95
1985	60	70	90	100
1986	65	75	95	105
1987	67	77	100	107
1988	70	80	103	110
1989	72	82	107	112
1990	74	84	109	114
1991	76	86	111	116
1992	78	88	113	118

LOAN AMOUNT

Year	Amount (000 FCFA)	Quantity Cereal (MT)
1984	1,430	20
1985	2,310	30
1986	4,125	50
	7,865	100

Loan repayment plan (5 years, one year grace period - 15% interest with the first years interest being the down payment)

Table 2

First installment - 1,430,000 FCFA

Year	Principle	Interest	Outstanding Balance	Payments
1984	0	214.5	1,430	214.5
1985	268	0	1,144	286.0
1986	268	171.6	858	457.6
1987	268	128.7	572	414.7
1988	268	85.8	286	374.8
1989	268	42.9	0	328.9
	1,430	643.5	0	2,073.5

Cumulative Loan Repayment - 7,865,000 FCFA

Year	Principle	Interest	Outstanding Balance	Payments
1984	0	214.5	1,430	214.5
1985	286	346.5	2,992	632.5
1986	748	790.35	6,831	1,538.35
1987	1,573	405.90	5,258	1,978.90
1988	1,573	788.7	3,685	2,361.7
1989	1.573	552.75	2,112	2,125.75
1990	1,287	316.8	825	1,603.8
1991	825	123.75	0	948.75
	7,865	3,539.25	0	11,404.25

Table 3

Year	Credit	Sales Revenues	Expenses			Cash on Hand (000 FCFA)	Stocks on Hand (MT)
			Construction	Purchases	Loan		
1984					214.5	(214.5)	
	1,430		130	1,300	0	(214.5)	20
		1,700				1,485.5	0
1985	2,130					3,795.5	0
			210	3,500		85.5	50
		4,500				4,585.5	0
					632.5	3,953.0	0
1986	4,125					8,078.0	0
			375	7,500		203	100
		9,500				9,703	0
					1,538.35	8,164.65	0
1987				7,700		464.65	100
		10,000				10,464.65	
					1,978.90	8,485.75	0
1988				8,000		485.75	100
		10,300				10,785,75	0
					2,361.7	8,424.05	0
1989			165	8,200		59.05	100
		10,700				10,759.05	0
					2,125.75	8,633.30	0
							0
1990			250	8,400		10,883.3	0
		10,900			1,603,80	9,279.5	0

Table 3 (continued)

1991			425	8,600		254.5	100
		11,100				11,354.5	0
					948.75	10,405.75	0
1992				8,800		1.605.75	100
		11,300				12,906.00	0

As shown on the accompanying cash and stocks flow table, a cereal bank activity of 100 MT may be expected to generate a value of 12,906,000 CFA through October 1982. This amount is equal to the expected value of 100 MT of grain plus 1,605,750 CFA of profit for the village groups.*

These figures clearly indicate that the cereal bank loan is financially viable. When one considers the economic benefits implied by the price table above, one finds that the direct economic benefits of the activity to the producer are approximately 1,000,000 CFA/year and to the consumer approximately 500,000 FCFA. This translates into modest increase of 1500 FCFA or $4/year direct per capita benefits due to cereal bank interventions. It is much more difficult to quantify the indirect benefits arising from market interaction. However, it would be expected that purchases by the cereal bank would be expected to bid up producer prices, and the availability of cereal stocks would serve to decrease costs to the consumer.

Finally, the long-term benefit associated with this activity will be the shift of cropping patterns away from lower value coarse grains towards those of higher value which will benefit rural producers/consumers.

(b) Analysis of the Credit Fund

The following tables present the financial flow of the credit fund activities. Expected inflation is accounted for within the loan demands and the expected percentage of bad debts are noted in the comments. The only outstanding issue therefore is the financing of the DIRC's administrative costs. These costs and an overall financial plan for the credit fund activity will be submitted in form and substance satisfactory to USAID/Upper Volta as a condition precedent to the release of counterpart funds for the Project activity. These tables clearly show that the fund is viable and the cumulative revenue will continue to support the credit program beyound the PACD.

* It is assumed the management time will be contributed by the villagers.

Table 4

H.C. Contributions to the Loan Fund

	CFA	#	
1984	55800000 -	102286 -	Loan demand
1985	55900000 -	154000 -	Loan demand
	12530000 -	35800 -	Loan repayment
	41370000 -	118200 -	U.S funding
1986	66000000 -	188571 -	Loan demand
	25434500 -	81241 -	Loan repayment
	37565500 -	107330 -	U.S funding
1987	[illegible]000000 -	251429 -	Loan demand
	47095200 -	134557 -	Loan repayment
	40904800 -	116871 -	U.S. funding
1988	93500000 -	267143 -	Loan demand
	67023900 -	191497 -	Loan repayment
	26476100 -	75646 -	U.S. funding

Table 5

L.O.P.

Project – 1 yr. grace period, 5 yrs. of repayments

	Original Loan	Repayments Principal	Repayments Interest	Repayments Total	Outstanding Balance	
	CFA	CFA	CFA	CFA	CFA	
1984	35800000 –	—	—	—	35800000 –	
85		7160000 –	5370000 –	12530000 –	28640000 –	
86		7160000 –	4296000 –	11456000 –	21480000 –	
87		7160000 –	3222000 –	10382000 –	14320000 –	
88		7160000 –	2148000 –	9308000 –	7160000 –	
89		7160000 –	1074000 –	8234000 –	—	
1985	55700000 –	—	—	—	48510000 –	15% [illegible]
86		9702000 –	7276500 –	16978500 –	38805000 –	
87		9702000 –	5821200 –	15523200 –	29106000 –	
88		9702000 –	4365900 –	14067900 –	19404000 –	
89		9702000 –	2910600 –	12612600 –	9702000 –	
90		9702000 –	1455300 –	11157300 –	—	
1986	66000000 –	—	—	—	54400000 –	10% [illegible]
87		11880000 –	8110000 –	[illegible] –	47520000 –	
88		11880000 –	7128000 –	19000000 –	35640000 –	
89		11880000 –	5346000 –	17226000 –	23760000 –	
90		11880000 –	3564000 –	15444000 –	11880000 –	
91		11880000 –	1782000 –	13662000 –	—	
1987	28000000 –	—	—	—	22400000 –	20% [illegible]
88		14020000 –	10560000 –	24640000 –	56320000 –	
89		14080000 –	8448000 –	22528000 –	42240000 –	
90		14080000 –	6336000 –	20416000 –	28160000 –	
91		14080000 –	4224000 –	18304000 –	14080000 –	
92		14080000 –	2112000 –	16192000 –	—	
1988	35200000 –	—	—	—	28800000 –	20% [illegible]
89		14960000 –	11220000 –	26180000 –	57340000 –	
90		14960000 –	8976000 –	23936000 –	42380000 –	
91		14960000 –	6732000 –	21692000 –	27420000 –	
92		14960000 –	4488000 –	19448000 –	14960000 –	
93		14960000 –	2244000 –	17204000 –	—	

	1984	1985	1986	1987	1988
Income (Repayments) Expenditure (Loans)	—	12530000 –	22434500 –	47095200 –	67023900 –
CFA	35800000 –	33900000 –	66000000 –	28000000 –	35200000 –
	(35800000 –)	(41370000 –)	(87565500 –)	(40904800 –)	(26476100 –)
Income (Repayments) Expenditure (Loans) $	—	35900 –	81241 –	134558 –	191497 –
	102236 –	154000 –	188571 –	251429 –	267143 –
	(102236 –)	(118100 –)	(107330 –)	(116871 –)	(75646 –)

Table 6

Pol-L.O.P.

Repaid-1yr. grace period, 5yrs. of repayments

	Original Loan	Repayments Principal	Interest	Total	Outstanding Balance	
	CFA	CFA	CFA	CFA	CFA	
1989	85000000 -	—	—	—	85000000 -	20% int. [illegible]
90		13600000 -	10200000 -	23800000 -	54400000 -	
91		13600000 -	8160000 -	21760000 -	40800000 -	
92		13600000 -	6120000 -	19720000 -	27200000 -	
93		13600000 -	4080000 -	17680000 -	13600000 -	
94		13600000 -	2040000 -	15640000 -	—	
1990	73000000 -	—	—	—	62000000 -	15% int. [illegible]
91		12400000 -	9300000 -	21700000 -	49600000 -	
92		12400000 -	7440000 -	19840000 -	37200000 -	
93		12400000 -	5580000 -	17980000 -	24800000 -	
94		12400000 -	3720000 -	16120000 -	12400000 -	
95		12400000 -	1860000 -	14260000 -	—	
1991	57000000 -	—	—	—	48400000 -	15% int. [illegible]
92		9680000 -	7260000 -	16940000 -	38720000	
93		9680000 -	5808000 -	15488000 -	29040000 -	
94		9680000 -	4356000 -	14036000 -	19360000 -	
95		9680000 -	2904000 -	12584000 -	9680000 -	
96		9680000 -	1452000 -	11132000 -	—	
1992	42000000 -	—	—	—	34000000 -	15% int. [illegible]
93		6800000 -	5100000 -	11900000 -	27200000 -	
94		6800000 -	4080000 -	10880000 -	20400000 -	
95		6800000 -	3060000 -	9860000 -	13600000 -	
96		6800000 -	2040000 -	8840000 -	6800000 -	
97		6800000 -	1020000 -	7820000 -	—	
1993	28000000 -	—	—	—	25200000 -	15% int. [illegible]
94		5040000 -	3780000 -	8820000 -	20160000 -	
95		5040000 -	3024000 -	8064000 -	15120000 -	
96		5040000 -	2268000 -	7308000 -	10080000 -	
97		5040000 -	1512000 -	6552000 -	5040000 -	
98		5040000 -	756000 -	5796000 -	—	
		1989	1990	1991	1992	1993
Income (Repayments)		32780600 -	44753300 -	47118000 -	52140000 -	30252000 -
Expenditure (Loans)		33000000 -	73000000 -	87000000 -	44000000 -	23000000 -
CFA		1780600 -	21753300 -	40118000 -	52140000 -	52252000 -
Income (Repayments)		247145 -	270724 -	277430 -	263257 -	229291 -
Expenditure (Loans)		242857 -	208571 -	164857 -	114286 -	90000 -
		5088 -	62153 -	114623 -	148971 -	139291 -

Economic Analysis

As noted in the Summary of the Economic Analysis, (Section IV. C) economic analysis were developed for each activity of the Project. Those analyses are presented below.

A. Agricultural Data Collection and Data Distribution

In an era when growing world interdependence can, overnight, change the economic environment of both developing and developed nations, accuracy and timeliness of data collection and analyses can do much to: prevent major losses in foreign exchange, improve the level of farmer incomes and, provided correct policies are in place, protect consumer welfare. Each of these is necessary for sustained economic growth and development. Without adequate data and analysis, Upper Volta will continue to be at a substantial disadvantage in making decisions in response to changing economic conditions. The decrease in U.S. stocks to be brought about by the "Payment in Kind" program, coupled with continued droughts in Africa and/or a major food shortage in the Soviet Union sets the stage for increasing, and possibly widely fluctuating prices. The economic value of timely reliable information increases substantially in a tight world market.

Quantifying the benefit of improved statistics is not easy, but economic studies in the U.S. indicate that each dollar invested to reduce the national sampling error from 2.5 to 2 percent, for example, will return more than 600 dollars in social benefits. Other studies demonstrate that the economic benefits are proportional to the difference in the square of the errors in developed and developing countries alike. With the current system, errors in the range of 10-20% are likely. Presuming they are 12%, reducing them to 5% will produce almost five times the economic benefit that would be obtained in reducing them from, say 5% to 2%.

The GOUV is unable to provide cost figures for collecting, aggregating, and disseminating their current statistics. These activities are performed in conjunction with other duties, and no system exists to monitor time spent or expenses incurred on each activity. This, coupled with the reluctance of INSD or DSA to discuss how many interviews are conducted, makes it extremely difficult to compare costs between the current system and the system to be implemented in this Project. However, the approach adopted for this Project has been found to be cost-effective in similar developing country contexts. The technical analysis for this activity discusses the comparative costs of different approaches to data generation.

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B. Strengthening the MRD's Policy, Planning and Programming/Project Monitoring and Evaluation Capabilities

The economic cost of poor policy analysis and project evaluation are manifest in higher than necessary costs and lower than anticipated returns. The catch however is the quantification of these higher costs and lower returns to projects in relation to the costs of better decision making. No attempt is made here to come up with any quantified estimates. Rather, a simple argument based on marginal productivity analysis is employed to argue that the level of investment being proposed is of a minimal nature, which would suggest high returns to the initial levels of investment. In this case, investments in DEP to improve the decision making process amounts to about $500,000 per year (this includes institution

building costs). Consequently, the combined amount of lower costs or higher returns in project implementation must exceed $500,000 (ignoring the discount rate) to have a positive rate of return. It is argued here that the marginal productivity curve at the prescribed level is increasing at an increasing rate and the returns per dollar spent on decision-making far exceed one.

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C. Strengthening Central Level Administration

The provision of support to improve central level administrative systems in the MRD raises two economic question. First, is it cost effective in relation to the alternative of setting up a full administrative capability in each ORD, Directorate and parastatal. The evidence to date suggests that more uniform systems are indeed better and that each uniformity must emanate from the national level. This does not mean highly centralized control necessarily results; it does mean however that there are indeed economies of scale (repetition) that cannot be ignored.

Second is the question of shifting administrative burden in project implementation from the donor to the GOUV. Here the economic argument is quite clear. To the extent that the MRD does not have the capacity to implement projects in the context of contracting, procurement and the like or that the capacity is inadequate and leads to delays, waste and possibly abuse due to the unfamiliar rules and regulations of the donor, the donor has but one alternative and that is to introduce a higher than desired expatriate level of assistance to monitor and implement the project. Such expatriate assistance is expensive and it is cost effective to shift as much of this function to the MRD as possible. No attempts are made here to quantify this relative gain as it is generally held as substantial and was previously a matter of policy with AID and remains to be the preferred approach if possible. This Project proposes to make a modest investment to make host country procurement possible in the medium-term.

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D. Skills Training for Rural Youth

An economic analysis of the CFJA activity needs to consider both the cost-effectiveness of the CFJA network and the return expected on new CFJA activities initiated by AID. The current cost to the GOUV per CFJA graduate is calculated in a recent IBRD appraisal report (for the Second Education Project) as only 25% that of a primary school graduate (CFJA cost is net of trainees' agricultural production at the CFJA, which covers some costs). The difference in costs is due largely to the high 79% retention rate of the CFJAs versus the 23% retention rate of primary schools. The cost per student (whether or not he or she graduates) is equivalent at CFJAs and primary schools; however, as the current GOUV initiative to increase enrollments at each CFJA is implemented, CFJA costs per student should fall below primary school costs per student. (There is ample room for increasing CFJA enrollments per center since currently they are significantly lower than primary school enrollment).

The CFJAs are a cost effective way to achieve three GOUV goals. It is likely that the CFJA approach is much more cost effective than that of primary school in achieving the GOUV's goal of decreasing the increasing rate of rural out-migration, although no data is available to permit precise comparison of migration rates for former CFJA trainees versus primary school students. One would expect a much

higher percentage of former primary school students than CFJA graduates to migrate away from rural areas, since primary school training is geared towards students who will "succeed" by graduating into a secondary school in a town while CFJA training is oriented towards rural life and farming. If the expected wide difference in migration rates is borne out, then the cost per educated rural, non-migrating youth would be much lower for the CFJAs than for primary schools. A second GOUV goal -- universal basic education -- could be achieved twice as fast through CFJA's as it could through expanding primary school education, according to IBRD cost calculations. A third GOUV goal of increased agricultural productivity will be better approached through the CFJA system than through the formal education system, due to the FJA emphasis on agricultural production and rural income generation techniques.

The CFJA program is more cost-effective than similar programs in other countries. Because the Upper Volta CFJAs are not residential training centers and have only one to two professional staff members per center, investment costs are low since dormitories and a staff housing compound are not needed. Recurrent costs are also low due to the low staff-to-trainee ratio (relative to CFJA programs elsewhere) and the fact that staff work with trainees from a fairly small geographic area and therefore have no need of the significant transportation support by CFJAs. This is in contrast to other countries where trainee recruitment and follow-up takes place in much wider geographic areas. The total LOP cost per trainee of this Project is approximately $138. This represents only 15% of the $900 cost per trainee of an AID-supported CFJA program in Cameroon and 2% of the $8000 - plus cost per trainee for AID-supported CFJA programs in the Gambia and Togo. (In fact, the cost per trainee benefitting by the activity will be less than $138 as benefits will extend beyond the five-year LOP). We assume the staff development and equipment provided by this Project will benefit at least three groups per CFJA, that is, that the effects of staff development and equipment on the quality of CFJA training will last for nine years. (Each CFJA class has a duration of 3 years).

The past several years have seen a number of scholarly publications linking basic education and farmer training in developing countries to increased farmer productivity and income. Most of these studies (by Chaudry, Jameson, et al, and several recent World Bank publications) make the case for education as one cause of increased farmer production and income, either through increasing farmers' efficiency in using existing technology or through increasing adoption rates for new technology. As with migration rates, the data on productivity, adoption rates, and on-farm income for CFJA graduates in Upper Volta do not exist to see if what has been claimed and demonstrated in other countries holds true in Upper Volta as the literature suggests it should.

Recent anecdotal evidence from the Peace Corps (which has volunteers working with CFJAs) and a FED evaluation, suggest that enrollment rates, retention rates and CFJA agricultural fields are all much better where the CFJA teacher is competent and the CFJA Village Council is active. In addition, the FED evaluation suggests that these conditions also are correlated with active Young Farmer Groups (composed of CFJA graduates) capable of raising the incomes of CFJA graduates. The FED evaluation noted income-generating activities initiated by CFJA graduates or Young Farmer Groups, which included cattle fattening and local commercial activities. The FED evaluation also makes the case that better training (of CFJA trainees, CFJA Village Councils, and Young Farmer Groups) in accounting skills would increase both CFJA effectiveness and the income-earning potential of CFJA graduates.

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There is thus evidence, albeit tenuous, that existing well-run CFJA's are enabling young people to increase both farm production and off-farm income. The evidence also suggests that more competent teachers and more active and better skilled CFJA Village Councils and Young Farmer Groups would increase both the effectiveness of the CFJA's (in enrollment and retention rates) and the income-earning potential of CFJA graduates. This AID-financed activity is designed to improve skills of all three groups -- teachers, councils, and young farmer groups.

Returns to education and training programs are often estimated by calculating the present value of the trainees' increase in expected lifetime income which will result from the program. In the case of the CFJA program, it is not possible to project lifetime income for trainees. However, what can be done is to estimate the level of benefits needed to justify the Project, and then see if it is reasonable to expect this level of benefits to occur...

What increase in lifetime income would be needed to justify the Project costs per trainee-beneficiary? Costs per beneficiary are 24,840 CFA if 3 groups per center over a nine-year period will benefit from the equipment and staff development provided by this Project. The net present value of a trainee's lifetime income would therefore have to increase by 33,232 CFA as a result of project activities for this Project to be justified. Consider the following scenario of a trainee's increased income over 29 years:

Year	Yr. 1	Yr. 2	Yr. 3	Yr. 4	Yr. 5	Yr. 6	Yr. 7	Yrs. 8-29
Income	0	0	4,000	5,000	6,000	7,000	8,000	9,000 CFA

Years one and two show no increase, since the trainee would be completing his/her training program. The net present value of the overall increased income stream at a 15% discount rate is 36,007, exceeding and justifying project costs.

Is it reasonable to expect the hypothesized increase in lifetime earnings for CFJA trainees to actually result from this Project? The per capita cash income from farm and household production in the Central Plateau area where this Project will concentrate was approximately 3,240 CFA in 1973 (DAI Sector Study). In 1983 prices, it would be approximately 5,277, since prices received by farm households have increased by about 5% a year. The DAI study states that family size in the Central Plateau area averages 10 members, so that household cash income (excluding migrant remittances) would be 52,770 CFA. For CFJA training to increase trainees' lifetime earning by 9,000 CFA/year would represent a 17% increase in their household income. Given the linkages which we expect to exist between Project activities and improved trainee skills and income-earning potential it is certainly not unreasonable to expect such an increase. Trainees' attendance at the CFJAs, many of which are fairly new and "unproven", is itself evidence that trainees and their parents expect the benefits from training to at least exceed the opportunity cost of their labor. This opportunity cost is fairly significant, since training goes on during the cropping season and trainees are old enough to be an important source of family farm labor.

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TABLE 1 Project Costs
(CFA)

A. Staff Training

1. In project zone (155 CFJA's)	171,250,000
2. For all zones (750 CFJA's)	71,345,000
3. ST overseas training (all zones)	34,560,000

*B. Equipment

1. In project zone (155 CFJAs)	290,685,000
2. All 750 CFJAs	235,440,000

*C. Short-term TA (all zones)	70,000,000
	= ($200,000)
D. Construction/Renovation (all zones)	187,200,000
E. Costs per trainee for 155 CFJA's during LOP	461,935,000

A1 - 171,250,000
B - 290,685,000

= 49,670 CFA per trainee during LOP
= 461,935,000 ÷ (155 x 2 classes of 30 per center over 5 year LOP)

= $138 @ 360 CFA = $1

F. Costs per trainee affected by project staff development and equipment = 33,115 CFA

461,935,000 ÷ (155 x 3 groups of 30 per center)

G. Staff development and TA costs

Spread across all 750 CFJA's
(A2+A3+B2+C+D) = 598,545,000

= (598,545,000 ÷ (750 x 3 groups of 30 per center)

= 8,867 CFA per trainee

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A different set of Project costs will go to train and provide technical support to staff from all regions, responsible for 750 CFJA's. If we again assume at least three groups of trainees over a nine year period will benefit from these activities, then the average cost per trainee is 8,867 CFA, as shown on Table 1, item G. The net present value of trainees' lifetime incomes would have to increase by an average of 8,867 CFA as a result of this part of the project in order to justify it. Again, given the modest size of the increase and the fact that the staff development activities are agreed on by AID, the GOUV, and other donors as needed to improve CFJA effectiveness, such an increase is not unreasonable. Please note that long-term technical assistance for the evaluation and monitoring specialist and mini-computer system are not considered in the economic analysis, since these costs are not related to the direct cost of the Project nor is it considered as having direct benefits to the beneficiaries. Therefore these costs should be viewed as being outside the scope of the B/C analysis; although it will have a tremendous effect in terms of understanding the impact of the FJA project.

The CFJA program is, by contrast to the formal primary school network in Upper Volta and to CFJA programs in other countries, a cost-effective method of achieving GOUV goals of increased agricultural productivity, decreasing rural out-migration and increasing the level of basic education. The returns needed to justify AID projects costs appear modest, and are reasonable to expect.

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E. Managerial Training for Adult Pre-Cooperatives

The MRD is emphasizing the village groups (GV) as the focus of its extension strategies and related agricultural sector support services. The MRD considers this the most cost-effective way of reaching large segments of Upper Volta's rural population given the MRD's limited budgetary and human resources. USAID/UV's support to DIRC to develop training programs for GVs will aid in creating the capacity within GVs to more effectively use the current market and technical information available to them. This will enable individual members of GVs to increase the productivity of their land, labor and other resources ; to improve the profitability of their agriculture and non-farm enterprises; and expand the potential for economic growth in rural areas. Furthermore, increasing GV abilities to use MRD support services more effectively will reduce much of the burden currently born by the MRD in extending these services as many of the agricultural sector support services will be gradually assumed by GVs or other rural entrepreneurs in areas where sufficient demand exists. A good example of this is in the Southwest region of Upper Volta where a network of rural artisans has developed strictly on a private basis for the manufacture, repair and maintenance of animal traction equipment.

By enhancing GVs ability to become more economically involved in farm and non-farm enterprises, progress towards achieving the GOUV's goal of stemming out-migration of agricultural labor can be made. As more employment and economic opportunities develop in rural areas, young farmers will be more inclined to remain involved in agricultural enterprises.

Another major activity for which GVs are becoming increasingly involved in is one of market intermediaries for cereal crops. GV's involvement in cereals marketing is considered a way of reducing the cost of annual cereal purchasing compaigns conducted by OFNACER to replenish the security stock and carry out its national price stabilization program. By using GVs, the GOUV is putting the cereal

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grain price stabilization and grain reserve function into the hands of private rural producers. GV's involvement in grain marketing will further decentralize food security stocks and put them closer to the rural populations, gradually reduce the extent and scale of OFNACER's responsibilities and increase the overall efficiency of the marketing infrastructure in Upper Volta.

USAID/UV support to DIRC will directly support the development of GV capacities to efficiently manage the flows of grain stocks at the village level. The GV role in the marketing chain for cereals is based on the establishment of cereal banks (for a detailed description and financial analysis of cereal banks and their intended function refer to component 4). Cereal banks can be managed to achieve several different marketing or food security objectives depending on the production potential or food needs of a particular GV. The possible objectives include: increasing producer prices in grain surplus regions; stabilizing consumer prices by keeping grain stocks near producing areas, thus, keeping prices down during stress months of the year and eliminating transport costs; and serving as short and long term grain reserves.

Training activities designed to upgrade the management capacities of GV, will help them achieve the maximum economic benefits flowing from cereal banks. GV leaders will gain practical knowledge of basic accounting and bookkeeping techniques. These techniques can be similarily applied to other commercial endeavors. The development of a competent cadre of GV trainers and more economically active and better trained farmers will enhance rural income potentials and overall economic growth in rural areas of Upper Volta.

Quantifying economic returns to non-formal training programs is difficult because the expected benefits cannot be easily isolated. USAID/UV and GOUV resources for this activity total $2.320 million. Over the LOP the Project will provide literacy and management training to approximately 1260 GV management officers. Thus, the LOP cost per trainee (GV management training only) is $1,840. Compared to other non-formal education projects in other West African countries, this amount is comparatively low. Additionally, the cost per GV management trainee will benefit all members of the GVs and, thus, the cost per beneficiary is much lower. The cost per beneficiary is further reduced by considering the other benefits accruing to GVs from the Project via improved training programs developed by DIRC for overall GV membership training and that benefits are expected to accrue beyond the LOP. Discounting the $1,840 cost per GV management trainee over a 5 year LOP at a 15% discount rate is $915. For USAID/UV's and GOUV investment in GV training to break even, each GV benefitting from improved DIRC training programs will need to generate at least $915 discounted over 5 years at 15% in economic returns to justify the project. It seems reasonable that this will be achievable during the Project's life as GVs become better able to more competently and efficiently manage cereal banks and other commercial enterprises, use market and technical information more effectively and master the use of productivity increasing inputs for increased agricultural production.

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F. Mid-level Technical and Managerial Skills Training

The economic analysis of this activity will be carried out during the implementation of Component 1 of the Project as these activities are intended to increase the knowledge base, human resources, and planning capacity of the MRD, as well as the human resource base for private sector firms involved in agriculture. All these activities are intended to have an indirect effect on production.

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Analytically, once the costs are known it could make sense to lump the cost of all these activities together and do an indicative sort of calculation to see what sort of production benefits (resulting indirectly from the activities) you would need to justify costs.

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G. Farming Systems Approach to Research and Extension

The economic return to national governments' investments in agricultural research are difficult to quantify and isolate because expected benefit streams are not usually generated for several years following the initial investment, and other variables such as abundant and consistent rainfall and improved commodity pricing structures or other market opportunities can have a beneficial impact on long-term agricultural production trends. Given this difficulty in identifying economic benefits directly flowing from agricultural research projects, this analysis will describe the potential economic impact of the Project which can be expected to accrue to the Voltan agricultural sector and economy as a whole Additionally, the analysis will provide the cost-effectiveness rationale to explain why USAID/UV has chosen to promote farming systems research (FSR) in the Voltan research system using the National Experimentation Service (NES) as the implementing agency. Finally, the analysis will present a Net Present Value calculation to demonstrate in a quantifiable way that positive economic returns can be expected to accure to the Voltan economy over the LOP to justify the Project.

1. Potential Economic Impact:

The Project will generate benefits to the rural population in the form of increased cash incomes from improved agricultural production, increased yield stability, and food security. Increased food security will influence the farmer's perception of risk as it relates to his agricultural practices and farm management decisions, and make him more progressive and open to new technologies or innovations. A consistent food supply will also improve and enhance nutritional levels of the rural farm family which will in turn improve labor productivity. Increased productivities of the farmer's land and labor stemming from using new technologies and improved practices will free-up resources and increase the potential for allocating resources into more productive crops or non-farm enterprises.

Secondary benefits considered significant as a result of more effective agricultural research are increased imployment in agriculture and the development of non-farm rural enterprises, many of which will provide required services and other forms of support to a more modern agriculture.

2. Cost-Effectiveness Considerations

As pointed out in an earlier section of the PP, the focus of agricultural research in Upper Volta has not been directly oriental towards the needs of the small farmer, and technical recommendations coming from research institutions are not being tested and refined at the farm level to accomodate the important constraints inhibiting increased productivity. With USAID/UV's support to the NES for the long-term reorientation in the way agricultural research priorities are defined, it is assumed that the Voltan research infrastructure will be better able to respond to farmers' problems. Using the FSR approach to research, the

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Project emphasizes extension service and farmer input into the research process. This reorientation will increase the efficiency and effectiveness of future research expenditures and will generate more rapid development and dissemination of appropriate agricultural technologies and increased productivity. The Project has a large training component which is seen as the most effective means of developing and increasing the Voltan capacity to continue to make improvements in the agricultural sector once USAID's input terminates. Promoting a cadre of Voltan technicians using an FSR perspective will provide continuity to the research and extension infrastructure. The Project calls for minimal technical assistance over the LOP, and a greater emphasis will be placed on training of intermediate-level technicians who will have the most constant and direct contact with the farmer.

The Project will use the FSR methodology developed specifically in Upper Volta through USAID's support to development of the FSU under the SAFGRAD Project, and thus, several years of developing an appropriate FSR methodology and data base can be avoided. Furthermore, FSR training methods developed by the FSU can also be applied to NES technicians. Based on SAFGRAD training, NES personnel will become more efficient in synthesizing data and evaluating research results and technologies.

The resources provides by the Project will be used to address agricultural problems in the Central Plateau area, an area comprised of over 50% of the population which has historically been neglected by research and has been designated a high priority area by the GOUV. Given the problems associated with increasing production in the Central Plateau area, it is assumed that acceptable and more profitable technologies will have a more rapid rate of diffusion.

The Project will support the NES in establishing a network of farming system units (FSUs) to carry out an adaptive research function. The NES and the National Extension Service are both mandated to collaborate in the development of technological packages for dissemination to farmers. As the NES and the extension service both lie under the MRD, the Project is reinforcing extension's role in the research process. This intra-ministerial collaboration is seen as the most effective way of streamlining the diffusion of technological opportunities.

In supporting the NES, no major expenditures will go for the physical development of a research infrastructure. The only construction under the Project will be for a central office headquarters as the present facilities for NES are considered substandard. Most research stations are already established, many owned and operated by the MRD.

The NES has a solid core group of agricultural technicians, including a Ph. D. in plant breeding. The cadres of NES technicians are highly motivated, understand their role in adaptive research, and can be immediately productive in implementing the Project.

3. Net Present Value Analysis:

As mentioned earlier, subjecting investments in agricultural research to rigorous economic analysis is difficult given the problem of isolating benefit streams directly flowing from the Project. However, there are many social benefits as well as secondary benefits which have a multiplier or spread effect in the economy. Examples of such benefits are food security, risk reduction, improved nutritional status, and an improved infrastrucuture serving agriculture.

For the purposes of this analysis and given the problems in precisely identifying quantifiable benefit streams, a Net Present Value (NPV) calculation will be used to demonstrate that USAID's and the GOUV's investment in applied agricultural research over the next 10 years will generate positive returns to justify the activity.

The major assumption underlying this analysis is that the most direct benefit accruing from the Project will be a long-term increase in aggregate agricultural production. The Project is concentrated in the ORDs comprising the Central Plateau zone and Dori region, and will emphasize food crop research. Thus, the analysis will estimate the annual net increases in aggregate production of the 3 major cereal crops; millet, sorghum and maize, in the 4 ORDs included in the Project zone using 1982 production levels as the base. The rate of production increases will be 2% annually with the first increase appearing in year 3 of the Project to account for the lag time between the initial Project expenditures and the first year one can realistically expect a new technology or innovation to have an impact on production. The 2% annual rate of increase will be compounded on an annual basis for the remaining 7 years of the project and its expected follow on. The increased production will be valued in terms of economic prices, and the incremental annual cash-flow (benefit stream) will be discounted at 15% over the 10 year LOP to determine the NPV of USAID's and GOUV's investments in the Project. The 10 year LOP will allow the analysis to incorporate the recurrent cost implication for the GOUV into the overall estimation of the Project's worth.

Table 2 presents the estimates of aggregate production levels for millet, sorghum and maize for the 4 ORDs of Yatenga (Ouahigouya), Centre (Ouagadougou), Centre Nord (Kaya) and the Sahel (Dori).

TABLE 2

Millet, Sorghum and Maize Production for the ORDs of Yatenga, Centre, Centre Nord and Sahel for 1982 (in Tons)

ORD	Millet	Sorghum	Maize	TOTAL
Yatenga	22,217	29,413	1,212	52,842
Centre	77,629	102,968	3,083	183,680
Centre Nord	36,833	44,451	5,036	86,320
Sahel	39,500	18,000	610	58,110
TOTAL	176,179	194,832	9,941	380,952

Official GOUV 1982 producer prices for these commodities are CFA 60 for millet, CFA 58 for sorghum and CFA 48 for maize (360 CFA = 1 US Dollar). The 1982 World Bank Upper Volta Agricultural Issues Study estimates world prices for these

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commodities projected through 1990 at CFA 71 for millet, 71 for sorghum and 76 for maize. The discrepancy between the domestic and world prices is due to a combination of input subsidy and export tax policies followed by the GOUV. For the purpose of this economic analysis these commodities will be value at world prices. This is a reasonable assumption as all these commodities are tradeable.

As crop yields are highly variable from year to year and are strongly correlated to the amount and consistency of rainfall, trying to determine a reasonable rate for yield increases in indeed difficult. The analysis will use 1982 as the base year. 1982 was considered a normal rainfall year, and production levels were above average. This analysis will assume that rainfall will be normal over the LOP for each of the regions included in the Project. Annual net increases in aggregate production of the three commodities will be estimated at a 2% annual rate and compounded on an annual basis with the first increase taking place in year 3 of the Project. An annual rate of 2% is reasonable as the 1982 production data indicate that in the Volta Noire ORD production for sorghum increased by 4% over 1981 levels. The increase is basically the result of rotating sorghum on fertilized cotton fields. The residual effect of fertilizer on sorghum production was significant, and this evidence points out the fact that the potential for increased cereal production given the use of modern inputs is large. The analysis further assumes that with FSR new inputs defined within the farming systems of the Central Plateau zone will have a positive impact on agricultural productivity and can be profitably employed to increase aggregate production. Intermediate or modern inputs have, indeed, been used much more extensively by Voltan farmers over the past 10 years. The magnitude of input usage is summarized in TABLE 3 . The inputs being promoted include fertilizers, improved seed, and animal traction equipment. Complementing the use of modern inputs are improved farming practices especially as they relate to improved soil and water management. If GOUV pricing policies remain favorable, many of these inputs can be profitably employed by Voltan farmers to expand output. The rate of the adoption of these inputs will be increased as FSR refines and defines appropriat technologies.

TABLE 3

Level of Input Use 1970-1979 (units as indicated)

Input	1970	1979	Estimated area (000 ha)	% of Total area
Improved seed sorghum, millet, maize) (mt)	n.a	75	1.3	0.1
Cereal Fertilizer (mt)	386	6,464	65	3
Thioral (mt)	23.8	40	1,350	61
Irrigation (ha)	n.a	3,340	3,340	8
Cotton fertilizer (mt)	1,824	7,234	56.8	69
Cotton insecticides (000 liters)	118	523	49.3	60
Animal traction (ox teams)	3,500	26,000	104,000	4

SOURCE: World Bank, Upper Volta Agricultural Issues Study. 1982

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TABLE 4 Summarize crop yield potentials for millet, sorghum and maize. These potentials are based on numerous research reports. To achieve optimal improved yields, the use of modern inputs in conjunction with improved practices required.

TABLE 4

Crop Yield Potentials

Crop	National Average (1974-78) (mt/ha)	Range of Current Yields (mt:ha)	Potential Yields (mt/ha)
Millet	0.39	0.3 - 0.6	0.7-0.9 0.8-1.3 1.5-2.5
Sorghum	0.59	0.4 - 0.6	1.1-2.9 3.0-3.5 3.3-4.9
Maize	0.62	-	3.5-5.0 4.5-5.1 3.5-4.5

Source: Ministère de l'Enseignement Supérieur et de la Recherche Scientifique, Direction Générale de la Recherche Scientifique et Technologique, Direction de l'Institut de la Recherche Agronomique, Institut de la Recherche Agronomique Tropicale et des Cultures Vivrières (IRAT), Rapport de Synthèse 1979

All of the yield potentials were defined by on-station research. The analysis assumes that optimal yields as defined by research station trials are not achievable by Central Plateau farmers, however with the Project, a movement towards improvements in yields will be achieved using technologies identified and improved upon by FSR. It is the movement towards the optimal yields on which the 2% anuual increase in aggregate cereal production for the Central Plateau and Dori is based.

The discount rate used for this analysis is 15%. There is no accurate way to determine which discount rate is appropriate for this analysis except to peg it to the Agency's standard target for an acceptable internal rate of return, 15 per cent.

Table 5 presents the NPV calculations. The NPV using a 15% discount rate is $1,078,200 over a ten year time horizon. The NPV calculation demonstrates that through USAID/UV's and the GOUV's investment in FSR, positive benefits will be generated over the LOP to justify the Project. In fact there would still be a positive NPV even if the benefits attibutable to FSR did not begin until the fourth year of the Project.

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TABLE 5

NET PRESENT VALUE CALCULATION OF FARMING SYSTEMS RESEARCH ACTIVITY

COMPONENT

($000)

YEAR	USAID 1/ CONTRIBUTION	GOUV 1/ CONTRIBUTION	TOTAL LOP COST	TOTAL VALUE OF PRODUCTION	VALUE OF ADDITIONAL PRODUCTION DUE TO FSR	INCREMENTAL CASH FLOW	DF 15%	PRESENT VALUE
1984	1,179.1	237.4	1,416.5	75,271.3	0	-1,416.5	.870	-1232.3
1985	1,205.8	237.4	1,443.2	75,271.3	0	-1,443.2	.756	-1091
1986	872.8	238.4	1,111.2	76,776.2	1,505.0	393.8	.658	259.1
1987	433	249.9	682.9	78,311.6	1,535.4	852.5	.572	487.6
1988	184.6	265	449.6	79,877.8	1,566.2	1,116.6	.497	554.9
1989	-	329.1	329.1	81,475.1	1,597.3	1,268.2	.432	547.9
1990	-	417.8	417.8	83,104.6	1,629.5	1,211.7	.376	455.6

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1991	-	570.7	570.7	84,766.7	1,662.1	1,091.4	.327	356.9
1992	-	302	302	86,462.0	1,695.3	1,393.3	.284	395.7
1993	-	337.1	337.1	88,191.2	1,729.2	1,532.1	.247	343.8
TOTAL	3,875.	3,185.0	7,060.1	809,507.9	12,920.0	5,466.9		1,078.2

1/ 15% continging cost included

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H. Nutrition - Food and Food Technology, Alternatives Approaches

The analysis for the nutrition activity differs from the immediately preceding analysis of agricultural research in that the objective of the activity is to increase nutritional well-being through better nutritional knowledge and nutritional planning rather than through a direct effort to increase production. The benefit of improved nutrition is almost as elusive as the value of human life given the effect of nutritional status on health and longevity as well as productivity, and that value is hard to quantify. Even if the valuation problem could be resolved by appropriate assumptions, we do not know precisely what the costs of achieving nutritional improvements are in this environment, so we must discard the possibility of a cost-benefit analysis.

The analysis is also not a true cost-effectiveness analysis since we are considering a combination of activities with different outputs rather than different methods or approaches for achieving a single output. The activities under consideration are rather basic food technology and nutritional analysis activities for which there are standard approaches which do not lend themselves well to alternate designs. Thus, what follows is a discussion of the configurations of activities considered for the nutrition sub-component and a narrative explanation of the reasons for accepting or rejecting the various configurations.

This Project has been carefully scrutinized to ensure no unnecessary activities are proposed. Given the dual interlocking purposes of the FFTS, viz. taking primary responsibility for the national food plan and improving nutritional self-reliance through the agricultural system, the FFTS must sacrifice its capability to fulfill both objectives if cutbacks are required. There is no doubt that Upper Volta needs better information on nutrition and consumption for food policy and planning, since it has an incomplete and low quality data base for nutritional concerns, nor is there any doubt that without improving nutritional self-reliance the Voltan population will continue to be dependent upon foreign assistance in overcoming the vagaries of Sahelian weather and the continued degradation of its natural resource base.

It is necessary, however, to discuss the implications of different levels of assistance on the FFTS program. No one branch has lower priority -- all three branches will suffer proportionately.

At a minimum level of assistance, there would be no studies, only a survey; training would be extended only to the groupements villageois; and the technology lab would only serve as a testing shop, not for research and development, while the home economics research would be restricted to methods of cooking and preservation. At this level of assistance, the survey would be useful only for gross planning, not for research and development efforts and as such the data would be difficult to interpret since many of the intrahousehold factors would not have been explored. It would also be necessary to guess, based on very insubstantial evidence, about the nutritional value of many common components of the rural diet. By training only the Groupements Villageois, one would be severely restricting the impact of the Project, thereby lowering its potential impact. One would fail to incur a multiplier effect through developing audio-visual materials or by training teachers. If the FFTS had only a food technology testing lab and a very rudimentary home economics lab it would not be able to carry out adaptive research on one of the most pressing constraints to improved nutrition in rural areas - time required for food transformation. Needless to say, at this minimal functional level, the FFTS

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could have very little substantative responsibility for and could provide minimal amounts of data to be used in for developing the national food plan.

At a more generous but still sub-optimal level of support the FFTS could carry out the survey and the two most essential studies (time allocation and food inventory); it could train groupements villageois and the teachers at the training centers and it could develop some training materials; and it could support fully functional food technology and home economics laboratories. At this level of support the FFTS would be able to carry out a better survey, but would still lack an understanding of microeconomic factors, price effects, and market basket or consumption studies which would be needed to help predict the nutritional impact of future policy changes such as shifts in GOUV commodity structures. The training would create improved and somewhat self-sustaining outreach through the teachers, but would still fail to reach a large group of potential users - the young farmers' groups who will be the agriculturalists, cooperative members, and household decision-makers of the future. The technological section would still lack the capability of analyzing food - both currently consumed and those developed by the home economics groups - for toxic and pathological properties. This lack of an institutional capacity to carry out such tasks could lead to tragic consequences or to avoidable social costs.

In considering alternatives one must also consider whether or not the private sector should assume these responsibilities. In the case of the FFTS, the major functions are data collection and analysis, training extension agents and other people involved in agricultural training, and development and testing of solutions to constraints to better food utilization in rural areas. Quite clearly, it is appropriate for governments to collect data for planning and projection and the Government of Upper Volta has no other source of equivalent data. The US government , through USDA, collects enormous amounts of data useful for programming and budgeting exercises in agriculture and nutrition.

The agricultural research and extension function is also appropriately carried out by governments, as food security is a common good from which all citizens, farmer and non-farmer alike, benefit.

There is an appropriate role for the private sector in disseminating new technology. Unfortunately, no private enterprise currently exists in Upper Volta which is capable of the research and development and field testing of the new technologies discussed for this Project.

The role of the food technology lab is to develop and field test new technologies. Once the economic returns to such equipment have been demonstrated the FFTS will encourage private entrepreneurs to manufacture and market them. The same possibility exists for kitchen technologies (e.g. airtight storage containers) which, once proven safe and effective will devolve to the private sector for manufacturing and after sales and services.

The recipe development activities are unlikely to find private sector promoters unless a simple processing step is required or if a packaged food could be substituted in the recipe itself, calculated on the package wrapping (very much the way new foods like texturized vegetable protein were introduced in the U.S.).

For two of the three activities then, the private sector has no maningful role to play beyond a provider of services. In the third activity private entrepreneurs will be encouraged to play a significant role in the multiplication and dissemination of the technologies developed by the FFTS.

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I. Establishment of a Comprehensive Progressive Soil and Water Conservation Process

The alternative designs considered for soil and water conservation included more or less soil and water conservation delivery and more or less rapid development of soil mapping and establishment of a soil and water data base. The approach adopted is an incremental one with mapping and surveys spread over a twenty year time horizon. These activities will have an indirect effect on production by improving the MRD's knowledge base and planning capability.

Unlike the data base generation activities, the modest soil and water conservation delivery activity could be analyzed for its direct effect on production. However, we do not have any good data on delivery costs to carry out such an analysis. Consequently, soil conservation delivery will be carried out on a small scale, carefully monitoring the costs and correcting the technical deficiencies of current conservation efforts.

The alternatives considered below range from no activity to a comprehensive design for a long-term program in soil and water conservation. The latter is the preferred alternative among the six considered.

1. Alternative 1: No USAID intervention

Selection of this alternative would maintain the status quo with respect to the existing institutional and societal arrangements. The condition of the resources base would, however, continue to degrade based on information provided in the DAI report, "Agricultural Sector Assistance Strategy for Upper Volta", the World Bank Report, "Upper Volta Agricultural Issues Study" the USAID Environmental Issues Report and various other documents and papers available for review.

The attainment of the GOUV's stated objective of food self-sufficiency would not appear to be possible if this alternative were selected. The agricultural, nutritional, social, economic and other associated problems would be aggravated.

2. Alternative 2: Establishment of a Data Collection and Management System only

This alternative has four elements. Element 1 puts a National Cooperative Soil Survey process in place. Element 2 consists of a Resource Monitoring system. Element 3 provides for Computerized Data Management system. Element 4 establishes a survey of the potential for more effective use of existing water management systems.

This alternative does not include a delivery system. Therefore, this alternative has no mechanism to ensure to any degree that information generated by any of the elements is effectively translated into useful products thereby justifying the investment in those elements.

The Resource Monitoring system will trace resource conditions and trends. Permanent sample sites will be established based on statistical sampling procedures which would be representative of the various land types. Parameters pertinent to such land type would be established and measured at each site on a predetermined cycle: 3 years, 5 years, 10 years.

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The Computerized Data Management system will provide for data storage, retrieval and analysis. It will give decision-makers information useful in setting priorities, basing budgets and staffing patterns, and allocating these financial and human resources towards the achievement of predetermined objectives.

The survey of the potential for more effective use of existing reservoirs and small irrigations systems will include their inventory, a determination of their status, i.e. degree of sedimentation, as well as their condition, and need for rehabilitation. This will provide the background information necessary for determining the benefits relative to whatever costs are incurred if a water development and/or management activity is undertaken. It will also provide information concerning the most effective scope of such an activity; i.e. large water development vs. small watershed protection vs. small village reservoirs for vegetable production. This survey will be done in conjunction with ONBI's proposed inventory to be carried out in 1985-86.

More specifically, the National Cooperative Soil survey process is a long-term incremental inter-governmental effort based on a national soil survey plan agreed upon by the cooperating entities, i.e. the Dutch, USAID, the GOUV, the FAO, IGHV and others. The national plan will identify such things as the methodology to be employed, the technical standards which will be adhered to, benchmarks for progress and other matters important to the cooperating entities.

Priorities must be established within Upper Volta as to which areas will be given early attention and the detail of survey anticipated.

The cooperating entities must identify the purposes for which a survey is being undertaken and agree on the inter-disciplinary input necessary and who will provide what work items within what time frames. The cooperating entities must also identify the nature of the interpretive information subsequent to the national soil survey process and its contribution to the decision-making and policy development and implementation process within the rural development sector.

3. Alternative 3: Data Collection and Management System plus Strengthening the Existing Field Delivery System

Alternative 3 describes the Data Collection and Management System elements. A first step in strengthening the existing field delivery system would appear to be the elevation of the DSA (Agricultural Services) to a position comparable to the ORDs within the MRD. The Soils Services Unit should be re-structured to make the soil conservation element more dominant. These actions would raise the profile of these entities to a level where ORD Directors may be dealt with more effectively. More effective interaction with ORD Directors appears essential to establishing the continuity throughout the organizational structure necessary to strengthen the existing field delivery system. Soils Services sections must have adequate resources to work with and appropriate technical support from ORD Directors and their staffs.

The ORDs visited during the Project design had a technical advisor (Dutch voluntee attached to each Director's staff. This position, be it filled by an expatriate or a Voltan could easily serve as the focal point for this technical support. There are, of course, other technical contacts to be made at the ORD level. However, in the soil and water conservation arena, the technical advisor appears to be the most appropriate contact for the coordination of activities.

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It follows then that the technical advisor must have the requisite logistical support and information to ensure that policies, priorities, and techniques emanating from the DSA/Soils Services Section are implemented.

Extension agents must be trained in at least rudimentary soil and water conservation technology to enable them to provide a level of follow-up sufficient to keep the village groups committed to the conservation activities they have undertaken.

Extension agents are burdened with a myriad of responsibilities. However, it appears that these responsibilities usually occur within separate time frames with minimum overlap. Therefore, the existing field delivery system could be strengthened by having the extension agents assure a level of direct assistance and follow-up in the soil and water conservation arena. This work and their on-going training program to ensure competence could be undertaken during time periods when other work requirements are minimal.

4. Alternative 4: Data Collection and Management System; Strengthening the Existing Field Delivery System
plus
Importing Technical Assistance to work on the Soil and Water Process Development at the National Level

Please refer to alternative 3 above for the description of the Data Collection and Management Section plus strengthening the Existing Field Delivery system.

The importation of technical assistance may be viewed in two time frames: long-term assistance and that of a shorter duration. If deemed necessary, long-term technical assistance designed to strengthen the national structure could achieved by the assignment of a GS-14/15 Soil Conservation with broad experience. This individual would work side-by-side with MRD personnel helping them evolve a national soil and water conservation process over a period of from one to two years.

However, effective short-term technical assistance could be provided by experienced technicians in increments of 6 to 8 weeks. For example, a Soil Scientist with experience as a State Soil Scientist could concentrate his/her efforts during that time frame working with the infrastructure already existing in the DSA/Soils Services portion of the MRD helping them evolve an acceptable pattern of elements to be negotiated into a soil survey work planning process. A Soil Conservationist with experience as a State Resource Conservationist could work similarly to develop the vegetative elements of a soil and water conservation program. An engineer with State Conservation Engineer's experience could provide similar assistance with the engineering components.

5. Alternative 5: Data Collection and Management System; Strengthening the Existing Field Delivery System:
Importing Technical Assistance to work on the National Soil and Water Conservation Process Development
plus
A Targeted Delivery System Based on Priority Identification

Alternative 4 plus a process of problem identification and definition and rational decision-making must be followed to isolate the most critical soil and water conservation problems at the national level and develop appropriate objectives. A similar process will be followed at the ORD level. The purpose

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of these processes is to ensure the effective use of scarce resources (i.e. funds, personnel, materials) in addressing the resource problem most important to Upper Volta.

By going through this process at the national level those ORDs deemed to have the most critical needs may be provided additional resources work on these problems. By going through this process at the ORD level, ORD directors can assure themselves that they are making the best use of the resources alloted them by whatever sources may be available to them.

Generally, an iterative sequence may be followed; i.e.
- Provide educational information
- Receive requests for assistance
- Inventory the resource
- Analyze the inventoried information
- Develop alternatives
- Make decisions
- Plan the activity
- Implement the plan
- Control quality
- Follow up and evaluate

6. Establishment of a Comprehensive Progressive Soil and Water Conservation Process

Execution of this alternative will reinforce the capacity of the Ministry of Rural Development to manage and promote a more efficient use of resources in the agricultural sector and increase agricultural output while protecting the resource base. This alternative builds on existing institutional and societal arrangements. It incorporates the elements of alternatives 2 through 5 while reinforcing the delivery system.

For example, it could provide for soil and water conservation section chiefs who would provide technical, budget, staffing and logistical support recommendations to the ORD directors. This section chief would provide technical supervision and training to a soil and water conservation section chief. This interaction will lead to the development of a comprehensive soil and water conservation program for the ORD which successfully blends the priorities, objectives and guidance developed nationally within the ministries with the priorities, needs and objectives generated within the ORD (gathered from the village level by the extension agents, surfaced through the ORD structure).

Furthermore, it would permeate the organization with soil and water conservation increments appropriate to the individual sections. For example, the functional literacy unit in component 2 of the ADS project could utilize books about soil and water conservation in their reading program, and incorporate the writing of conservation essays in their primary school writing efforts.

Since, as previously mentioned, the extension agent already has a fulltime job and the imposition of soil and water conservation responsibilities upon this existing workload may be less than satisfactory, this alternative provides for a counterpart soil conservationist/soil conservation technician to spend full time on that work. These positions would allow the extension agents to perform their assignments more adequately. They would allow someone trained in the complexities of soil and water conservation to devote greater effort to that priority work.

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This alternative would complete the structural design of a comprehensive national soil and water conservation process. It would work within the organization patterns already existing in Upper Volta and would not require complete reinstitutionalization.

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J. Decrease Food Insecurity at the Village Level (Support to the DIRC for Village Cooperative Cereal)

There are two levels of Economic and Financial Analyses required for this Project activity. One is at the village level to assure that the potential borrower can realize sufficient earnings to justify the investment; the second is at the loan fund level to assure that the fund will be financially viable beyond the PACD.

1. Cereal Bank Level Analysis

Before undertaking the analysis at the village cereal bank level, it is important to stress that due to the varying socio-economic and market conditions across the country, no two cereal bank loans are identical. While each loan recipient will first prepare an individual feasibility study that will be verified and approved or rejected by DIRC credit agents, the following analysis is believed representative of a typical cereal bank loan based on our previous experience with cereal bank loans and market conditions in the North Central Area where the loans are expected to be made.

Due to the fact that most loan recipients will not have had applied experience with cereal banks prior to the loan, the DIRC has recommended and USAID agrees, that the borrower should start small and expand as possible given the individual setting. For this reason it is assumed the borrower receives a loan for 20 MT in 1984, 30 MT in 1985, and 50 MT in 1986. It is estimated that construction costs equal 10% of the value of the grain.

It is assumed for the purpose of this analysis that the DIRC will charge an interest rate of 15%. Should the DIRC be forced to charge a higher interest rate due to a greater than expected delinquency rate, higher inflation or higher administrative costs, the Cereal Bank will be forced to charge marginally higher prices to consumers to assure repayment.

A further assumption is that life of construction is 5 years and construction replacement costs with traditional materials will increase by 5%/year. Finally the following prices are assumed. Again the absolute values are not as relevant as the pricing margin. The margin for cereal bank activities are calculated at 20 to 25 FCFA, while the free market can be expected to have a range of 40 CFA/kg.

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EXPECTED PRICES 1984-1992 (FCFA/KG)

Year	Expected Market Producer Price	CB Producer Price	CB Consumer Price	Market consumer Price
1984	55	65	85	95
1985	60	70	90	100
1986	65	75	95	105
1987	67	77	100	107
1988	70	80	103	110
1989	72	82	107	112
1990	74	84	109	114
1991	76	86	111	116
1992	78	88	113	118

LOAN AMOUNT

Year	Amount (000 FCFA)	Quantity Cereal (MT)
1984	1,430	20
1985	2,310	30
1986	4,125	50
	7,865	100

Loan repayment Plan (5 years, one year grace period - 15% interest with the first years interest being the down payment).

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First installment - 1,430,000 FCFA

Year	Principal	Interest	Outstanding Balance	Payments
1984	0	214.5	1,430	214.5
1985	286	0	1,144	286.0
1986	286	171.6	858	457.6
1987	286	128.7	572	414.7
1988	286	85.8	286	374.8
1989	286	42.9	0	328.9
	1,430	643.5		2,076.5

Cumulative Loan Repayment - 7,865,000 CFA

Year	Principal	Interest	Outstanding Balance	Payments
1984	0	214.5	1.430	214.5
1985	286	346.5	2.992	632.5
1986	748	790.35	6.831	1.538.35
1987	1,573	405.90	5.258	1.978.90
1988	1,573	788.7	3.685	2.361.7
1989	1,573	552.75	2.112	2.125.75
1990	1,287	316.8	825	1.603.8
1991	825	123.75	0	948.75
	7,865	3,539.25		11,404.25

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Year	Credit	Sales Revenues	Expenses			Cash on Hand (000 F.CFA)	Stocks on Hand (MT)
			Const-ruction	Purchases	Loan		
1984					214.5	(214.5)	
	1,430		130	1,300	0	(214.5)	20
		1,700				1,485.5	0
1985	2,310					3,795.5	0
			210	3,500		85.5	50
		4,500				4,585.5	0
					632.5	3,953.0	0
1986	4,125					8,078.0	0
			375	7,500		203	100
		9,500				9,703	0
					1,538.35	8,164.65	0
1987				7,700		464.65	100
		10,000				10,464.65	0
					1,978.90	8,485.75	0
1988				8,000		485.75	100
		10,300				10,785.75	0
					2,361.7	8,424.05	
1989			165	8,200		59.05	100
		10,700				10,759.05	0
					2,125.75	8,633.30	0
1990			250	8,400		116.70	100
		10,900				10,883.3	0
					1,603.80	9,279.5	0

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1991			425	8,600		254,5	100
		11,100				11,354.5	0
					948,75	10,405.75	0
1992				8,800		1,605.75	100
		11,300				12,906.000	0

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As shown on the accompanying cash and stocks flow table a cereal bank activity of 100 MT may be expected to generate a value of 12,906,000 CFA through October 1982. This amount is equal to the expected value of 100 MT of grain pl 1,605,750 CFA of profit for the village groups. (It is assumed the management time will be contributed by the villagers).

These figures clearly indicate that the cereal bank loan is financially viable When one considers the economic benefits implied by the price table above, one finds that the direct economic benefits of the activity to the producer are approximately 1,000,000 CFA/year and to the consumer approximately 500,000 FCF This translates into modest increases of 1500 FCFA or $4/year direct per capi benefits due to cereal bank interventions. It is much more difficult to quantify the indirect benefits arising from market interaction. However, it would be expected that purchases by the Cereal Bank would bid up producer prices, and the availabilities of cereal stocks would serve to decrease costs to the consumer.

Finally, the long term benefit associated with this activity will be the shift of cropping patterns away from lower value coarse grains towards those of higher value which will benefit rural producers/consumers and the national economy through greater export earning and foreign exchange from shifts into cotton production.

2. Credit Funds Analysis

The following tables present the financial flow of the credit funds activities. Expected inflation is accounted for within the loan demands and the expected percentage of bad debts are noted in the comments. The only outstanding issue therefore is the financing of the DIRC's administrative costs. These costs and an overall financial plan for the credit fund activity will be submitted in form and substance satisfactory to USAID/Upper Volta as a condition precedent to the release of counterpart funds for the Project activity. These tables clearly show that the fund is viable and the cumulative revenue will continue to support the credit program beyond the PACD.

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K. Increase the Efficiency of the National Basic Cereals Supply Stabilization

The general principle of economic analysis is to compare the real benefits of the Project activity with its real costs. In order for such analyses to be satisfactorily completed,,it is necessary to be able to quantify the benefits of the Project as well as the costs. While the costs of this Project are quantifiable, it is our assessment that the Project benefits of this activity are largely intangible due to the fact that the major outputs of the Project are the improved management and planning capacity of OFNACER itself, as well as the Ministry of Rural Development. For this reason we have elected to complete a least cost/demand analysis as specified in Handbook 3, Appendix 3E.

1. Least Cost Demand Analysis

As was discussed under the Project Description, for the GOUV to realize the goal of increased cereal security and strengthen its analytical and planning capabilities it must develop the information and analytical capacity to assess all links of the food chain (production, marketing/transformation and consumption). Such information and analyses are fundamental and necessary preconditions to the Ministry of Rural Development's capacity to manage and promote a more efficient use of resources in the agricultural sector. The selection of OFNACER as the institution responsible for gathering and analyzing market information is not only consistent with the Office's Charter, but is also the least cost method of achieving the desired results. Since OFNACER has a nationwide system of over 100 buying/selling centers, it is argued that the basic data collection can be achieved at no additional costs to the GOUV. The alternatives of strengthening the Department of Studies and Project (DEP), or the Department of Agricultural Services (DSA) implicitly would require increases in staff of approximately 50 persons to satisfactorily monitor market conditions. We therefore believe that the proposed increase of three economists to OFNACER's Planning Unit, the 36 PM technical assistance, and the proposed training is the most efficient use of resources to realize the stated objectives of strengthening the MRD's analytical capacity, enabling OFNACER to become more efficient, and implicitly encouraging OFNACER's evolution away from market intervention (except as necessary) to a role of market assessment and policy formualtion which we believe is more appropriate for government.

With regard to improved storage management, the proposed assistance of training and warehouse commodities accompanied by policy reform to assure the recurrent cost financing of warehouse commodities is the most effective means of assuring the improved quality of OFNACER's stocks.

RECURRENT COSTS ANALYSIS

In the "Recurrent Costs of Development Programs in the countries of the Sahel: Analysis and Recommendations",*, recurrent costs are defined as:

> "the set of annual flows of gross expenditure of the government and its agencies, in local currency or foreign exchange, undertaken in order to generate socio-economic benefits in connection with the operation and maintenance of a unit of installed capacity, regardless of the source of finance of the expenditures in question, domestic or foreign".

The heart of this definition is "the operation and maintenance of a unit of installed capacity". Expenditures for this purpose may be contrasted to non-recurrent expenditures incurred in installing, developing or establishing this capacity. In the case of a road it is easy to distinguish between the installation of capacity (the road) and the maintenance of that capacity. In the case of something like agricultural research, it is harder to distinguish between the developmental or installation phase and the maintenance phase. In the sense that research is always directed towards increasing the productive capacity there is never a phase of maintaining an established capacity. Nonetheless, there are continuing expenditures required to operate a research program. We will treat this case and similar kinds of current expenditures as if we have established units of installed capacity for all components, in order to get the full recurrent expenditure implications of the Project. Then we will explain why certain expenditures should be considered as non-recurrent costs and therefore, for reasons not entirely clear, more worthy of financing by donors. We will compare the full recurrent expenditures with the current and expected Ministry of Rural Development budgets and the PL 480 counterpart funds to be made available in covering operating costs associated with the expansion of the Ministry's activities.

TABLE 1

Recurrent Costs	Annualized recurrent costs in constant 1984 dollars for 1989 and beyond
Component 1 (mostly T.A.)	
- Policy Analysis, Project Evaluation And Administrative Support	135.6
- Sampling Frame - Agricultural Statistics	172.3
Component 2	
- Young Farmer Training	173.1
- D.I.R.C.	114.2
- Scholarship Fund	0

* CILSS/Club du Sahel, August 1980.

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Recurrent Costs	Annualized recurrent costs in constant 1984 dollars for 1989 and beyond
Component 3	
- National Experimentation Service	297.4
- Food and Food Technology	221.1
- National Soils Service	276.6
Component 4	
- Food Security	121.3
TOTAL	1511.6
(of which new staff)	(402.6)
Agricultural Statistics	
- New Staff	92.1
- Vehicles - replacement (108.9 ÷ 6)	18.1
(Maintenance) (Operation)	24.3
- Supplies	15.3
- Travel (local)	11.3
- Office Expenses	4.0
- Equipment	7.2
Sub - Total	172.3
Policy Analysis - Project Evaluation and Administrative Support	
- New Staff	50.0
- Vehicles - 39.5 ÷ 6 replacement	6.6
Maintenance	19.0
- Supplies & Equipment	20.0
- Travel	20.0
- Computer (100 ÷ 10)	10.0
- Documentation Center materials	10.0
Sub - Total	135.6
D.I.R.C.	
- New Staff	36.0
- Vehicles - replacement and	10.0
Maintenance Operation	25.7
- Training Center Maintenance	.5
- Training materials	2.0
- In-country Training	40.0
Sub - Total	114.2

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Young Farmer Training		Annualized recurrent costs in constant 1984 dollars for 1989 and beyond
- New Staff		8.2
- Building maintenance		6.0
- Equipment - replacement		34.0
- Mini computer		3.0
- Photovoltaic units		1.5
- Buses - replacement		10.0
0 & M		25.7
- Supplies for Teaching Centers		12.0
- Computer supplies		1.5
- In-Country Training		71.2
	Sub - Total	173.1
National Experimentation Service		
- New Staff		80.1
- Training (short-term)		10.0
- Equipment		30.0
- Vehicle - replacement		32.3
0 + M		120.0
Spare parts		20.0
- Computer		3.0
- Building maintenance		2.0
	Sub - Total	297.4
Food & Food Technology Service		
- New Staff		46.9
- Surveying costs		10.0
- Building maintenance		5.0
- Vehicles 118 ÷ 6 replacement		19.8
0 + M		59.4
- Equipment - Office		16.0
Lab		6.0
Coop & Food Tech.		16.0
Garage		4.0
Library		5.0
- Computers - 2 micros		1.0
- Equipment Audio-visual		14.0
- Survey Supplies		4.0
- Duplication & Printing		6.0
- Spare parts		8.0
	Sub - Total	221.1
National Soils Service		
- New Staff		77.0
- Building maintenance		2.7
- Vehicles (154 ÷ 6) replacement		29.4
0 + M		94.5
- Computers (100 ÷ 10)		10.0
- Survey equipment		10.0
- Cartography Equipment		18.0
- Soil Conservation Supplies		10.0
- Documentation Center		5.0
- Office Equipment		10.0
- Office Supplies		7.0
- Survey Supplies		3.0
	Sub - Total	276.6

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Food Security	Annualized recurrent costs in constant 1984 dollars for 1989 and beyond
- New Staff	12.3
- Training	5.1
- CEPS Office	31.4
- Warehouse Equipment	30.0
- Computers (100 ÷ 10)	10.0
- Vehicles - replacement 45.3 ÷ 6	7.5
O + M	25.0
Sub - Total	121.3

The GOUV budget for 1983 is not structured in a way which enables a precise breakdown by Ministry of budgeted expenditures. The following figures show the Ministry of Rural Development's share of the budget for 1983 in millions of CFAF.

	Ministry of Rural Development (MRD)	GOUV total*	MRD Share of Total (%)
Personnel	2,758.8	31,773.9	8.7
Material	133.4	3,170.7	4.2
Common Expenses & Maintenance	358.2 (est.)**	4,117.5	8.7
Public 'Intervention' (scholarship, contributions to int'l organizations, Public enterprises)	119.1	6,487.3	1.8
Equipment & Investment	425.6	3,187.8	13.4
National Counterpart to Foreign Aid	250.0 (est.)***	1,000.0	25.0
TOTAL	4,045.1	49,737.2	8.1

* excludes Dept service.

** we assume the MRD's share of general operating expenses is the same as its share of total GOUV personnel.

*** about 25% foreign aid in recent years has been allocated to rural development and agriculture. We assume the counterpart contributions will have a similar pattern of allocation. This budget item is not broken down in the 1983 GOUV budget.

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If post-independence growth patterns prevail during the coming years, we may expect about three per cent annual growth in GNP in constant CFA. If the share of the GOUV remains stable, as it has for the past few years, and if the MRD's share of the GOUV budget also remains constant at about 8.1 per cent, then we could expect the following trend in MRD budget totals in millions of CFA francs.

	1983	1984	1985	1986	1987	1988	1989
MRD budget	4,045	4,166	4,291	4,420	4,553	4,689	4,830
(millions of $)*	11.6	11.9	12.3	12.6	13.0	13.4	13.8

In other words, we could expect annual budget increases in constant dollars of about 350,000 to 390,000 during the life of the project and an increase of just over 400,000 dollars in 1989. This may be compared with the annualized recurrent costs of $1,512,000 beginning in 1989.

During the life of project, personnel and operating costs in addition to the expected growth of MRD expenditures will be financed through PL 480 counterpart funds. With the addition of these funds the MRD budget may be expected to increase as shown below.

	1983	1984	1985	1986	1987	1988	1989
MRD Budget ($ millions)							
GOUV resources.	11.6	11.9	12.3	12.6	13.0	13.4	13.8
PL 480 counterpart utilization.	-	2.5	2.9	2.3	1.9	1.7	-
TOTAL	11.6	14.4	15.2	14.9	14.9	15.1	13.8

In order to maintain the same scale of operations in 1989 as in 1988, financing must be obtained whether from external sources or through reallocation of GOUV resources for $1.51 million in recurrent operating and maintenance costs.

This figure is within the realm of possibility for the GOUV to finance through its own resources. At the assumed growth rate of three per cent annually, the GOUV budget will expand by $5.6 million from 1988 to 1989. The question is quite simply a matter of the priority which the GOUV will assign to maintaining the established operations of the Ministry of Rural Development in 1989.

From the point of view of personnel expansion, the recurrent personnel costs attributable to the Project are relatively modest. They amount to $400,000 of the total $1,512,000. This represents an addition of only 4.1 per cent to the Ministry's personnel budget in 1989 and it is less than one half of a percent of the current GOUV personnel budget.

* 350 CFA/$

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	1983	1984	1985	1986	1987	1988	1989
MRD personnel	2,759	2,842	2,927	3,015	3,105	3,198	3,294
(millions of $)	7.9	8.1	8.4	8.6	8.9	9.1	9.4

The major portion of recurrent costs are material support to operations and maintenance. The recurrent budgets have been prepared on the basis of expected future activity levels which should be maintained to benefit from the activities began during the Project. Each activity of the Project has been designed from the perspective of minimizing the necessary additions to personnel while at the same time providing adequate material support and equipment for them to achieve the expected levels of output. While the recurrent cost implications of the project are not insignificant, they have been constrained to amounts which do not radically alter the relative importance of the Ministry of Rural Development within the overall budget and which do not require a major departure from the projected trend of GOUV resources committed to the MRD. The PID approval cable (STATE 033844) of February 5, 1983 requested a clarification of "whether conditions in Upper Volta are consistent with the four criteria for AID funding of recurrent costs described in the Agency "Recurrent Costs policy paper" of May, 1982. While this Project generates the recurrent costs which were estimated above, it does not call for the financing of recurrent costs, strictly speaking, with only a few exceptions. What the Project does call for is the financing of operating and maintenance costs during the installation or project development phase. It is the USAID's perception that this installation phase for several of the activities described above will require more than the five years allotted and our strategy calls for a ten-year approach to these activities through a follow-on project. Consequently, a discussion of the four criteria is somewhat inappropriate with respect to recurrent cost financing in this Project. Such a discussion would be appropriate if the Project involved significant levels of funding to support ongoing MRD activities. Instead, in almost all cases, the Project will increase the level of activity or begin new activities.

Since this Project begins or expands certain basic activities and a significant level of future recurrent costs, it is nonetheless instructive to examine the four criteria in looking ahead to the future, and in considering the funding of operating costs with PL 480 counterpart funds.

(1) An acceptable policy framework or movement towards such a policy framework.

The Investment Rationale paper of May 5, 1983 discussed the policy framework at length, drawing upon the conclusions of two major studies of the agricultural sector*. The conclusion is the policy framework is reasonably good and, in addition, this Project will finance the basic data generation and studies of policy issues which will assist in improving the policy framework.

(2) An assurance that recurrent cost support has higher development impact than new investments.

This argument will be made when the USAID decides it is appropriate to engage in recurrent cost financing. To a significant degree, many donors already support some recurrent costs. Notable examples are the World Bank's road maintenance project and the annual budget support provided by France. However, there

* I.B.R.D., Report No. 3296-UV, Upper Volta Agricultural Issues Study, Oct.29,82
D.A.I., Agricultural Sector Assistance Strategy for Upper Volta, March. 1982.

are numerous cases of missed opportunities because of the general neglect of recurrent cost financing. For instance, in some areas the amount of potable water regularly available could be more economically assured by well-deepening and pump repair than by sinking new wells. This is an example in a specific area which is indicative of the more general case for recurrent cost support which will be made in the revision to the FY 1985 CDSS and in future project presentations with recurrent cost financing components.

(3) An inability of the host country to undertake recurrent cost financing.

The situation in Upper Volta is crystal clear in regard to its inability to finance significant amounts of recurrent costs. The precise magnitudes involved are not known and are not estimated by all the donors or the GOUV. We will present crude estimates of the recurrent cost financing requirements for Upper Volta in our CDSS revision and discuss the implications for our program strategy.

(4) A carefully phased plan exists for shifting the entire burden to the host government.

The new levels of activity for existing offices will, in many cases, require more than five years to become fully functional and operating at their new normal capacity. The GOUV will begin to absorb the recurrent costs of these units during the follow-on project, substituting its own resources for the PL 480 counterpart funds generated during the follow-on project. As the budget projections above have shown, the recurrent costs of this Project are within the ability of the GOUV to finance without unreasonable resource reallocation.

SOCIAL SOUNDNESS ANALYSIS

The Agricultural Development Support Project (ADS) will engage in a variety of activities designed to increase agricultural productivity in Upper Volta. In support of this goal, the Project will provide assistance to strengthen the Ministry of Rural Development's (MRD) capacity to achieve a more efficient utilization of human, physical and financial resources. Given this project purpose, the ADS will operate primarily at the central level. Simultaneously however, selected interventions to develop and extend proven productivity - increasing technologies will be carried out at the regional level, with emphasis on the less-endowed and relatively neglected Mossi (or Central) Plateau region. The Mossi Plateau covers 30 percent of Upper Volta's total land area, contains 70 percent of its total population, and is faced with major physical and technological agricultural constraints. With these foci, the project, as designed, offers exciting possibilities for generating positive results in growth terms. At the same time, it is geared towards attending specifically to equity concerns by reducing current regional disparities in agricultural development.

Since, in the long-run, the ADS is expected to generate benefits which will impact the country as a whole, this social analysis begins by providing a general description of socio-economic considerations in Upper Volta which are pertinent to the Project. It examines the socio-cultural landscape which will affect and be affected by project activities. The feasibility of specific activities is then analyzed, together with the potentials for spread effect. The latter is strongly dependent on the former, and will require the adoption of highly participatory procedures and the development of effective linkages among the central Ministry, the regional development organizations, and the local villages. Finally, the impact of ADS is forecast; specific groups of beneficiaries are identified, and the degree of equitable distribution of benefits is assessed.

I. Upper Volta: Socio-Economic Considerations

Upper Volta is a land-locked country with a population of approximately 6,300,000. There are nine major ethnic groups in the country, of which the Mossi comprise the greatest percentage (some 48% of the population). The climate, soils and water resources of the country provide a difficult setting for the people. Between 85% and 92% of the population is rural and they are almost all principally occupied in food and cash-crop production, with animal raising as an important secondary activity. It is the primary activity in the case of certain ethnic groups.

Land availability is becoming an increasing problem in Upper Volta, particularly in the Mossi Plateau, where 70 percent of the total population resides. The average population density in the country is 22 persons per square kilometer, except in the Mossi Plateau which carries an average of 41 inhabitants per square kilometer. In terms of arable surface availability, the national average is 1.87 hectares per capita. In the Mossi Plateau, the average is 0.74 hectares per capita, 26 percent less than the minimum area (1 hectare per capita) suitable for the extensive, fallow ground system of agricultural cultivation practiced in the Plateau.

The heavy concentration of the population in the Mossi Plateau originated during the pre-colonial era when the upland plateau area was favored for: (a) its lesser exposure to diseases prevalent in the river bottom lands; (b) its favored position for defense; (c) the unique groundwater feature of the region, particularly in Yatenga, and (d) the location of the Plateau, which sits in the major crossroads of trade between coastal Africa and the desert trading entrepots, like Timbuctu and

Mopti.* Overpopulation in the Mossi Plateau has since resulted in land degradation and devegetation --- problems which have constrained agricultural and livestock production, and have precipitated a major population exodus from the Plateau.

A presentation of the socio-economic profile of Upper Volta would be incomplete without a discussion of migration and its impact.** Migration constitutes the most spontaneous and permanent movement within and out of Upper Volta. The World Bank estimates that the number of migrants leaving Upper Volta each year averages 100,000 persons, of which 80 percent goes to the Ivory Coast. The migrants are generally young men (70.4 percent), unmarried (73 percent) and Mossi (63 percent).

Internal migration, the type which involves movement from the rural areas to urban centers, usually involves young married couples. In 1975, it was estimated that 21,000 families had migrated to urban centers, mostly from the Mossi Plateau.

Finally, there is internal migration which involves movement between rural areas. This type, which is either spontaneous or organized (e.g., Volta Valley Authority Program), usually involves movement out of the Mossi Plateau, to the more productive West of Southwest regions. A total of 27,000 migrants was recorded to have moved between rural areas during the period 1969-1973. Overall, it is estimated that the rate of international migration exceeds internal migration by a ratio of 10:1.

The primary reason for migration is economic. The region where migration rates are highest is the Mossi Plateau, which is characterized by irregular and insufficient rainfall, lack of land, and heavily degraded soils. In 1973, ORSTOM estimated that over 15 percent of the men and 9 percent of the women, or some 344,000 people had migrated from the Mossi Plateau. Other economic reasons for migrating generally include the lack of salaried and off-farm employment, and underemployment during the dry season. Another off-cited reason for migration is the desire to be independent. This is prevalent among young men and married couples who generally do not have access to land and capital (until the males are in their mid-thirties), and therefore, do not have control over resources earned.

Migrants' remittances to the rural areas constitute the major advantage to migration Studies done in 1972-1973 indicate that approximately 25 percent of per capita cash income in the Mossi Plateau comes from migrants' remittances.***

*Ford, Robert Elden, Jr., "Subsistence Farming Systems in Semi-Arid Northern Yatenga, p. 269-270 (unpublished dissertation).

**The information on migration is drawn primarily from the Development Alternative Inc.'s (DAI) report, Agriculture Sector Assistance Strategy for Upper Volta, 1982, p. 27-30.

***Jean Louis Boutellier, Andre Quesnel, et Jacque Vaugelarde, "Systèmes Socio-economiques, Mossi et Migrations". Cahiers de l'ORSTOM, Ser. Sci. Hum., Vol. XIV, No. 4, 1977, p. 377.

A second advantage is the alleviation of pressure on limited land and family granaries. Notwithstanding its advantages, the growing rate of migration merits concern. In 1980, the total active population in Upper Volta was estimated to be about 2.7 million persons. Due largely to migration labor shortages are now being felt. A recent survey by ONPE/BIT reveals that labor deficits reach about 15 percent during the peak period of the agricultural production season.* The absence of able-bodied males (majority of the migrants) during this season is exacerbating the already heavy workload demands on women, is forcing old men to keep on working, and is prematurely bringing in and keeping young children in the labor force. The implication of the latter on the low literacy rates of Upper Volta, particularly as it affects the education opportunities for female children, should be noted. Likewise, labor shortages in the rural areas should be a prime consideration in the development of productivity-increasing agricultural technologies.

Another area of social concern related to migration pertains to the lack of economic opportunities and social status for returning migrants, particularly in the rural areas. Village elders generally monopolize certain economic networks. Since returning migrants do not hold any social status in the village, they are unable to participate in economic activities. Returning migrants have numerous obstacles to overcome before they can carry out economic activities in the village. One such obstacle is that they do not dispose of the basic resources (fields, livestock, cereals, house) to carry out these activities. The savings they bring back are insufficient to buy these basic resources and are usually spent on conspicuous items (e.g. clothes, watches and radio).

The difficulty of assimilation faced by returning migrants is further exacerbated by their lack of skills relevant to village development. This is primarily due to the fact that most migrants work at unskilled jobs while abroad. In the face of increasing labor shortages the productive use of returning migrants' labor offers an additional opportunity for increasing Upper Volta's limited human resource base. The Project is well-advised to further investigate the size and location of this potentially unutilized labor pool, and devise measures to involve them in relevant skills training in agriculture or related services. Having traveled they are likely to be open to new agricultural techniques and may perhaps become pilot farmers.

Another factor which affects the socio-economic structure of Upper Volta is the level of literacy in the country. The literacy rate is 5 percent, one of the lowest in the world. In 1981, only 20 percent of the primary school-age children was registered; in the secondary level, the rate was only 2 percent. In addition to the formal education system which is usually found in the urban centers, a separate system of rural education exists in Upper Volta. In 1961, the Mininstry of National Education established a number of Rural Education Centers (CER) to provide education of youth which is more closely responsive to rural needs. In 1975, this system of CER gave way to the Young Farmer Training Program (FJA). Approximately 19,000 students are currently enrolled in 562 operating CFJAs in the country. The literacy rate among females is notably lower than among males, due primarily to lack of opportunity, lack of financial resources, and overriding family obligations (see Table 1).

*ONPE/BIT, "Regionalisation des Ressources Humaines", 1980.

Table 1. - Literacy Rates, 1975*

	AGE					
	55-60		25-29		10-14	
	Male	Female	Male	Female	Male	Female
Urban	34.8	5.1	52.0	18.8	73.0	56.8
Rural	7.3	0.5	14.1	1.9	17.1	7.3
All	8.5	0.7	17.0	3.0	20.7	11.0

The health and nutritional status of the Voltan population is poor by any definition. Infant mortality estimates are approximately 161 per 1,000 livebirths, and mortality of children 0-5 years old reaches levels over 270 per 1,000. Parasitic, bacteriological, viral and nutritional disorders are the principal health problems. The demographic profile of the country reveals a young and expanding population. Total fertility rate is 6.5 live-births per woman. The crude birth rate is 48 per 1,000. The rate of annual natural increase is between 2.4 percent and 2.6 percent, with a population doubling time from 27 to 29 years. However, due to increasing migration rates, the growth in population may double more slowly.

The 1975 General Census indicates that 92 percent of the active population is employed in the agricultural sector. A more detailed discussion of existing farming systems and the organization of productive resources at the village-level will be discussed in a later section of this paper. The secondary sector provides employment for 11.2 and 33.8 percent of males in the semi- urban and urban areas, respectively. Likewise, this sector provides employment for 12 percent of the women in urban areas. Tailoring is the most predominant profession for men and women in the secondary sector. The tertiary sector employs 13.2 and 35.2 percent of males in the semi-urban and areas, respectively, and 75 percent of urban women. Trading is the most important activity for both men and women in the sector. Trading however, is virtually dominated by women (66 percent of all traders) who are mostly engaged in the sales of vegetables, dolo (millet beer), clothing, jewelries, and kitchen utensils, among others.

A discussion of ethnic groupings in Upper Volta is necessary, because ethnic affiliations strongly affect socio-economic orientations and village-level organizations. There are more than 50 ethnic groups in Upper Volta, which are classified under three major anthropologic families -- Neo-Sudanians (72%), Guineans (17%), and Sahelians (11%).

The major ethnic groups belonging to the Neo-Sudanian family include the Mossi, Gourounsi, Bwa, Lobi-Dagara, and the Gourmantché. The Mossi, Upper Volta's largest ethnic group, comprise a homogeneous ethnic body. The structure of the Mossi Kingdom is highly centralized and entails a great deal of coercion in its interactive relationships. The Gourounsi and Gourmantche are more individualistic and

* 1975 General Census.

have less rigidly structured political organizations. The social unit of the Bwa is the autonomous village where a diffused ruling power is maintained. The Lobi-dagara are known for their originality and the archaism of their customs. The Lobi-dagara is the only ethnic group in Upper Volta which practices matriarchy.

The Guinean family is composed primarily of the Samo, Marka, Bissa, Senoufo, and Dioula. The autonomous village is their basic administrative unit, and liberalism is fundamental to these ethnic groups. The Sahelian family includes the Peul, Touareg, and the Bella. Pastoralism is the major feature of these ethnic groups. The Peul chiefs do not "rule", but rather seek cooperation and compromise through a process of consensus-building.

Geographically, the Mossi, Peul and Gourounsi are found in the Mossi Plateau. Approximately 72 percent of the population of the Eastern Region is Gourmantche, and the remainder is primarily composed of the Peul and Mossi. There are many ethnic groups living in the Southwest region, including the Bobo (most predominant group), Lobi-dagara, Dafing, and a steadily increasing number of Mossi immigrants. The pastoralist Peul, the Touareg and the Mossi can be found in the Sahel region.

II. The Socio-Cultural Context of the ADS

Agricultural and rural development projects, particularly those which are designed to build or strengthen national institutions' capacity to develop and mobilize local resources more effectively, must necessarily articulate themselves at two different settings. The "culture" of the bureaucratic institution which will be supported by the project must be understood. Without assurance that an institutional will and orientation exist to pursue the project goal and purpose, the likelihood of sustained success will be negligible. Then, there is the local setting, which must be understood, as it provides the ultimate parameters against which project success will be measured. Without a clear understanding of local level processes and trends, there can be no firm expectation that efforts to increase agricultural productivity and rural welfare will succeed so that the feasibility of project interventions can be adequately assessed, the institutional setting is described and analyzed in the Institutional/Administrative Analysis Section IV. E and Annex G (5) and the rural setting is described in this section.

A. The Rural Setting

Because of differences in geographical distribution of agricultural potential in Upper Volta, it would be difficult and misleading to draw a "typical" production system in the rural areas. Therefore, the discussion of production systems will be divided according to the four major regions in Upper Volta: the Mossi Plateau, the Eastern Savannah Region, the Southwest Region, and the Sahel.*

1. The Mossi Plateau

Annual rainfall in the Mossi Plateau ranges from 600 to 900 mm, higher in the south and lower in the north. Due to population pressures, the soils are generally poor and less fertile relative to other regions. Because of poor soils and lack of water in the region, an increasing rate of out-migration from the Mossi Plateau is occuring, which in turn, is further reducing agricultural productivity, due to labor shortages.

* This section largely summarizes findings contained in DAI's report, Agriculture Sector Assistance Strategy for Upper Volta, p.27-30.

The production unit in the Mossi Plateau is the extended family, or zaka, which generally consists of the household head, his wife or wives, unmarried children, and married sons who have not yet established their own homes. The size of the zaka varies considerably, although it usually averages about 10 members. Food security is of paramount importance to farm households in the Mossi Plateau. However, due to the low agricultural productivity in the region, a growing number of households has become increasingly dependent on markets to meet a portion of their food needs.

Family plots are usually cultivated around the compounds and in fields located in the village and the bush. Collective family plots are controlled by the compound head and farmed by the extended family; individual plots are farmed by women (usually wives of the household heads), and to a lesser extent, by the sons. Women do not inherit rights to land use. Husbands are expected to provide them with land for their private fields. However, due to population pressure on land in the Mossi Plateau, it is likely that women's fields are usually not of the best quality. In some cases, women borrow land to extend their private fields. Land borrowing is increasingly becoming a common practice in Upper Volta, as will be discussed later in another section.

Millet is the most important crop throughout the region followed by sorghum (red and white), and by roselle, which is generally grown as a border crop. Intercropping sorghum and millet with cowpeas, and to a lesser extent, with groundnuts, is a common practice. This strategy has most likely evolved as a means of maximizing limited soil fertility.

Planting is normally done with the use of a simple daba hoe, without further seedbed preparation or plowing. As a general rule, except when there is significant weed growth, farmers do not usually plow their lands before planting in order to increase the amount of land they can cultivate immediately after the first rains come. Farmers apply manure and compound waste on compound plots. Very little chemical fertilizer is used. There is an increasingly growing attraction to animal traction (because of its labor-saving advantage) although low incomes may preclude general access.

Women's role in the Mossi Plateau has increased to primary importance as a result of the out-migration of prime age males, land depletion, and seasonal food shortages.* One study indicated that women contribute 54 percent of the labor required to cultivate one hectare of land, in contrast to male contribution, which is 46 percent. In addition, women are expected to care for small ruminants, collect fruits and herbs, and perform the standard time-consuming domestic chores of fetching water, collecting wood, grinding corn, and preparing meals.

The produce from the collective family fields goes to the household head, who is responsible for providing all family members with the morning meal. Women are expected to provide condiments for sauces that accompany the cereals, as well as to contribute to the evening meal. In times of need, which is frequent in the Mossi Plateau, women are expected to supplement the family's food supply from their personal fields. Income generated by women (e.g. from the sales of dolo), are used to purchase clothes, pay for taxes, buy cooking utensils, and contribute to expenses associated with family ceremonies. Almost all households maintain livestock as part of the farming system. Small ruminants and poultry are common and usually sold to meet immediate cash needs. Cattle ownership is generally limited to the "better-off" farmers; cattle herding for the sedentary Mossi farmers is usually done by the pastoralist Peul.

* Henderson, Warner, Ferguson, Women in Upper Volta, 1982.

2. The Eastern Region

The farming systems in the Eastern Region are essentially similar to those found in the Mossi Plateau, because farmers in both regions face the same constraints of low and variable rainfall and relatively poor soils. The similarity however, does not hold true in the eastern and southeastern parts of the region, which have heavier soils and relatively higher rainfall. These more productive areas are presently underpopulated because of the high incidence of diseases such as malaria, onchocerciasis and trypanosomiasis, lack of transportation facilities, and prohibition of settlement in areas reserved for wildlife.

The major crops cultivated in the region are sorghum and millet, which are planted in one or more principal fields belonging to the compound. These fields are controlled by the compound head and cultivated during a fixed part of the day (usually mornings) by all household workers. Likewise, the produce from these fields is controlled by the compound head, who is responsible for providing enough grains for the household to last through the next year's harvest. If harvest are poor, the compound head buys sorghum or millet from other family members, using proceeds from the sales of his cash crop. A survey conducted in 1977 indicates that 42.7 percent of cash crops (soybeans, peanuts and rice) is grown by the compound heads.

In addition to the principal fields, most household members cultivate individual plots allocated to them, usually in the afternoons. The 1977 survey mentioned above shows that in an average 7 - hectare farm, 16.9 percent is controlled by women. The amount of time spent by a woman in her individual plots usually depends on the extent of time spent on her husband's fields, the distance between her husband's fields to hers, and the availability of labor assistance. On the average, women spend about 25 percent of their farm work time in their own fields.

Crops that are normally controlled by men include rice, soybeans, cotton, corn and tobacco. Women control the production of okra, peanuts, and earthpeas. When the economic value of a particular crop grown by women increases, control usually shifts to men. An example is corn, which was traditionally grown by men and women. Because of the increase in the value of corn as a cash crop, and since only male heads generally have access to production inputs, the control of corn has shifted to men.*

There appears to be a correlation between ethnic affiliation and receptivity to change. For example, in 1975, a major effort was undertaken to introduce animal traction in the Eastern ORD. A Michigan State University study conducted in 1981 found that most of the adopters were Mossi farmers.** A survey on small scale enterprise conducted in 1981 shows that in the Eastern Region, the Mossi, the Peul and the Haoussa are more likely to be engaged in newer enterprises (e.g. tailoring, grain milling and baking). In contrast, the Gourmantche entrepreneurs are evenly divided between owning traditional enterprises (e.g., blacksmithing, carpentry and pottery) and newer enterprises.

3. The Southwest Region

This is the most agriculturally productive region in Upper Volta, because of its greater rainfall and higher soil fertility. The household is the basic production unit and is made up of the household head, his wife or wives, his children and younger relatives. Sexual division of labor is less pronounced in this region. In many of the ethnic groups, women have fields of their own. In contrast to the other regions, there appears to be a more equitable distribution of farm labor in

* Ibid

** A total of 1,800 oxen and donkey units were sold in 1975-1980.

the Southwest. This is most likely due to the fact that farming is generally more remunerative in the region, good land is still relatively plentiful, and there is less migration among younger men.

Most of the farming systems are based on sorghum production, which is the most important staple in the region. Secondary crops include long season millet, cowpeas (which are intercropped with sorghum and millet), and maize. Since the introduction of maize varieties which are highly responsive to fertilizer applications corn has been growing in importance in the region.

Cotton is the region's most important cash crop. The major cotton acreage expansion which started in earlier years levelled off in 1978, when unfavorable price relationships between cotton and other crops developed. Paddy rice is cultivated on bas-fonds lands, particularly in the south. Large-scale irrigated rice production projects are being introduced. Fruits and vegetables are produced in marketable quantities in the southern part of the region, and exported to other parts of the country and to Europe. Small ruminants and fowls are kept by most households. Cattle are common in the northern tsetse - free zones; in the southern part, trypanotolerant Ndama cattle are prevalent. Use of animal traction has been heavily adopted and is even gaining importance in tsetse - infested zones.

The receptivity to the use of improved cultural practices, including fertilizers, improved seeds and animal traction, is substantially more pronounced in this region than in any other region in Upper Volta. This is largely due to the success demonstrated in agricultural development projects, which in turn have largely benefited from the more productive physical endowments of the region. As a result of its good technical and economic potential, the Southwestern region has received the most numerous donor investments and projects. The introduction of successful interventions in the region has also precipitated the formation of cooperatives, credit unions, 4-H clubs, cereal banks, cotton marketing groups, and groupements villageois.

4. The Sahel Region

The basis of the economy in the Sahel is livestock (cattle and small ruminants) production. Agriculture is practiced on a very limited scale because of the uncertainty of rainfall and the pastoralist - orientation of the majority of the region's populace. The Peul are the dominant ethnic group, together with their former vassals, the Bella. Tuaregs and Mossi can also be found in the Sahel.

Most of the Peul in the Sahel are now semi-sedentary. Both nomadic and semi-sedentary Peul share similar characteristics. Both groups are more oriented toward milk rather than beef production. Generally, cattle are sold only under very pressing financial constraints. Secondly, both groups obtain or cultivate millet to supplement their milk supply. Third, both groups take full advantage of the Sahelian environment by being mobile. Fourth, their herd management practices are similar. The household head manages herds that include cattle that do not belong to him; part of his herd is managed by other herders. Finally, both semi-sedentary and nomadic Peul believe in communal ownership of pastureland, natural water areas, and ponds.

During the dry season, the sedentary members of a Peul family cultivate millet and tend the animals which have not gone on transhumance. Both nomadic and semi-sedentary Peul women are responsible for milking and preparing milk products, building and taking down homes, preparing food, fetching wood and water, and looking after the children. The nomadic women are responsible for selling milk and butter in order to purchase grains and other essentials. Sahelian women own rights in cattle

and small ruminants, and according to estimates approximately half of all livestock in the region is owned by women. However, control of these rights is monitored by males.

To summarize, the existing production systems (livestock/crop) adopted by the Sahelian population are based on a strategy of coping with tenuous environmental conditions. In addition, from a socio-cultural point of view, it must be understood that livestock ownership, as opposed to crop ownership, is and will continue to rest in individual hands. In order for livestock technical interventions to gain positive response, this ownership pattern must be understood and dealt with.*

5. The System of Land Tenure

Farming in Upper Volta is governed by, among other factors, systems of land ownership. Certain common characteristics prevail: all land ownership depends on an absolute right of a religious nature, which is vested in various classes of land-holding chiefs; farms are established on the basis of various types of user rights. Four categories of user rights can be found in Upper Volta:

(a) Permanent user rights held by heads of households belonging to a lineage group whose chief has a right of collective possession;

(b) Permanent user rights acquired from clearing virgin land;

(c) Inherited user rights; and

(d) Temporary user rights on borrowed land.

A sample survey conducted nation-wide shows the distribution of the above categories in the following proportions;**

System of Tenure	% of Cultivated Fields
(a)	54
(b)	14
(c)	6
(d)	26
TOTAL	100

The survey indicates that to a certain extent, new rights are being acquired through the clearance of virgin lands (14 percent) and that temporary user rights are prevalent. Given the intense pressure on land in the Mossi Plateau and the resulting impossibility of inheriting enough land to support a family, it is not surprising to find that 52.2 percent of land cutlivated by farmers surveyed in three ORDs was on borrowed land. In the Eastern region, research conducted by Michigan State University showed that 27.3 percent of fields were cultivated on borrowed land. Insecurity of tenure, which results from temporary user rights on borrowed land, may well serve as an impediment to the adoption of technologies requiring relatively heavy land improvement investments. Thus this factor should not be overlooked in the development and extension of production or soil improvement technologies.

*Vengroff, Richard, Baseline Data Report, Sociological Sector: Upper Volta Village Livestock Project, 1979.

**Bouthellier, G., "Les Structure foncières en Haute-Volta: Résultat d'une enquête par sondage", Institut Voltaïque de Recherche Scientifique.

B. Linkages between the MRD and the Rural Sector

At the local level, the rural sector in general, and the farmers/livestock-raisers in particular, have organized themselves and their resources in ways that best minimize their economic and social vulnerability. This in not to imply that the relatively high degree of risk-aversion, particularly in the Central Plateau, is at cross-purposes with the national objective of increasing agricultural productivity. interventions introduced in the past that have demonstrated tangible gains have elicited positive response from farmers. For example, there is a noticeably growing demand by farmers for animal traction, even in the Central Plateau, because of its demonstrated advantage in maximizing labor use.

Given that a common goal of attaining food self-sufficiency is shared at the national and local levels, the question then revolves around how an effective interaction can be forged between the two. Obviously, improving the MRD's capacity at the central level becomes a meaningless strategy for USAID unless benefits are subsequently shared by the rural sector. Developing effective linkages to ensure benefit transfer then becomes of paramount importance to the Project.

The MRD is committed to working closely with and through local groupings such as the groupements villageois, groupements féminins, groupements des jeunes agriculteurs, and the village cereal banks, for two major reasons. First, it does not have sufficient manpower and financial resources to provide services effectively at the local level on a one-to-one basis. Secondly, these local groups have been effective in soliciting broad-based participation at the village level, which is one of the MRD's primary strategies in rural development. The local village groups currently represent the closest link of the MRD to the rural sector. The Project will strengthen this linkage and increase these village groups' absorptive capacity through activities which will reduce rural illiteracy and upgrade the groups' managerial and technical skills. On a limited scale, a revolving fund will be provided to finance the expansion of cereal banks' procurement activities.

Secondly, the Project will provide assistance to strengthen the project monitoring and evaluation capacity of the MRD. Through this intervention, the MRD will be able to develop another type of linkage with the rural sector -- one that does not rely solely on specific groups and group leaders, but rather, one which will provide an effective and more broad-based system of direct feedback from villagers, as projects are being implemented. This process will thus provide MRD direct access to village affected by specific projects and vice-versa. A similar type of linkage will be developed in the third component of the ADS project, which is intended to accelerate the development and transfer of productive technologies to the agricultural sector. The Farming Systems Approach to research and extension (FSR) will be introduced, initially in the Central Plateau region, to enable farmers and extension agents to work together and with agricultural research stations, in testing viable and potentially adoptable production technologies. The development and extension of nutritionally sound food processing practices will be pursued in a similar manner by testing technologies collaboratively with women's groups in 20 groupements villageois nation-wide.

III. The Socio-Cultural Feasibility of Project Interventions

The Project involves twelve activities, of which some will have immediate impact on beneficiaries and participants; others will have to undergo testing and evaluation before positive impact can be determined. The discussion provided in the preceding sections described the potentials of and constraints in the agricultural sector which

need to be considered in planning and policy making, implementation of training activities, development of technological packages, and in the overall management of development interventions in agriculture. The social feasibility of the Project is assessed on the basis of these factors.

A. Component 1:

1. Agricultural Data Collection and Data Distribution

One of the major constraints in formulating rational and informed plans and policies in agriculture is the lack of reliable, timely and consistent estimates of basic agricultural statistics in Upper Volta. This activity will address this gap using the area frame sampling approach. In a country like Upper Volta, where population movement within and out of rural areas is prevalent, the use of area frame sampling provides a major advantage over the traditionally used list frame sampling, particularly in terms of minimizing sampling errors. This is mainly due to the fact that list frame sampling relies almost exclusively on population censuses to select respondents. Where migration rates are high, population censuses become easily out dated. Thus, in terms of selecting an approach to improve the quality of agricultural data, the Project demonstrates recognition of a major social phenomenon in Upper Volta by introducing area frame sampling. In the data collection process itself, this component will ensure data collectors are well-trained, understand local-specific social customs, and can communicate adequately with the respondents. To the extent possible, women interviewers will be utilized in order to ensure that the gender-disaggregated information to be gathered are accurately reflected. The reason for obtaining sex-disaggregated data is to enable isolation of trends in male and female cropping patterns, distribution of land between men and women, and absolute and relative productivity. This information, which is largely lacking in Upper Volta, could be used to guide the development of policies and interventions which adequately respond to differential constraints faced by male and female producers. In addition, they could signal areas where micro-level and more detailed research is needed. In this connection, sample fields will be identified as to whether the principal cultivator is male or female, and whether the fields are collective village, household or individual fields.

2. Strengthening MRD's Policy, Planning, Programming and Project Monitoring/ Evaluation Capabilities.

This section discusses two of the most important institution - strengthening components of the Project: (1) strengthening MRD's Policy, Planning and Programming Capability; and (2) strengthening MRD's Project Monitoring and Evaluation Capability. The first will specifically be geared to provide DEP staff with improved capabilities in conducting studies on important issues which affect agricultural policy-making, planning and programming of financial and manpower resources. The second will provide assistance to DEP in assessing the technical monitoring and monitoring needs of each of MRD's Directions, and in harmonizing the various monitoring and evaluation systems within MRD. This component feeds into the first component, and has important implications for redistributing development resources throughout Upper Volta.

The actual implementation of the above components poses no social feasibility issues, except to the extent that interpersonal relationships among the DEP staff, and between the DEP and the technical assistance team are effective and collaborative. The entire Project has been designed collaboratively with the MRD from the PID stage, and will continue to be administered this way. This is particularly important if the Project is to develop an institution which is truly Voltan. In addition, the

training activities of these project activities (as with all the training activities of the entire Project), must be carefully selected or developed to meet immediate and real needs within Upper Volta's agricultural system. Both activities therefore, should leave behind a permanent Voltan capability to manage resources, conduct studies and develop policies and plans which are truly responsive to Voltan needs.

The social (as well as economic) impact of these two project elements can range from being significant to being nil, depending on various factors. One of them has already been described above. Another important factor is the quality, nature and relevance of the studies to be conducted. From a social standpoint, the most relevant issues to be investigated include those which relate to regional income distribution patterns, individual income distribution, effects of migration, and women in development issues. At the end of this annex is a section of a contractor's report which provides specific recommendations with regard to the last area. A final important factor, which will affect the impact of this project, is the "cultural" orientation of the MRD and other agriculture-related institutions. As indicated in an earlier section, there appears to be an orientation within the MRD toward a positive stance and a commitment to local-level participation in the implementation of development activities.

B. Component 2:

1. Rural Youth Training

It is generally agreed that the formal primary education system in Upper Volta is not relevant to the immediate needs of the rural population. In fact, this factor has been identified as one of the major reasons for cultural alienation in the rural areas, and, to a certain extent, for the increasing rate of rural to urban migration among the young people. On the other hand, rural youth training, which this project will support, provides a rural-oriented education. The FJA system is an already established educational system in the rural areas. The villagers themselves play a vital role in the control of CFJAs through elected village councils. The FJA system supports the traditional family structure which is very important in Voltan society. Families are large and members are extremely dependent on each other. With the CFJAs being located in the villages, students are able to stay with their families and thereby continue to assist in agricultural and household work.

During the dry season when no agricultural work is done, CFJA students are taught income-generating skills. Skills in activities traditionally undertaken by men are taught to the boys. Likewise, traditional skills for women are taught to the girls. Thus, no cultural barriers are crossed. The DSFJA is looking into increasing the income-generating potentials of CFJA students, and has requested assistance to address this need. Through the Project, technical assistance will be provided to identify:

1. Potential income-generating activities for CFJA students, especially for the girls;

2. Ways of increasing returns to those activities; and

3. Necessary modifications to the curriculum to incorporate the findings from (1) and (2) above.

In addition to the agricultural and other skills training, CFJA students are taught to read and write in their local language, a practice which reaffirms the importance which the FJA system attaches to cultural heritage. In order to further increase the relevance of the CFJA system to the rural areas, the Project will provide assistance to monitor the impact of the education system on agricultural productivity and income-generation, and to identify factors which affect differential impact. Findings

from this evaluation will be used to modify overall curriculum content and training approach, if found necessary.

There are two major social issues related to the CFJA system. First, there are virtually no opportunities for further education leading to salaried employment for CFJA graduates. The resolution of this issue is beyond the scope of this project, because it will require, first of all, an overall revamping of the Voltan education system. Even if it were revamped, salaried employment is generally scarce in the country. Given these constraints, an alternative is offered by the FJA system through its provision of income-generating off-farm skills. The pre-cooperatives formed by CFJA graduates (GJA) provide a structure for self-employment using these skills after completion of the FJA education.

In addition to the above issue, it appears that girls do not have as equal access to CFJAs as boys do. Only about 10 percent of CFJA students in all of Upper Volta are girls. In the CFJAs to be supported by this project, female enrollment is only 7 percent. The major reason for the low female enrollment rates is the lack of female teachers willing to be posted in rural areas. A committee has been formed by the DSFJA to recommend actions to ensure that more female teachers are recruited for the rural areas. The progress of this committee should be carefully monitored to determine whether supplemental assistance from the Project may be necessary to implement any of the committee's recommendations. In addition, the DSFJA has given its assurances that of the 90 teachers to be trained within the next year under this project, 40 of them will be women. Finally, the financial assistance from the Project to equip the women's teacher training center in Kamboinsé is a necessary step toward increasing the number of female teachers for the CFJAs. Equipping this center provides an added benefit of making facilities available for conducting refresher courses for current female teachers. It is the intention of the DSFJA to request Peace Corps Volunteer assistance to supplement the currently inadequate size of teaching staff at the center.

Increasing the number of girls' or mixed CFJAs is another measure which will be taken to improve girls' access to rural youth training. The DSFJA has indicated that one-third of the 155 schools to be refurbished by this project will be mixed or girls' CFJAs. Lastly, a campaign to sensitize rural families to the importance of education for women and girls is recommended, to counteract the attitude held by many families that educating women is not as important as educating men.

2. Managerial Training for Adult Pre-Cooperatives

Over the past decade, the MRD has successfully mobilized the Groupements Villageois in delivering services to villages. Village groups have traditionally been a common feature of Voltan village life, which explains the MRD's success in using them as a vital link to the rural sector. By strengthening the managerial capacity and upgrading the skills of the groupements, the Project will be supporting MRD's highly participatory approach to rural development.

The initial concentration of efforts in the Central Plateau is a logical starting point. This region provides agricultural employment, albeit at low productive levels, to the majority of the Voltan population; furthermore, the Mossi, more than any ethnic group in Upper Volta, have demonstrated a considerable degree of receptivity to change and innovation. In addition, the concept of developing a skills training program based on existing production systems and the location-specific availability of off-farm income-generating activities, will ensure relevance to actual village conditions, and therefore a higher degree of acceptance. The conduct of intensive socio-economic baseline studies however, should be minimized

and conducted only in areas where such studies are not already available. The FSR activity proposes to conduct similar studies in the Mossi Plateau, and may be used for purposes of their project component as well. In many cases, inundating people with repetitive and exhaustive questions is socially counterproductive.

Several factors presently designed into the literacy and managerial training activities may result in inequitable training access. The length of the literacy training activity and the distance of the training sites for both literacy and managerial training programs will effectively exclude the participation of women pre-cooperative officers. However, the technical analysis for this intervention addresses the scheduling procedure, and the promotion of women for training will be a prirority concern. Measures which will be considered to ensure equitable access and maximum participation of women are:

1) conducting the training sessions in villages, such as in available rural youth training centers, and

2) conducting shorter training sessions, e.g., 2 hours a day, over a longer period of time.

3. Mid-Level Technical and Managerial Skills Training Fund

Obviously the availability of this training fund has important implications for improving productivity in the agricultural sector. No significant social feasibility issues will be encountered since the types of training will be carefully selected to meet immediate and most pressing needs in Upper Volta. This will be assessed by the contractor when doing the Training Needs Assessment Survey.

It is envisioned that the majority of the training will be for currently employed public and private sector personnel. All 500 people trained under the Skills Training Fund will be members of client-organizations which will request the training, as all training requests will have to originate from organizations, not individuals.

Of the 108 people who will be trained under the Training Grants Fund for Associate Degrees or equivalent, 60% of them will come from the public sector via the MRD/DAAF. All of these people are seen as having a position in the Government at the time or due to be employed by the public service for certain positions which are open. The other 40% of the candidates will come from the private individuals. These candidates will be selected in terms of merit and ability. They can come from all sectors and be at various stages of employment.

There was some concern raised as to the possibility of trained cadres who cannot be absorbed by the economy. First, it should be pointed out only about 6% of the total number of people trained will be competing on an open competition basis without organizational backing. Secondly, an informal fact finding session by an independent consultant found that a number of private and public companies in Upper Volta have a large percentage of expatriate mid-level managers and skilled labor employees. In querying these companies, many of them stated the reason they had hired expensive expatriate labor was due to the lack of trained Voltan nationals at the skilled labor/mid-management level. They found the expatriate labor very expensive and implied that if there is an available cadre of Voltan skilled technicians and mid-managers they would be in demand.

Finally, it is recommended that the types and mix of training areas and the location and duration of training should not be so restrictive as to preclude women's access to the training fund. Given the uncertainty about the number of qualified women in

the public and private sectors interested in training, setting a pre-determined target number of women who should receive training would be counter-productive. During the mid-term evaluation, progress will be reviewed and indicators obtained in order to develop more informed guidelines on how to ensure equal access for women to training opportunities.

C. Component 3:

1. Farming Systems Research

The farming Systems approach to research and extension is not a new idea in Upper Volta. Some FSR activities are currently being tried in different parts of the country, including the SAFGRAD/FSU activity which USAID is currently supporting. The inclusion of this activity in the ADS Project will provide the necessary continuity to the SAFGRAD effort, with implementation to be focused in three Central Plateau ORDs and one Sahel ORD, and attempt to institutionalize FSR in the national research network. These sites have been selected as they represent relatively neglected research zones where crop/livestock production systems are practiced.

Aside from addressing the physical constraints of low fertility and low moisture potential in the selected ORDs, careful attention must be given to the pressing land, labor and cash (for purchased inputs) constraints faced by farmers/livestock-raisers in the Central Plateau and the Sahel. Likewise, a clear understanding of sexual division of agricultural labor must be gained in order to correctly target research inputs and solicit feedback to the right channels.

As is consistent with the FSR approach, technological innovations based on existing farming systems will be tested first, i.e., substantial changes in crop mix for example, will most likely not be met immediately with significant success. The production systems of farmers in the Central Plateau and the Sahel regions have evolved over many years of trying to cope with the physical and labor constraints in these regions. In this connection, the proposal to increase forage crops for livestock will be viewed with caution. While the availability of forage crops/legumes is an ideal approach to integrating crop and livestock production (mixed farming) constraints exist in these regions which may preclude the inclusion of forage in existing farming systems. It is unlikely, given land and labor shortages in the Mossi Plateau and even in the Sahel Region, that scarce resources will be allocated to a non-food, non-cash crop. If at all, an intervention may be tested to determine the feasibility of growing forage in fallow lands requiring the absolute minimum amount of labor input.

2. Development and Extension of Nutritionally Sound Food Preparation and Processing Technologies.

In Upper Volta, most of the efforts in dealing with the problem of malnutrition have been concentrated around the maternal and child health care centers located throughout the country. While this is not an inappropriate approach, it needs to be supplemented with efforts to integrate nutrition improvement with rural development. The close association between nutrition and food availability and utilization necessitates this additional focus. The three elements included in the nutrition activity of the Project will support the Food and Food Technology Service (FFTS) of the MRD planning, testing and promoting nutritionally sound food preparation and processing practices.

The social feasibility of the nutrition-improvement focus of the Project will of course, depend to a large extent on a clear understanding of constraints at the household level which preclude proper and sufficient attention to nutrition needs.

The nutrition surveys to be conducted under this project will provide an information base for this purpose. In addition, research on technologies for food processing and preparation will be directly linked to the village-level, in order to gain direct local participation in the technology development process. Thus, technology development will be based on clearly expressed village needs and constraints, tested "off-station" to properly simulate real life situation, and evolved with continuous inputs from rural women who will be the primary, if not sole users, of these technologies.

The availability of socially and economically feasible technologies and the acceptance of these and of improved food preparation and processing practices by the rural women alone, are not going to be sufficient to solve the nutrition problem in Upper Volta. Nutrition education will be needed to sensitize all other parties responsible for food production and distribution, from the national to the household levels, and should include those responsible for income allocation within households. Again, this element has been incorporated into the Project.

However, the sensitization campaign, as planned does not include the provision of nutrition education for men in the villages. This is necessary as they are in many cases, mainly responsible for making resource allocation decisions in Voltan households.

In the selection of women's pre-cooperatives to be involved in food processing technology testing, criteria should include: longevity of the group, implementation of a detailed accounting system, successful implementation by the group of at least one village-level project as an indication of group solidarity, and annual pre-cooperative receipts ranging from one-third to one-half of the yearly amortization payment. The reason for the last criterion is to ensure women in the pre-cooperatives have sufficient "disposable income" with which to finance whatever processing equipment they may wish to purchase. This is to discourage diversion of income from other equally essential household expenditures (e.g., food).

For the long-term, investigations must be made to ensure that "proven" processing equipment can be made widely available to the villagers. In addition, effective means of disseminating information to other women's pre-cooperatives on the operation of these equipment should be devised.

3. Soil and Water Management and Conservation Practices

This activity of the Project is probably faced with the most difficult social feasibility issues. Despite the generally perceived need among villagers for soil and water conservation measures, the lack of security of tenure in fields cultivated (as in borrowed lands) generally preclude farmers' investment in land improvement. One of the required investments is labor, which is in short supply in many areas of Upper Volta, primarily because of migration. In addition, the lack of water in many areas also provides a social constraint because of its debilitating effect on a local work force. For example, in one of the villages visited by the soils technicians of the PP design team, it was observed terrace work was started by the villagers but was not completed. The village chief explained their well had gone dry and even though his villagers wanted to complete the work, they could not perform the hard, manual labor required in the heat without an adequate supply of drinking water. Villagers have a very real concern about water security. It has a demonstrated constraining effect on daily village life and can severely impair the timely installation of planned conservation measures and the needed maintenance of measures already installed.

There is general agreement that agricultural and other resource conservation activities based on village groups probably have the greatest potential for success. However, in many cases, the capability for self-management of these groups is often weak. Their level of operation and maintenance of existing soil and water conservation measures is not adequate. This could prove to be a severe constraint to the success of long-term soil and water conservation efforts, and therefore, requires priority attention. Local groups need to be provided quality-level guidance and leadership development and understanding of their responsibilities in planning, installing and maintaining conservation systems. Quality technical personnel must be incorporated into the delivery system and these persons must be equipped with adequate social as well as technical skills.

Given the existing soil and water conservation problem in Upper Volta, which severely constrains efforts to increase agricultural productivity, the alternative of not providing any assistance in this area, because of the constraints mentioned above, is not recommended. The Project will therefore provide limited and focused assistance in the area of soil and water conservation delivery systems. This is envisioned as an experimental intervention with the intention of developing a delivery system based on a collaborative effort between technically upgraded extension agents and the villagers. Technical specialists will be provided by the Project to work with this team. The selection of a single site in the Yatenga ORD in the Mossi Plateau is judicious. As indicated earlier, the Mossi are the most innovative and progressive ethnic group in Upper Volta. Furthermore, the need for soil and water conservation is greatest in this area. Given these two factors, the chances of success are increased. However, careful attention must be given to ensure village labor is provided on a voluntary basis, and not imposed upon village members of lesser status. As indicated earlier, the Mossi ethnic group is generally governed by a highly centralized and coercive structure.

In the long-term, a nationwide soil, water and related resources conservation and development program will need to be supplemented by reforms in land tenure laws and with improved technical expertise to implement such a program. The Project will be providing assistance to formulate a national soil, water and related resources policy, and will support the strengthening of technical capability in the area of resource conservation. The GOUV has declared national interest in bringing about reforms in land tenure.

D. Component 4:

1. Credit Fund for Cereal Banks

The implementation of this component of the Project will be conditioned upon the GOUV's willingness and ability to determine and implement a mechanism for extending unsubsidized credit to village - based cereal banks. The intention is to demonstrate to the GOUV that credit service can be set on a financially viable footing if the excessive subsidies currently incurred by the Government are avoided or minimized. However, the primary objective of this Project element is to test the effect of increasing local storage and the volume of cereal purchases on decreasing cereal insecurity.

The major feasibility issue associated with this pilot, experimental effort relates to the possibility that using "higher-priced" unsubsidized credit, cereal banks may not be able to compete at the local level, and therefore may be unable to recover their investments. Precautionary measures need to be taken before credit is extended to the cereal banks. These include the conduct of thorough financial and economic studies to determine appropriate interest rates to be charged by the DIRC

to the cereal banks. Furthermore, given these interest rates, feasibility studies need to be carried out to determine the level of returns which can be expected from cereal banks' involvement in this scheme. All these have been designed into this Project element. Management training for DIRC personnel and for participating cereal banks will likewise be provided. A final safety precautionary measure which will be taken to ensure the financial viability of this credit scheme is the strict screening of credit applicants. Demonstrated financial and management capabilities will be required. If the qualification criteria set are met by cereal banks operated by women, equal access to the credit fund should be given them.

2. Increasing the Efficiency of OFNACER

This element of the Project is designed to improve OFNACER's operations in the area of cereals marketing and storage. The potential social feasibility issues could arise in the enforcement of policies. For instance, prices which are not adequately remunerative to producers could result in losses for farmers, which in turn, could lead to reduced cereal availabilities in subsequent years. Consumer prices which are set too high could erode purchasing capacity, which in turn, affects nutritional status. Poor distribution policies could result in one of the above consequences. The purpose of the technical assistance and training to be provided under this element of the Project are precisely to avoid such consequences from occurring. It is understood that OFNACER's role in the cereals market will not be expanded as this too could result in a negative economic and social impact on cereal banks and private trade.

3. PL 480 Title II Section 206

The importation of wheat and vegetable oil, which will be sold locally at unsubsidized prices is proposed in this component of the Project. The selection of these commodities underwent considerable analysis of trade-offs and consequences (i.e., within limits of available information). Wheat and imported oil are higher-priced, relative to domestic coarse grains and oil. This implies that the major consumers will be limited to the better-off segment of the population, particularly those residing in urban centers. An alternative is to bring in coarse grains which are consumed by the majority of the population. Based on available data however, a possible consequence of this action would be an increase in the supply of coarse grains relative to demand, which in turn, will have a depressing effect on prices and incomes of Upper Volta's small farmers. The price drop is expected because it is believed Upper Volta now produces 95-98 percent of its coarse grain requirements. The alternative of not bringing in any commodity at all, will result in: (1) the GOUV using its limited financial resources to import wheat and oil commercially, which will exacerbate the already precarious balance of trade position of the country and could result in the diversion of funds from the agricultural sector; and (2) the local currency support necessary to implement the total package of

institution, immediate benefits, in almost all cases, will directly impact the MRD personnel. However, institution-building should not be an end in itself. Thus, in all cases, deliberate attempts have been made to ensure that benefit flows ultimately reach various sectors of the economy, with particular emphasis on the rural sector. Within the rural sector, measures have been taken to ensure that benefits are not captured by a "favored few". The attainment of growth with equity is one of the major features of the ADS Project. The successful attainment of this objective will be demonstrated through the regional redistribution of GOUV and donor investments, so that regions of Upper Volta other than the Southwest, will begin to receive their fair share of development assistance. The usual flow of benefits to men will be balanced by measures to provide equal attention to women's needs.

As each activity varies in the way it impacts on different categories of people, a discussion of beneficiaries and benefit flows is provided below.

A. Component 1

1. Agricultural Data and Data Distribution System

The direct beneficiaries of this project element are the personnel of the Statistical Unit of DEP, who will receive training in improved data collection and computer processing. The timely release of accurate statistics will be beneficial to a wide range of people who rely on the availability of agricultural data to formulate plans, policies or production and marketing studies. These beneficiaries include the MRD in general, OFNACER, the donor community, the agribusiness sector, and perhaps even the farmers themselves. The entire agricultural and livestock sector in general will indirectly benefit from the proper translation of agricultural data, by the above users, into rational plans and policies. Within the agricultural sector, the availability of sex-disaggregated data may ultimately benefit women. In addition, Upper Volta Geographic Institute and the Regional Remote Sensing Center will benefit from the increased utilization of their services and resources by the Statistical Unit of DEP.

2. Strengthening of the Policy, Planning, and Programming Capability of the MRD.

The staff of DEP will directly benefit from short-term and on-the-job training to be provided under this activity of the Project, in conducting policy analysis studies, project evaluation studies, and in agricultural planning. Improved policies and planning capability will benefit farmers (men and women), livestock-raisers, the agribusiness sector (includes cereal banks, private traders), the ORDs, and the donor community. By improving the programming capability of DEP, a regional redistribution of development investments will occur.

3. Strengthening the Project Monitoring and Evaluation Capability of the MRD.

This activity of the Project will directly benefit the staff of DEP whose capabilities in monitoring and evaluation will be improved through training. Each Direction of the MRD will likewise benefit from the harmonization and strengthening of the overall MRD project monitoring and evaluation system. Through the improvement of capabilities at the DEP level, the intended project-level beneficiaries in the field will benefit from, for example, the redirection of project inputs and thrusts.

B. Component 2

1. Rural Youth Training

The direct beneficiaries of this Project activity include (1) the DSFJA, which will receive financial assistance in equipping and refurbishing its schools and training facilities; (2) the CFJA teachers, who will receive improved training; and (3) the CFJA students, who will, likewise, receive improved and more relevant training in agricultural techniques and other income generating skills, and (4) GJA, CVC and FJA assistants who will receive management training under the Project. Improved skills training for the CFJA students will enhance their income-generating opportunities in the rural areas, thus resulting in benefits for them, their parents, and their schools. Finally, more rural youth, particularly girls, will benefit directly from increased access to the FJA system through the construction of additional CFJAs. Access for girls will likewise be improved through the availability of additional female teachers.

2. Managerial Training of Adult Pre-Cooperatives

The support to be provided under this activity of the Project will provide direct benefits to the farmer members of the Groupements Villageois in the Mossi Plateau. These farmers will receive skills training based on a program which will be developed to suit the agro-ecological and other conditions of the Plateau. Subsequently, the Groupements Villageois in other regions of the country will be provided similar region-specific training programs. Other direct beneficiaries of this project activity include: (1) the leaders of Groupements Villageois, who will receive training in literacy, leadership skills, and simple financial, accounting and other related management skills; (2) the DIRC zonal-level trainers, whose training skills will be upgraded; and (3) the DIRC central office personnel, who will receive training in financial management, accounting, other areas of public administration, and in educational and communication technologies. In addition, technical assistance will be provided to DIRC in the development of appropriate training courses.

3. Mid-Level Technical and Managerial Training Fund

The availability of this fund will directly benefit private and public sector personnel, who will receive scholarships for in-country short-term training and two-year training (AA level) in the United States. The specific training areas will be determined according to immediate needs in the agricultural sector. The indirect beneficiaries include the employing companies or offices of the selected trainees who will return with improved skills, and the trainee's families, who, presumably, will benefit from any income increases the trainees will receive from having acquired improved skills.

C. Component 3

1. Farming Systems Approach to Research and Extension

Given the nature of FSR, the benefits from this activity of the Project will not be immediate. The direct beneficiaries will be the farmers and their households residing in selected villages at 3 ORDs in the Mossi Plateau and 1 ORD in the Sahel region. With the development of proven improved packages of agriculture/livestock production technologies, the returns to the investment (land, labor, capital) of participating farmers and their households will be improved. Increases in farmers' incomes will, however, depend on the existence of favorable pricing policies and marketing conditions. The NES and extension agents will likewise

benefit from learning FSR techniques. Over the longer-term, the benefits of FSR will be apread to farmers in other ORDs throughout the country. Indirectly, through increases in agricultural productivity, Upper Volta's economy will be improved.

2. Development and Extension of Nutritionally Sound Food Preparation and Processing Practices

At the central level, the personnel of the Food and Food Technology Service (FFTS) will benefit from acquiring training in-country and in the U.S. in various nutrition-related areas. In addition, the personnel of the Survey and Planning Unit of FFTS will benefit from acquiring an improved capacity to undertake and analyze nutrition-related surveys and studies. The FFTS itself will benefit from receiving financial assistance to construct headquarters and laboratory facilities/equipment. The male and female extension agents, vocational agricultural teachers, members of selected women's and young farmers pre-cooperatives, and agricultural school students will benefit from undergoing nutrition training programs to be conducted by the FFTS. Finally, rural women belonging to selected women's groups will benefit from gaining access to improved food preparation techniques and food processing equipment. It is envisaged these will result in improved nutrition status for the participating women and their families. Access to food processing equipment will not only reduce women's workload in food processing, but will also provide an additional income source. Over the long-term, the benefits to be derived by the participating women's groups will be spread to other women's groups throughout the country.

2. Develop and Extend Environmentally Sound Soil and Water Management and Conservation Practices.

This activity of the Project will provide assistance to the National Soil Service in developing the necessary data base to formulate a nationwide soil, water and related resources policy. In addition a selected group of villagers in 1 ORD in the Mossi Plateau will participate in a pilot intervention for soil and water management conservation. The success of this activity and the ability of the participating villagers to maintain the installed conservation systems will result in improved soil and water conditions in their area, thereby improving their agricultural productivity and rural welfare. The success of this pilot intervention will allow for replication in other villages. In the long-run, with the availability of a proven system for soil and water conservation, improved overall agricultural productivity and rural welfare in Upper Volta will be achieved. This of course, assumes nationwide cooperation in implementing conservation systems.

D. Component 4

1. Credit Fund for Cereal Banks

This activity of the Project is designed to provide unsubsidized credit assistance to 40 cereal banks operated by men's and women's pre-cooperatives throughout the country, to fund their grain purchases and construct storage facilities. This will result in increased cereal availability particularly during the hungry season, improved nutritional status and increased disposable incomes. Given successful implementation of this pilot effort, it is envisaged that additional cereal banks throughout the country will benefit from this credit availability. Indirectly, this activity of the Project, if successfully implemented, will contribute to the reduction of cereal insecurity. Consequently, it is envisioned that increased production of various types of crops will occur, given favorable conditions, a large number of farmers will benefit from increased incomes which may result in improved household nutritional status.

3. PL 480 Section 206

The direct beneficiaries of this program include OFNACER, which will receive and sell the wheat and oil shipment, and the Grands Moulins Voltaique (GMV), the only mixed capital flour milling company in Upper Volta. Another set of beneficiaries are the private sector baking and oil industries, which will purchase the commodities from OFNACER and GMV and resell at the retail level. Finally, consumers (mostly urban) will benefit from the availability of wheat and oil in-country. Indirectly, lower-income consumer groups will benefit from increased availabilities of coarse grains (primarily corn) and domestic oils. It appears that the availability in the markets of wheat and U.S. vegetable oil reduce demand for corn and domestic oil. The PL 480 local currency generations will be used to support the rest of the ADS project activities. Therefore, the beneficiaries identified in those project activities also benefit from PL 480 Title II Section 206 Program.

V. POTENTIAL FOR SPREAD EFFECT

In projects attempting to increase agricultural productivity over an entire country, it is necessary, for purposes of achieving a broad spread of benefits, to ensure that interventions are technically and economically sound, as well as being socially acceptable. Equally important, project interventions and benefits must be sustainable and replicable within reasonable limits of cost and management expertise. In this connection, several constraints within Upper Volta need to be considered: the GOUV's limited ability to underwrite recurrent costs from its own budget; a limited cadre of trained personnel from the national to the local levels; and differences in regional production systems because of the relatively heterogeneous physical, cultural and economic make-up of the country and its people.

With careful attention to the constraints listed above, the ADS Project has incorporated specific activites to ensure sustainability, replicability and an overall spread effect. On-the-job, and long and short-term training activities have been included in all the interventions of the ADS. This will ensure that a cadre of trained personnel, both in the public and private sectors, and from the national to local levels, will be developed to sustain and spread the activities of and the benefits from the Project. To further ensure replicability, the Project will provide training programs to upgrade the skills of local trainers. Training areas and training content will be carefully identified and developed to ensure relevance to Upper Volta's most immediate needs in the agricultural sector. Badly needed infrastructure and equipment support will be provided, as in the case of the Project activity to strengthen the rural youth training program. This assistance will enable the DSFJA to upgrade its training program and expand its beneficiary coverage.

Baseline, socio-economic and other types of village-level studies will be undertaken to support several project components in developing interventions or packages of technology which are relevant and responsive to beneficiary needs. By being relevant, chances of sustainability are increased. These project components include FSR, Managerial Training for Adult Pre-Cooperatives, the Food Preparations Processing Activity, Soil and Water Management and Conservation and the overall Project Monitoring and Evaluation activity. The FSR, Soil and Water Management and Conservation and the Food Preparation and processing activities will develop a replicable system of assessing beneficiary needs and constraints in conjunction with the development and extension of adoptable technological packages.

Selected cereal banks will be provided unsubsidized credit from a revolving fund to be managed by DIRC. Credit extension will be implemented with caution to ensure that adequate management develops while the financial viability of small scale-private sector involvement in grains procurement is being tested. This approach, if proven successful, will establish a replicable mechanism for expanding village-level involvement in grain marketing, through the extension of unsubsidized credit to cereal banks. The replicability of area frame sampling as a means of collecting agricultural statistics has been demonstrated in numerous LDCs, including West African countries with environmental conditions similar to Upper Volta's. Pilot surveys however, will be conducted in order to fine-tune procedures before nationwide application.

All the proposed ADS Project activities have been subjected to rigorous tests of cost-effectiveness, to ensure replicability and sustainability while at the same time minimizing the recurrent cost burden on the GOUV. In the short, and most likely, in the medium-term however, the use of PL 480 Section 206 local currency generations has been proposed, to assist the GOUV meet investment, and to a certain

extent, recurrent costs, while interventions are being tested for maximum relevance to the objective of achieving agricultural growth.

Lastly, assistance will be provided to strengthen the MRD's policy, planning and programming capabilities. The implication of this activity for achieving a broad-based spread of benefits is noteworthy. Through the formulation of more informed development plans and policies, considerable economic benefits to the economy as a whole, and to the agricultural sector in particular, may be realized. Better programming of GOUV and donor funds for agriculture should realign current regional investment disparities. This activity will therefore ensure the distribution of development assistance and benefits across all regions in a more coordinated and equitable manner.

VI. Participation

USAID/Upper Volta has sought to maximize the participation of immediate Project beneficiaries from the outset. Throughout the development of the PID and PP, Mission worked on a collaborative basis with the principal Departments of the MRD which will receive assistance from, and will manage the ADS Project. The modus operandi was for the USAID ADO, his staff, and the PDO to meet regularly with the Secretary General of the MRD, the Director of the Studies and Projects Division, and with each Direction to discuss requests of assistance drawn up by the latter. During the PP design this collaborative approach included discussions with selected potential beneficiaries at the village-level.

Several features have been designed into the Project to ensure effective beneficiary participation during project implementation. The provision of on-the-job and short-term training will increase the level of participation of MRD/OFNACER personnel and members of the groupements villageois in the administration of various project activities. FSR is a highly participatory approach to technology development and extension, requiring close collaboration among researchers, farmers, and extension agents in the Mossi Plateau. A similar type of village-level participation will be sought in the development of environmentally, socially and economically sound soil and water management and conservation practices, as well as in the development and extension of food preparation and processing techniques. The conduct of baseline, socio-economic and other village studies, as well as the implementation of monitoring and evaluation activities, are a means of soliciting beneficiary feedback, and thus participation, in shaping the thrust of project inputs. The extension of credit to cereal banks is envisioned as a means of expanding the involvement of village-level cereal banks grain procurement.

Finally, careful attention has been given to ensuring women's active participation in project activities. Equal access to training opportunities, to be provided to CFJAs, pre-cooperatives, MRD and the private sector, will be ensured. Where appropriate, data to be collected during project implementation will be disaggregated by sex, in order to gain the necessary information to determine women's potential and constraints in the agricultural sector. As women contribute significantly to agricultural production, the FSR activity will ensure that they are involved in technology development. The food preparation and processing activity is of course, predominantly women-oriented. Further details on measures designed into the project to increase women's involvement have been discussed in an earlier section.

Specific Recommendations

Partaining to Women in Development Issues:

Project Component No 1 - Improving Management

of Sector Resources and Investments*

* This is part of a report done by a contractor, Christine Jones, in May, 1983.

I. DEVELOPMENT OF MRD ANALYTICAL AND PROGRAMMING CAPACITY

A. Assistance to DEP

1. Collection of basic agricultural statistics by area sampling procedure: Gender-disaggregated information on area, production and yield might signal trends in

a) male and female cropping patterns
b) distribution of land between men and women
c) absolute and relative productivity.

Such information in and of itself would not explain the trends which are observed, nor would they indicate whether women have suffered a decline in their absolute and relative welfare level. However, they could be used as a guide to where more micro level and detailed research is needed.

It is recommended that when the basic agricultural statistics are gathered, the fields sampled be identified as to a) whether they are collective village, household, or individual fields and b) whether the principal cultivator is male or female.

It is recommended that the statistical reliability of the gender-disaggregated data be evaluated to determine the significance of any trends which may be observed. The reliability of data could probably be assessed by a comparison with data from FSR and baseline studies. This question should be assessed in the design of the area sampling procedure and a method for assessing the reliability of the gender-disaggregated data should be proposed, before sampling is actually undertaken.

2. Project monitoring and Evaluation

a - Data to be collected

Project interventions are likely to have the most rapid and significant impact on women's agricultural productivity in the short-term. In addition to the basic agricultural statistics of area, production and yield which could be used for project monitoring purposes, the following data should be collected in all baseline and evaluation surveys:

i. male and female labor allocation between agricultural enterprises; between income generating household maintenance and other activities.

ii. inputs to agricultural enterprises operated by men and women. Distinguish between types of input, cash/in kind, sex of hired or exchange labor.

iii. Men's and women's income from agricultural and non-agricultural activities. Distinguish in kind and cash income. Determine if intrahousehold remuneration for labor services rendered exists, and what the rate is. Seasonality of income.

iv. Control over income: do women maintain control over their own earned income.

v. male and female expenditure patterns, broken down into expenditures on food, clothing, health, education, housing, taxes, etc. Seasonality of expenditure patterns.

vi. relevant socio-economic indicators, mortality rates, morbidity rates, fertility rates, literacy rate, access to training or credit programs

which are non-gender-specific, nutritional status disaggregated by gender.

b - Purpose of Collecting above Data

These data will enable policy planners to relate changes in men's and women's workload, income and expenditure to changes in the productivity of household and personal agricultural enterprises. The reasons for the changes in productivity levels can be determined and reinforced or counteracted as necessary. Such data will also allow policy makers to determine the impact of projects on the welfare of individual household members, irrespective of changes in total household agricultural productivity. Welfare considerations are important with respect to the formation and maintenance of human capital in the agricultural sector.

c. Collection and Presentation of Data: Recommendations when most of the above data are collected they are usually collected on an individual household member basis. However, in presentation they are often aggregated to the household level. The marginal cost of disaggregating the data by gender in both collection and presentation is small. The biggest increase in cost is probably due to the necessity or desirability of hiring female enumerators to interview women, particularly for the collection of income and expenditure data. It is recommended that wherever possible, female enumerators be used to interview women. Asking the head of the household how much time his wife spent in her field (which the FSR surveys in Upper Volta do) will probably not yield the same answer as asking the women herself. Asking one family member for another member's income and expenditures is likely to produce even more dubious results. If male enumerators must be used to collect labor data, they should interview women themselves in so far as possible after adequate explanations and assurances are given to the community. Obviously, the comportment of the male interviewer is a critical factor in determining whether he can successfully interview women.

d. Gender-disaggregated averages should be presented for individual male or female household members. The current practice in FSR studies in Upper Volta is to give the average percentage of household labor done by men and women. To derive the amount of labor done by the average man or woman, one is forced to divide the average number of hours done by men by the average number of men per compound, and similarly for women. A more accurate indication of male and female workload would be take the average of time worked by individual men and individual women, stratifying by the number of men and/or women in the household where there are economies of scale present. This is not to say, however, that labor time by crop and activity should not be broken down by gender. This information is useful to the planner interested in determining how much total labor input would increase if women's total labor input to a particular activity increased by a certain percentage.

e. A third issue which should be addressed in the analysis of labor data is the assignment of adult equivalents, where women's and children's labor is weighted at some fraction of men's. Both weighted and unweighted averages should be presented. In its first report, ICRISAT weighted an hour of women's labor at 75 the value of an hour of men's labor.

3. <u>Studies which should be undertaken by the DEP</u>

a. Analysis of correctness of the adult equivalent weights which are assigned to women's and children's labor.

b. Analysis of the returns to labor of men's and women's cash income generating activities. This data is important in determining whether the returns to women's labor are lower than men's. This would aid the DEP in allocating its resources between improving the profitability of women's income-generating activities and improving the profitability of men's if there is a marked difference in the rates of return to their labor.

c. As an additional means of determining whether MRD resources should be invested in the development of gender-specific income-generating activities, a study of the relationship between income and nutritional status should be undertaken. This could be done in conjunction with the national nutrition survey. The women's income would have more impact than an increase in men's income (which includes income from the collective cereal field) on the nutritional status of the members of the household who are most at risk. Gender-specific income elasticities for food expenditures should be developed. They would vary across male and female income classes.

d. Also in conjunction with the national nutrition survey, the effect of cash cropping by the household head should be investigated. If most of the household's time is spent producing a crop which is marketed rather than home-consumed, is the nutritional status of any or all members of the household better or worse than the nutritional status of households which produce an equivalent value of cereals for home consumption? The study should investigate the extent to which the revenues from the cash crop are used to purchase calories. It should also investigate whether women from households which cultivate cash crops spend more income on food than women from households which cultivate cereals for home consumption. If women from cash cropping households spend more on food than women from non-cash cropping households, do they do so in order to compensate for shortfalls in their husbands' expenditures on food? Or are their expenditures a net addition to their husbands? The purpose of doing such a study would be to provide the DEP with data on whether cash cropping is nutritionally harmful or beneficial. This information could be used to evaluate whether cash cropping activities should be pursued and if so, what kinds of income generating activities for women should be financed from cash cropping households in order to minimize the negative impact of cash cropping on nutritional status.

e. Women-headed households

On the Central Plateau, there are probably very few women-headed compounds, though there may be many women-headed households within those compounds. In conjunction with baseline data collected or FSR studies, a study should be undertaken to determine if widows or women whose husbands have migrated have less access to the means of production, whether they have been forced to allocate more labor to household cereal production at the expense of their personal crop production and whether their children's and their own welfare levels are lower as a result. The effect of remittances on their own and their household's agricultural productivity should be investigated. Also to be investigated is the welfare level of women-headed households compared to male-headed households in the same stage of the life-cycle. This study could be part of a larger study on the effects of migration on agricultural productivity, on the Central Plateau. The purpose of such a study would be to enable the MRD to target special programs at women-headed households if they appear to be particularly disadvantaged. It could also be used to develop a policy discouraging or encouraging migration depending on its net effect on agricultural productivity and the welfare of households in communities which send off large numbers of migrants.

f. Conflicts between Personal and Household Production

A study should be conducted to determine the causes and effects of large variations in the amount of time women allocate to personal fields vs. household fields if such variation is observed in FSR studies. It should be determined if women who cultivate larger fields use the income from their fields to purchase food that otherwise be provided by their husbands. Or is there a net benefit to the household when women cultivate larger personal fields? The purpose of this study would be to guide the MRD in forming land tenure laws which would protect and/or encourage women's rights to land independent of their husbands.

g. The impact of domestic labor-saving technologies on women's agricultural productivity should be assessed. Both before and after new technologies are introduced, women's labor allocation to agricultural production should be monitored. If, for example, as a result of labor saving technologies women spend 10% more time on agricultural production and this results in a 1 or 3% increase in agricultural output (the figures are merely illustrative), then the DEP should focus its resources on the development and extension of domestic labor saving technologies as the most efficacious method of increasing agricultural production in the short and the medium term.

h. In view of the high fertility rate which is causing a significant shift in the land labor ratio on the Central Plateau land, a study should be undertaken to determine if there is significant variation in fertility levels in rural areas and whether it is related to socio-economic variables such as income (male/female levels), nutritional self-sufficiency, migration, education etc. If a significant cause and effect relationship can be demonstrated, then the DEP would have a clear idea of the available policy levers. In conjunction with this study, another study could be done to ascertain the demand for family planning services, in lieu of traditional practices of birth spacing.

4. A final issue is whether technical assistance to the DEP in the area of WID should be provided. We do not see the utility of employing a WID specialist whose only job is to do WID studies. The issue of increasing women's agricultural productivity and income generating capacity is central to any effort to increase agricultural output and nutritional status. The DEP and donor community will be making important resource allocations on the basis of the studies to be undertaken by the DEP. It is critical that all technical assistance to the DEP have an informed understanding and the capacity to carry out the analytical studies proposed above. If not, WID will remain largely a descriptive exercise with no input into major policy resource allocation decisions. Thus, the technical assistance in the field of economics/agricultural economics to be provided to the DEP should be not only competent in their particular fields but should have also done research on issues related to the allocation of resources and the distribution of income at the intra-household level and how the allocation influences household agricultural productivity and welfare. Voltan masters and Ph.D candidates to receive training in the U.S. should be required to write their theses on these topics. This is the best way of ensuring a long-term interest and capability in this area.

INSTITUTIONAL ANALYSIS

I. Background

A. Agriculture in the National Economy

Since independence in 1960, the Voltan economy has changed its structure through the creation of import-substituting industries, and through the expansion of commerce and services. During the 1970's, Upper Volta managed to achieve modest economic growth and maintained a conservative approach in its fiscal policies. However, growth was uneven over the decade, due to the instability of output in rainfed agriculture which depends on highly variable amounts and timing of rainfall. The worsening of Upper Volta's chronic trade deficit and recent budget deficits reflect worldwide economic stagnation and not basic changes in government policies or underlying economic structures. Given its resource constraints and modest growth prospects, Upper Volta has performed reasonably well.

The primary sector of agriculture has grown more slowly than other sectors over the past 10 years in Upper Volta. The slow growth of agriculture is due to a set of physical and technological constraints which are expensive to overcome and are not due to inappropriate pricing and marketing policies or an inappropriate role of the central government. Given the available technologies, farming capacity is fully utilized and output has on the average kept up with the growth in effective demand. Any strategy for improving the agricultural sector must accord priority to increasing the economic efficiency of food production and concentrate on incremental improvements in the farming system and the overall agricultural resource base.

Agricultural output data are not reliable, but available data indicate rapid growth in cotton output, but declining per capita output of basic grains. Overall food availability, however, appears to be maintained through food aid, incorporation of other foods such as roots, tubers and vegetables in the diet and the substitution of imported wheat and rice for local grains in urban areas. The data on food availability is incomplete, so one cannot be certain whether it has declined or remained the same. Growth in agricultural production is concentrated in the Southwest which has better farming conditions, access to modern inputs through the cotton company and a many times higher level of donor-financed investment. As a consequence, that region attracts rural migrant farm families from the Central Mossi Plateau.

Given the importance of crop production in the Voltan economy, improvements in rainfed agriculture will have a major impact on economic growth. Sorghum and millet area cultivated has increased steadily at about 1%/year with the exception of the drought years. The increase in yields appears to be due primarily to a shift in production towards the Southwest, particularly by benefitting from the effect of residual fertilizer in old cotton fields.

The area devoted to corn remained constant during the'sixties and then dropped precipitously during the drought. It has been slowly recovering since the drought years as farmers regained confidence in rainfall. In the past two years significantly higher yields have been obtained through the use of fertilizer and improved varieties.

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Rice has been a constant source of trouble in marketing since the initial investments in rice production in the 'sixties'. These problems are not easily resolved since rice imports have a comparative advantage over locally produced rice. Rice production has fallen over the past two years as the amount of rice imports has increased.

Total cereal production has increased by 29% in 21 years. Domestic cereal production fell from over 215 kilograms per capita during the 'sixties to an average of 204 kilograms per capita during the late 'seventies. Per capita availabilities have not changed much due in part to a shift towards imported cereals (wheat for bread and rice) and to food aid. However, performance over the past two years is encouraging for increases in area and particularly for increases in yields.

The situation in the Central Plateau region is more critical than the average production figures suggest for the country as a whole. In the East, the lack of infrastructure prevents closer integration of the region with national markets, so the improvement in the terms of trade has been transmitted only weekly to farmers in this region. The Sahel satisfies only a portion of its own demand for food grains and is better suited for herding activities. It would not make sense to promote a shift towards food crop production to the detriment of livestock production in this region of the country.

Yield figures for the Central Plateau show no long-term growth, while the same figures for the Southwest show a 25% increase in cereal yields over the decade of the 70's. The country is relying more and more on the production of a surplus in the West and Southwest to make up for the shortage of land and stagnation of yields in the Central Plateau.

While the general situation of agriculture is not encouraging, the growth of cotton output and the increase in cereal yields and output in the Southwest show the agricultural potential of this region, an area which continues to attract rural migrant farm families, as well as the responsiveness of its farmers to the economic incentives of improving terms of trade for agriculture.

The same incentives apply to the Central Plateau, but land shortage and concomitant declining soil fertility, along with higher unit costs of production, have constrained cereal output from increasing more rapidly in this area.

B. Policy Setting

Several recent analyses of Voltan agricultural sector policies point out that the GOUV marketing and pricing policies are not too bad. They indicate where improvements may be made in policies to achieve greater economic efficiency in the farmers' use of resources, but the gains to be made are marginal and more important for long run considerations. Thus, one may conclude that agricultural production and growth of output are not constrained by pricing and marketing policies. Upper Volta has maintained a rather liberal approach to marketing and pricing of agricultural commodities, especially for domestic food grain marketing. Most accurate information points out grain markets in Upper Volta are very well integrated, prices are determined by conditions of supply and demand, and, unlike its neighbors in Mali and Niger, the GOUV does not try to enforce official prices on private sector marketers.

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The GOUV's policies revolve around the objective of assuring sufficient availability of cereals throughout the country in the short-run at reasonable prices, while simultaneously encouraging subsequent years' domestic production by assuring producers a remunerative post-harvest price. To this end, GOUV uses OFNACER to implement a grain security and price stabilization program. OFNACER's three major functions are to:

1. Maintain a "Security Stock" or emergency grain reserve of 30,000 metric tons, a quantity sufficient to satisfy 1.5 million people with 33% of the daily minimal cereal consumption for 120 days until commercial imports or food aid could arrive;

2. Offer a remunerative price to producers in areas which have market supply potential in order to encourage adequate domestic production in subsequent years;

3. Sell stocks as required to rotate the security stock and purchase in excess of the 10,000 metric tons required to replenish the security stock as necessary to stabilize prices at a remunerative level. Sales can either be at the wholesale level, exported as was the case in 1982, or sold to the Ministry of Interior and/or PVOs for targetted food aid as in 1983.

The maintenance of a 30,000 metric tons national security stock for emergency purposes is clearly a role which can only be fulfilled by the state and the sale of stocks as they are rotated out of the emergency reserves is required to assure funds will be available to replenish the stock in subsequent years.

OFNACER has revised its policy, from being consumer-oriented throughout the 1970s,to that of serving as a policy instrument for the increase in cereal production in the 1980s. Through the Grain Marketing Development Project, USAID/Upper Volta has been able to have some influence with the Government of Upper Volta and it has supported OFNACER's and the MRD's policy reforms.

While we do not believe OFNACER should attempt to become a true price support mechanism (which would require a significant increase in OFNACER's capacity and increase the financial burden on the state) we do believe the efforts to offer a remunerative price in surplus potential areas is fully consistent with the GOUV's objectives and an appropriate role for OFNACER.

It must also be acknowledged that the GOUV appreciates the complexity of the problem of highly variable supply, and perceives OFNACER as only one tool to address it. The GOUV is also supportive of the development of rural financial institutions, private sector cooperatives to manage village level cereal banks, off-farm employment and rural roads for isolated parts of the country. It is believed as these innovations develop within the rural milieu, the importance of OFNACER as a producer price support mechanism will decline. In the short-term, however, OFNACER is believed to be a valuable and relatively effective tool for attainment of the GOUV's objective of increased cereal production. An indication of its effectiveness is that during the 1981/1982 campaign, OFNACER was able to bid up producer prices in the Southwest from December through early May. When OFNACER had depleted its financial resources, the private sector price fell by 5 - 10%.

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Partially as a result of this intervention, farmers in the Southwest increased the area planted to cereals by 5% in 1982. This has permitted increased production in the region and resulted in a situation where emergency food aid is not required even though the northern parts of the country suffered a severe drought which reduced production by approximately 30% in 1983.

In contrast to domestic agricultural output markets, the markets for the export of agricultural produce are more subject to price control and state domination through marketing boards or parastatal companies. This is of course true of the cotton monopoly, SOFITEX, which sets farmgate prices and has a legal monopoly on cotton exports. It is also true to a less rigorous extent for oilseeds and sheanuts which are effectively taxed by the Agricultural Product Price Stabilization Fund (CSPPA). The smaller but high-growth potential market for fruit and vegetable exports is also constrained somewhat by the activities of the state-run cooperatives' union (UVOCAM). A change in structure for this particular market is contemplated, but it is further constrained by the limited air freight space available through the UTA-Air Afrique monopolization of Upper Volta air carriers to Europe (i.e. to Paris). This is not the case for livestock exports which are harder to control, particularly for herds which are trekked accross borders in the bush. Livestock exports are taxed, but there is no state marketing agency setting prices or taking an active role in any part of the marketing process.

The effect of controls and inefficient structures on the development of export markets has probably slowed down the expansion of export crops to the detriment of Upper Volta's growth. On the other hand, the cotton company has presided over a twelve-fold expansion of cotton output since 1960 by providing a reliable source of inputs (fertilizers, seeds, chemicals) and a reliable market for the outputs. Other markets have grown in spite of controls and without additional inputs (e.g. oilseeds, sheanuts, fruits and vegetables). While the GOUV can point to this record of expansion, a more positive set of policies could have led to better performance in export crops.

One of the factors limiting expansion of all crops is the structure of agricultural input marketing. In areas where SOFITEX is not providing inputs for cotton farmers, the Regional Development Organizations (ORDs) have been responsible for providing inputs. For many years sprayers, insecticides and fertilizers were obtained through SOFITEX on credit. Supplies were often delivered late and the ORDs did not have an effective distribution system, but at least some supplies were available. SOFITEX now refuses to grant credit to the bankrupt ORDs, so there are no inputs available in many regions except through donor-financed projects. We consider this to be a major shortcoming of the agricultural input marketing system and we have made it first priority for policy reform in the direction of private input distribution networks. There are no quantitative measurements of the extent to which limitations on input supply have affected agricultural output, but there is a strong presumption that its effect has been negative.

In addition to the privatization of input supply markets, the pricing of inputs is a priority policy concern also. The World Bank is currently negotiating a phased reduction of subsidies on fertilizer. Through USAID/UV support to the Seed Multiplication project the GOUV has instituted a procedure for setting improved seed prices which takes into account the costs of production and demand for different varieties as determined through the annual seed use survey.

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Under this Project, the Department of Studies and Projects will analyze or contract for analysis of the effect on input pricing and market structure efficiency of input use in order to formulate recommendations for pricing and marketing of agricultural inputs.

C. Underlying Causes for the Slow Growth of Agriculture

As the preceding section indicates, the slow growth in agriculture is primarily due to a set of physical and technological constraints which are expensive to overcome and not to inappropriate pricing and marketing policies or an inappropriate role for the central government. There are a few exceptions to this general principle, but the generalization is a robust one.

The economic incentives for agricultural production improved steadily over the past decade. Both market and official prices for food staples (sorghum, millet and maize) increased faster than either general inflation or the prices of agricultural inputs (fertilizers, improved varieties of seeds and insecticides). Subsidies on inputs grew larger and more credit was made available on easier terms. There has also been a steady increase in the level of foreign-financed investment directed at agriculture. The increasing attractiveness of agricultural activities relative to other activities and the free market for domestic output improved the incentives for the farmer to produce more.

Against this backdrop of improved economic opportunity, why did cereal production (and perhaps overall food production) expand more slowly than population growth? The answer appears to be a combination of the impact of food aid and commercially imported coarse grains, the substitution of preferred commodities (rice, wheat, vegetables, oil) and a shift to roots and tubers, as well as physical and technical constraints to increased cereal production. The physical constraints everywhere are particularly severe except in the Southwest. These include inadequate and highly variable rainfall, the high cost of irrigation, poor soils, a high-density population and the high cost of modern technology. Low and variable levels of rainfall increase the difficulty of developing varieties as well as reducing the expected yield potential of traditional varieties. Improved varieties usually are more sensitive to drought conditions whereas traditional varieties do not respond so strongly to good growing conditions. Irrigation would allow better water control and the accompanying use of yield-increasing inputs, but there is relatively little irrigation potential in Upper Volta and it has proven to be very expensive compared to the value of output. Voltan soils have low natural fertility which is further reduced by leaching and erosion when they are cultivated. Fallow periods are not sufficiently long to restore soil fertility in the Central Plateau under traditional rotation systems and due to the high rate of population growth, even with out-migration, these insufficient fallow periods are being further reduced.

The high cost of modern technology has also been a constraining factor. The World Bank analysis of financial and economic returns to the adoption of available technologies shows profitable returns to increasing output for most crops. However, it appears that raising the net financial and economic return per labor unit is dependent upon favorable natural conditions and proficient farming i.e. good timing of operations, use of fertilizer, animal traction and manure. The I.B.R.D. analysis of financial and economic returns to adoption of new technologies demonstrates the scope for improvement of productivity is limited.

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In summary of the technical constraints, it is apparent there are no "green revolutions" in sight for the farming conditions in Upper Volta. Rather, USAID/Upper Volta perceives increased productivity in agriculture to be generated by the increase in productivity per hectare. Such increases in productivity are expected to be brought about through improved conservation practices to improve soil fertility and retain moisture, increased inter-cropping, and the shift towards higher value crops, as well as continued research and development of improved technical packages. Such a strategy is consistent with the World Bank conclusion that we must work towards "long-term changes consisting of incremental improvement in the farming systems and in the agricultural resource base"*.

The general economic constraints to development of agriculture in Upper Volta are also severe. They are the classic constraints facing a landlocked agrarian economy, with the additional constraints of a poor physical resource base and emigration of labor to coastal countries, which raises the cost of labor. These classic constraints are the higher cost of imported inputs and the lower value of exported outputs due to the overland transportation costs to the sea. Poor internal transportation networks also reduce the net value of output, particularly in the East. The openness of the economy and its small size mean Upper Volta is a price taker for imported and exported goods and has little scope for influencing the price structure. As an example of this, the high demand for meat in the Ivory Coast raises the cost of animal traction teams. To summarize, Upper Volta has a low level of technology, faces severe physical resource constraints, has high factor costs due to the demand for its labor in the Ivory Coast and the cost of imported inputs, and faces low world commodity prices.

In the context of these constraints, USAID/UV concludes Voltan agriculture has performed reasonably well. The country still meets almost all its internal demand for food, albeit at poor nutritional levels, in average years and it has successfully promoted the growth of cotton exports. Domestic markets are competitive and unconstrained and, with the exception of food aid sales, government intervention in these markets has encouraged greater production and has not displaced private trade. The GOUV needs to take a critical look at the input supply system and its handling of export crops, with a view towards privatizing these activities.

D. Institutions Serving the Agricultural Sector:

The basic institutions serving the agricultural sector are the Ministry of Rural Development (MRD), the Regional Development Organizations (ORDs), the Volta Valley Authority (AVV), the National Cereals Office (OFNACER), the Voltan Union of Truck Farming Cooperatives (UVOCAM), the National Agricultural Credit Bank (CNCA) and the Voltan Company for the Development of Textile Fibers (SOFITEX). These institutions are concerned with the agricultural services of extension, marketing, input and credit delivery. In addition to these agricultural support services, there are research institutions concerned with providing the technical content for extension and there are training institutions to educate personnel for the support services. Several institutions are active in more than one agricultural service, so we will discuss institutions service by service.

* I.B.R.D., Upper Volta Agricultural Issues Study, p. 11. .../...

1. The Ministry of Rural Development (MRD)

The MRD is responsible for providing support for the ORDs at the national level. The MRD departments (called directions) which either provide supporting services or participate in extension are briefly described below.

(a) Department of Agricultural Services

The Direction des Services Agricoles (DSA) includes the following services: crops, fertilizer, seed, and pesticides;and quality control of vegetable products. Although DSA is responsible for providing technical support to the agricultural extension program, this has proven difficult in practice due to the lack of direct linkages between DSA and the ORDs.

(b) Department of Livestock Services

The Livestock Service has traditionally concentrated on animal health. The national director coordinates programs of research, animal production, and meat and food inspection. The field service is oriented toward vaccination campaigns and deals little with other livestock production problems. Following the 1974 reorganization, its field service was put under ORD responsibility. Then in mid-1980 the Livestock Service was centralized once again at the national level. Although the national office is responsible for technical supervision of animal production and extension programs, these will continue to be implemented through the ORDs.

Training for Livestock Service staff is biased towards veterinary medicine. In 1980 there was only one livestock production specialist in the whole service. Most of the other 31 professional-level staff were veterinarians. Field agent (veterinary nurse) training emphasizes prophylactic treatment of cattle. The division is currently making plans to include animation as part of its functions. This would mainly involve forming herder groups to be the counterparts of village groups organized elsewhere.

(c) Department of Rural Institutions and Credit

The Direction des Institutions Rurales et du Credit (DIRC) has focused on organizing villagers into groups (animation) to provide marketing, credit and social services. It also provides general support for ORD community development bureaus. A major DIRC responsibility is to train local animamateurs. The training program consists of an initial six-week workshop followed by an in-service training workshop. DIRC activities are of importance to the entire agricultural extension program since most recent government agriculture programs have been organized around village group formation. The success of these groups is dependent to a large extent on the ways in which they are formed and supported.

DIRC has recently assumed the responsibility for training in adult functional literacy. Regarding this function, there are four aspects to DIRC's program:

- To train literacy teachers at the local level:training includes transcribing the national languages (Pula, Moore, Dioula, Gourmantche) and group dynamics;
- To produce and furnish teaching materials in the national languages;
- To follow up and evaluate literacy programs;and
- To study the rural environment.

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Although there are no standard lexicons in the five national languages at present, no restriction is placed on producing materials using the national orthography. At least in theory, material in the national languages can be produced quickly and in quantity.

The course the DIRC staff offers to local literacy teachers consists of six days of transcription training, six days of teaching methods, and six days of mathematics and evaluation. Literacy teachers are largely from the local area and supported by their home community. The three main characteristics sought in these teachers are discipline, dynamism, and knowledge of the community. In principle, literacy training can be a cost-effective way of increasing the local population's ability to absorb and retain information.

(d) Department of Young Farmer Training

The Direction des Services de Formation des Jeunes Agriculteurs (DSFJA) is responsible for overseeing the training of young farmers in centers (CFJAs) throughout the country. The DSFJA purpose is to teach farmers between the ages of 12 and 16 vocational agriculture, mathematics and literacy in their local language and French. The school also attempts to instill civic duty and open students' minds to new ideas.

The agricultural portion of the curriculum is a combination of "learning by doing" and discovery methods of teaching. In the morning students work in school fields using animal traction and other techniques. Toward noon they meet with the teacher to discuss the morning's activities and lessons to be drawn from them. The afternoon contains three 45-minute periods on the other three aforementioned topics which are taught in a fairly straightforward lecture-response manner. One day each week is reserved for follow-up activities at the students' homes.

The school is based on a three-year cycle. Students are recruited every three years with the aid of the Conseil Villageois du Centre (CVC) which is the CFJA's link with the local community. The CVC also ensures regular attendance and may help manage money the school makes from the sale of its agricultural produce. At present there are about 700 CFJA centers in Upper Volta of which 562 are operational, with a staff of around 1,100 and roughly 15,000 students.

The CFJAs are intended to be self-supporting, except for state-paid salaries. The revenue generated from school fields should be sufficient to cover the schools' operating expenses. Unfortunately, most schools cannot meet expenses because their land is of poor quality or they lack inputs such as fertilizer and insecticides when they are needed.

(e) Training Institutions for Extension Staff

There are three levels of training for extension personnel in Upper Volta. The highest training level is provided by the Institut Superieur Polytechnique (ISP) at the University of Ouagadougou. Currently it has two tracks, one of five years and the other of three. Within each track there are three options: agricultural studies, animal husbandry, or forestry.

Students spend the first year together studying common subjects and in the second divide into their respective tracks.

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In the third year they divide into the three different fields mentioned above. Those who continue into the fourth year are given additional specialized training and in the fifth year spend 10 months in the field after which they write a memoire and defend it before a jury prior to receiving their degree.

ISP graduates fill positions at the Ministry level in Ouagadougou and in ORD headquarters, including directorships. The ISP program can produce 10 to 20 ingenieurs per year, most of them in agriculture.

For mid-level training the most important institution is the Centre Agricole Polyvalent (CAP) at Matourkou. This is the only school for mid-level extension agents in Upper Volta. If offers two degrees, of which the higher is a Conducteur de Travaux Agricoles Specialises (CTAS) which is a three-year course offered to secondary school students who have completed the BEPC. Their curriculum consist of two years of basic training in general agriculture and one year of specialized training. They fill positions in the MRD, ORD headquarters, and as extension service sector chiefs.

The second degree is the Agent Technique Agricole (CTA). This is a four-year course offered to students who have completed 2 years of the BEPC (Junior High School). ATA training is similar to the CTAS' training but at a simpler level. ATAs are generally qualified to fill the position of ORD subsector chief. Matourkou currently graduates about 30 conducteurs and 35 agents per year.

Extension agents who wish to specialize in forestry or livestock transfer to the forestry school at Dinderesso or the Ecole Nationale d'Elevage et des Industries Animales (ENESA) after their second year at Matourkou. The main role of ENESA is to train veterinary nurses (infirmiers veterinaires).

At the third level of training for encadreurs, animateurs, and animatrices, short-term non-degree training is offered by the ORDs, DIRC, and two private non-profit training institutions, CESAO and INADES. The only effective ORD encadreur training is in the four ORDs which recevie major donor assistance (Bobo-Dioulasso, Dedougou, Bougouriba and Fada N'Gourma). The other ORDs have neither the staff nor funds to conduct even minimally adequate training courses.

Both the ORDs and DIRC use CESAO and INADES to train their field-level personnel. INADES specializes in field workshops and correspondence courses in subjects related to agriculture and extension. CESAO offers six to twelve-week courses for field agents and villagers in subjects dealing mostly with group formation, cooperatives, teacher training, and preventi . health practices.

The Livestock Service has recently started training assistants d'elevage and agents techniques. This lower-level training is oriented toward animal health care but also includes some animal husbandry.

The two teacher training centers for the CFJA program are Farakoba and Kamboinse. Farakoba is currently producing between 40 and 50 graduates every two years. These new teachers are high school graduates who receive two years of training at the center.

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Until now Kamboinse has been principally involved in retraining agents who were part of the Rural Education System (the predecessor to the CFJAs). Additional dormitories have been built to start training women with an expected output of 30 to 35 teachers per year.

2. The Regional Development Organizations (ORDs)

The ORDs were started in 1966 as an attempt to decentralize agricultural development. Initially the focus was on the technical and economic aspects of rural development. Only in the mid-1970s did the government adopt the concept of integrated rural development which included marketing, functional literacy, local organizations, and certain types of infrastructure. Although social services were not included, the ORDs became responsible for both agricultural extension and a wide array of other services involved in agricultural and rural development. In 1979 a commission to review ORD activities found they were overextended. Their role was subsequently revised to include only functions directly related to agricultural production.

The ORD headquarters staff is composed of the following divisions:crop production; animal production; physical works; community development; economics, statistics, and planning; credit and finance; and administration. For extension work the ORDs are divided geographically into sectors, subsectors, and extension cells consisting of several villages. The extension hierarchy at the ORD level consists of civil service grades ranging from A through D. Category A includes all university-trained ingenieurs who occupy posts at the ORD headquarters level including the directorship. Category B agents are typically found as sector chiefs and carry the title of Conducteur de Travaux Agricoles Specialises (CTAS) or Agent Technique Specialise (ATS). Currently these agents follow a three-year agriculture course upon completion of the BEPC in secondary school.

Categories C and D are called Agents Techniques Agricoles (ATAs) and are commonly found in the position of subsector chiefs. They follow a four-year program at Matourkou, Dinderesso, or ENESA upon completion of the troisieme level in secondary school (equivalent to the tenth grade in the United States). They basically learn the same subject matter as a CTA, but on a simpler scale.

The local extension worker or encadreur is a contract employee of the individual ORD and does not have civil servant status. Each ORD is responsible for training its encadreurs. At present there is no standard core methodology given to extension workers. Consequently there is considerable variation in the quality of encadreurs within and among ORDs. They usually have a sixth or eighth grade education followed by less than one year of agricultural training.

The extension staff is responsible not only for disseminating improved technologies but also for administering credit, distributing inputs, and creating farmer groups. Because the extension staff is small compared to the number of farmers which must be reached, various extension methodologies have been developed to increase the staff's effectiveness.

In the Eastern ORD, for example, farmer groups are formed to receive extension advice and agricultural credit, including loans for animal traction. Improved farming practices are demonstrated in a collective field which group members farm. In the Hauts Bassins and Volta Noire ORDs a pilot farmer approach has been adopted. As will be discussed later, further efforts are needed to increase the cost-effectiveness of ORD extension programs.

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3. Amenagement des Vallees des Voltas (AVV)

The AVV was created in 1974 and assigned the development responsibility for 30,000 km^2 of Oncho-freed land. The program is essentially a highly structured resettlement project which included infrastructure development (social and economic) and a full range of support services for agriculture, small- scale industry, and commerce. Farmers participating in the project (estimated eventually to total 52,000 farm families) are obliged to adopt AVV recommended farming practices.

4. Marketing

There are three quasi-public organizations involved in agricultural marketing. For cereals, the Office National des Cereales (OFNACER) is responsible for maintaining price stability and food security. In normal rainfall years OFNACER markets about 25,000 metric tons per year out of a total 150,000 metric tons traded. For export crops, the Societe des Fibres et des Textiles (SOFITEX) handles the marketing and export of cotton and the Caisse de Stabilisation des Prix des Produits Agricoles (CSPPA) is responsible for exporting groundnuts, sheanuts, and sesame. Marketing fruits and vegetables for export is handled mostly by the Union Voltaique des Cooperatives Maraicheres (UVOCOM).

5. Input Supply and Credit Delivery Services

(a) Input Supply

Animal traction equipment is both imported and produced locally. The ORDs and private farmers procure the foreign equipment from private suppliers. There is no significant import duty on this equipment.

Animal traction equipment is made locally from imported raw materials at three ARCOMAS (Atelier Regional de la Construction de Materiel Agricole) in Ouagadougou, Bobo-Dioulasso, and Tenkodogo and assembled at COREMMAS (Cooperative Regionale de Montage de Materiel Agricole) located at the ORD level.

Both types of institutions are constituted as self-financing public entities. In theory the COREMMAs keep accounts separate from the ORDs, although the ORDs are financially responsible for the workshops under present arrangements. The ARCOMAs, on the other hand, benefit from considerable external financing from the Conseil de l'Entente, the Swiss, and the CEAO. The subsidy on current operations takes the form of technical assistance and concessional loans for working capital. The ARCOMAs have a liquidity problem because the ORDs are late in paying for equipment they received in earlier years. (Previously CNCA paid suppliers of agricultural inputs directly and treated these payments as loans to the ORDs). The ARCOMAs have the capacity to produce 22,000 plows per year. In 1981 the farmers requested only 6,000 plows, but the ARCOMAs were unable to satisfy even this small number, since their liquidity bind prevented them from buying the raw materials needed to produce the plows.

(b) Credit

The GOUV established the CNCA in October 1980. Subscribed capital to the CNCA has been set at 1.3 billion CFA, with 650 million CFA paid during the first year.

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The government and other public institutions (such as CNDI and CSPPA) hold 54 percent of the equity with the remaining 46 percent owned by the French Caisse Centrale de Cooperation Economique (CCCE), the Central Bank of West African States (BCEAO), and the West African Development Bank (BOAD).

In 1981 CNCA (along with BNC, BICIA, and BIV) lent SOFITEX about 3 billion CFA for fertilizer (on a nine-month loan) and about 4 billion CFA for marketing cotton (on a six-month loan). Statistics on medium-term credit given to the ORDs for animal traction credit were not available, but 600 million CFA had been budgeted for this purpose in 1981. Capital for credit to farmers for agricultural inputs was not a constraint in 1981, but raw materials for making animal traction equipment were a constraint because of the ARCOMA/ COREMMA liquidity problems discussed above.

6. Agricultural Research

Since 1978, agricultural research in Upper Volta has been the responsibility of the Institut Voltaique de Recherches Agronomiques et Zootechniques (IVRAZ) which is part of the Ministry of Higher Education and Scientific Research. The most important rainfed food grain programs are in the Institut de Recherches Agronomiques Tropicales et des Cultures Vivrieres (IRAT), the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), and the Semi-Arid Food Grain Research and Development project (SAFGRAD). The most important rainfed cash crop research programs are in the Institut de Recherches sur le Coton et les Textiles (IRCT), the Institut de Recherches sur les Huiles et les Oleagineux (IRHO), the FAO fertilizer trials and the United Nations Development Program (UNDP) Soils Service project.

Within the MRD, the NES was created in 1983 to implement an annual adaptive research program. NES was also charged with improving the linkages between the research community and the extension service.

E. Institutional Performance and Constraints

The ADS Project is focusing on improving the performance of those institutions within the MRD which serve the agricultural sector. In assessing the past performance of these institutions, this analysis will concentrate on extension, marketing, input supply and credit delivery, research and training.

1. Extension

The extension service is the principal responsibility of the ORDs. The goal of the extension program is to increase rural productivity through the adoption of improved farming, marketing and management practices. The extension service is charged with the key responsibility of being the effective informational link between the central government research institutions and the farm households.

Historically, the ORDs have had a broad mandate to implement multisectoral, integrated rural development programs. This has resulted in a minimization of true extension functions as the ORDs have concentrated on input and credit delivery, marketing, infrastructure development, health, education and so on.

The GOUV recognized the ORDs had become overextended and did not have the authority to carry out the coordination required by integrated rural development.

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A GOUV commission appointed in 1979 recommended narrowing the mandate of the ORDs to concentrate on agricultural promotion. This reform has been carried out, divesting the ORDs of responsibility for marketing, functional literacy training and civil works other than water control structures.

The ORDs are staffed at headquarters by technical personnel who provide backstopping to the field personnel. The latter are organized into geographical sectors (typically 4 or 6 per ORD) which are subdivided into from 5 to 7 subsectors which are in turn divided into 6 to 8 extension cells. Supervisory personnel at sector and subsector levels are generally civil servants while the extension agents are contractors.

The ORDs are criticized for poor coordination between their technical and geographic or operational services and for the centralization of all coordination functions in the ORD Director's office. The Commission has proposed delegating authority to Deputy Directors for technical services and for administrative and financial affairs, but the tendency of Directors is to want to retain authority over operations rather than delegate it.

The integration of research results into ORD extension work has also been a weak point. The ties between research station work and the ORDs are too indirect and not enough research has been done in actual farming systems. This situation is beginning to change with efforts like the SAFGRAD project, but the linkages need to be directly addressed to incorporate research results into extension messages.

The problems of the extension service are therefore complex and interrelated. The lack of strong ties between both the research units and extension as well as the central government support programs (conservation, literacy training, etc.) and extension has resulted in the lack of effective or coordinated measures available to the farmer which may be expected to increase production. This lack of effective and coordinated measures is compounded by the low extension agent/population ratio, the failure historically to incorporate farmer agents within the extension system; the allocation of agents' time to non-agricultural issues, and the recruitment of young, educated, but relatively inexperienced, agents to serve the rural population. The result has been that the extension system has not effectively served the rural population.

Due to this historic problem and the tendency of the donor community to invest in developing geographic regions or ORDs, experience has shown that improvements have been highly localized without linkages to transfer positive results beyond the region. The problem is currently being addressed by the FAO and World Bank efforts which are focusing upon local level research and development, increasing the role of farmer agents, and attempting to increase the dialogue between regional entities.

2. Marketing

Marketing is dominated by small private traders with the exception of cotton. The divestiture of marketing responsibilities from the ORDs, the transfer of OFNACER from the Ministry of Commerce to the Ministry of Rural Development and the abolition of OFNACER's theoretical monopoly have resulted in a liberal private trade in domestic agricultural output with limited public intervention. We continue to be involved in the refinement of OFNACER's role and marketing strategy as discussed above and in other sections of this PP.

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Rice marketing is a special case of an imported grain against which locally produced rice is not competitive. Private importers pay only a part of legal import duties and the Army imports large quantities duty-free, much of which is sold to the public. The GOUV has not seriously attempted to protect its own irrigated production of rice which is marketed by OFNACER and SOVOLCOM (a state-owned retailer) at a loss. The market is therefore principally a liberal market for small quantities of local output and large quantities of imported rice. About 30,000 tons of rice were imported in 1980 primarily for consumption in urban areas. Since Upper Volta has no comparative advantage in rice production, we have no economic objection to the country maintaining a relatively liberal market for rice imports.

Fruit and vegetable marketing is handled by a union of producers' cooperatives (UVOCAM). It was created as a private commercial entity, but it has several civil servants working in its management as well as in the producers' cooperatives. The Ministry of Rural Development has discussed the privatization of UVOCAM, but has not yet taken steps to bring it about.

UVOCAM has expanded the export of green beans to France through attention to quality control prior to export and it has become involved in some processing activities. However, it has not produced financial reports and does not do cost accounting, so it is hard to say what its potential for expanded operations is or how efficiently it operates. It is however clear that its competitive position in the French market is affected by the UTA/Air Afrique freight rates which make up forty per cent of the Paris in-warehouse price. The charter airline charges a third as much as UTA/Air Afrique for its limited cargo space so there is clearly room for competition in this market. The constraints and the potential for private competition in export marketing warrant further analysis by the Ministry of Rural Development in its inquiry into privatization of UVOCAM.

Other marketing institutions are SOFITEX for cotton and the CSPPA for sheanuts. SOFITEX has a monopoly and relies on the worldwide network of CFDT to market its cotton. CSPPA requires private sheanut exporters to sell 80 tons of sheanuts to it at a controlled price before they may export any other sheanuts.

While they have trouble enforcing this marketing requirement, it probably raises the costs of marketing for private traders. The GOUV should investigate other arrangements for taxing the incomes of these traders which would promote more efficient marketing of this collected tree crop. CSPPA is also responsible for groundnut exports, but in recent years the domestic market price has been above the official export price, so there have been almost no official exports. There too, the GOUV should study the possibility of privatizing groundnut exports and revising the method for taxing the income of producers and marketers.

In summary, marketing is no longer a function of the ORDs and only OFNACER and SOVOLCOM are involved in internal markets for grain and some rice. The export markets are dominated by public agencies and parastatal firms. These structures should be carefully studied by the Ministries of Rural Development and Commerce, Industrial Development and Mines, with a view towards increasing private sector participation and the efficiency of export marketing.

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3. Input Supply and Credit Delivery

Once again one must distinguish between the vertically-integrated SOFITEX structure for cotton areas and the ORDs and CNCA for other crops and non-cotton producing areas. SOFITEX imports and delivers insecticides and fertilizers at subsidized prices for its cotton farmers. It then recovers much of the subsidy when it buys back its cotton. For other crops and particularly in other regions, the ORDs are the principal input distributors. Except for the private distribution of chemicals used to protect grain after the harvest (actellic, gammagraine and thioral), the ORD extension agents are responsible for surveying needs by village group, stocking the supplies and distributing them within their zones. This includes communicating the farmers' requests for credit from CNCA to finance the purchase of inputs.

The existing system suffers from the usual problem in communicating demand through a bureaucratic supply system, placing orders with sufficient lead time and making deliveries in a timely manner. These disadvantages may outweigh the advantages of centralizing procurement and the system definitely discourages the development of a private distribution network. There is a clear need for analysis of the existing supply system and experimentation with private distribution in competition with the public network. The tendency on the part of the GOUV to want to keep input prices low so that poor farmers can afford them obviously discourages the development of private trade. Experimentation allowing such trade with no price limitations might yield some interesting results, and it would allow the comparison of regions with and without the private trade alternative.

The World Bank has suggested a more decentralized ORD procurement and supply management structure within the Bougouriba ORD. The rationale for this approach is to take advantage of economies of scale in procurement for a "thin" market. However, they also suggest experimenting in other ORDs with greater reliance on private licensed distributors for distribution from the ORD within the region.

Credit delivery is closely linked to provision of inputs through the ORDs. The National Agricultural Credit Bank (CNCA) provides a large part of the credit for the marketing campaigns and for inputs. Farmers generally contract loans for purchase of inputs which are then delivered by the ORD agents. The farmer never actually handles cash, but picks out his piece of equipment or type of fertilizer in advance with a ballpark estimate of cost to be specified upon delivery and the ORD agent's explanation of CNCA credit terms. A portion of CNCA financing also goes to SOFITEX which it uses to purchase inputs. SOFITEX then recovers any credit for inputs at the purchase of the crop. The GOUV intends for all agricultural credit eventually to be channelled through CNCA, but there are still other funding sources for ORD credit programs and the Department of Rural Institutions and Credit (DIRC) is responsible for extending loans to village level cereal banks which are similar to village cooperative elevators in the United States.

The rural credit program also suffers from the low real rates of interest it charges in the sense that the incentives for good performance are solely

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bureaucratic and not economic. Credit funds cannot avoid decapitalizing over time even with good repayment rates. While these policies are not specific to agriculture, the disadvantages are much greater for rural lending. Administrative costs per franc lent tend to be higher on numerous small loans which comprise the institutions' portfolios. Furthermore, there is no possibility of profitable formal financial intermediaries if they are required to abide by a margin of 3% over the preferential discount rate for rural loans.

There may be some scope for private initiative in the Popular Savings Banks movement, but that is highly limited if they become legal financial entities and are required to work within the UMOA framework. For the foreseeable future, credit delivery will remain a heavily subsidized activity relying on fresh infusions of capital from UMOA and from donors who will accept the inevitable decapitalization of their funds and the distortions of the credit market through the state structure.

4. Research

The research institutions provide the basic raw material for the extension system to communicate to farmers. All research is done under the authority and supervision of the Voltan Institute for Agronomic and Animal Science Research (IVRAZ) of the Ministry of Higher Education and Scientific Research. As of 1980 there were 20 different agencies active in research, including the University of Ouagadougou, IRAT, ICRISAT, IITA, Purdue University, Michigan State University (now departed), FAO, UNDP and a number of stations established by the French. The role of expatriate researchers is dominant and is changing only slowly.

Much has been written about research in the semi-arid tropics. For the purposes of this analysis, we wish to simply point out that the shortcomings of research in Upper Volta have been similar to those elsewhere, i.e. a station-oriented approach which is being modified to do on-farm trials and farming systems research. This is important in the highly constrained Voltan agricultural sector because of the need to take many factors into account before feasible productivity-enhancing modifications can be developed.

Secondly, the results of the farming systems research and on-farm trials must be communicated more effectively to and through the extension system. Finally, and most importantly, given the difficulty of the research tasks and the modest resources Upper Volta can contribute to its research agenda, external resources must be committed for the long-term if a research effort is to be sustained.

In response to this need for research to become more oriented to on-farm conditions, the MRD recently created the National Experimentation Service (NES) to implement a program of adaptive farming systems research.

5. Training

There are several institutions involved in training personnel for the Ministry of Rural Development and the private sector. The University of Ouagadougou trains agricultural scientists ("Ingenieurs Agronomes") at a rate of about 20 a year. Approximately 15 more agricultural scientists return from abroad each year. The Matourkou Agricultural Training School trains all the rest of the civil service personnel at a lower level and there are specialized schools in forestry and animal husbandry for students who complete the two-year core

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curriculum at Matourkou. The field level extension worker is now trained exclusively at his ORD. He is not a civil servant and the level of training offered varies greatly from one ORD to another.

The Government of Upper Volta also has an active young farmer training program in 562 functioning centers throughout the country. This program in vocational agriculture is designed to encourage rural youth to pursue farming as a livelihood using the most productive resources available. The program is also supported by the training of trainers for these centers and a post-graduate association of young farmers. The Department of Rural Institutions and Credit is responsible for offering classes on functional literacy as well as management, accounting and marketing. Finally, the National Center for re-training of Rural Artisans (CNPAR) is attempting to upgrade rural artisan skills with a view towards producing and/or adapting improved farm equipment.

F. USAID/UV Strategy for Improving the Productivity of Voltan Agriculture

In determining the focus of the ADS Project, three possible alternative intervention strategies were examined: (1) direct private investment in rural enterprises and farming; (2) investment through the ORDs; and (3) investment in central MRD management, policy making, research and essential services. For a through discussion of each alternative, the reader is directed to The Investment Rationale for the Agricultural Development Support Project 686-0255-USAID/UV May, 1983 in Annex K.

Considering the three alternative investments, USAID/UV opted for alternative number three, the reinforcement of selected central ORD services and the MRD's capacity to manage projects in the agricultural sector. Our strategy is to concentrade on improving the institutional capacity of the MRD to more effectively and efficiently serve the rural sector through improved planning and management, the provision of managerial and skills training, more effective research and technology transfer, the development of selected technical services and improved food security.

(7) Administrative Analysis

This administrative analysis discusses the legal status, financial status patterns of organization and administrative capacity of each entity under the Ministry of Rural Development which this Project supports. The analysis also describes the USAID/Upper Volta role in implementing the Project.

A. Ministry of Rural Development (MRD)

(1) Introduction

The Agricultural Development Support (ADS) Project will be implemented by several different Departments and Services within the MRD and OFNACER. This analysis provides a general overview of the MRD's administrative structure and a detailed description and analysis of the individual entities within the MRD which will have Project implementation responsibilities.

(2) Administrative and Legal Status

The MRD is responsible for providing technical support to the Regional Development Organizations (ORD) at the national level. The MRD is comprised of several technical services and the MRD organizational structure is presented in Figure 1. Degree No. 83-0019/CSP/PRES established the MRD which consists of: The Minister's Cabinet, the Secretary of State's Cabinet, the Secretary General's Office, the Central Services Departments, the Technical Inspection and the Administrative and Financial Affairs Departments.

Each Department legally exists on the basis of a Ministerial decree governing its organization and responsibilities. The appointments of the Secretary of State, the Secretary General, the Directors and the Director Generals of state and parastatal organizations are made through Presidential decree in the Ministerial Council, based upon the Minister's proposal. The Chiefs of Services' appointments are made through Ministerial decrees upon the Director General's proposal.

Depending upon their importance, decisions are taken by the Directors, the Secretary General, the Cabinet Director, and the Ministerial Council. There is a weekly Directors'Meeting, chaired by the Minister, in which the Secretary General participates.

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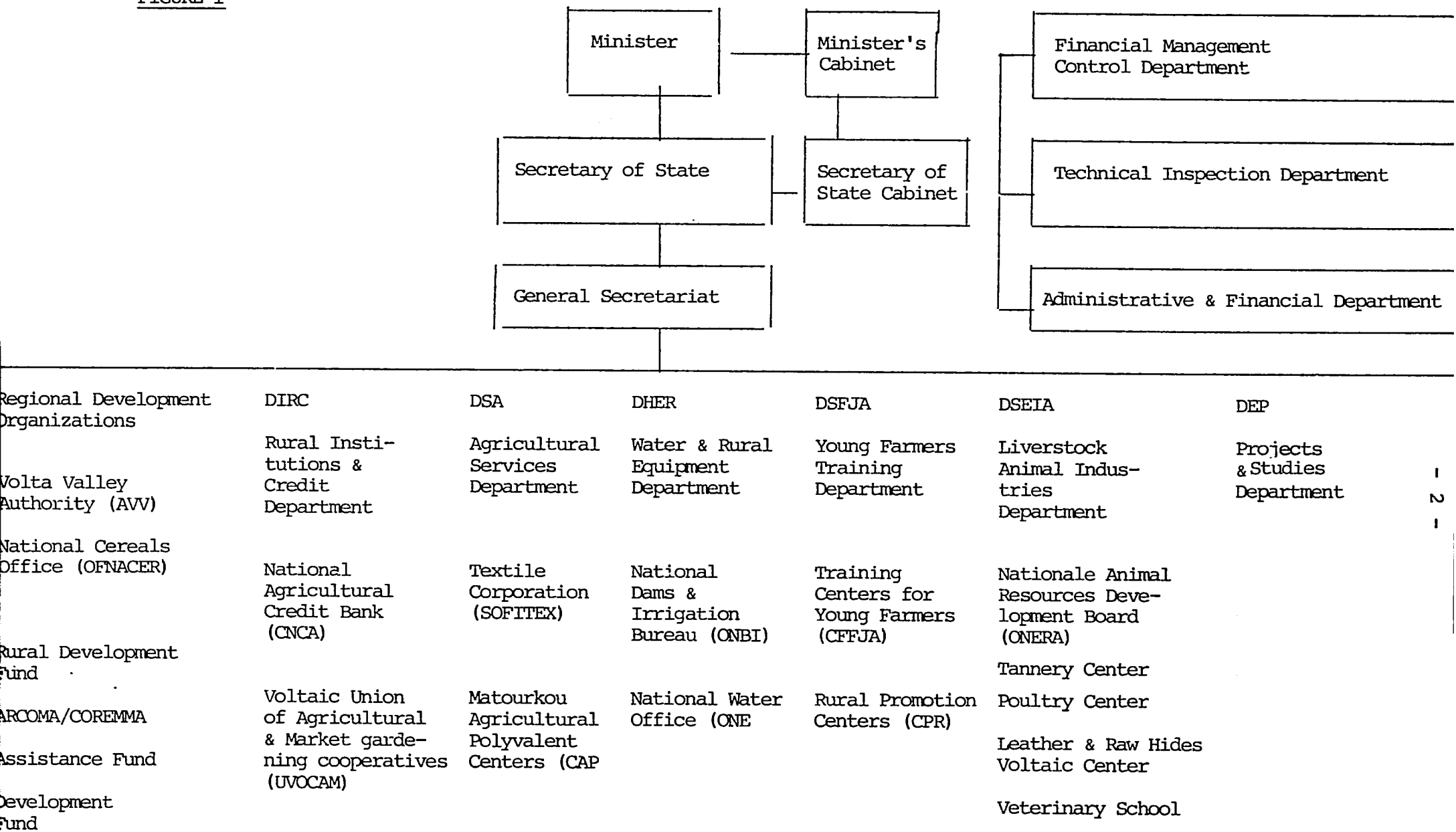
FIGURE I


Minister
Minister's Cabinet
Secretary of State
Secretary of State Cabinet
General Secretariat
Financial Management Control Department
Technical Inspection Department
Administrative & Financial Department
Regional Development Organizations
Volta Valley Authority (AVV)
National Cereals Office (OFNACER)
Rural Development Fund
ARCOMA/COREMMA
Assistance Fund
Development Fund
DIRC
Rural Institutions & Credit Department
National Agricultural Credit Bank (CNCA)
Voltaic Union of Agricultural & Market gardening cooperatives (UVOCAM)
DSA
Agricultural Services Department
Textile Corporation (SOFITEX)
Matourkou Agricultural Polyvalent Centers (CAP
DHER
Water & Rural Equipment Department
National Dams & Irrigation Bureau (ONBI)
National Water Office (ONE
DSFJA
Young Farmers Training Department
Training Centers for Young Farmers (CFFJA)
Rural Promotion Centers (CPR)
DSEIA
Liverstock Animal Industries Department
Nationale Animal Resources Development Board (ONERA)
Tannery Center
Poultry Center
Leather & Raw Hides Voltaic Center
Veterinary School
DEP
Projects & Studies Department

Although the ADS Project will be directly supporting the central MRD it is important to mention that the ORDs are essentially counterpart organizations which carry out rural development programs at the regional levels. ORDs were established in 1966 by the GOUV in an attempt to decentralize agricultural development efforts. Initially, the ORDs' focus was on the technical and economic aspects of rural development. In the 1970s the GOUV adopted a concept of integrated rural development which included marketing, functional literacy, local village organization promotion and rural infrastructure development. ORDs also became responsible for agricultural expansion and a wide array of other services related to rural development. The central MRD provides ORDs with various technical services aimed at increasing the ORDs' capacities to serve the rural sector.

(3) Financial Status:

The MRD's budget for fiscal year 1983 is presented in Table 1. This budget falls under Order N°. 83-003/PRES/CSP/MEF of the Financial Act for the state budget implementation. The sole MRD receipts accounted for in the State budget come from the DSA and DSEIA revenues from production activities.

(4) Patterns of Organization:

This section will deal with the functional role of each Department and Service involved in the ADS Project activities and address their strengths and weaknesses with regard to their implementation responsibilities.

(a) MRD Departments

As the Cabinet is more of a political than technical nature, the Secretary General is the focal point of the MRD administration system. From a hierachical point of view, he reports directly to the Minister, but he has authority over the Ministry's offices with the except on of the DAAF. From a functional point of view, the Secretary General assists the Minister in the design and implementation of MRD policy, ensures the MRD technical relations with other Ministries and the GOUV General Secretariat and Council of Ministers, and ensures the management, coordination and control of the Services included in the technical and administrative plan. The Secretary General also has authority to sign certain documents as well as decision making authority for administrative matters.

The Secretary General has been USAID's principal contact during the PID and PP design process and will remain the same for the important issues concerning the negotiation of the ADS Project Agreement and implementation. The Secretary General's main role in the Project will be to ensure an overall coordination of Project activities. The Secretary General has further responsibilities for coordinating the activities of three Departments at the MRD's administrative level which will have implementing responsibilities under the ADS Project. These include the Direction des Affaires Administratives et Financieres (DAAF): the Direction des Etudes et Projets (DEP); and the Direction de Contrôle et Gestion (DCG) as well as several Departments at the MRD's technical service level.

(i) Direction des Affaires Administratives et Financieres (DAAF)

Under the ADS Project, DAAF will administer and coordinate the Training Grants Fund within Component 2. Component 1 will address management and planning issues throughout the entire MRD structure. The DAAF is charged with overall administration (personnel, legal and general services and the budgeting of GOUV

Table 1

Ministry of Rural Development
1983 operating budget
(millions of CFAF)

Department	Personnel	Material*	Total	%
Minister's Cabinet	44.5	3.0	47.5	1.7
Secretary of State's Cabinet	8.7	3.0	11.7	0.4
Secretary General	468.8	3.0	471.8	16.3
Technical Inspection	11.2	2.0	13.2	0.5
D.E.P.	20.5	2.6	23.1	0.8
D.C.G.	16.6	2.5	19.1	0.7
D.I.R.C.	39.2	1.9	41.1	1.4
D.S.A.	353.1	12.5	365.6	12.6
H.E.R.	176.5	15.0	191.5	6.6
D.S.F.J.A.	1040.0	15.3	1055.3	36.5
Liverstock Service	504.5	20.0	524.5	18.1
D.A.A.F.	56.9	2.0	58.9	2.0
General Operating Costs	18.1	50.6	68.7	2.4
TOTALS	2758.8	133.4	2892.2	100.0

* The Ministry also receives a share of the "common expenditures" of the GOUV which covers rental, telephone, telex, utilities and some transportation. The total common expenditures for the GOUV are 4.7 billion CFA. The Ministry's share is probably about 360 million CFA or about the same as its share in the GOUV personnel budget. Addition of this share greatly increases its material budget but probably does not alter the relative importance of different departments.

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funds. The DAAF is also responsible for the coordination of offers of scholarships or fellowships and keeps the other Departments informed of all the training opportunities for MRD personnel.

The organization of DAAF includes a secretariat, a personnel office, an accounting and financial affairs office and a documentation office. DAAF is currently staffed with 26 people.

USAID/UV's support of DAAF under the ADS Project will focus on making DAAF more effective and efficient in financial management and human resource development.

(ii) Direction des Etudes and Projets (DEP)

The DEP is the most recent addition to the MRD. DEP is charged with the generation of agricultural statistics, studies and policy formulations and program monitoring and evaluation. The DEP is comprised of four sections: studies and documentation, project follow-up and evaluation, agricultural statistics, and administration and accounting. The Studies and Documentation Service is responsible for the identification of studies to be prepared for MRD's technical services.

Under the ADS Project, USAID/UV assistance to DEP will attempt to reinforce the different sections within DEP. DEP currently is under-staffed and its personnel under-trained. DEP's statistical service is extremely weak, and a major focus of support to DEP will be on upgrading the quantity and quality of the Voltan agricultural sector data base.

(iii) Direction du Contrôle et Gestion (DCG)

The DCG is charged with overall financial control of the MRD. Within the DCG are 4 sections: Accounting and Administration; Financial Control; Professional Training and Follow-up; and Statistical Documentation and Studies. Created in 1979, the DCG is still under-staffed, and its personnel lack the necessary skills' training in accounting and financial management to make it a sound organization. Under the ADS Project, we will provide support to the DCG to upgrade the personnel capabilities in the area of accounting and related financial management.

(iv) Direction des Services de Formation des Jeunes Agriculteurs (DSFJA):

The DSFJA is responsible for overseeing the training of young farmers in centers (CFJAs) throughout the country. The DSFJA's purpose is to teach farmers between the ages of 12 and 16 vocational agriculture, mathematics and literacy in their local language and French. The school also attempts to instill civic duty and open students' minds to new ideas.

The school is based on a three-year cycle. Students are recruited every three years with the aid of the conseil villageois du centre (CVC) which is the CFJA's link with the local community. The CVC also ensures regular attendance and may help manage money the school makes from the sale of its agricultural produce. At present there are 562 operational centers in Upper Volta with a staff of around 1,100 and roughly 15,000 students.

The CFJAs are intended to be self-supporting, except for state-paid teacher salaries. The revenue generated from school fields should be sufficient to cover the schools' operating expenses. Unfortunately, most schools cannot meet expenses because their land is of poor quality or they lack inputs such as fertilizer and insecticides when they are needed.

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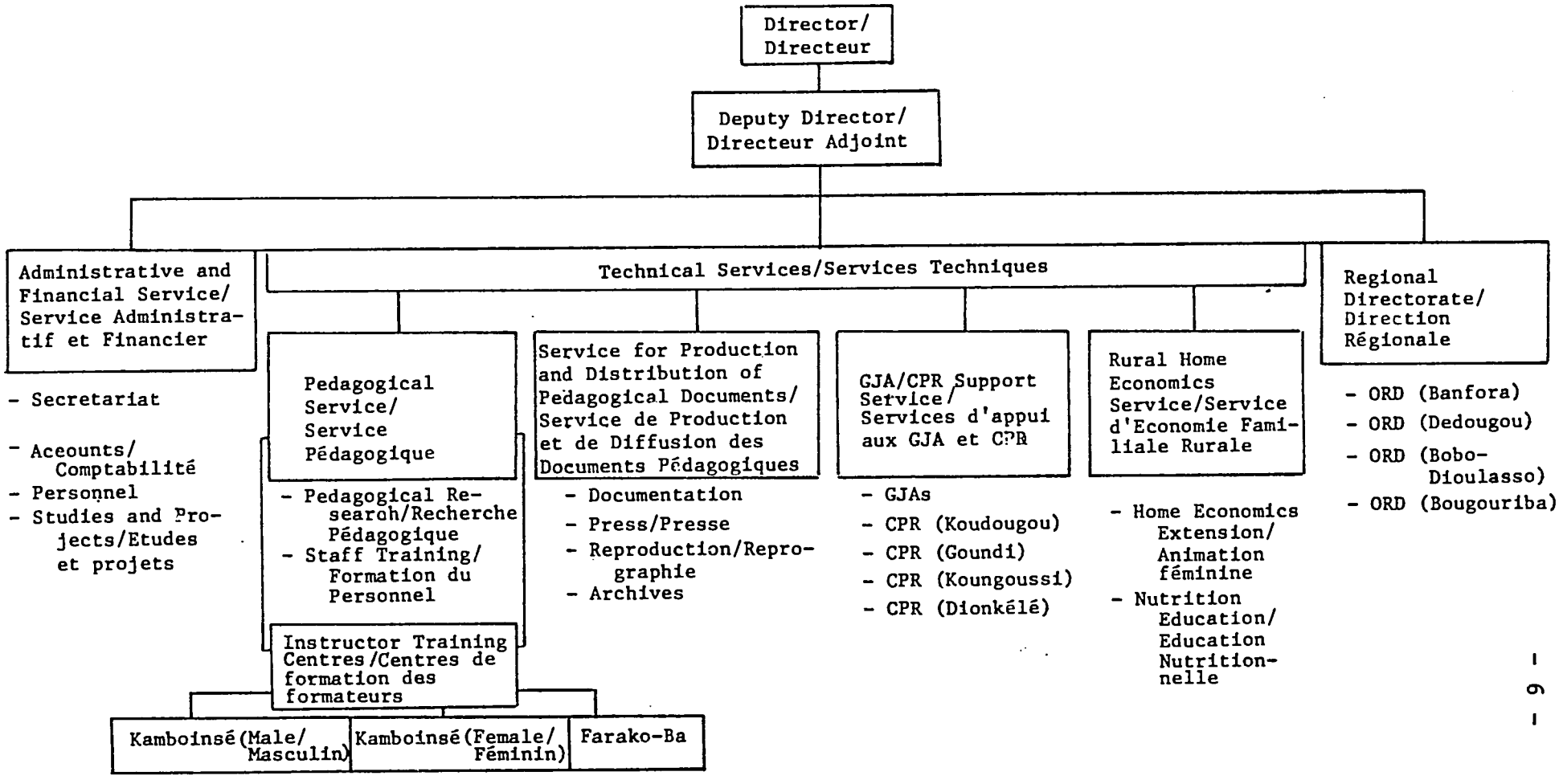
FIGURE 2

Diagram 1

Structure of the FJA Directorate/Organigramme DFJA



(v) Direction des Institutions Rurales et Credit:

DIRC has focused on organizing villagers into groups (animation) to provide marketing, credit and social services. It also provides general support for ORD community development bureaus. A major DIRC responsibility is to train local animateurs. The training program consists of an initial six-week workshop followed by an in-service training workshop.

DIRC activities are of importance to the entire agricultural extension program since most recent government agriculture programs have been organized around village group formation. The success of these groups is dependent to a large extent on the ways in which they are formed and supported.

The present structure of DIRC has 4 sections: Administration and Accounting; Rural Institutions; Marketing and Credit; and Regional Coordination.

The DIRC current staff consists primarily of economists and educators, with a majority of mid-level professionals. The DIRC needs technical assistance in sociology educational sciences, and village-level training methods and technique. DIRC's staff of 55 includes head office administrative and technical staff, regional trainers of DIRC village-level agents, and a large cadre of village-level agents. Under the ADS Project, DIRC will have implementation responsibilities for programs of Groupements Villageois training. Since its creation in 1979, DIRC has exhibited excellent performance in terms of implementing its annual training programs. It has very successfully administered and managed an Entente Fund financed animal traction credit fund totaling $900,000.

(vi) Direction des Services Agricoles (DSA)

The DSA is the oldest Department in the MRD and is comprised of 9 technical services: Seeds, Plant Production, Production, Fertilizer, Soils, Food and Food Technology, Storage and Treatment, Statistics, Extension, and Experimentation and Applied Research. Each service has its own responsibilities, and the DSA Director is responsible for ensuring coordination between the services and the Minister. Component 3, Research and Technology Transfer, of the ADS Project will provide support to the National Soils Service (NSS), the National Food and Food Technology Service (NFFTS) and the National Experimentation and Applied Studies Services (NEAS)

(aa) National Soils Service:

The NSS was created in 1976 through a UNDP/FAO financed project which terminated its first phase in December 1981. During that time, the NSS was charged with the following activities :

- determining the potential outputs of the soils of Upper Volta;
- assisting in the diversification and intensification of crop production;
- assisting in the establishment of projects for water, crop production, forestry and range management based on types of soils found therein;
- assuring the training of local technicians in applied soils science methodology.

The NSS has been financed by the UNDP/FAO and the Dutch. The UNDP/FAO project phase 1 lasted six years (1974-1981) at a cost of $857,000. Phase II began in 1982 and has a project life of three years and a cost of $700,000. However, due to

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budget and currency devaluation the UNDP/FAO project will run out of funds one year early in December 1983 instead of the planned date of December 1984. The Dutch constructed the NSS headquarters during 1979-82 at a cost of just under $300,000 which includes 10 offices, 5 laboratories and a warehouse and car park. The Phase II effort following construction of the NSS headquarters, provides for the operation of the soil testing laboratory and the fertility section, an undertaking valued at $419,000 and scheduled to terminate in December 1984.

The NSS currently has two accounts, one at the National Treasury to pay for salaries, operational supplies, vehicle operation and building maintenance. The second account at the BIV pays for the cost of survey work, cartography and loboratory analysis. All work is done on a contract basis, with receipts going directly to the BIV account. Once survey work costs are paid, the remaining funds are transfered to the Treasury account.

The NSS will need to engage an accountant/financial manager to assist the Chief of the NSS to control operations. This individual will be placed in the administrative section. Short-term training for the individual will also be required.

At the current time, the UNDP/FAO project is pursuing the legal protocol required to transform the NSS into a National Bureau attached directly to the Secretary General of Rural Development. This upward movement of the NSS out of the DSA is desirable in order to permit the NSS to have the ability to generate national policy recommendations for a soil and water conservation program and then be able to execute that policy. This requires the need for coordination at a high level of the diverse organizations charged with soil and water activities such as the FDR, ONBI, HER, and ORDs. Its current position in the DSA does not permit such coordination. The change to a National Bureau will not affect internal organization greatly. The major change will be reflected in greater importance bring given to the soil and water conservation unit than currently.

The Director of the DSA is a line officer under the General Secretary. It will be the responsibility of the DSA Director to ensure the implementation of the National Soils Service activities. As such, the DSA Director will be the GOUV Project Manager for this activity. Currently, he delegates his authority for routine implementation activities to the Chief of the NSS. This organizational pattern provides for a clear chain of command from the head NSS's technical section up to the DSA Director.

The DSA Director is a former ORD Director (Bobo, Ouaga) and has had significant managerial experience. He has a general agricultural Masters Degree. The Chief of the NSS is a trained Agriculturalist specializing in Soil Survey and has six years of administrative experience. This individual, as well as the Deputy Chief and the NSS acountant, will need to receive management training. Participation in USDA short courses or in the University of Pittsburgh Seminar will be programmed under the Project.

When the NSS becomes a National Bureau, it will gain a certain amount of autonomy with respect to its own management. The management training received by NSS staff will permit them to concentrate on implementation problems and not spend all their time dealing with management problems.

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TABLE 2

NATIONAL SOILS SERVICE
CURRENT STAFFING LEVEL
PLUS FUTURE STAFFING NEEDS
IN ADDITION TO CURRENT LEVEL

Section	Title	Current level	Future needs	Salary level
Soil Survey	Section Chief	1	0	A
	Brigade Chief	2	4	A
	Surveyor	2	4	B
	Surveyor Aide	1	5	C
	Drivers	5	7	–
	Workmen	8	6	–
Cartographer Reproduction	Section Chief	1	0	A
	Cartographer	2	2	B
	Photography specialist	0	1	C
	Photography aide	0	2	C
Topography	Brigade Chief	0	1	B
	Asst. Topographer	0	1	D
	Driver	0	1	–
Soil Fertility	Section chief	1	0	A
	Assistant fertility specialist	0	1	B
	Fertility Aide	0	1	C
	Driver	0	1	–
Soil and Water Conservation	Section Chief	1	0	A
	Conservationist	0	1	B
	Asst. Conservationist	0	1	B
	Irrigation Specialist	0	1	A
	Driver	0	2	–
Documentation Center	Computer Programmer	0	1	A
	Key punch operator	0	1	B
	Librarian	0	1	B

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Administration	Chief, National Soils Service	1	0	A
	Deputy Chief	0	1	A
	Chief, Personnel	0	1	B
	Accountant	1	0	B
	Secretary, Chief NSS	0	1	C
	Typists	2	1	C
	Receptionist	2	0	D
	Warehouse manager	0	1	C
	Messenger	1	1	-
	Driver	0	1	-
	Guard	2	1	-
	TOTAL	33	53	

Figure II organizational pattern is staffed with 33 salaried people. Among the 33 are seven cadres superieurs who have at least a B.S., M.S. educational level. Table I lists these individuals by section and function. The anticipated increases in personnel are needed to support the various sections related to the soil survey effort, and the soil conservation section. The documentation section will not be staffed until year three or four when the ADP system is installed.

Over the life of the Project, 4 long-term expatriate advisors will be required, a soils cartographer for 36 P.M. a soil conservationist for 36 P.M., a computer technician specializing in natural resource data base management for 24 P.M., and a soil scientist specializing in genesis and morphology for 24 P.M. The cartographer who will coordinate the soil survey map-making and provide on-the-job training to NSS staff will be attached to the Cartography and Reproduction Section This position is currently held by a FAO expert. The soil conservationist will plan to arrive in year three and will work with the two agents newly returned from long-term training in soil conservation. He/she will concentrate on the formulation of recommendations for a national soil and water conservation policy. He/she will also begin to develop a soil and water conservation program as supported by the NSS in the ORD of Yatenga. The computer technician will install the ADP system, establish guidelines for its use, coodinate ADP comptability with the DEP and IGHV, and train appropriate NSS staff. This person will be attached to the documentation section. The soil scientist will work with the NSS to establish soil series criteria for the first time in Upper Volta and will lay the ground work for the eventual use of the International Soil Taxonomic System. Returning graduates of US institutions will be familar with and will have used this taxonomic system. This person will be attached to the soil survey section.

(bb) National Food and Food Technology Service

The FFTS was created in 1976 and was attached to the Ministry of Rural Development's Permanent Secretariat of the Coordination Committee. In 1979, during a Ministerial reorganization, the FFTS was placed within the DSA.

The FFTS is charged with the general areas of research, special studies, training and extension as they apply to food and nutrition and food technology. Specifically, they have been given the responsibility to:

- promote integration of food and nutrition activities within rural development projects and to assist in the design of a National Food Plan;
- assist production planners to incorporate food/nutrition parameters into the national development plan to achieve food self-reliance;
- investigate food transformation processes, study and test improved techniques for locally available foods and recommend technical packages for extension activities through the ORD structure;
- ensure quality control and inspection for locally produced and marketed foods as well as for imported commodities;
- provide training to rural workers and administrators within the food and nutrition area.

The FFTS' financial status is governed by the fact that it is a service within the DSA. As such, the Director of the DSA must concur on such items as annual budgets, salary levels, construction, levels of training, selection of candidates for long-term training. Daily financial operations within the FFTS will be governed by the accountant/financial manager in conjuction with the Service Chief.

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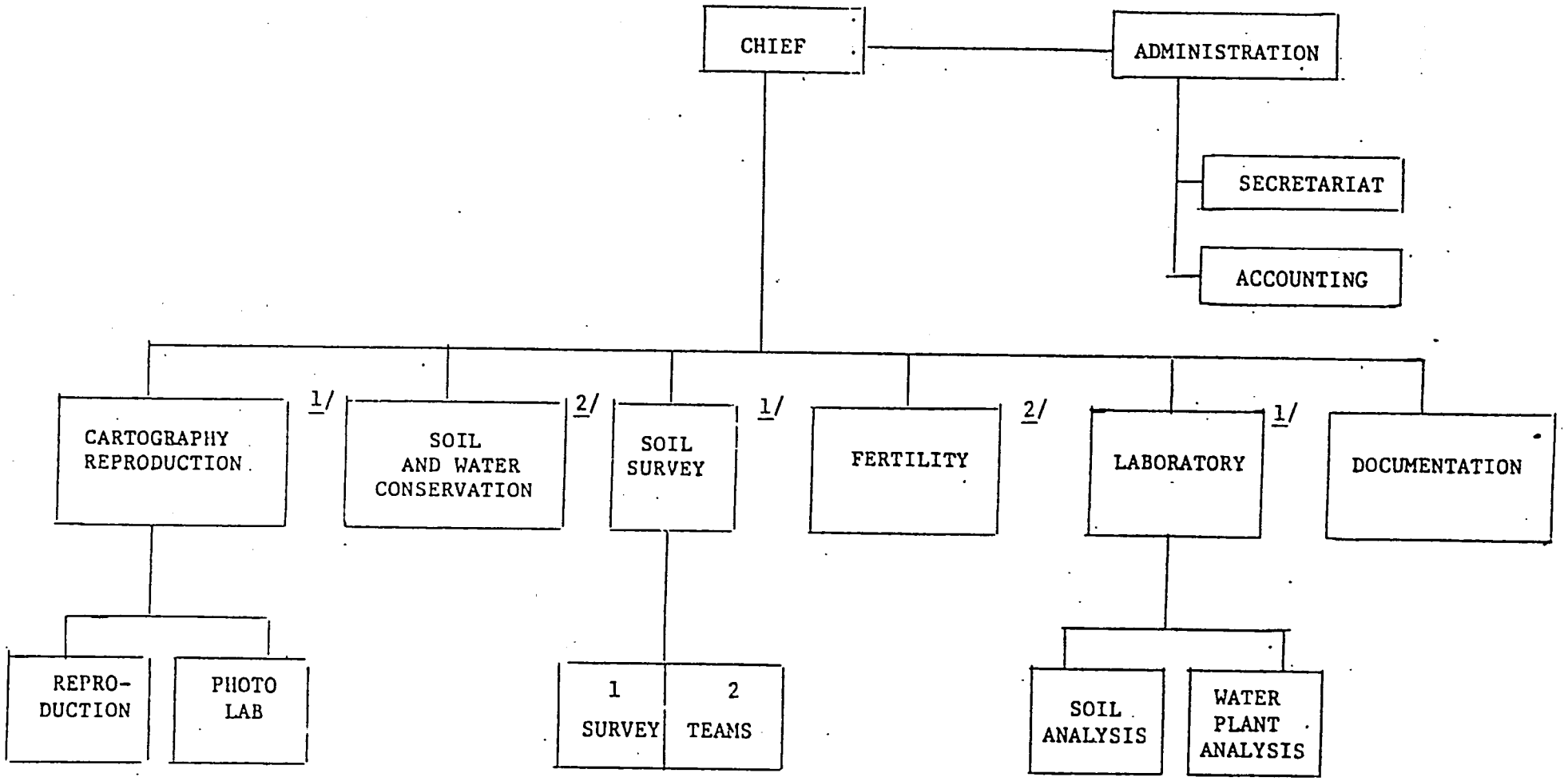
FIGURE 3
CURRENT NSS ORGANIZATION
1983



1/ Operational

2/ Just being formed under UNDP/FAO, Dutch.

The Director of the DSA is a line officer under the General Secretary. It will be the responsibility of the DSA Director to ensure the implementation of the Food and Food Technology Service. As such the DSA Director will be the GOUV Project Manager for this activity. Currently, he delegates his authority for routine implementation activities to the Chief of the FFTS. This organizational pattern provides for a clear chain of command from the heads of the FFTS technical sections up to the DSA Director.

The Chief of the FFTS is a trained Chemist (B.S.), but has little managerial experience. This individual, the Deputy Chief and the FFTS accountant (to be recruited), will all need to receive management training. Participation in USDA short courses or in the University of Pittsburgh Seminar are programmed into the Project.

The FFTS currently has six civil servants and one contract secretary. This level is below the minimum staffing requirements, particularly with respect to support personnel. It is anticipated that an additional six people will be required in the first three years with an additional 10-15 people during the last two years. At the end of the Project, all sections found in chart four, will require a total staff of thirty people (6-8 cadres superieurs and 20-25 contract employees). All GOUV personnel will be supported through the PL 480 counterpart generations.

The implementation plan has been designed to be carried out on an incremental basis and is wholly dependent upon the FFTS's ability to staff its organization. Consequently, priorities have been established for implementation. There are in order of priority:

- Execution of survey work;
- Increased training activities;
- Food Technology Research and Development.

Staffing priorities will follow the above schedule. In order to support all three of the major activity areas, the current administrative weaknesses will be strengthened. This requires the placement of an accountant/financial manager and the placement of a Deputy Chief responsible for management of the technical section. Increases in support personnel (secretaries, drivers, mechanics will round out the organization.

(cc) National Experimentation and Applied Studies Service:

The Service National de l'Expérimentation et des Etudes d'Accompagnement (National Experimentation and Applied Studies Service) was formally separated from the National Extension Service in March 1983. The MRD considered the creation of the National Experimentation and Applied Studies Service (NES) as the most effective way of establishing functional linkages between agricultural research institutions, the extension service and Voltan farmers. The MRD, however, emphasized the importance of the NES - extension collaboration by including in each service's attributions liaison units which will jointly develop technological packages for dissemination to farmers.

The present NES staff consists of twelve people: eight technicians and four administrative support staff. The Chef de Service holds a Ph.D. equivalent degree in Agronomy. In addition, the NES already has 5 Ingenieurs Agronomes (Bachelor's degree equivalent in an agricultural science) and 2 Agents Technique Specialisé (advanced training in an agricultural science) on its staff. Thus, the NES already has a strong core staff of agricultural technicians to implement the Project.

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The Project will require four additional technicians who will receive long-term training in Agronomy, Agricultural Economics, Rural Sociology/Anthropology, and Computer Science. Upon completion of their training in year 4 of the Project, they will assume the function of the 4 long-term technicians required at the beginning of the Project. Three additional Ingenieurs Agronome will be recruited from Upper Volta's national agricultural education system to fully staff the NES needs for middle level technical functions, i.e. four Ingenieurs Agronomes coordinating the 4 regional FSUs at the ORD level and four directing programs of the head office technical units. Four additional Agents Techniques Spécialisés (ATS) will likewise be recruited to provide assistance at the regional, sector and sub-sector levels. The availability of the additional ATS should not be a problem as they are considered lower level.

As pointed out above, there is already a strong core staff of agricultural technicians capable of implementing the Project. The largest need for technical staff (Enqueteurs/Observers) can be provided from the SAFGRAD project or the national agricultural education system, and adequate candidates are available for recruitment. The administrative personnel needs do not present any difficulties in recruiting adequate staff.

Therefore, a strong central technical staff is already in place. During year one of the Project additional technical and administrative staff will be recruited and after year two the NES will be fully staffed except for the technicians under long-term training who will assume their positions in year four. Given the emphasis on intermediate to lower level/technical personnel for the implementation of the research program, problems in achieving the proposed staffing pattern are not foreseen. The recruitment of the four long-term participants could pose a problem due to the scarcity of qualified Voltans for these positions.

As the NES is a new service its annual budget is FCFA 1,500,000. Except for USAID assistance no other donor is supporting NES activities. The largest proportion of the NES budget is allocated to personnel and operating expenses with very few funds going into actual research efforts. This financial profile of a Voltan organization not receiving outside donor assistance is standard and reflects the general pattern of GOUV budget expenditures. The additional staff required to implement the Project will be supported by counterpart funds. Major operating expenses, i.e. vehicle maintenance and utilities will also be financed through the counterpart funds. The USAID is well aware of the recurrent costs ramifications and a recurrent cost analysis of this component is provided in Section G (4).

The Director of the DSA is a line officer under the Secretary General. It will be the responsibility of the DSA Director to ensure the implementation of the NES. As such, the DSA Director will be the GOUV Project Manager for this activity. The DSA Director will delegate his authority for routine implementation activities to the Chief of the NES.

The majority of the Enqueteurs/Observers will have already received training in FSR methods via the SAFGRAD Project. A Documentation Specialist/Librarian will be recruited locally to manage the proposed documentation center, and one computer assistant will be contracted locally to complement the computer specialist who will receive long term training.

The additions to the administrative support staff will be comprised of 10 people. The NES has already requested an assistant Chef de Service who will, for the most part, have administrative responsibilities. Two accountants will be contracted by NES to ensure proper financial management. Other additions to the administrative staff will include a secretary, mechanics, drivers and guards. Table I summarizes the NES staffing pattern.

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TABLE 3

NES Staffing Needs

No.	Actual	Proposed	
		Contract	Civil Service
1	Chef de Service		1 Chef Adjoint
1	Secretary	1 Secretary	
		2 Accountants	
		1 Documentalist	
		1 Computer Operator	
		1 Computer Assistant	
5	Ingenieurs Agronome		3 Ingenieurs Agronome
2	ATS		4 ATS
		20 Enqueteurs	
1	Chef Garage		
		1 Mechanic	
2	Chauffeurs	2 Chauffeurs	
		2 Guardians	
			1 Agronomist BA-MS
			1 Agricultural Economist
			1 Rural Sociologist
12		31	11

(vii)) Office National des Cereales:

The implementing agency for this Project activity will be the National Cereals Office (OFNACER). This institution was created in 1971 by the GOUV (Decree No. 71/003/PRES/MIC dated January 8,1971) and given particular status via Decree No. 71/004/PRES/MIC of the same date. The institution was initially placed within the Ministry of Commerce but transferred to the Ministry of Rural Development (ordinance No. 78-011/PRES) on March 6,1978. The institution was given the mandate to implement the following activities:

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(aa) Serve as a coordinating office to balance grain supplies by absorbing surplus and delivering sufficient quantities to deficit zones

(bb) Maintain the national level security stock created by West German financing, and

(cc) as stated in Article 7, as a coordinating office, OFNACER is charged with the responsibility of organizing itself in liaison with the administrative authorities, the ORDs and other organizations to provide at any time detailed estimates on the harvest by geographic region, as accurate an assessment as possible of the consumption requirements and growth rate, and information on the cereal situation throughout the country.

OFNACER was created as an autonomous financial entity and received 50,000,000 F.CFA as initial capital and 700,000,000 F.CFA advance from GOUV. In addition to this amount, OFNACER has received financial assistance from a number of donors, particularly the West German, AID, The FED, French, Dutch and Canadians. OFNACER has also received grant assistance from the same donor for technical assistance, training, and commodity support.

Figure indicates the current placement of OFNACER in the Ministry of Rural Development. OFNACER is governed by an Administrative Council, chaired by the Minister of Rural Development. This Council, which includes members of various Ministries of the GOUV, determines the general policy and oversees the operations of OFNACER. The Director General of OFNACER is a political appointee who is responsible for the day-to-day operations of the office in association with the Directors of Stocks, Finance, Marketing, Personnel and Material, Logistics and the Controller General. During the past two years, OFNACER has improved its human resource base by recruiting more qualified Directors of Marketing, Personnel and Material, and Finance. The result of this recruitment, technical assistance and training has been a general up-grading of OFNACER's technical capabilities.

The Director General of OFNACER is a line officer under the Secretary General of the Ministry of Rural Development. It will be his responsibility to ensure the implementation of the activity, and as such will serve as the GOUV Project Manager. The Director General is responsible for OFNACER's overall activities. Due to OFNACER's organization however, a number of other personnel are expected to play critical roles during the implementation of the Project. These persons include the Assistant Director General, who is responsible for the general supervision and management of the Planning Unit (CEPS), the Director of Management and his assistants who are responsible for the development and implementation of the national warehouse sanitation program as well the general maintenance of stocks, the Director of Administration who is responsible for in-country training and applications for U.S. training as well as the receipt and inventory of U.S.-financed commodities, and the Financial and Accounting Director who is responsible for the management of the local cost funds utilized by this activity. Each of these individuals has worked closely with USAID in implementating the Grain Marketing Development project.

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Some weaknesses in the organization have existed in the past when office functions and responsibilities were not clearly delineated. The reorganization structure developed by OFNACER with USAID and German technical assistance has a more functional basis and will contribute to a more efficient organization. The most crucial administrative and institutional concern at this junctures is not within OFNACER, but rather with the establishment of functional linkages between OFNACER and the other agencies within the Ministry of Rural Development. Such linkages must be strengthened in order for the MRD to develop the institutional capacity to increase agricultural productivity. It is for precisely this reason that we are addressing complementary agencies simultaneously under the ADS Project rather than through smaller individual projects.

B. USAID/Upper Volta

USAID/Upper Volta will play a major role in implementation of this Project. Therefore, in addition to the analysis of the administrative capability of the various Departments and entities supported under the Project, we also describe how the USAID is organized and how it will jointly implement the Project with the MRD.

1. USAID Organization

The first line of responsibility for the Project is with the project management staff within the Office of Agriculture. This staff is divided into three sections; the Agricultural Economics section, the Agricultural Management/Human Resource Development section and the Agricultural Capital and Technology Transfer section. Each section is comprised of a USDH Project Officer who serves as the project manager for the portion of the agricultural portfolio within the section. To assist with portfolio management, each section has an FSN project manager plus other project managers as required (PSC's and/or PASA's). The project management staff is supported by four Voltan administrative staff, including two bilingual secretaries, one clerk typist and one administrative assistant. The second line of responsibility in project management is the Agricultural Development Officer who is generally aware of all major activities in project implementation and can backstop the USDH Project Officers in each section on administrative approvals and the like in their absence.

The OAG Project Officers are supported in implementation metters by other offices throughout the Mission, as well as periodic services provided by REDSO/WCA. In the case of the former, the OAG Project Officers work closely with the Controller's Office for matters concerning project budgeting, disbursements and audits; the Program Office for project modifications, conformance with guidance, monitoring and evaluation plus engineering support; the Office of Human Resources for training and monitoring of PL 480; and the Deputy Director's Office for small contracts. In addition, the USAID is setting up a logistic support contract which will provide support to all project-financed contractors, both long and short-term.

The organization as described above, represents a certain amount of recent Mission reorganization and restructuring particularly with respect to the Office of Agriculture. The OAG was set up on July 1, 1982 with the assignment of an ADO and the transfer of two USDH, one PSC, one PASA and one secretary. Since then, one USDH Project Officer ,three FSN project specialists (two being recruited currently) and three administrative support staff have been added. It is anticipated that one or two more project managers may be contracted to handle the portfolio. The Controller's Office, is currently fully staffed with 3 USDH,

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TCN plus an expanded local staff. The Program Office is fully staffed with 5 USDH, 3 FSNs and one U.S. Contractor. Over the past fifteen months the Program Office has introduced a thorough and rigorous quarterly Project progress review system which identifies problems for management to deal with early in their gestation. Lastly, the Deputy Director's Office is leading a complete revision/updating of Mission operation procedures to increase both operational effectiveness and efficiency. This includes a clarification of support provided by the JAO and the initiation of a Mission-wide logistics support contract for all project-financed long and short-term advisory services. Combined, these revisions in USAID organization and operating procedures should be reflected in a substantially strengthened Mission capability to carry out the portfolio of bilateral and regional projects.

2. Operations of the Logistic Support Contract

Logistic support to contractors, both short and long term, will be provided through a separate, distinct contract. USAID plans to contract with a U.S. firm to establish a support office in Upper Volta to provide the full range of support necessary for the efficient functioning of technical assistance personnel. Support services would include but not be limited to housing rental and maintenance, furnishing and repairs, travel, shipping, educational arrangements, etc.

Initially, this Project will provide the major source of funding for the administrative costs of operating the support office mechanism. Once established and operating, other project contractors will receive their support through this contract mechanism. Each project would then provide a portion of the administrative costs of support office operations.

The procedure has several advantages. First, project managers will no longer have to fill the grap resulting from the JAO limiting its provision of services to contractors. Secondly, documentation for the local cost financing of all contractors will be consolidated into a single billing. This will be a significant reduction in the paperwork of the Office of Financial Management and voucher review. Third, contractors can get about their work more quickly and efficiently without having to spend time at the customs or procuring bottled gas.

The contract itself would be handled by the new management/supply officer if the position is approved. If not, the Deputy Director's Office would be the appropriate home for monitoring the mission-level contract.

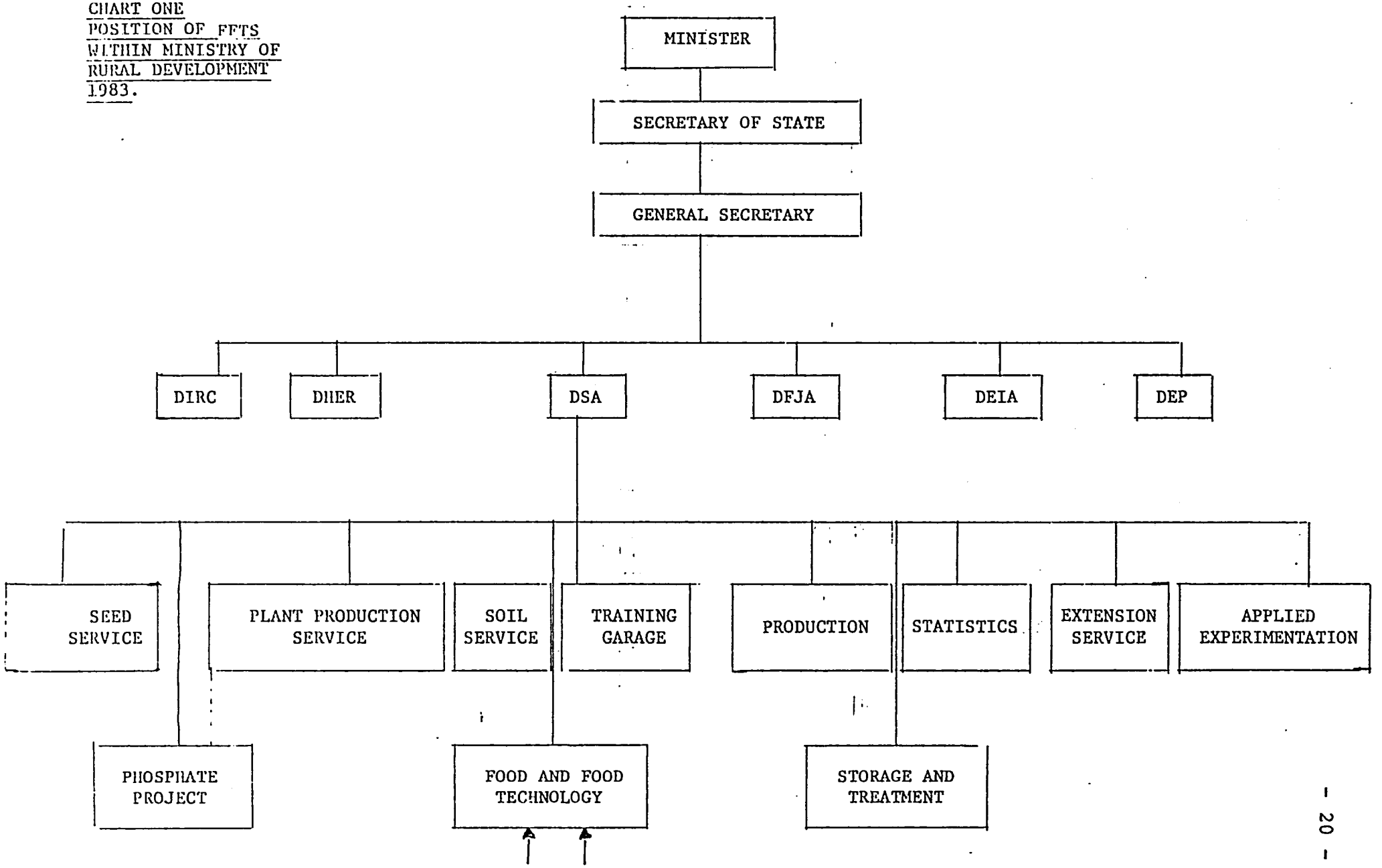
3. Joint Implementation

The ADS Project Agreement will negotiated with the Ministry of Rural Development. Immediately upon completion of the agreement, a joint Project Committee will be set up and will include the Secretary General as chairman, heads of the central Departments and related MRD agencies involved in the Project, representatives from other Ministries (representing agricultural research, Environment, Commerce, Finance, Plan, Treasury and Education) and the USAID representatives (ADO and various Project Officers). The Committee wil meet at least annually to review Project implementation issues such as the annual budget, evaluation and modifications if required. The day-to-day aspects of implementation will no however, be the responsibility of the joint Project Committee.

After the Project Agreement has been signed, the Minister will redelegate authority for the day-to-day implementation of Project activities to the various central Departments and entities. The OAG project management sections will be

paired with this redelagation for joint implementation. The groupings will be as follows. The Agricultural Economics section will work with the DEP on agricultural statistics, the DEP on policy analysis and project evaluation, the DIRC on cereal banks, OFNACER on food security planning and OFNACER and the DEP on programming the section 206 program. The Agricultural Management and Human Resources section will work with the DAAF on the administrative support contract for the entire MRD system, the DAAF on the scholarship funds, the DSFJA on rural youth training and the DIRC on managerial training for the groupements villageois. The Capital and Technology Transfer section will work with the DSA in food and food technology, farming systems research, and soil and water conservation. This same approximate pairing was involved in the collaborative design of the Project Consequently, minimal dalays in start-up are anticipated.

CHART ONE
POSITION OF FFTS
WITHIN MINISTRY OF
RURAL DEVELOPMENT
1983.



NOTE: DIRC RURAL INSTITUTIONS AND CREDIT
DHER RURAL CONSTRUCTION AND HYDRAULICS
DSA AGRICULTURAL SERVICES
DFJA YOUNG FARMER SCHOOLS
DEIA LIVESTOCK
DEP APPLIED STUDIES AND PROGRAMS

The full Ministry Organization has been deleted to show detail at the low level within the DSA.

CHART TWO
EXPECTED
INFORMATION
FLOWS

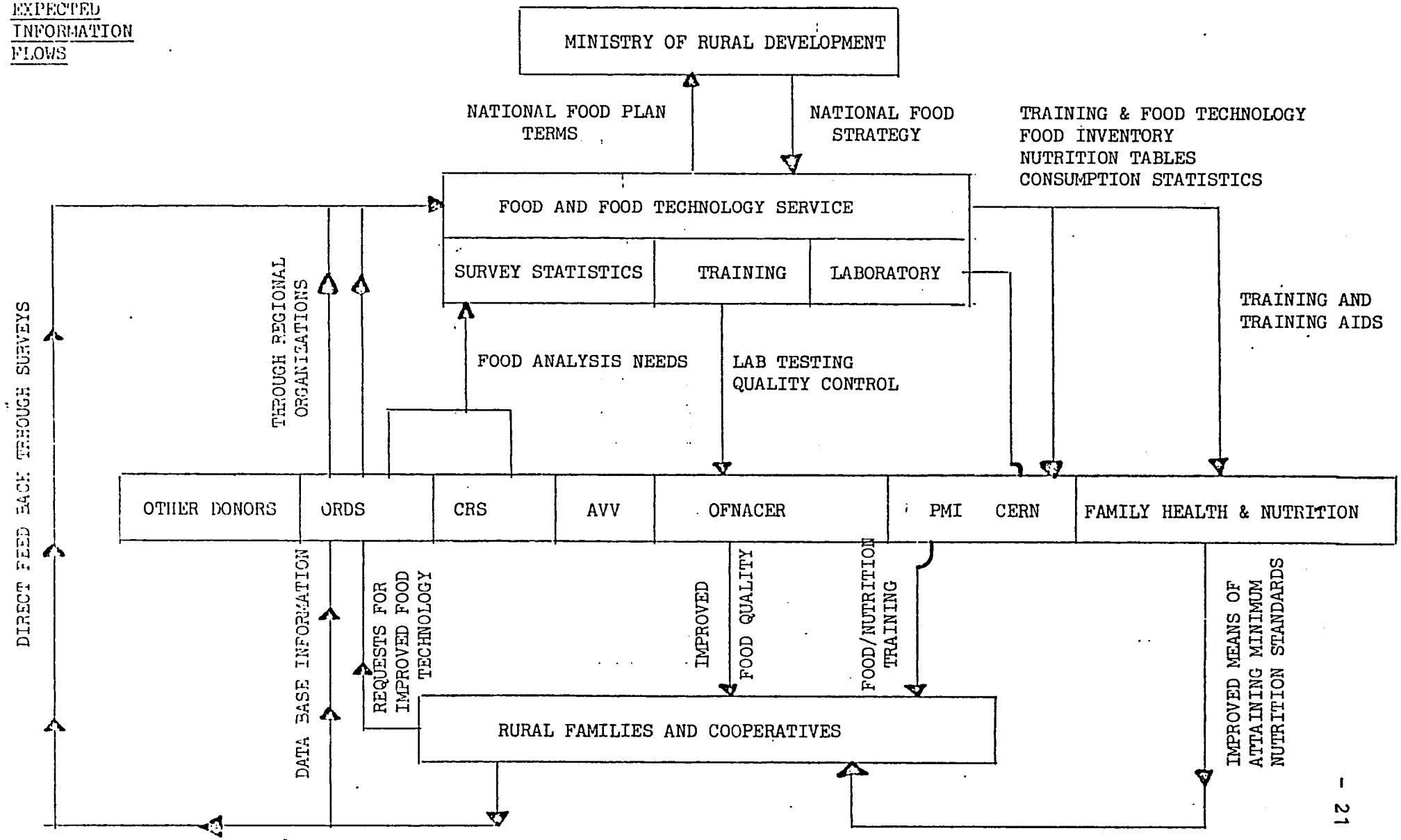


CHART THREE
FFTS ORGANIZATION
1983

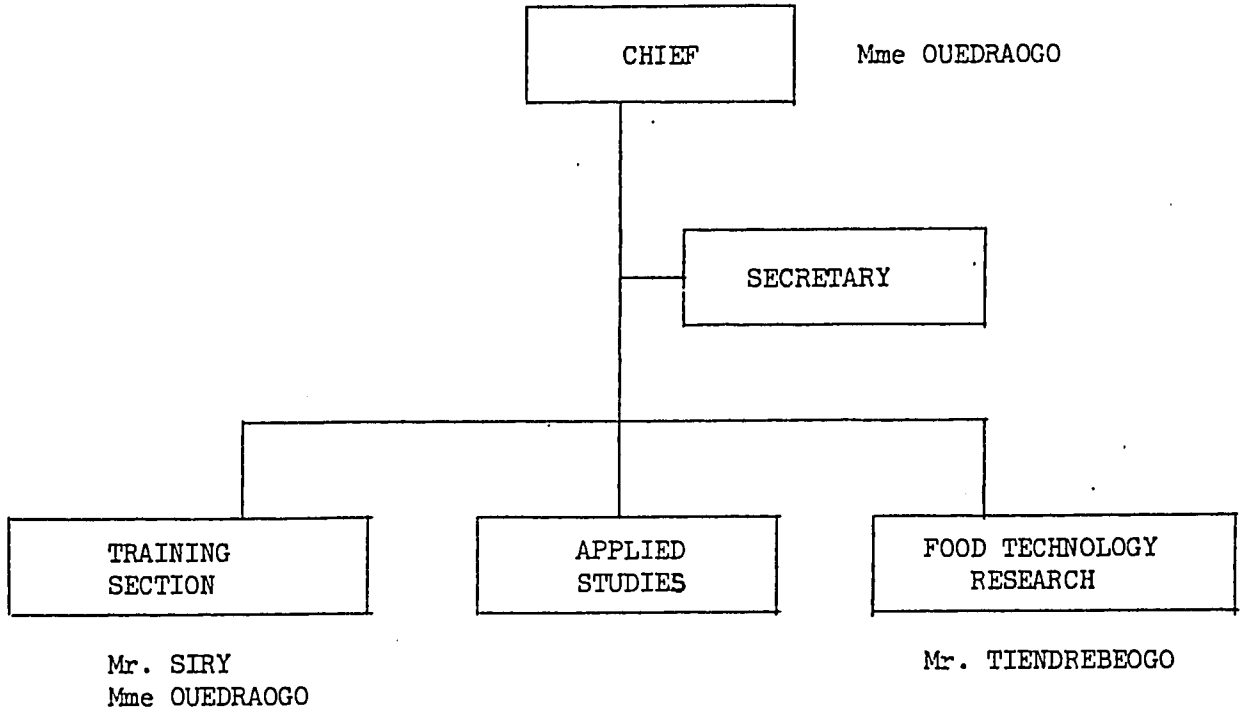


CHART FOUR
FFTS ORGANIZATION
AT END OF PROJECT
1988

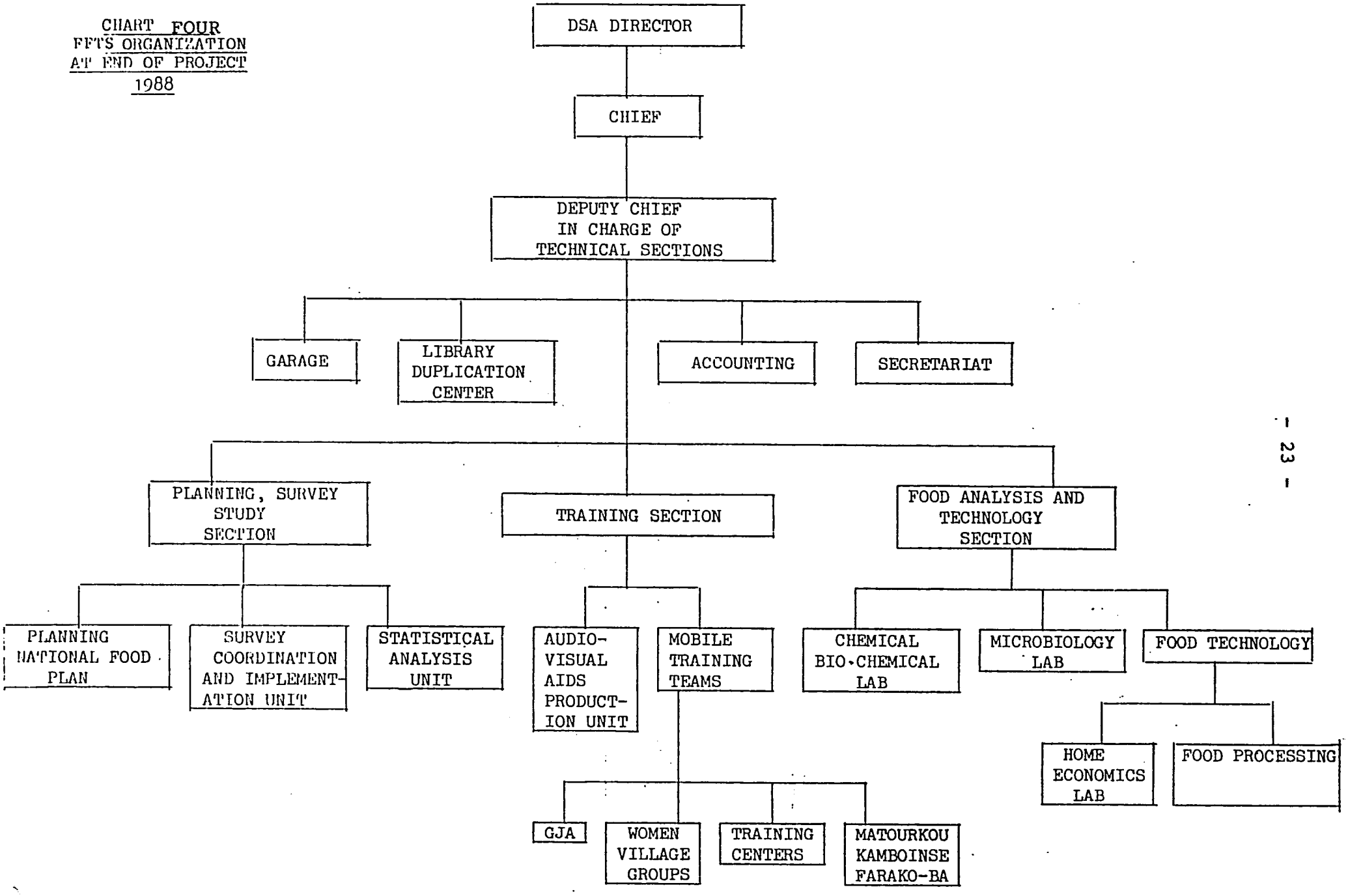


TABLE FIVE

List of GOUV personnel to be in place at the end of the project

SUPERVISORY PERSONNEL

Chief	1
Deputy Chief	1
Accountant	1
Librarian	1
Survey Section Head	1
Training Section Head	1
Food Technology Section Head	1
Statistican/Computer Operator	1

SUPPORT PERSONNEL

Secretary	2
Drivers	3
Mechanic	1
Library Aide, Copier	1
Admin. Assistant	1
Survey Interviewers	2
Trainers: Nutritionist	1
Home Economist	1
Audio Visual Specialist	1
Animatrice (Coops)	1
Vocational Agriculture Specialist	1
Chemistry Lab Technician	1
Microbiology Lab Technician	1
Home Economic Lab Technician	1
Agricultural Engineer/Food Technologist	1
Workman	1
Day and Night Guard	2
TOTAL	30

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REVISED INITIAL ENVIRONMENTAL EXAMINATION

PROJECT COUNTRY:	Upper Volta
PROJECT TITLE:	Agricultural Development Support Project (686-0255)
FUNDING:	FY 83-87: $30,000,000 in DA and approximately $10,000,000 in PL 480
PERIOD OF PROJECT:	1983-1988
I.E.E. PREPARED BY:	Kevin J. Mullally, USAID Environmental Officer
DATE:	June 15,1983
ENVIRONMENTAL ACTION RECOMMENDED:	See summary and recommendations

CONCURRENCE:

Emerson J. Melaven
USAID Mission Director

CONCURRENCE:

Africa Bureau Environmental Officer

CLEARANCE:

GC/AFR

REVISED I.E.E.

IMPACT IDENTIFICATION AND EVALUATION FORM 1/

Impact Areas and Sub-Areas	Impact Identification and Evaluation 2/
A. LAND USE	
1. Changing the character of the land through:	
a. Increasing the population	N
b. Extracting natural resources	N
c. Land clearing	L
d. Changing soil character	L
2. Altering natural defenses	L+
3. Foreclosing important uses	N
4. Jeopardizing man or his works	N
5. Other factors	
Increased food production	M+
B. WATER QUALITY	
1. Physical state of water	L
2. Chemical and biological states.	N
3. Ecological balance	M
4. Other factors	N
C. ATMOSPHERIC	
1. Air additives	N
2. Air pollution	N
3. Noise pollution	N
4. Other factors	N

1/ See following section for discussion of impacts identified in this form.

2/ Key to symbols: N = No environmental impact
L = Little (low) environmental impact
M = Moderate environmental impact
+ = Indicates impact is positive

IMPACT IDENTIFICATION AND EVALUATION FORM (Continued)

D. NATURAL RESOURCES

1. Diversion, altered use of water L

2. Other factors . . . . . N

E. CULTURAL

1. Altering physical symbols . . . . . N

2. Dilution of cultural tradition . . . . . N

F. SOCIO-ECONOMIC

1. Changes in economic/employment patterns . . . . . N

2. Changes in population . . . . . N

3. Changes in cultural patterns . . . . . N

G. HEALTH

1. Changing a natural environment . . . . . N

2. Eliminating an ecosystem element . . . . . N

3. Other factors: . . . . . .
Improved Nutrition . . . . . M
Increase in disease potential . . . . . N

H. GENERAL

1. International impacts L

2. Controversial impacts . . . . . N

3. Larger program impacts . . . . . N

4. Other factors . . . . . N

I. EXAMINATION OF NATURE, SCOPE AND MAGNITUDE OF ENVIRONMENTAL IMPACTS

A. Description of Project

The long-term goal of the Agricultural Development Support Project is to increase agricultural output. This Project represents a major reinforcement of the Ministry of Rural Development's administrative and programming support system to the agricultural sector. The End-of-Project status will be the following:

(1) An improved national to regional level planning and managerial capacity;
(2) An expanded technical managerial skills base;
(3) An improved MRD food production, marketing research and farming systems research capability.
(4) Reduced insecurity of food supply.

B. Identification and Evaluation of Environmental Impacts

As this is a large and comprehensive program, the possible environmental impact will be discussed for each component separately.

1. The Planning and Management component will not finance any major physical intervention, but instead will concentrate on the provision of advisory services, commodity assistance and academic training. As such, no adverse environmental impacts are anticipated from this component. Possible secondary beneficial impacts may result from the more efficient functioning of the reinforced Departments within the MRD. For example, a strong monitoring and evaluation unit and thoughtful development of long-range policies will prevent unnecessary destruction of the environment, as the policies are transformed into activities on the ground. As per Section 216.2(c) (2) (i) of Regulation 16, this component can be categorically excluded from further environmental review.

2. The Technical and Managerial Skills Training component will involve relatively little, if any, actual physical interventions, but will concentrate in the main on providing training assistance. No adverse impact on the environment is anticipated. The additional training for the selected individuals will raise their awareness of the linkages between the environment and development activities, encouraging them to prepare environmentally sound programs. As per Section 216.2 (c) (2) (i) of Regulation 16, this component can be categorically excluded from further environmental review.

3. The Research and Technology Transfer component will consist of three activities:

(a) nutrition research,
(b) farming systems research, and
(c) soil and water land use planning and management.

(a) The nutrition research will concentrate on the nutritional aspects of food crops and develop an applied research network based on a systems approach to research and extension. As this component is designed to gather and analyze information with the objective of matching nutritional needs with food production and supplies, this component should be exempt from the environmental analysis procedure as these activities will be consistent with Section 216.2(c)(2)(iii)Regulation 16, relating to controlled experimentation in the categorical exclusions section of AID Environmental Procedures.

C. Description of Possible Impacts

1. Land Use

There will be minimal land clearing for the construction of the food processing laboratory, the local grain storage facilities, and for the farming systems research activities. The actual construction activities will disturb very small areas of land and have little impact on the environment, and there will not be any undue traffic caused by the creation of the storage areas. There should be a beneficial environmental impact in time from the development of sound farming systems, but it is not expected that the research will have any great immediate effect as it is primarily an investigative endeavor.

2. Water Quality

There is an anticipated improvement of the physical state of the water as a result of the soil and water conservation activities. There should be reduced sediment in water flow, increased infiltration and a less static water table as a result of the institution of such practices as contouring, micro-catchments, rainfall harvesting, water spreading and strip cropping.

3. Atmosphere

Project activities should have no effect on air pollution.

4. Natural Resources

The improvement of natural catchment areas will prolong the length of time water will be available, both to plants as soil moisture, and as recharge for the water table.

There will be a limited beneficial environmental impact from well water level improvement, and a more productive use of rainfall.

5. Cultural

There will be no alteration of physical symbols or dilution of cultural tradition in the Project area.

6. Socio-Economic

There should be no changes in economic/employment patterns or in population. In fact, Project activities are designed to improve employment opportunities on the Mossi Plateau.

7. Health

In the long term, it is anticipated the aggregate of Project activities will have the effect of improving the nutrition of the Voltan population, through its objective of increasing agricultural output.

8. General

There will be no international impact, except perhaps for those countries whose markets are replaced by PL 480 imports. There are no other adverse environmental impacts anticipated.

The construction and development of the food processing laboratory will have little adverse impact on the environment other than the removal of natural vegetation on the actual laboratory site. However, proper measures must be built in the design to include planned waste disposal. As the total activity consists of research and development it qualifies for a categorical exclusion, per Section 216 (c) (2) (iii) of the AID Environmental Procedures (Regulation 16).

(b) The farming systems research component will qualify for a categorical exclusion pursuant to section 216.2 (c) (2) (iii) of Regulation 16. There will be no actual extension activities funded under this activity. Proven techniques, practices and systems will be disseminated through linkages established with an ongoing FAO project supporting extension services.

(c) The soil and water land use planning and management activity will provide advisory services, commodity assistance and academic training in support of the MRD soil conservation unit. Assistance will be provided in mapping, delivery services, and with improved kinds of policy and infrastructure.The total effort of this activity will be to move the utilization of the available natural resources to their highest and best utilization capability. The potential beneficial impacts of this activity are substantial. The actual delivery package will be tested with a pilot activity in northern Upper Volta. The eventual soil conservation activities should:

(1) contribute to the standing mass of vegetation;
(2) increase infiltration in treated areas;
(3) stabilize or improve physical and chemical soil properties, such that soil fertility will be enhanced by the reduction of soil erosion; and
(4) improve harvest years over a period of time.

In view of these facts, this activity merits a negative recommendation.

4. Component four will involve the provision of PL 480, Section 206 commodities which will substitute for present imports. In as much as the imports may originate from Europe or other countries, some minimal impact may be made on an international scale for those countries which lose their market. There is no other anticipated environmental impact, either positive or negative for this element.

This component will also include support for OFNACER in the form of training, technical assistance, and warehouse commodities for thirty existing warehouses. The commodities will be essentially for testing grain for different properties and for protecting it. No pesticides are programmed for use at the warehouses, as storage is programmed for a short period of six to eight months maximum.

The final element of this component will be assistance for the construction of grain storage at the village level. Again, as storage will be for approximately six months, there is no provision for pesticide use. There are also no anticipated health hazards due to the short periods of time the grain will be in storage. Storage will be of traditional design and provide for a maximum of 50 to 100 M.T. capacity. As these storage areas will not be a part of any major effort to increase production, but rather will assist farmers in stabilizing early season times of plenty with times of scarcity, there are no anticipated cropping pattern changes. Actual construction will have minimal effect on the physical environment. As such, a negative determination is recommended for the fourth component.

D. Summary and Recommendations

This is a multifaceted country-wide program designed to assist the Government of Upper Volta in its efforts to achieve food self-sufficiency. From its very beginning, planning efforts made a conscious effort to include environmental considerations to minimize any possible adverse effects to the natural environment. In the past, the GOUV's approach has tended to emphasize short-term considerations of an income-maximizing nature. Given the fragile ecosystem, a major focus of this Project will be the development of sustainable agricultural production strategies. The planning and implementation activities of the Project will, as a consequence, entail the consideration of environmental implications. In view of the above, the following recommendations are made:

-- for component one, a categorical exclusion;
-- for component two, a categorical exclusion;
-- for component three,
  (a) a categorical exclusion for the activity and the construction
  (b) a categorical exclusion
  (c) a negative recommendation; and
-- for component four, a negative determination.

INITIAL ENVIRONMENTAL EXAMINATION

PROJECT COUNTRY:	Upper Volta
PROJECT TITLE:	Agricultural Development Support Project (686-0255)
FUNDING:	FY 83-87: $30,000,000 in DA and $10,000,000 in PL 480
PERIOD OF PROJECT:	1983-1988
I.E.E. PREPARED BY:	Kevin J. Mullally, USAID Environmental Officer
DATE:	December 14, 1982
ENVIRONMENTAL ACTION RECOMMENDED:	See summary and recommendations

CONCURRENCE:

Emerson J. Melaven
USAID Mission Director

CONCURRENCE:

Africa Bureau Environmental Officer

CLEARANCE:

2.3.83

GC/AFR

IMPACT IDENTIFICATION AND EVALUATION FORM[1]

Impact Areas and Sub-Areas	Impact Identification and Evaluation[2]
A. LAND USE	
1. Changing the character of the land through:	
a. Increasing the population	N
b. Extracting natural resources	N
c. Land clearing	L
d. Changing soil character	L
2. Altering natural defenses	L
3. Foreclosing important uses	N
4. Jeopardizing man or his works	N
5. Other factors	
Increased food production	M+
B. WATER QUALITY	
1. Physical state of water	M
2. Chemical and biological states	N
3. Ecological balance	M
4. Other factors	N
C. ATMOSPHERIC	
1. Air additives	N
2. Air pollution	N
3. Noise pollution	N
4. Other factors	N

1/ See following section for discussion of impacts identified in this Form.

2/ Key to symbols: N = No environmental impact
L = Little (low) environmental impact
M = Moderate environmental impact

IMPACT IDENTIFICATION AND EVALUATION FORM (Continued)

D. NATURAL RESOURCES

1. Diversion, altered use of water L

2. Other factors . . . . . N

E. CULTURAL

1. Altering physical symbols . . . . . N

2. Dilution of cultural tradition . . . . . N

F. SOCIO-ECONOMIC

1. Changes in economic/employment patterns L

2. Changes in population . . . . . N

3. Changes in cultural patterns L

G. HEALTH

1. Changing a natural environment L

2. Eliminating an ecosystem element . . . . . N

3. Other factors:

Improved Nutrition . . . . . M

Increase in disease potential . . . . . M+

H. GENERAL

1. International impacts . . . . . L+

2. Controversial impacts . . . . . N

3. Larger program impacts . . . . . N

4. Other factors . . . . . N

3. The Research and Technology Transfer component will primarily support the Directorate of Agricultural Services (DSA) in nutrition research and in field-level adaptive research. There will be a limited amount of land-clearing related to the GOUV-financed construction of the five applied research stations. This construction will entail the clearing of some native vegetation from the construction sites, as well as some disturbance of the soil. The area and amount of native vegetation and agricultural land affected will be small. It should cause no significant environmental impact; therefore, a negative determination is recommended for the construction.

The research will concentrate on the nutiritional aspects of food crops on the one hand and develop an applied research network based on a systems approach to research and extension. As this component is designed to gather and analyse information with the objective of matching nutritional needs with food production and supplies, this component should be exempt from the environmental analysis procedure as these activities will be consistent with Section 216.2(c) (ii) of Regulation 16, relating to controlled experimentation in the categorical exclusions section of AID Environmental Procedures.

The potential beneficial impacts of the accompanying extension activity will be substantial. The provision of food production inputs in response to the nutritional aspects of food crops should eventually improve the food intake and health of the local population. In working with technologies such as donkey traction this component will address the issue of farm labor constraints during peak seasons. Since the stations and extension efforts teach proper cultural methods, the potential negative impact on the natural environment will be minimized. The threshold decison on this extension activity will be deferred until Project Paper design, at which time an IEE, and if necessary an EA with appropriate scoping, will be prepared.

4. The Selected Technical Services component concentrates on the controlled experiments of new systems approaches. Several different initiatives will be undertaken under this component. Introduction of energy-efficient production equipment and systems should have little adverse impact on the environment. By their nature, energy-inefficient systems, being wasteful, are more destructive of the environment than energy-conservative systems.

a. The diversion and increased use of water will expand the available growing space surrounding the dams. Potential beneficial impacts include the improvement of the economic well-being of the target population through the development of permanent agriculture. The accompanying conservation activities in the upper reaches of the drainage basins should also improve ground-water availability and prolong the life of the water-retention systems created by the dams, by reducing erosion and siltation. In designing type irrigation systems themselves, the implementing agency must be aware that virtually every aspect of an

irrigation project may have environmental implications. The training and support of the ONBI should minimize poor development designs for irrigation systems and provide, in conjunction with the soils unit, professional assitance in selecting adequate sites, with proper soils. The soil conservation activities will also have to take action below the dam to minimize erosion of the newly prepared lands, with wind-breaks, terracing, if necessary, and other measures. As the dams are located in an otherwise difficult growing environment the project anticipates little problem with potential pests becoming naturalized outside the project area. Furthermore, project design by the new ONBI unit should minimize any waste-water problems. The planned reinforcement of the extension services which will be provided to these soils will be essential in imparting information on such things as irrigation cultivation techniques, drainage, and other aspects of the rural agricultural economy.

Since it is not possible at this time to identify the sites at which ONBI and HER will work with irrigation and well development, the PP team will have to suggest environmental safeguard procedures for ONBI and HER to follow in making individual site selection. It would also seem highly desirable for the technical assistance team to include an agricultural or environmental engineer and a public health specialist. The addition of such skills to the ONBI staff would ensure environmental (including health) concerns are taken into account, and would also enhance the institutionalization of environmentally sound procedures in all ONBI and HER activities.

b. The Livestock activity will concentrate on integrating existing services in the livestock sector. No new activity is planned, but the Project will integrate and enhance existing services for the purpose of strengthening their advisory capacity. Therefore, the project anticipates no adverse environmental impacts.

c. The FAAC support will expand the availability of equipment and improve overall management operations. Adverse environmental impacts may occur from the increased availability and use of agricultural equipment. However, this is expected to be miminal when coupled with the additional training for better technicians and village groups offered through other aspects of the project. Project support for a soil conservation unit should also provide adequate oversight capabilities in the MRD to minimize abuse of the natural environment. The three activities under this component, especially the water-related activity, have not been sufficiently defined at this stage to permit comprehensive environmental review. Therefore, the threshold decision is deferred until Project Paper design, as in the case of the extension activity.

5. The provision of PL 480 Section 206 commodities will supply substitutes for present imports. There is no anticipated environmental impact, positive or negative from this component.

I. EXAMINATION OF NATURE, SCOPE AND MAGNITUDE OF ENVIRONMENTAL IMPACTS

A. Description of Project

The long-term goal of the Agricultural Development Support project is to increase agricultural output. This project represents a major reinforcement of the Ministry of Rural Deveopment's administrative and programming support system to the asgricultural sector. The End-of-Project Status will be the following:

(1) An improved national to regional level planning and managerial capacity;

(2) An expanded technical and managerial skills base;

(3) An improved MRD food production, marketing research and technology transfer system;

(4) Strengthened delivery systems within selected technical services and parastatals;

(5) Reduced insecurity of food supply.

B. Identification and Evaluation of Environmental Impacts

As this is a large and comprehensive program, the possible environmental impact will be discussed for each component separately.

1. The MRD Planning and Management component will not finance any major physical intervention, but instead will concentrate on the provision of advisory services, commodity assistance and academic training. As such, no adverse environmental impacts are anticipated from this component. Possible secondary beneficial impacts may result from the more efficient functioning of the reinforced Directorates within the MRD. For example, a strong monitoring and evaluation unit and thoughtful development of long-range policies will prevent unnecessary destruction of the environment, as the policies are transformed into activities on the ground. As per Section 216.2(c)(2)(i) of Regulation 16, this component can be categorically excluded from further environmental review.

2. The Technical and Management Skills Training component will involve relatively little, if any, actual physical interventions, but will concentrate in the main on providing training assistance. No adverse impact on the environment is anticipated. The additional training for the selected individuals will raise their awareness of the linkages between the environment and development activities, encouraging them to prepare environmentally sound programs. As per Section 216.2(c)(2)(i) of Regulation 16, this component can be categorically excluded from further environmental review.

C. Summary and Recommendations

This is a multifaceted country-wide program designed to assist the Government of Upper Volta in its efforts to achieve food self-sufficiency. From its very beginning, planning efforts made a conscious effort to include environmental considerations to minimize any possible adverse effects to the natural environment. In the past, the GOUV's approach has tended to emphasize short-term considerations of an income-maximizing nature. Given the fragile ecosystem, a major focus of this project will be the development of sustainable agricultural production strategies. The planning and implementation activities of the project will, as a consequence, entail the consideration of environmental implications. In view of the above, the following recommendations are made:

--for component one, a categorical exclusion;

--for component two, a categorical exclusion;

--for component three, a negative determination for construction, a categorical exclusion for nutrition research, and a deferral of the threshold decision for extension activities;

--for component four, a deferral on all three activities; and

--for component five, a negative determination.

Energy Production and Consumption Analysis

The current identifiable energy requirements of the Project fall into three broad categories:

A. Fuel and associated petroleum products for support vehicles, small agricultural equipment power supplies and small absorption refrigerators (non-renewable);
B. Electrical power for the construction and continuing operation of planned office and laboratory facilities (non-renewable); and
C. Photo-voltaic power supplies to provide light to selected isolated rural schools (renewable).

No other specific energy requirements have been identified in the Project, other than the possible experimental use of three or four ultra-light aircraft for use by agricultural statistics enumerators. These units would use small quantities of gasoline on the same order of magnitude as a 250 cc motorcycle.

(a) Specific requirements for non-renewable petroleum products

The tabulated data below indicate the specific use and quantity requirements for petroleum fuels. All vehicles are to be equipped with diesel engines, as are the small agricultural engines. The refrigerators will use kerosene.

Item	No. of Units	Use	Example	Duty Cycle of use	Rate of Consumption	Liters per Unit/year	Total for group/year
LT. Truck 4 WD	25	Off road utility	AMC Jeep CJ8G10	25,000 km per year	10 km/L	2500	62,500 L
Passenger Sedans	14	General Road Service	AMC Alliance	20,000 km per year	12/km/L	1667	23,333
5 HP Agricultural equipment	60	Equipment Drive	B & S or European equipment	1000 hrs per year	3/4 L/hr	750	45,000
Mini-bus	4	Personnel Transportation	Toyota or Dodge	30,000 km per year	8 km/L	3750	15,000
Absorption Refrig.	20	Vaccine Storage	Kelv. or Equal.	Continuous 50% cycle	2L/24 hr	730	14,600

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TOTAL FUEL/YEAR 160,433 L

Figuring an average of one year procurement time for all items - petroleum fuel use for four remaining years of project will be: 641,732 liters
plus 5% shrinkage and spillage and "other" 32,088

Estimated TOTAL PETROLEUM FUEL FOR PROJECT 673,820 liters
or about 168,460,000 CFA F (at 250 CFA F/L).

This fleet of motor vehicles represents a substantial investment, warranting careful supervision and maintenance. The useful life of this equipment is directly affected by the quality and timeliness of routine maintenance procedures, especially in regard to air filters and oil changes. Since the "in situ" value of these vehicles will approach $700,000 and energy efficiency and longevity can be affected by as much as 40 to 50 percent, funds utilized to assure strict discipline in this area, are well spent, particularly in the Upper Volta environment.* All major automotive manufacturers coorporated into a brief 'awareness' course for all personnel involved in operation and maintenance.

(b) Specific requirements for non-renewable public utility electric power

For the laboratory and office space to be constructed under Component 3 of the Project, the single-story building will be 1200m², with 60 offices, air conditioned, with electricity @ 12W/M² plus miscellaneous power requirements @ 300 watts/office. This analysis is based upon using the same consumption rate for the construction period as final use consumption.

Assumptions: 40 KW air conditioning (total), pressure water available, 75% load factor, 8 hour day, 6 days/week, construction starts at the end or the sixth month.

Connected load: 40 KW (AC)
15 KW (light)
18 KW (misc.)

73 KW (total potential load)

73 KW X .75 = 55 KW avg. Load
x 8 hrs/day
440 KW hrs/day
x 6 days/week
2640 KW hrs/week
x 234 week electricity use in project (4.5 years)
617,760 KW hrs total use

@ 60 CFA/KWH = 37,065,600 CFA F. Estimated 234 weeks total electricity cost at current rates. This figure can vary up or down 15%, depending on insulation and other construction factors.

These figures include no electric line extension or connection costs, assuming that all building sites are presently within active utility service zones.

* By way of illustration, if the vehicles cost $670,000 and fuel costs $280,000. or a total of $950,000, 10% life and efficiency improvement would be $95,000.

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(c) Specific requirements of renewable photo-voltaic school lighting

The provision of photo-voltaics is to provide sufficient electric power to fifteen selected CFJAs for four hours after dark. This can be provided in approximately 40m² buildings with 4-40 watt fluorescent fixtures. This will not provide enough light for demanding, close work, but is sufficient for reading in close proximity to the light source. A power receptacle will be provided for loads up to 400 watts of no more than one hour duration. The maintenance of these units is slight, with minimal surveillance of the storage cells required. Life of cells is usually three to five years.

The insolation in this part of Africa is a dependable 8 to 10 hours per day. Using an average incidence angle of 50 to 60 degrees we could expect an average exposure efficiency of 75% (tracking panels would increase efficiency and minimize panel requirements but would also require more attention - i.e. a daily resetting or a partial use of output for automatic tracking).

Total power requirement per school at levels indicated above:

160 watts X 4 hrs	=	640 watt hrs
400 watts X 1 hr	=	400 watt hrs
		1040 watt hrs total

75% X 9 hrs = 6.75 hrs insolation time average

$\frac{1040 \text{ watt hrs}}{6.75 \text{ hrs}}$ = 154 watts input (minimum) of voltaic cells

use 75% system efficiency factor and install 200 watts* of photo-voltaics. Current costs are between $12 & *18/watt installed including solid state converters and storage (use $15/watt or $3000/school) use $45,000 for 15 schools.

(d) Summary of the Energy Assessment

The energy systems proposed to provide power to the Project are found to be appropriate and reasonable for the anticipated tasks. The selection of the diesel engine for both stationary and motive applications, even though slightly more expensive in initial cost, makes sense for the following reasons:

(i) Fuel efficiency is 25 to 30% greater than for gasoline engines of equal output.

(ii) The usuful life of diesel engines is ordinarily at least twice that of the counterpart gasoline engine and often outlasts the gas engine by a factor of three or four.

(iii) Diesel engines are much more likely to run for longer periods with low maintenance input.

* Completely integrated packages are available "off the shelf" in the 200 watt range. It is anticipated panel costs will be substantially reduced in the near future (12-18 months) due to the recent development of ammorphic substrate cells.

These factors suggest there is a reduced likelihood of the necessity for vehicle replacement during the life of the project, as the prime factor in vehicle replacement usually involves power plant problems. This applies to the small agricultural power supplies as well. An additional advantage is the safety of diesel fuel both in storage and use.

For the construction and power supply of office and laboratory facilities, there is no practical substitute for public utility power, even at the inflated electric rates in Upper Volta, as long as the supply can be brought economically to the point of use.

(e) Application of Renewable Energy Systems

The photo-voltaic power supply proposed for limited school lighting (CFJAs) is a first step in promoting the extended and efficient use of school facilities. It is virtually impossible to place a dollar value on this particular application of this technology. The photo-voltaic approach was selected because it represents the lowest maintenance requirement for the projected life of any system which might be utilized. Furthermore, the exposure of this burgeoning technology to large numbers of students and teachers is expected to have a beneficial impact in a country which has dependable year-round insolation and the possibility of numerous photo-voltaic applications. This may serve as a pilot effort in introducing photo-voltaics, which could possibly be manufactured in Upper Volta at some point in the future.

Non-renewable:

Petroleum fuels	$ 467,930
Public Utility Electricity	102,960

$ 570,904 for four years or about $143,000 per year. It would be expected that this figure could be improved upon with careful management and optimization of the use of facilities.

Renewable:

Photo-Voltaic (school lighting)	$ 45,000

Original installations in fifteen schools 6% added for each year in operation for maintenance and battery replacement.

(average 15 year photo-voltaic life)

GOUV Maintenance Costs

6 X 15 or 90% of $45,000	$ 40,500
Total 15 year cost	$ 85,500

or $5,700 per year for fifteen schools
or $380 per year per school
or $1.50 per school per day.

TOTAL Energy Costs (All categories for LOP)

Non-Renewable	$ 570,904
Renewable	$ 45,000
	$ 615,904

(These figures do not incorporate any factor for inflation. Dollar costs are calculated on the basis of 360 CFA/1 U.S. Dollar).

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1. Responsibilities

The Ministry of Rural Development will be the implementing agency for this Project. Procurement will be carried out as follows:

a) The majority of the commodities listed will be procured through a Procurement Services Agent (PSA) who will act on behalf of the HC.

b) Vehicles will be procured directly from the manufacturer.

c) Local procurement will be in accordance with the shelf-item rules or if the amounts exceed the authorized figures, by solicitation of offers to obtain the best possible price. See V below.

The Project will contract for the Services of a Supply Management/Procurement person (SMP) who will oversee the entire procurement process, follow AID procurement Regulations, and provide logistic and administrative support to all TA persons for this Project. This person will have two Voltaic assistants who will be trained in all of the functions connected with commodity/logistics/administrative management.

Project Managers will be required to submit requisitions to initiate procurement actions through SMP. In all cases PIO/Cs for commodity procurement will be required to initiate procurement action.

2. Commodity List

Prices shown are FOB Prices

A. COMPONENT 2

Equipment List For Two Teacher Training Centers:

(All dollar amounts are rounded)

(1) Classrooms (10)

NO.	ITEM	UP $		TP $	
1	Desk, Pedestal	230		230	
1	Chair, Executive	105		105	
50	Desk, Student, Steel	120		6,000	
50	Chairs, Stackable	16		800	
4	Ceiling fans, 56"blade	220		880	
2	Chalkboard	60		120	
1	Clock Battery Operated	27		27	
			10 x	7,360	
		Sub-Total			74,000

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QTY	ITEM	UP $	TP $	
	(2) Library (2)			
9	Shelving - Steel, Adj.	93	848	
4	Folding Tables, Pedestal type	93	372	
32	Chairs (same as classroom)	16	512	
4	Fans, Ceiling	220	880	
2	Card Catalog	150	300	
1	Typewriter-Manual	150	150	
1	Rack, Magazine, 8 Shelves	200	200	
1	Book Rack, Portable w/carters	140	140	
1	Circulation Desk	700	700	
1	Chair, Swivel, Adj.	75	75	
1	Desk (see classroom)	230	230	
1	Chair "	105	105	
			2 x 4,512	
		Sub-Total		9,024
	(3) Student Lounge (2)			
4	Fans, ceiling	220	880	
15	Chairs w/armrest	35	525	
2	Sofas - business lounge type	800	1,600	
4	Floor lamps	100	400	
4	Coffee Tables	100	400	
	Misc. Furnitures	1,000	1,000	
			2 x 4,805	
		Sub-Total		9,610
	(4) Dining Hall (2)			
12	Tables, Pedestal type,rolding	93	1,116	
100	Chairs (same as for classrooms)	16	1,600	
6	Fans, ceiling	220	1,320	
	Misc. Furnishings	1,100	1,100	
			2 x 5,136	
		Sub-Total		10,272
	(5) Kitchen Hall			
2	Freezer chest type litres (18 cuft) 220V	500	1,000	
1	Air conditioner, 23000 BTU 220V	1,000	1,000	
2	Gas range with extra wide oven, 2 oven rocks 4 burners, self cleaning oven	600	1,200	
	Pots Pans Knives Utensils — 1 lot	800	800	

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QTY	ITEM	UP $	TP $	
	Plates Cups Bowls 1 lot Silverware	1,000	1,000 2 x 5,000	
		Sub-Total		10,000
	(6) Dormitory (2)			
50	Bunk beds hardwood/metal construction with matresses ladder	250	12,500	
50	Wardrobes with hanging spare and shelves	150	7,500 2 x 20,000	
		Sub-Total		40,000
	(7) Office Equipment for Both CFFs Office Furniture			
10	Exec. desks	230	2,300	
10	Exec. chairs	105	1,050	
20	Waiting chairs	350	7,000	
			10,350	
	Office Equipment			
4	Project or screens	90	360	
4	16 mm projector with 6 watt speaker and VU meter UL listed 110-240V 50-60Hz	300	1,200	
2	Stencil duplicator	900	1,800	
2	Electric stencil machine	1,500	3,000	
8	Manual typewriter office style	700	5,600	
10	File cabinets	250	2,500	
4	Supply cabinets	150	600	
			15,060	
2	Books + Journals	75,000	150,000	
		Sub-Total		175,410
		TOTAL $		322,392

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B. COMPONENT 3

QTY	ITEM	UP $	TP$
	(1) Food and Food Technology FFTS		
15	Conference tables 30" x 60"	250	3,750
24	Desks, Laminate tops, with drawers, locking 30" x 60 x 30", metal	200	4,800
4	Typing Desks	250	1,000
20	Rollings 2 tier tables (side tables to desk)	150	3,000
150	Feet of Govered book shelves (dust protection) eight feet tall with five levels (documentation center).	20/Feet	3,000
10	Glass doored chemical storage cabinets, metal	300	3,000
24	Desk chairs,swivel,w/wheels	105	2,520
150	Straight back, padded chairs (100 conf room, other for office) with arms	110	16,500
30	5 drawer, deep, metal filing cabinets	220	6,600
15	Desk top calculators,	100	1,600
15	Pencil Sharpeners	10	150
15	Floor type ASH trays	15	225
24	Desk top paper and pencil organizers	5	120
15	Two hole, hole punches for paper	5	75
24	1 meter rulers, wood	5	120
24	Staple removers	3	72
15	Stapler, office medium weight	5	75
2	Heavy duty staples	10	20
15	Heavy base scotch tape dispensers	5	75
10	In-out boxes	5	50
15	Fire extinguisher, foam	10	150
5	Chemical fires extinguisher	25	125
1	Lecturn with loud speaker, floor-model, 220V	1,200	1,200
2	Paper pad easel	25	50
100	Paper pads for easel	5	500
4	Large size cork boards, bulletin	50	200

QTY	ITEM	UP $	TP $
1	Large size, removal letter, bulletin board/black clip in littles 8' x 3'	250	250
2	Glass display panels 6'x3' Wall type	300	600
20	Wall clocks Battery Operated	20	400
1	Portable black board	50	50
2	Manual typewriters (french extra ribbon)	700	1,400
2	Electric typewriters/french /extra ribbon, joints corrector tape 22)V	1,000	2,000
1	Permanent projector screen	100	100
2	Slide projectors w/extra bulbs, 220V,50HZ	200	400
1	Over head transparency projector	300	300
2	Electronic Scanning stencil makers	1,800	3,600
2	Electric printers for stencils with extra screens & print runs for color work	2,000	4,000
2	Xerox photocopy machine /dry process	5,000	10,000
1	Xerox photocopy/compiler		2,000
20	Garbage cans	10	200
		Sub-Total	74,177

SURVEY EQUIPMENT

20	Battery operated tape recorders	$100	$2,000
240	Cassette Tapes, 90 MIN	4	1,000
4 000	AA Batteries	1.50	6,000
24	Waterproof watches with stopwatch	75	1,800
30	Hospital Scales 100-200 kg range	400	12,000
24	Hand calculators W/memory and programmable	300	7,200
100	Metal note PADS & Clip Boards 8" x 10"	15	1,500
20	Metric Dietary scales W/weights	120	2,400

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QTY	ITEM	UP $	TP $
8	Botanical sample presses for 2 doz. specimens each	70	600
5 000	1 liter plastic containers, air tight with caps, cylinder type	1.75	8,700
4	Frozen sample carrier, airfreight, portable	750	3,000
60 sets	ARM circumference color coded bands	20	1,200
60	4 liter volumetric measures	25	1,500
10,000	2" x 4" self-adhesive waterproof labels	50/1000	500
		Sub-Total	$46,400

PORTABLE AUDIO VISUAL AIDS EQUIPMENT

3	KODAK Carousel slide projectors W/extra bulbs, 220 V, 50HZ	350	1,000
20	Carousel slide containers, 80 s. cap.	15	300
3	Projection screens	300	900
500 ft	Extension CORD, H.D.	50	250
3	2500 W, portable, gas electric generator, 220 V	4,000	12,000
3	Industrial type cassette recorder, with 30 W amplifier, 2 detachable speakers	1,500	4,500
50	60 Min Cassette tapes	4	200
3	16 MM sound Color Movie Projector W/extra bulbs & reels, 220V, 50 HZ	1,000	3,000
3	Sets of detachable speakers	400	1,200
5	35 MM Automatic cameras W/55 MM lens including flash attachment	800	4,000
2	Portable video systems: camera, battery pack, recorder, and playback monitor plus accessories	3,000	6,000
2	Color Monitors 20"	1,000	2,000

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QTY	ITEM	UP $	TP $
50	Color Video cassettes	25	1,250
2	Video tables, mobile for recorder & monitor	300	600
2	Artists drawing table with drafting machine	1,800	3,600
3	Rapidograph ink pen sets (5 pens, 15 points)	150	450
	Miscellaneous drawing and artist supplies		15,000
		Sub-Total	$42,100
	Other A.V. needs to be determined after the arrival of technical assistance		
		Sub-Total	$60,000

Laboratory Equipment

The exact list of commodities is to be agreed upon through a C.P. in year 3. A total of $300,000 is being allocated for this area.	$300,000
The exact list of food technology machinery to be sold to village groups will also be determined by a C.P. in year three. 20 groups will be able to obtain $10,000 worth of equipment in this program.	$200,000
Spare parts for all equipment listed above	$150,000
Food and Food Technology Sub-Total	$872,677

(2) National Soils Service Equipment List:

1	Fixed Ground Radio Transmitter, Receiver, dist of 400 KM	25,000	25,000
6	Vehicle installed Radio receiver/transmitter 400 KM	5,000	30,000
150	Heavy Duty Pick Axes	40	6,000
150	Heavy Duty Steel shovels	40	6,000
8	Radio/Electronic distance measure & angular displacement Theolite W/tripod	9,000	72,000

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QTY	ITEM	UP $	TP $
8	Portable metal tables for field use	55	450
20	Portable metal chairs	20	400
50	Aluminum note pads & clip board	15	750
12	Hand calculators W/memory and programmable	350	4,200
12	35 mm automatic camera sets W/UV filter, 55 mm lens and electronic flash	500	6,000
5	Neutron proble soil moisture testers	10,000	50,000
20	Stainless steel soil augers, 36"	150	3,000
4	Drawing tables 60" x 60" with drafting machine, variable height, angle	1,500	6,000
1	Reflecting projection/ enlarger 12" x 12" negative capacity, color, W/analyzer like Artographic model 55C-Z	4,000	4,000
2	Large surface photocopier/reduce 36" x 36"	15,000	30,000
1	Slotted Template cutter & template set for photo mosaics	2,500	2,500
1	Macro Photogrametric printing instrument like T Hint Small Model 35/70	25,000	25,000
2	Electronic Scanning Stencil makers	1,000	2,000
2	Electric stencil printers	1,000	2,000
4	Electric Typewriters, French Keyboard	2,000	8,000
2	Dry process copy machines, like Xerox	12,000	24,000
150 M	Metal book shelves with glass doors	60	9,000
10	Metal desks, three drawers	200	2,000
2	Typing desks, metal	250	500

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QTY	ITEM	UP $	TP $
5	Rolling tables, 20" x 20"	150	1,500
10	Padded desk chairs, swivel type	150	1,500
100	Straight back chairs	110	11,000
10	Metal, five drawer, filing cabinet	220	2,000
	MISC office equipment		5,000
2	220 V, 50 HZ slide projectors, 35 MM/W extra bulbs	350	700
2	Projection screens	180	360
20	Slide containers for projector	15	300
		Sub-Total	$335,000

(3) National Experimentation Service

Agricultural Equipment:

30	Plows	3,000
30	Seeders	3,000
30	Cultivators	3,000
10	Motorized pumps	6,000
10	Small motorized tractor	30,000
	Miscellaneous tools and equipment fencing $100,000	100,000
	Sub-Total	$145.000

Office Equipment For NES Headquarters
Same Ust As For Food And Food Technology 74,177

NES Sub-Total 220,000

C. COMPONENT 4 DECREASED FOOD INSECURITY

No.	QTY	DESCRIPTION	1985 UNIT COST	TOTAL COST
1	15	Constant temperature oven (23 V, 50HZ)	1,050	15,750
2	60	Dial Grain thermometers (-10° to 100° C), Conn 1/2, dial Size 2, Item-12	40	2,400
3	60	Dole Moisture Testers	400	24,000

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No.	QTY	DESCRIPTION	1985 UNIT COST	TOTAL COST
4	60	Dole Moisture Carrying Case	60	3,600
5	60	Replacement Thermometers	20	1,200
6	30	Portable Wall Mounted Hygrometer	85	2,550
7	60	Lab Scales (1000 grams)	210	12,600
8	120	Bag Probes (99 cm - 60 opening)	75	9,000
9	60	Corn Sieve Commercial	19	1,140
10	60	Solid Bottom Pan for Corn Sieve	8	480
11	60	Set of Sorghum Sieves and Pan	42	2,520
12	60	Hastings Triplet Magnifiers	34	2,040
13	30doz.	Grain Sample Boxes	4	120
14	60	5 1/2"Forceps, Med. Serrated points	4	240
15	60	5" Forceps Fine Smooth points	4	240
16	60	MSA Industrial Gas Mask with phosphine cannister	130	7,800
17	100	Replacement Cannisters	40	4,000
18	36pair	12 1/2" Neo-Prene Latex Gloves, 8-8 1/2	2.50	90
19	36pair	12 1/2" Neo-Prene Latex Gloves, 9-9 1/2	2.50	90
20	36pair	12 1/2" Neo-Prene Latex Gloves, 10-10 1/2	3.00	108
21	250	Alkaline "D"Batteries"	1.00	250
22	60	Alkaline 9v Batteries	2.00	120
23	60	Explosion Proof Flashlights	7.50	450
24	30doz.	Heavy Duty Rat Traps	15.00	450
25	360	MCS Plastic Tarpaulins Heavy Duty, 006" thick, water proof, and acid proof (28' x 32')	105	27,800
26	180	Nylon-Vinyl Tarpaulins 18 Oz Heavy Strength (20' x 30')	725	130,500
27	30	Gas-Sentinal Phosphine Detector (240V, 50Hz)	175	5,250
28	30	Suspension/Hanging scales (100)	850	25,500
29	300	Adhesive Tape Rolls (4" x 100")	1.50	450
30	300	Tarpaulin Tape Rolls (6" x 100")	2.00	600
		Component 4 Sub - Total		296,000

Procurement for Component No. 4, Decrease Food Insecurity, will not take place until 1984/85. FOB prices have been adjusted accordingly by compounding 10% from 1983.

NOTE:

All commodities listed above have been identified in more specific details in project files which are not included in this P.P. The Office of Agriculture, USAID has the supporting specifications in its files.

.../...

D. COMPUTERS*:

The intention is to purchase 8 micro and 6 mini-computers for this Project and all of its components. It is also the intention that the actual selection of the computer hard/software be determined in year two of the Project by the TA team. However, for budgetary planning purposes, the following costs are anticipated.

- FJA Component	3 Micro-Computer and accessories	45,000
- FFTS Component	2 Micro-Computer and accessories	30,000
- Experimentation Service	3 Micro-Computer and accessories	45,000
- Soils Service	2 Mini-Computer	200,000
- DEP	2 Mini-Computer	200,000
- OFNACER	2 Mini-Computer	200,000
	TOTAL	$720,000
	Shipping, insurance and Contingency	180,000
	TOTAL	$900,000

E. VEHICLE PROCUREMENT FOR THE ADS PROJECT:

COMPONENT	4 - WD #/Amount	SEDANS #/Amount	TOTAL ($) #/Amount
I	8/$129,100.	8/$ 76,000.	16/$205,100.
II	1/$ 15,000.	1/$ 9,500.	2/$ 24,500.
III	43/$687,800.	20/$202,900.	63/$890,700.
IV	2/$ 30,000.	1/$ 9,500.	3/$ 39,500.
TOTAL (#/AMOUNT)	54/$861,900.	30/$297,900.	84/$1,159,800.

* NOTE:

Prior to any actual procurement action for computers (hard/software and services) M/SER/DM in AID/W will be contacted and concurrence obtained for the type of computers identified.

.../...

F. SUMMARY OF COMMODITY PROCUREMENT

COMPONENT	COMMODITY COST **	SHIPPING, INSURANCE, AND PSA FEES INLAND FREIGHT (APPROX. 80% OF FOB)		
I	180,000	158,800	=	338,800
II	400,000	302,000	=	702,000
III	1,300,000	1,045,000	=	2,345,000
IV	400,000	300,000	=	700,000
TOTALS	2,280,000	1,805,800		4,085,800

GRAND TOTALS:

-	COMMODITIES:	$ 4,085,000
-	VEHICLES:	$ 1,159,800
-	COMPUTERS*:	$ 900,000
	TOTAL:	$ 6,145,600

* NOTE: Computers will be administratively controlled by component 1 for procurement purposes only.

** Detailed commodity list costs do not equal the above figures due to as yet unidentified commodities and their costs which have not been included in the detailed listing.

.../...

3) Commodity Eligibility

All commodities listed are eligible for AID financing, and will be procured from Code 941 countries, except for items designated for local procurement.

4) Source/Origin

Except as indicated in the equipment list, all commodities are from AID Geographic Code 941 Source/Origin.

5) Shelf-Item Procurement - Local Cost Financing

The Agricultural Development Support Project will utilize approximately $1 million for local cost procurement of such items as spare parts, POL, agricultural implements, construction material, etc. Procurement under the shelf-item rule will be in accordance with rules outlined below.
Local procurement of commodities can provide the following items:

- Indigenous commodities - those mined, grown or produced in the cooperating country. Non-free world componentry is disallowed.

- Shelf items - those items imported and stocked to meet a general public demand in the cooperating country or any other Code 941 Country. They are not goods imported solely to support an AID-financed project.

Both indigenous goods and shelf items must meet eligibility criteria - they are subject to the statutory and policy restrictions found in Handbook 1, Supplement B, Chapter 4.

Financing Support

- Indigenous goods can be financed by AID project funds without limitation, other than the total local currency limit of the Project.

- Imported shelf items from Code 000 (U.S.) sources can be financed in unlimited quantities. Commodities from Code 941 sources (U.S. and Less Developed Countries) can also be financed in unlimited quantities; the eligible source (s) must be identified in the Project Agreement. Shelf items coming from Code 899 (Free World) sources, but not from Code 941 (Selected Free World) sources, i.e., Code 935 sources, can be procured if the price per unit does not exceed 5,000; the total amount of these Project purchases cannot exceed $25,000 or 10% of the total Project local cost financing, whichever is higher, but in no case will they exceed $250,000 without a source/origin procurement waiver. Prices to be paid for locally procured commodities will be no more than the lowest available competitive prices, and purchases will be in accordance with good commercial practices. Commodities on the local market that are imported from non-Free World countries are not eligible for AID financing. Vehicles are not eligible items under the "shelf item rule" but cement, sand, gravel, POL, and construction materials are obtainable with local cost financing. Some locally-procured items may be ineligible as a result of being shipped aboard non-Free World vessels, high visibility commodities (tractors, farm equipment, fertilizers, etc.) may fall under this heading. Invoices for payment should state the source and origin of locally purchased materials, if such a requirement is practical.

.../...

6) Title of Commodities

Title to commodities procured through AID financing normally rests in the cooperating country.

7) Waivers

The following waiver is required:
- single source procurement waiver-vehicles.

8) Local Cost Procurement

All commodities identified as being procured with GOUV 'LC' funds are to be financed with funds generated by PL-480 food sales. These funds are not included in the procurement plan as they will not be included in the authorization package for the Project commodity procurement. Not all lists are completed or developed at this time. Project Officers and MRD Counterparts will determine what type of equipment will be bought.

IMPLEMENTATION SCHEDULE AND CHARTS

I. COMPONENT ONE

A. Policy Planning and Programming/Evaluation and Monitoring

Activity	Timing
1. REI draft	June 1983
2. PP approval	July 1983
3. Authorization	July 1983
4. REI Completed (BIFAD & SER/CM)	August 1983
5. Pro-Ag signed	August 1983
6. REI distributed to Universities	September 1, 1983
7. Universities respond to REI	September-November 1983
8. MRD Team visits interested Universities	October-November 1983
9. MRD/USAID Select Design University	December 1, 1983
10. SER/CM negotiates design contract	December 1983
11. MRD/University undertake collaborative design	January-June 1984
12. MRD/USAID review proposal and decide on implementation	July 1984
13. SER/CM negotiates contract	July/August 1984
14. Contract signed	August 1984
15. Students begin training	September 1984
16. LT advisor arrive	September 1984
17. Implementation proceeds as designed	September 1984 to PACD

.../...

- 1st joint evaluation of this activity MRD/USAID/University	June 1986
- 1st overall evaluation	August 1986
- 3 year extension of PACD and this activity	September 1986
- 2nd joint evaluation of this activity by MRD/USAID/University	June 1988
- 2nd overall evaluation	August 1988
- 2 year extension of PACD and this activity	September 1988
- 3rd joint evaluation of this activity MRD/USAID/University	June 1991
- 3rd overall evaluation	August 1991
- Final evaluation of this activity MRD/USAID/University	June 1993
- Final overall evaluation	August 1993

* * *

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Table 1

A. Policy Planning and Programming/Evaluation and Monitoring

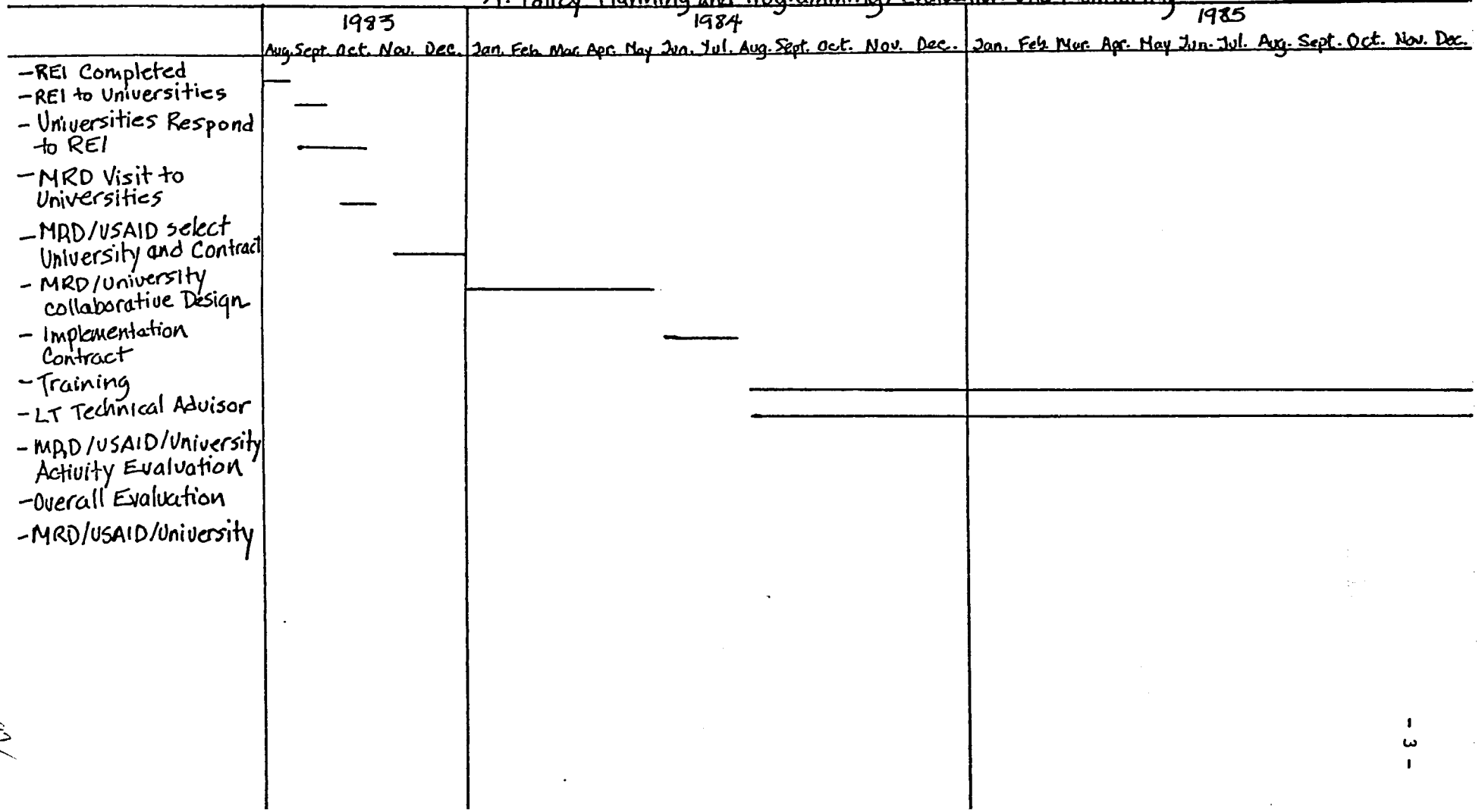
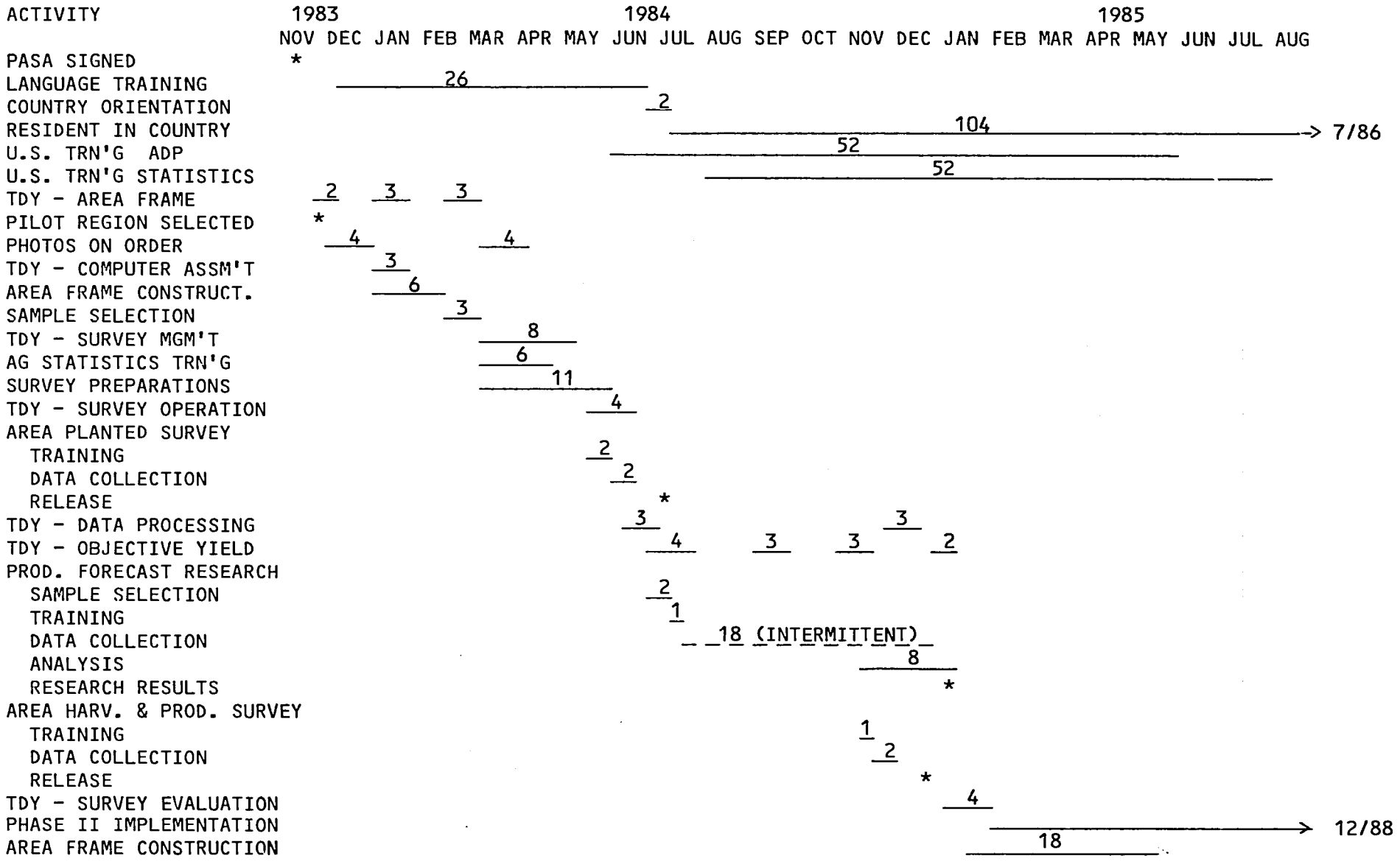


Table 1 (continued)

	1986	1987	1988
	Jan. Feb. Mar. Apr. May. Jun. Jul. Aug. Sept. Oct. Nov. Dec.	Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sept. Oct. Nov. Dec.	Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sept. Oct. Nov. Dec.
-REI Completed			
- REI to Universities			
-Universities Respond to REI			
- MRD visit to Universities			
-MRD/USAID select University and contract			
- MRD/University collaborative Design			
- Implementation contract			
-Training			
-LT Technical Advisor			
- MRD/USAID/University Activity Evaluation	—		—
- Overall Evaluation			
-MRD/USAID/University	—		—

Table 2

B. Agricultural Statistics



REMAINING IMPLEMENTATION DETAILS WILL BE SCHEDULED AT END OF PHASE I

C. ADMINISTRATIVE SUPPORT

Event	Timing
1. Project Agreement Signed	August 1983
2. Submission of requests for 1984 operating expenses support by DAAF, DCG, DOC and others	August/September 1983
3. Preparation of the Request for Technical Proposal (RFTP)	September/October 1983
4. MRD committee (DEP/SG) review requests for operating expense support	October 1983
5. USAID reviews MRD 1984 requests for operating expense support	November 1983
6. Advertising of RFTP	November 1983
7. Vehicles are ordered PIO/C	November 1983
8. Distribution of RFTP	November/December 1983
9. Receipt and analysis of RFTP	January/March 1984
10. Selection of contractor and advice to firms	April 1984
11. Prepare PIO/T for Contract	April 1984
12. Vehicles arrive	April 1984
13. LT Training participants identified	May 1984
14. Contract Preparation (Costs estimates, negotiation, draft contract)	May/June 1984
15. Sign Cost Reimbursement type contract	July 1984
16. Submission of Requests for 1985 operating expenses	August/September 1984
17. LT Advisory Services begin	September 1984
18. LT Training Participants Depart (4)	September 1984
19. ST Advisory Services begin	October 1984
20. MRD committee reviews 1985 operating expenses requests	October 1984
21. USAID reviews MRD 1985 requests for operating expenses	November 1984

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Table 3

C. Administrative Support

	1983					1984												1985											
	Aug.	Sept.	Oct.	Nov.	Dec	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
-Submission of Local cost	—												—												—				
-MRD Reviews Budgets		—												—												—			
-USAID/MRD Budget Approved			—												—													—	
-Technical Assistance			x											—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
-Vehicles				x					—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
-Training									x					—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Table 3 (continued)

	1986												1987												1988											
	Jan.	Feb.	Mar.	Apr.	May	June	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
- Submission of Local cost									—												—															
- MRD Reviews Budgets										—												—														
- USAID/MRD Budget Approved											—												—													
- Technical Assistance																																				
- Vehicles																																				
- Training																																				

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2. COMPONENT TWO

D. Rural Youth Training

July 83	- Project Paper approved
August 83	- Signing of Project Agreement
September/ October 83	- Preparation of detailed plans and cost estimates for renovation, construction, and water systems at Kamboinse and Farakoba
	- PIO/T drafted and recruitment initiated for Evaluation/ monitoring specialist for DSFJA
	- Drafting of PIO/C for US procurement, selection of procurement agent
	- Initiate local procurement of equipment for CFFs and 55 CFJAs
	- Start in-service training for 180 formateurs, 775 CVC, 300 GJA, 71 Conseillers FJA
November 83	- Request for bids for renovation/construction and water system construction
	- Procurement agent starts procurement for US goods
	- Short-term consultancy on library book identification
	- 2 local librarians identified
	- Local procurement for 55 CFJAs completed
	- Equipment list for local equipment for CFFs specified and ready for procurement.
	- Local procurement initiated for women's center
December 83	- Review of bids for renovation, construction and water system
	- TA contractor selected
	- Equipment for 55 CFJA out at centers
January 84	- Women teacher training center starts operations
	- 2 male teacher training centers start new year
	- Library books procurement initiated, PIO/C drafted
	- 2 local librarians out for ST training
	- Contractor selected for construction and renovation (Kamboinse and Farakoba)

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- 2 local technicians identified to work with evaluation specialist

- Women's center procurement completed

February 84 - ST consultancy on curriculum development

- Mini computer system identified and ordered via air freight

- Contractor starts work at 2 CFF sites

- LTTA arrives in country

April 84 - Renovation of 2 CFFs complete

- ST consultancy on rural income generation activity

- ST consultancy on agricultural mechanics

May 84 - Mini computer system arrives and is installed

June 84 - Start in-service training during second year for

190 Formateurs
775 CVC
550 GJA
35 Assistant FJA
71 Conseillers FJA
10 Ingenieurs FJA

July 84 - Construction of classroom/Student Lounge/Library complete at 2 CFFs

- US procurement completed and in country

- Library books procured and in country

- ST consultancy in library set up and on-the-job counterpart training

- Local procurement for 2 CFFs completed

August 84 - Water system at CFF complete

- DSFJA and technical adviser

- Evaluate use of equipment in first 55 CFJAs

September 84 - ST consultancy follow up on curriculum development

- Initiate procurement for equipping 2nd 50 CFJAs

November 84 - 105 CFJAs equipped

.../...

July 85 - Start in-service training for third year

220 Formateurs
775 CVC
800 GJA
35 Assistant FJA
91 Conseiller FJA
15 Ingenieurs FJA

October 85 - Initiate equipment procurement for last 50 CFJAs

December 85 - All 155 CJFAs equipped

January 86 - Mid-term evaluation of ADS project

February 86 - Evaluation/monitoring specialist contract completed, departs Upper Volta. Local counterpart take over

July 86 - Start in-service training for fourth year

210 Formateurs
775 CVC
1050 GJA
75 Assistant FJA
91 Conseillers FJA
15 Ingenieurs FJA

June 87 - End of project evaluation

July 87 - Start in-service training for fifth year

220 Formateurs
775 CVC
1550 GJA
75 Assistant FJA
110 Conseillers FJA
20 Ingenieurs FJA

Design ADS II

July 88 - End of ADS I

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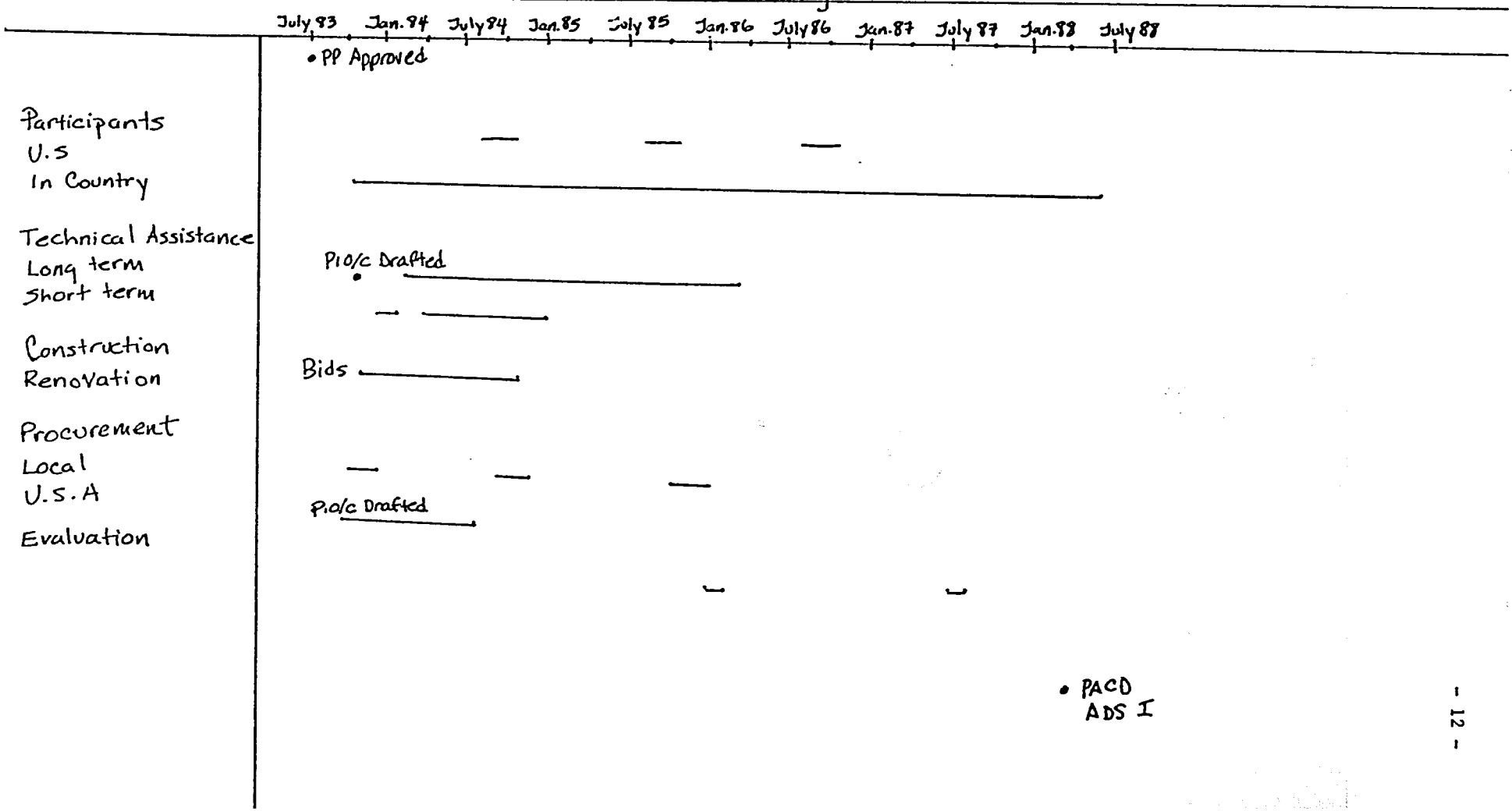
Table 4

D. Rural Youth Training



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E. MANAGERIAL AND TECHNICAL SKILLS FOR GROUPEMENTS VILLAGEOIS

1. Proposed Calender of Events:

Project Month		Major Actions	Responsibility
FY 83	July	AID/W review and project authorization	AID/W
	August	Project Agreement signed	AID/UV, GOUV
	September	PIO/T drafted, submitted to AID/W	AID/UV
	September	PIO/C for vehicles approved and issued	AID/UV
	September	Local procurement of training materials initiated.	AID/UV, GOUV
FY 84	October	Initial Conditions Precedent met	GOUV
	October	Local procurement of training material completed	AID/UV, GOUV
	October	PIO/T approved in AID/W and issued	AID/W
	October	Contract negotiated and finalized between DIRC and local research organization to carry out socio-economic survey	GOUV
	October	1st Annual DIRC Training Program submitted for AID/UV approval	GOUV
	October	AID/UV approves DIRC Training Program	AID/UV
	November	1st Annual GV training program begins for GV	GOUV
	November	DIRC recruits, hires local artist	GOUV
	November	Interested contracting firms submit proposals	Contractors, AID/W
	November	Socio-Economic survey begins	DIRC Contractor
	December	Proposals evaluated	AID/UV, GOUV
	December	Principal contractor selected	AID/UV, GOUV, AID/W

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	January	Contract negotiation begin	Contractor, AID/W
	February	Vehicles arrive	AID/UV
	February	Socio-economic survey completed	DIRC Contractor
	February	Technical assistance contract signed	Contractor, AID/W
	March	Technical assistance team arrives	Contractor
	May	1st annual GV member training program completed	GOUV
	May	DIRC internal evaluation of training program begins	GOUV, Contractor
	May	1st annual Contract team submit work plan	Contractor
	June	Evaluation of 1st annual training plan completed	GOUV, Contractor
	July	Development of 2nd annual training plan begins	GOUV, Contractor
	July	Based on 1st year evaluation appropriate training modules begin to be developed	GOUV, Contractor
	September	Local procurement of training materials initiated	GOUV, AID/UV
FY 85	October	2nd annual DIRC Training Program submitted for AID/UV approval	GOUV
	October	Local procurement of training materials completed	GOUV, AID/UV
	October	AID/UV approves DIRC 2nd Annual Training Program	AID/UV
	November	2nd annual GV member training program begins	GOUV, Contractor
	November	DIRC agent training program begins	GOUV, Contractor
	November	GV management training program begins	GOUV, Contractor
	November	Contract team submits 1st semi-annual report	Contractor

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	May	DIRC internal evaluation of 2nd Annual training program begins	GOUV, Contractor
	May	Contract team submits 2nd Semi-Annual report	Contractor
	June	Evaluation of 2nd Annual training program completed	GOUV, Contractor
	July	Development of 3rd Annual training plan begins	GOUV, Contractor
	July	Based on 2nd Annual training program training modules are further developed and refined	GOUV, Contractor
	September	Local procurement of training materials initiated	GOUV, AID/UV
FY 86	October	3rd Annual DIRC training program submitted for AID/UV approval	GOUV, Contractor
	October	Local procurement of training materials completed	GOUV, AID/UV
	October	AID/UV approves DIRC 3rd Annual training program	AID/UV
	October	AID approves 4th Annual Training Plan	AID/UV
	November	3rd Annual DIRC Training Program begins for GV members, GV management officers and DIRC agents	GOUV, Contractor
	November	Contract team submits 3rd Semi-Annual Report	Contractor
	March	Recruitment for USAID Evaluation team begins	AID/W, AID/UV
	May	3rd Annual DIRC training program completed	GOUV, Contractor
	May	DIRC internal evaluation of 3rd Annual training program begins	GOUV, Contractor

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	May	Contract team submits 4th Semi-Annual Report	Contractor
	June	Evaluation of 3rd Annual training program completed	GOUV, Contractor
	June	Recruitment of USAID Evaluation team completed	AID/UV, AID/W
	July	Development of 4th Annual training program begins	GOUV, Contractor
	July	Based on results of 3rd Annual training program training modules are further developed and refined	GOUV, Contractor
	July	AID Evaluation begins	AID/UV
FY 86	September	AID Evaluation completed	AID/UV
	September	Local procurement of training materials initiated	GOUV, Contractor
	September	4th Annual DIRC Training Program submitted for AID/UV approval	GOUV, Contractor
FY 87	October	Local procurement of training materials completed	GOUV, Contractor
	October	AID/UV approves DIRC 4th Annual Training Program	AID/UV
	November	4th Annual DIRC Training Progam begins for GV members, GV management officers and DIRC agents	GOUV, Contractor
	November	Contract team submits 5th Semi-Annual Report	Contractor
	February	Contract Team leaves	
	May	DIRC internal evaluation of 4th Annual Training Program begins	GOUV, Contractor
	June	Evaluation of 4th Annual DIRC Training Program completed	GOUV, Contractor

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	July	Development of 5th Annual DIRC Training Program begins	GOUV, Contractor
	July	Based on results of 4th Annual Training Program training modules are further developed and refined	GOUV, Contractor
FY 87	September	Local procurement of training materials initiated	AID/UV, GOUV
	September	5th Annual Training Plan submitted for AID/UV approval	GOUV, Contractor
	September	PIO/C for replacement vehicles completed, approved, and issued	GOUV, AID/UV
FY 88	October	Local procurement of training materials completed	GOUV, AID/UV
	October	AID/UV approves 5th Annual Training Plan	AID/UV
	November	5th Annual DIRC Training Program begins for GV members, management officers and DIRC agents	GOUV, Contractor
	February	Replacement vehicles arrive	AID/UV
	May	5th Annual DIRC Training Program completed	GOUV, Contractor
	May	DIRC internal evaluation of 5th Annual Training Program begins	GOUV, Contractor
	May	Contract team submits 8th Semi-Annual Report	Contractor
	June	Evaluation of 5th Annual Training Program completed	GOUV, Contractor
	July	Development of 6th Annual Training Program begins	GOUV, Contractor
	August	PACD 8/88	AID/UV, GOUV
	August	End of Project Evaluation, determination of follow-on activities	AID/UV

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Table 5

E. DIRC Groupements Villageois Training

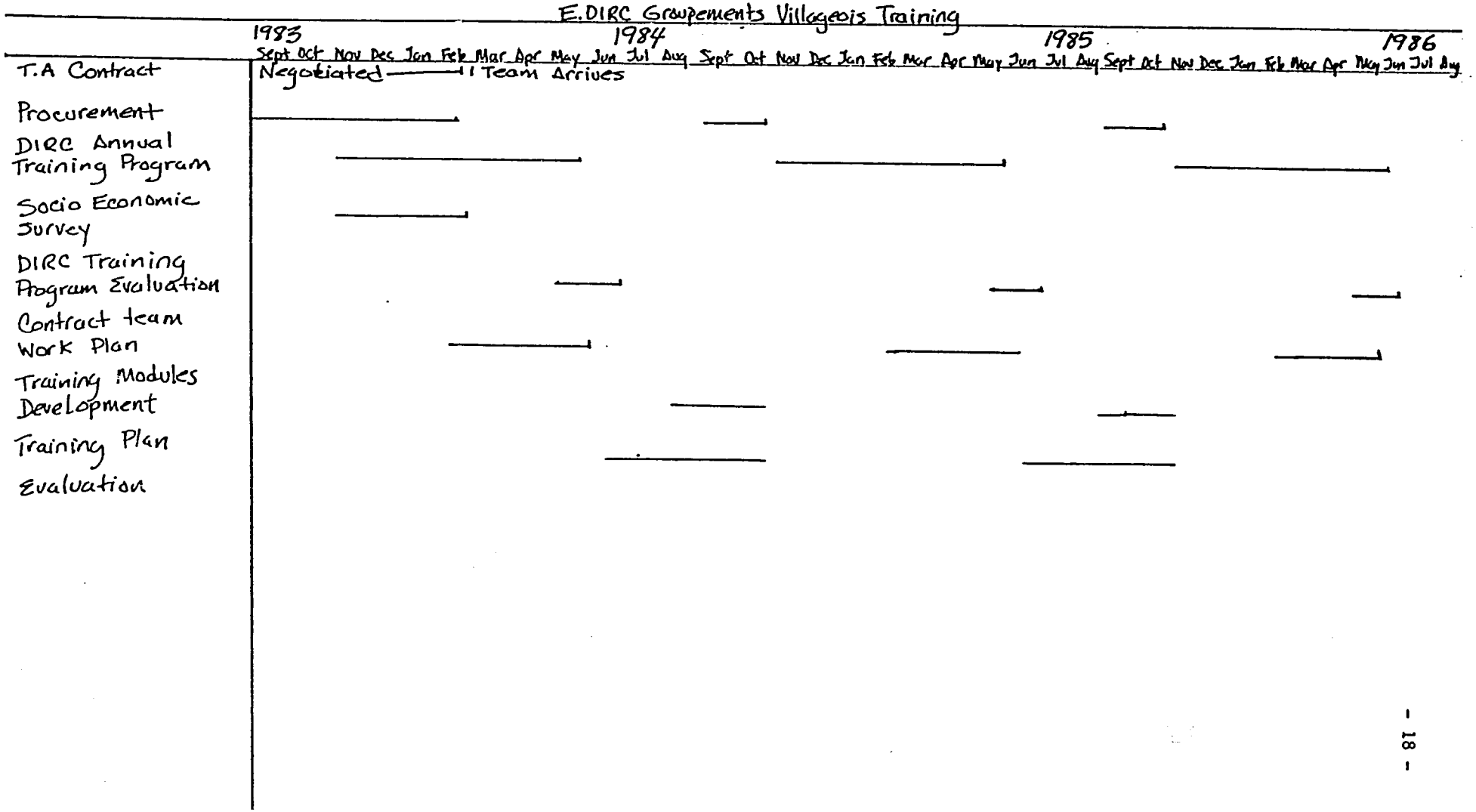

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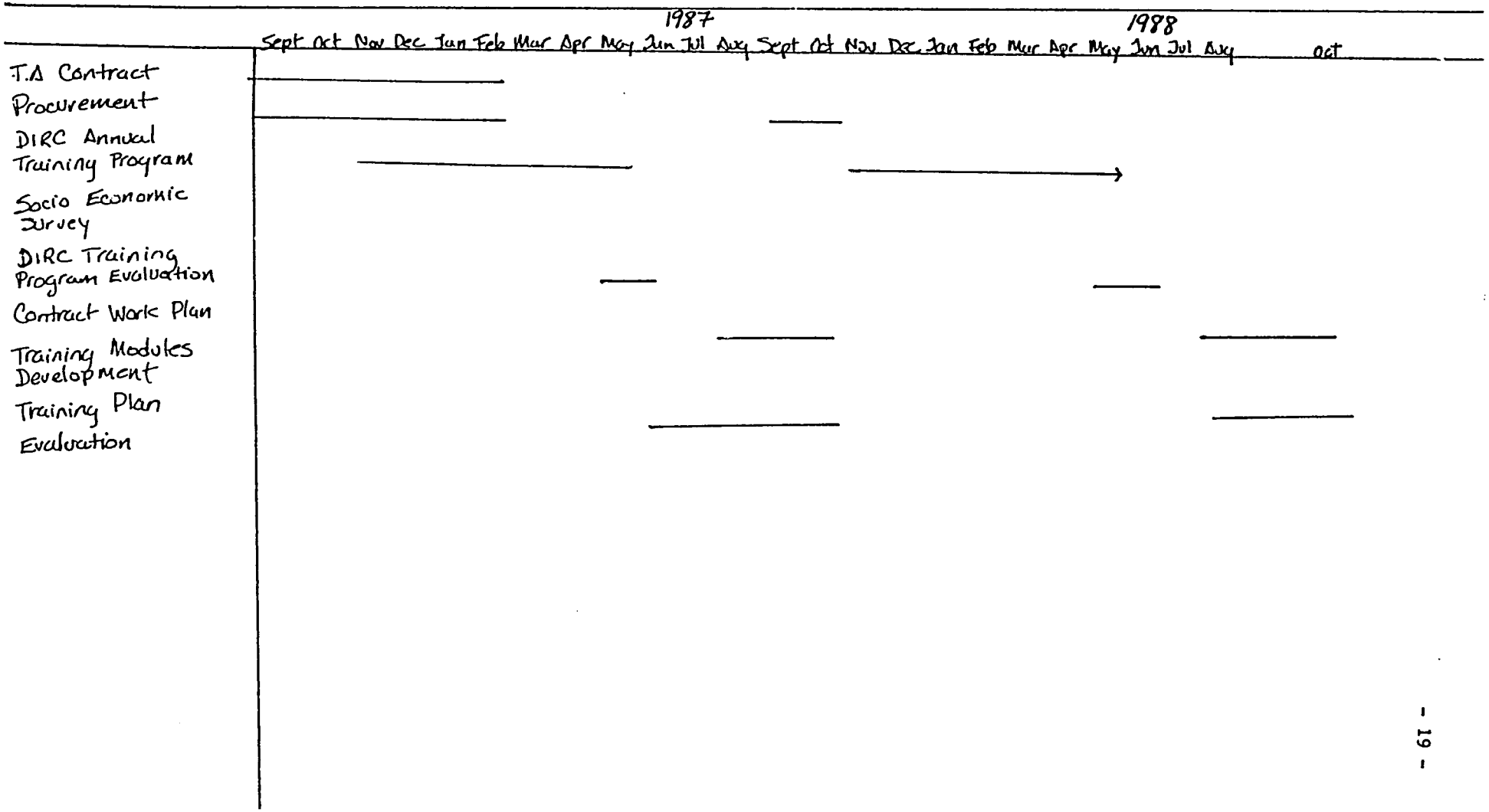
Table 5 (continued)



F. MANAGERIAL TRAINING FUND

Year 1 (July 83 - June 84)		
July 83	Project Paper Approved	AID/W
August 83	Project Agreement Signed	USAID/GOUV
September 83	Request for Proposals	AID/W
October/ November 83	Proposals in and reviewed	AID/W
December 83	Contractor selected	AID/W/USAID
February/March 84	- Contractor in country	Contractor
	- Recruitment of Voltan contractor personnel	Contractor
		Contractor
	- Rental of Office Space	Contractor
	- Procurement of commodities	Contractor/USAID
April 84	- Start first survey of training needs in the private sector (with a ST specialists (three months))	Chambre de Commerce/Contract
	- Development of U.S. training institutions files on equivalency	Contractor
	- Training the recruited personnel in the use of word processors	Contractor
	- Design of operating procedures for the training grants fund and for the skills training programs delivery system. (1 month of ST specialists in participant training; 2 months of ST specialists in non formal instruction system design).	Contractor

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May 84	- Search for training institutions and programs in third countries.	Contractor
	- Completion of survey of training needs in the private sector	Chambre de Commerce/Contracto
	- Development of U.S. training institution equivalency files and procedural design continue.	"

Year II (July 84 - June 85)

July 84	- Completion of the design of operation procedures for Training Fund and the skills training delivery system. All forms printed.	Chambre de Commerce/Contracto
	- U.S. training institution equivalency files completed and introduced to DAAF for processing by the Ministry of Higher Education.	Contractor/DAAF
	- Starting of operations "promotion of project training services with potential clients" associated with assessment of their specific training needs.	Contractor
	- Recruiting of Training Specialist (for the skills training fund).	"
August 84	- Announcement sent to DAAF for U.S. and Third Countries. Training Under Training Fund.	"

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September 84	- Planning of the English language course.	Contractor
December 84	- DAAF sends final list of candidates for participant training under Training Fund drafting of PIO/Ps by contractor and USAID/MRD clearance.	DAAF/Contractor/USAID
January 85	- Second survey of training needs in private sector	Chambre de Commerce/Contractor
	- Start English Training	Contractor
March 85	- Decision of equivalency of diplomas made by Minister of Higher Education	GOUV
Also in Year II		
	- 4 courses or seminar on management organized through U.S. or Voltan specialized institutions	Contractor
	- 5 courses prepared and executed under the in-country technical skills training program (through 10 pm of ST specialists)	Contractor
Year III (July 85 - June 86)		
	- End of English language training	Contractor
August 85	- English exam; equivalency decisions and clearance USAID	Contractor/USAID

August 85	- Announcement for training programs and institutions in the U.S. and in Third Countries for second contingent	Contractor
September 85	- Placement of first contingent of Voltan students for the U.S. and Third Countries training institutions	Contractor
December 85	- DAAF communicates final list of participants Group II	DAAF
January 86	- Second English language course starts	Contractor
	- Third survey of training needs in the private sector	Chambre de Commerce/ Contractor
Also During Year III		
	- 4 courses and seminars on management executed by U.S. Voltan Training institutions	Contractor
	- 5 courses prepared and 7 courses implement for the technical skills in-country training program (with 10 PM of ST specialists)	Contractor

Year IV - (July 86 - June 87)

July 86	- End of English language course (gr. II)	Contractor

August 86	- Announcement for training programs in US. and Third Countries - third contingent.	Contractor
September 86	- Second group of students leave for U.S. and Third Countries announcement for third contingent sent to DAAF.	
December 86	- Mid-term evaluation	USAID
	- DAAF communicates final list of participants Group III	DAAF
January 87	- Third English language course starts	Contractor
June 87	- First graduates come back home from the U.S. and Third Countries.	

During Year IV (July 86 - June 87)

	- 4 courses and seminars for management training by U.S. and Voltan specialised training institutions.	Contractor
	- 5 courses prepared and 5 courses executed under the technical skills in-country training programs.	

Year V (July 87 - June 88)

August 87	- English exam third group; equivalency decisions by Min. Higher Education and final clearance of third group participant by USAID.	USAID/GOUV

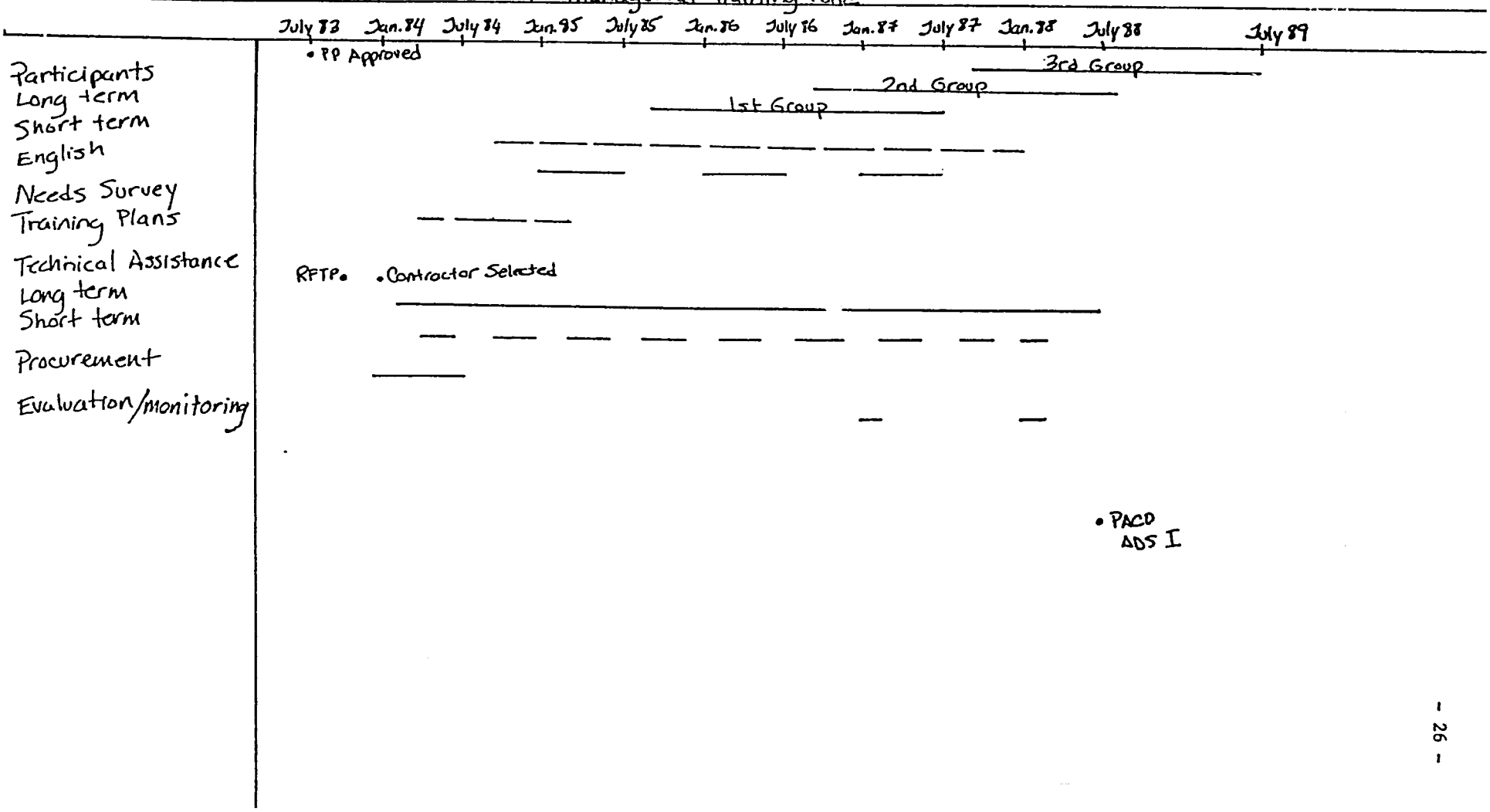
September 87	- Third contingent of participants leaves for U.S. and Third Countries.	Contractor
October 87	- Follow up on graduates first group in the private sector follow up analysis on returned participants.	
June 88	- Arrival in country of second contingent of participants.	

Also during Year V (July 87 - June 88)

	- 4 courses and seminars for management training by U.S. and Voltan specialized training institutions.	
	- 5 courses prepared and 5 courses implemented under the technical skills in-country training programs.	Contractor
July 88	- End of Project. PACD amendment allowing one year extension for returning participants;	USAID
June 89	- Return of all participants	

Table 6

F. Managerial Training Fund



3. COMPONENT THREE:

G. FARMING SYSTEMS RESEARCH

1. Proposed Calendar of Events:

Project Month		Major Actions	Responsibility
FY 83 July	-	AID/W review and Project authorization.	AID/W
August	-	Project Agreement signed.	AID/UV, GOUV
September	-	Contract PIO/T drafted, submitted to AID/W;	AID/UV
"	-	Rental of NES office completed;	GOUV,AID/UV
"	-	PIO/C for vehicles, furniture and appliances completed, approved and issued.	AID/UV
FY 84 October	-	Begin construction prequalifications and preparation, analysis of responses, complete IFB;	AID/UV, GOUV

Project Month	Major Actions	Responsibility
FY 84 October	- Initial Conditions Precedent to the met	GOUV
"	- PIO/T approved in AID/W and issued;	AID/W
November	- Contract negotiated with Purdue University.	AID/W
December	- Completion of construction prequalification and IFB;	GOUV, AID/UV
"	- Contract signed with Purdue;	AID/W
"	- USAID approval of construction IFB, IFB handed out;	GOUV, AID/UV
January	- Contract team arrives;	Purdue
"	- Vehicles, furniture and appliances arrive	AID/UV
"	- Annual budget due	GOUV/NES
February	- NES Annual Training Plan completed;	GOUV, PURDUE, AID/UV
"	- Long-term participants nominated;	GOUV, Purdue
"	- Placement of long-term participants begins.	GOUV, Purdue, AID/UV

March	- Construction contract awarded;	AID/UV, GOUV
"	- NES Training Plan approved	AID/UV
April	- CSRA Meets;	GOUV
"	- Purdue submits first annual Work Plan;	Purdue
"	- First Annual FSR Plan completed;	GOUV, Purdue
"	- NES personnel begin establishment of FSUs at the ORDs of Yatenga, Centre Nord, Centre and Sahel.	GOUV, Purdue
May	- Farming systems delineated in project zone, trials established at selected villages.	GOUV, Purdue
"	- Short-term participant training begins;	GOUV, Purdue
"	- FSUs should be established before cropping season.	GOUV, Purdue
"	- Construction begins	GOUV
June	- Long-term participants go off for training	GOUV, Purdue

July	- FSR Program on-going	GOUV, Purdue
August	- Purdue submits first Semi-Annual Report;	Purdue
September	Project Agreement Amendment signed	AID/UV, GOUV
"	- FSR in-country training seminar;	GOUV, Purdue
FY 85 October	- FSR Program completed, analysis begins;	GOUV, Purdue
"	- First short-term participants return.	GOUV
December	- Research data analysis completed;	GOUV, Purdue
January	- Research-Extension meeting organized by NES.	GOUV, Purdue
February	- NES - Extension develop technical packages;	GOUV, Purdue
"	- NES 2nd Annual Training Plan completed;	GOUV, Purdue
"	- Purdue submits Semi-Annual Report;	Purdue
"	- Year 1 research data reports published.	GOUV, Purdue

March	- NES 2nd Annual Training Plan approved.	AID/UV
April	- Purdue submits 2nd Annual Work Plan.	Purdue
"	- CSRA meets, research priorities identified.	GOUV
"	- 2nd Annual FSR Plan completed.	GOUV, Purdue
"	- NES FSR Training Seminar	GOUV, Purdue
May	- Implementation of 2nd FSR program begins	GOUV, Purdue
"	- Short-term participant training begins	GOUV, Purdue
August	- Purdue submits 2nd Semi-Annual Report	Purdue
"	- FSR Training Seminar;	GOUV, Purdue
FY 86 October	- 2nd FSR Program completed, analysis begins.	GOUV, Purdue
"	- Short-term participants return.	GOUV, Purdue
December	- Research data analysis completed.	GOUV, Purdue
January	- Research-Extension seminar organized by NES.	GOUV, Purdue

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February	- NES-Extension develop technical packages based on 2nd year research.	GOUV, Purdue
"	- NES Third Annual Training Plan completed.	GOUV, Purdue
"	- Purdue submits 3rd Semi-Annual Report;	Purdue
"	- Year 2 research data report published.	GOUV, Purdue
March	NES Third Annual Training Plan approved;	AID/UV
"	- USAID Evaluation team recruitment begins;	AID/UV, AID/W
April	- Purdue submits 3rd Annual Work plan;	Purdue
"	- CSRA meets, research priorities identified.	GOUV
"	- 3rd Annual FSR Plan completed.	GOUV, Purdue
"	- NES FSR Training Seminar	GOUV, Purdue
May	- Implementation of 3rd FSR Program begins;	GOUV, Purdue
"	- Short-term participant training for year 3 begins.	GOUV, Purdue

February	- NES-Extension develop technical packages based on 3rd year research.	GOUV, Purdue
"	- NES Thrid Annual Training Plan completed;	GOUV, Purdue
"	- Purdue Submits 5th Semi-Annual Report;	Purdue
"	- 3rd FSR Program reports published;	GOUV
March	- NES 3rd Annual Training Plan approved	AID/UV
April	- Purdue submits 3rd Annual Work Plan;	Purdue
"	- CSRA meets, research priorities identified	GOUV
"	- 4th Annual FSR Plan completed;	GOUV, Purdue
"	- NES-FSR training seminar	GOUV, Purdue
May	- Implementation of 4th FSR Program begins;	GOUV, Purdue
"	- Short-term participant training for year 4 begins.	GOUV, Purdue

4/2V

June	- Long-term participants return;	GOUV
July	- AID Evaluation begins	AID/W
August	- Purdue submits 4th Semi-Annual Report;	Purdue
"	- NES Office Building completed;	GOUV
"	- FSR Training Seminar	GOUV, Purdue
September	- PIO/C for replacement vehicles completed, approved, and issued;	AID/UV
"	- AID Mid-term Evaluation completed;	AID/UV
FY 87 October	- 3rd FSR Program completed; analysis begins;	GOUV, Purdue
"	- Short-term participants return;	GOUV
December	- Research data analysis completed;	GOUV, Purdue
January	- Research-Extension Seminar organized by NES.	GOUV, Purdue

August	- Long-term technical assistance team departs, contract completed;	Purdue
"	- Project Agreement Amendment signed;	AID/UV, GOUV
"	- FSR training Seminar;	GOUV
FY 88 October	- 4th FSR Program completed, analysis begins;	GOUV
"	- Short-term participants return;	GOUV
December	- Research data analysis completed;	GOUV
January	- Research-Extension Seminar organized by NES;	GOUV
February	- NES-Extension develop technological packages based on 4th year research;	GOUV
"	- 4th FSR Program report published.	GOUV
April	- CSRA meets, research priorities identified;	GOUV

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April	- 5th Annual FSR Plan completed.	GOUV
"	- NES Training Seminar	GOUV
May	- Implementation of 5th FSR Plan begins;	GOUV
August	- PACD 8/88	AID/UV
"	- FSR Training Seminar;	GOUV
"	- End of Project Evaluation; determination of follow-on activities.	AID/UV

* * *

Table 7

6. Farming Systems Research

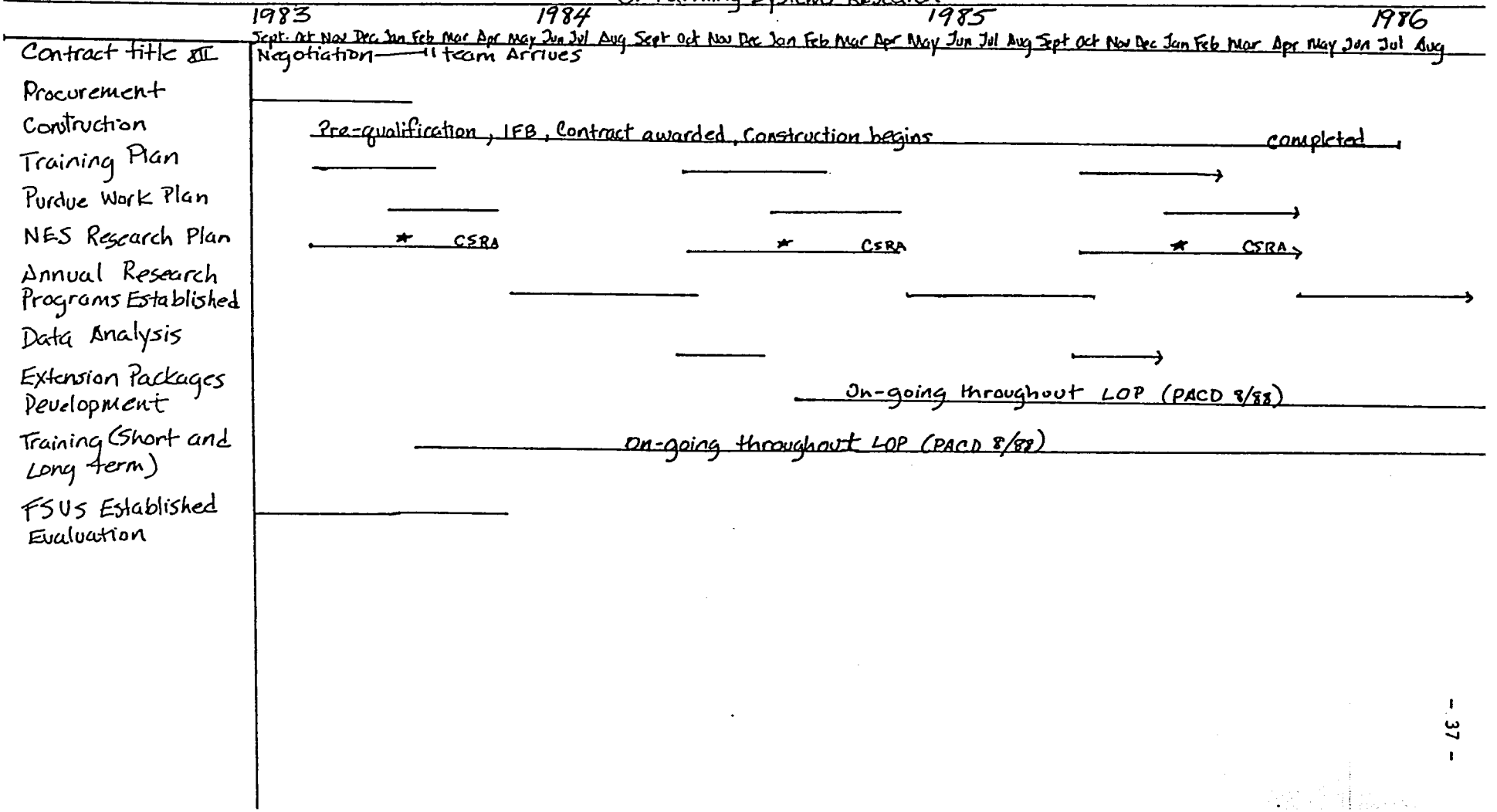
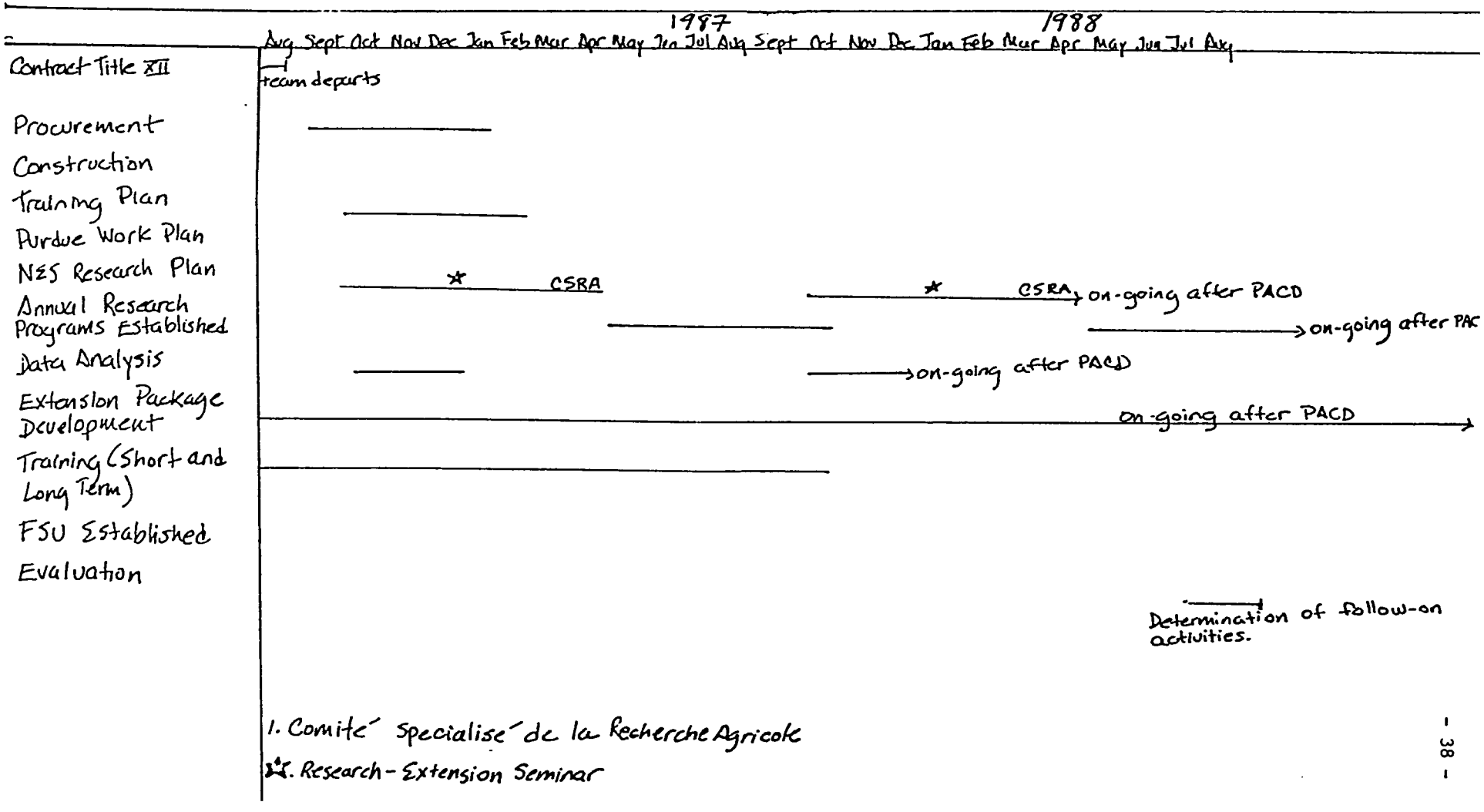


Table 7 (continued)



H. FOOD AND FOOD TECHNOLOGY

Date	Activity	Agency(s) Responsible	
		AID	GOUV
3-6/83	PP Prepared	X	
7/83	PP Approved	X	
8/83	Pro Ag. Signed	X	X
12/83	Project Start-up Date		
	- Prepare PIO/C for vehicles and commodities	X	
	- Prepare Basic PIL	X	
	- Prepare PIO/T for technical assistance for long-term project Mgr.	X	
	- Nomination for long-term US training (3)		X
	- Prepare PIO/P for participant training	X	
	- Approve design of FFTS headquarters and begin procedure to select contractor and approve site	X	X
1/84	- Assignment of new personnel to FFTS (accountant, deputy chief, technicians		X
	- Procurement activities for long-term technical assistance scheduled to arrive in June 1984	X	
	- Continued preparation of PIO/C for vehicles and commodities	X	
	- Submission of annual budget		X
2/84	- Nomination of FFTS agents for short-term US training scheduled for summer 1984		X
	- Initiate requests for reference materials to stock documentation center		X
	- Request for short-term T.A. to assist in methodology formulation for food inventory scheduled for June 84-June 85	X	
	- Approve plans for AG school in country training by mobile units		X
3/84	- Participate in GOUV annual planning committee for upcoming growing season		X
	- Contractor selected for construction of FFTS headquarters	X	X

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	- Long-term Project Manager arrives at post	X	
4/84	- Long-term participants leave for the US to begin English training	X	
	- T.A. arrives to begin planning for Food Inventory mini-survey	X	
	- Begin Ag-school nutrition training program at Matourkou and Kamboinse		X
	- Finalize selection criteria for women's coops who will participate in survey & training		X
5/84	- Contract issued for construction and activity begins; scheduled for completion in January 86	X	X
	- Food Inventory Survey Methodology approved	X	X
	- Select 20 women's coops to be used over life of Project for surveys, training and food technology experimentation.		X
6/84	- Short-term training in management (financial, administrative, implementation) begins for two ATAS agents	X	
	- Commencement of Food Inventory Survey lasting until June 1985		X
7/84	- Continued execution of Food Inventory Survey		X
8/84	- Commodities begin arriving for headquarters, construction and vehicles	X	
	- Participants return from short-term US training	X	
	- Preparations for World Food Day (October)		X
9/84	- Nominations for long-term US training (3) to begin English training in March 1985		X
	- Request for short-term technical assistance to determine methodology for time allocation analysis	X	
	- Nomination for short-term US training to begin English in May 1985		X
10/84	- Participation in World Food Day		X
	- Food Inventory samples sent to Dakar		X

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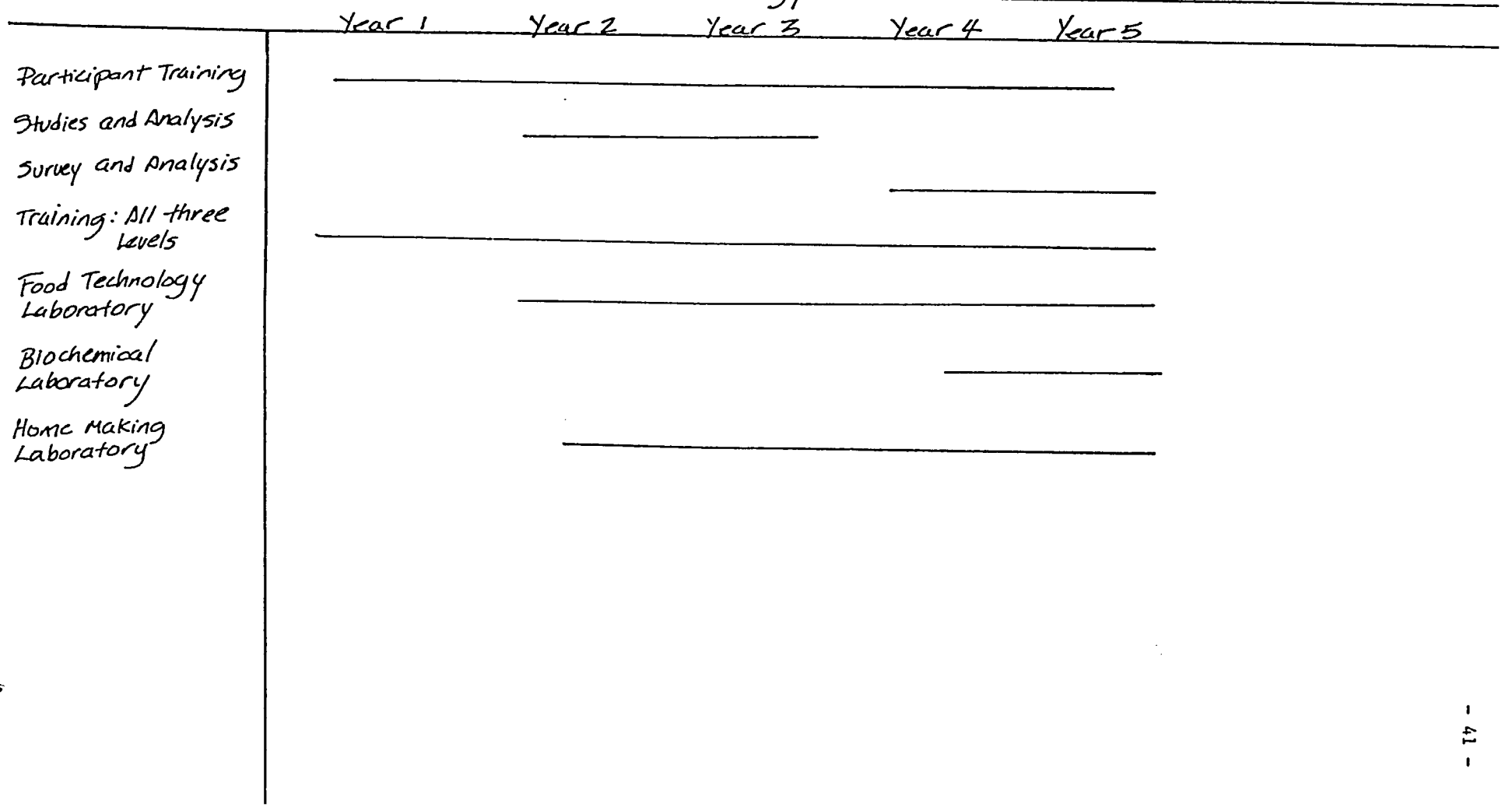
Table 8

H. Food and Food Technology



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11/84	- Short-term T.A. for time allocation survey arrives at post	X

I. SOIL AND WATER

Date	Activity	Agency(s) Responsible	
		AID	GOUV
7/83	- PP Approved	X	
8/83	- Pro. Ag. Signed	X	X
10/83	- Project Activity Start-up	X	X
11/83	- Prepare PIO/C for vehicles	X	
	- Prepare other PIO/C for survey offices and cartographic supplies	X	
	- Prepare PIO/T for Long-term T.A. for 48 PM cartographer, soil scientist	X	
12/83	- Nominations received by AID for 2 Long-term participants for MS's in computer science & soil conservation		X
	- Basic PIL is issued	X	
	- Nomination for 2 agents of NSS for USDA summer courses & 3 months of English, for 1984 session		X
1/84	- PIO/T for 6 PM short-term T.A. to design framework for National Survey Plan of Work	X	
	- Annual local currency budget submission for AID approval for 1984		X
	- PIO/P's long-term and short-term participants scheduled to leave in March or April 1984	X	
2/84	- NSS purchases aerial photographs for the Mossi Plateau from IGHV in preparation for short-term T.A. visit in April		X
3/84	- Long-term and Short-term candidates leave for English training at ALIGU, in US	X	X
4/84	- Short-term T.A. team (3 people) arrive to design framework for National Survey	X	
	- NSS participates in Annual Ag. Research Technical coordination meetings	X	
	- NSS participates in Inter-Ministerial mapping Commission Meeting		X

6/84	- Short-term T.A. for Soil Survey Design leave Upper Volta	X	
	- PIO/T for short-term T.A. in financial mgt. 1 PM to arrive in September 1984	X	
8/84	- Short-term USDA course participants return from the US after 5 months		X
9/84	- Long-term NSS participants in MS program begin first academic year, in US	X	
	- Vehicles and commodities begin arriving	X	X
	- Short-term T.A. financial mgt. arrives for one month	X	
10/84	- PIO/T for 2 PM Short-term T.A. water resources ag economist to design water resource assessment, to arrive in 1/85	X	
11/84	- Nomination of two NSS for 24 PM of mid-term US training at SCS State Level Conservation Service in a southwestern state	X	
12/84	- Nomination of two NSS agents for 1985 USDA short courses with English at ALIGU		X
1/85	- Short-term T.A. water resource assessement design, 2 PM arrives	X	
3/85	- Short-term T.A. water resource assessment design leaves	X	
	- Short-term & Mid-term participants leave for US English training	X	
4/85	- Water resource assessment and inventory begins, to take 20 months	X	
5/85	- National Soil Survey Plan submitted & approved meeting CP	X	X
6/85	- Evaluation plan is determined and agreed to by GOUV and AID	X	X
7/85	- National Soil Survey gets under way		X
8/85	- Evaluation plan is approved and PIO/T is drafted for 6 PM, a soil mgt. administrative specialist, soil cartographer, a soil conservationist and a rural sociologist	X	
	- Short-term participants in USDA course return to Upper Volta	X	
	- PIO/T for short-term T.A. 2 PM for soil science computer specialist	X	

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Table 9

I. Soil and Water

	1983	1984	1985	1986	1987	1988	1989
1. National Soil Survey		Plan of work					
2. Soil and Water Conservation and Evaluation System.			Implementation				
3. Water Resource Potential Assessment Study.				System Design	Implementation		
4. Data Storage, Retrieval and Analysis System.							
5. Targetted Delivery of Soil and Water Conservation Erosion Control Phase I			Design	Installation			
6. Targetted Delivery of Soil and Water Technology Erosion Control and Water Management.					YATENGA ORD		

11/85	- Short-term computer specialist arrives to design ADP system	X	
3/86	- Evaluation begins to last six weeks	X	X

4. COMPONENT FOUR

J. DECREASE FOOD INSECURITY AT THE VILLAGE-LEVEL

Due to the close integration of this component with the DIRC - Training Component the reader is encouraged to refer to the Implementation Schedule of Component Two.

Date	Action	Office
1983		
August	Project Agreement Signed	USAID/MRD
August	Project Counterpart Named	USAID/DIRC
1984		
January	CP for Financial Management Plan Submitted in form and substance satisfactory to USAID/Upper Volta	USAID/DIRC
1985		
February	Loan Requests Received	GV/DIRC
March-April	Construction loans given to approved applicants	DIRC
March-April	Downpayment for construction loans	GV
September	Downpayment for cereal purchase loan	GV
September/ October	Cereal Bank loans given	DIRC
1986		
February	Loan Requests Received	GV/DIRC
March-April	Construction loans given to approved applicants	DIRC
March-April	Downpayment for construction loans	GV
September	Downpayment for cereal purchase loan	GV
September/ October	Cereal Bank loans given	DIRC

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Table 10

J. Local Level Food Security & C DIRC - Cereal Banks

	1983	1984											1985											
	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
- Training Feasibility Studies/Introduction (component 2)						—													—										
- Loan Applications						—	—	—	—										—	—	—	—							
- Construction-Grain Facility loans								—	—	—											—	—							
- Training Management and Marketing (Component 2)				—	—	—	—	—	—	—						—	—	—	—	—	—	—						—	—
- Grain Purchase Loans														—											—	—			
- Condition Precedent								X																					
- Financial Plan																													

Table 10 (continued)

	1986												1987												1988											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.
-Training Feasibility studies/Introduction (component 2)																																				
-Loan Applications																																				
-Construction-Grain Facility loans																																				
-Training Management and Marketing (component 2)																																				
-Grain Purchase Loans																																				
-Condition Precedent																																				
-Financial Plan																																				

1987		
February	Loan Requests Received	GV/DIRC
March-April	Construction loans given to approved applicants	DIRC
March-April	Downpayment for construction loans	GV
September	Downpayment for ceral purchase loan	GV
September/ October	Cereal Bank loans given	DIRC
1988		
February	Loan Requests Received	GV/DIRC
March-April	Consturction loans given to approved applicants	DIRC
March-April	Downpayment for construction loans	GV
September	Downpayment for cereal purchase loan	GV
September/ October	Cereal Bank loans given	DIRC

K. DECREASED FOOD INSECURITY AT THE NATIONAL LEVEL

Date	Action	Office
1983		
August	Project Agreement Signed	USAID/MRD
August	Project Counterpart Named	USAID/OFNACER
September	Draft PIO/T for Sanitation Expert	USAID/OFNACER
October	Nominees for training FY 84-85 (Storage Management, Economist, Accountants, Auditors)	OFNACER
October	Processing of Participant Training	USAID
November	Contract for local accounting training	OFNACER/USAID
1984		
January	Sanitation Expert Arrives	USAID/AID/W
January	OFNACER begins announcing market price (Self-Help Measure)	OFNACER

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March	National Warehouse Sanitation Plan Implemented	OFNACER
March	Audit Training Begins	USAID
April	Computer Standardization within MRD	USDA/USAID/MRD
April	Language Training for U.S. Participants	USAID/USIS
April	Announce Floor Price and Strategy	OFNACER
May	Draft PIO/C for computer system	USAID/OFNACER
May	Draft PIO/T for computer specialist	USAID/OFNACER
May	CPs for warehouse commodity procurement	OFNACER/GOUV
June	Draft PIO/C for warehouse commodity procurement	USAID/OFNACER
July	Storage Expert, Economist and Accountant depart for U.S.	USAID/OFNACER
September	Auditor returns to OFNACER	OFNACER
October	Nominees to training (1 Economist, 1 Accountant)	OFNACER
October	Processing of Participant Training	USAID
1984		
November	Computer System Arrives	OFNACER/USAID
December	Warehouse commodities arrive	OFNACER/USAID
1985		
January	PIO/T for Economic Advisor	USAID/OFNACER
January	Computer Specialist arrives	USAID/AID/W
January	Local Storage Training begins	OFNACER
March	CPs for Vehicle Procurement met	OFNACER
March	PIO/C for Replacement Vehicles	USAID/OFNACER
April	Language Training for U.S. Participants	USAID
April	Announce Floor Price and Strategy	OFNACER
June	Economist and Accountant return from U.S.	OFNACER
July	Economist and Accountant depart for U.S.	USAID/AID/W
August	Long-term Economic Advisor arrives	USAID/AID/W

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1985		
October	Expansion of Planning Unit (CEPS) 3 local hire Economists	OFNACER/USAID
October	Nomination of Economist for Training	OFNACER
October	Processing of Participant Training	USAID
1986		
January	Replacement Vehicles Arrive	OFNACER/USAID
April	Announce Price and Strategy	OFNACER
April	Language Training for U.S. Participant	USAID
June	Economist & Accountant return from U.S.	OFNACER
July	Economist departs for U.S.	USAID/AID/W
December	Storage Expert returns from U.S. to work for OFNACER and complete research	OFNACER
1987		
April	Announce Price and Strategy	OFNACER
June	Economist returns from U.S.	OFNACER
1988		
January	Storage Expert returns to U.S. to complete M.S. degree	USAID/AID/W
July	Storage Expert returns from U.S. to assume role as Director of Stocks	OFNACER

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Table 11

K: National and Regional Food Security (OFNACER)

	1983					1984												1985											
	Aug.	Sept.	Oct	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul	Aug.	Sept	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
Technical Assistance																													
- Sanitation Expert	X					—	—																						
- Computer Specialist								-		X								—	—	—	—	—	—	—	—				
- Economist																		X							—	—	—	—	—
Expansion of Planning Unit (CEPS)																											—	—	—
Commodities																													
- Computer System										X							—	—	—	—	—	—	—	—	—	—	—	—	—
- Vehicles (Two 4 wheel drive and 1 sedan.)																				X									—
- CP for Warehouse Equipment.										X																			—
- Warehouse Equipment											X						—	—	—	—	—	—	—	—	—	—	—	—	—
Training																													
Economists	X							—	—	—	—	—	—	—	—	—	—	—	—	—	—								
A.															X														
B.																				—	—	—	—	—	—	—	—	—	—
C.																											X		
Accountants																													
A.	X							—	—	—	—	—	—	—	—	—	—	—	—	—	—								
B.															X														
Storage Management	X							—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Audit				X			—	—	—	—	—	—																	
Local Storage																		—	—	—	—	—	—	—	—	—	—	—	—
Local Accounting			X	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

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Table 11 (continued)

	1986	1987	1988
	Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sept. Oct. Nov. Dec.	Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sept. Oct. Nov. Dec.	Jan. Feb. Mar. Apr. May Jun. Jul. Aug. Sept. Oct. Nov. Dec.
Technical Assistance			
- Sanitation Expert			
- Computer Specialist			
- Economist			
Expansion of Planning Unit (CEPS)			
Commodities			
- Computer System			
- Vehicles (Two 4-wheel drive and 1 Sedan)			
- CP for Warehouse Equipment			
- Warehouse Equipment			
Training			
Economists			
A.			
B.			
C.			
Accountants			
A.			
B.			
Storage Management			
Audit			
Local Storage			
Local Accounting			

Table 12

P.L. 480 Title II Section: 206 Program

	1983					1984											1985											
	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
-Negotiate Annual Transfer Authorization	—										—														—				
-Call forward of Commodities	X												X												X				
-Receipt of Commodities						—												—											
-Deposit of Sales Proceeds							—	—	—										—	—	—								
-Annual Progress Report											—												—						
-Mid-term Evaluation																													

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Table 12 (continued)

	1986												1987												1988											
	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.
-Negotiate Annual Transfer Authorization								—																												
-Call forward of Commodities								X																												
-Receipt of Commodities	—												—																							
-Deposit of Sales Proceeds		—	—	—										—	—	—																				
-Annual Progress Report						—												—																		
-Mid-term Evaluation																		—																		

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Best Available Document Annex J

VZCZCCBG *
RR SUEHC
DE RUFHOO #3287 157 **
ZNR UUUUU ZZH
R 261113Z2 JUN 83
FM AMEMBASSY OUAGADOUGOU
TO STDSTATE WASHDC 6221
BT
UNCLAS OUAGADOUGOU 03287

AIDAC

FOR AFR SWA AND AFR/PD/SWAP

CLASS: UNCLASSIFIED
CHRGE: AID 6 3 83
APPRV: DIR:MELAVEN
DRFTD: OPR:LERNER:LA
CLEAR: 1. OAG:BECKER
2. OAG:SMITH
OAG: GUNTHER
DISTR: AMB DCM CHRON
OAG DDIR DIR
C&R

OPR
OAG
DIR
CHRON
R.F.

E.O. 12356: N/A
SUBJECT: UPPER VOLTA AGRICULTURAL DEVELOPMENT SUPPORT PROJECT (686-0285): DRAFT CN

1. USAID UPPER VOLTA IS HEREBY FORWARDING A DRAFT CONGRESSIONAL NOTIFICATION FOR THE AGRICULTURAL DEVELOPMENT S C'D PROJECT.

2.A. PROGRAM: UPPER VOLTA
- B. TITLE: AGRICULTURAL DEVELOPMENT SUPPORT PROJECT
- C. PROPOSED OBLIGATION (IN THOUSANDS OF DOLLARS)
- FY 83: 8,585
- D. LIST OF PROJECT FUNDING: 32,000DA, 10,000 PL 480
- E. NUMBER: 686-0285
- F. GRANT XX
- G. NEW XX
- H. SEL. AGT.: SDP
- I. INITIAL OBLIGATION: FY 83
- J. ESTIMATED FINAL OBLIGATION: FY 87
- K. ESTIMATED COMPLETION DATE OF PROJECT: FY 88

3. PURPOSE: TO REINFORCE THE CAPACITY OF THE MINISTRY OF RURAL DEVELOPMENT (MRD) TO MANAGE AND PROMOTE A MORE EFFICIENT USE OF RESOURCES IN THE AGRICULTURAL SECTOR. THIS WILL BE REALIZED THROUGH (A) IMPROVED MANAGEMENT OF AGGREGATE RESOURCES AND INVESTMENT FLOWS, (B) IMPROVED QUALITY OF HUMAN CAPITAL, (C) AN ACCELERATION IN THE TRANSFER OF SOUND TECHNOLOGY, AND (D) A DECREASE IN PRODUCTION UNCERTAINTY LARGELY THROUGH REDUCTIONS IN FOOD INSECURITY.
4. PROJECT DESCRIPTION: THIS INSTITUTION-BUILDING PROJECT REINFORCES SELECTED CENTRAL SERVICES OF THE MRD AND ITS OVERALL CAPACITY TO MANAGE PROJECTS IN THE AGRICULTURAL SECTOR. THE PROBLEMS OF AGRICULTURAL DEVELOPMENT IN UPPER VOLTA ARE NOT AMENABLE TO QUICK TECHNOLOGICAL OR POLICY FIXES. INSTEAD, RESOURCES MUST BE ALLOCATED TO ACHIEVE STEADY, LONG-TERM PROGRESS IN AGRICULTURE. BY STRENGTHENING CENTRAL SERVICES, POLICY PLANNING AND MANAGEMENT, THIS PROJECT REINFORCES THE MRD'S CAPACITY TO MAKE RESOURCE ALLOCATION DECISIONS.

A. COMPONENT 1 IS DESIGNED TO IMPROVE THE ALLOCATION OF SCARCE RESOURCES (PHYSICAL, HUMAN AND CAPITAL) TO PERMIT INCREASED LEVELS OF PRODUCTION. THIS INCLUDES SUPPORT TO THE UPDA STATISTICAL REPORTING SERVICE IN UPGRADING AGRICULTU-

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AND STATISTICS AND INTRODUCING AN AREA SAMPLING FRAME TO ESTIMATE CROP AND LIVESTOCK PRODUCTION FIGURES. THE DATA AND INFORMATION PROCESSING AND DOCUMENTATION SYSTEMS WITHIN THE MRD WILL ALSO BE STRENGTHENED. IN COLLABORATION WITH A U.S. TITLE XII UNIVERSITY, THE PROJECT WILL SUPPORT TRAINING AND POLICY PLANNING STUDIES AND WILL IMPROVE THE EFFICIENCY OF PROJECT ANALYSES, MONITORING AND EVALUATION. BETTER STATISTICS AND DATA PROCESSING, MORE AND BETTER STUDIES AND ANALYSIS LEADING TO IMPROVED POLICY, PLANNING AND PROGRAMMING, AND A COMPREHENSIVE AND COORDINATED SYSTEM OF PROJECT ANALYSIS, MONITORING AND EVALUATION WILL ENSURE EXTERNAL RESOURCE FLOWS WILL BE COMBINED WITH DOMESTIC RESOURCES IN A MORE EFFECTIVE AND EFFICIENT MANNER.

B. COMPONENT 2: IMPROVED HUMAN CAPITAL IS EXPECTED TO HAVE AN IMPACT ON AGRICULTURAL PRODUCTIVITY THROUGH GREATER RETURNS TO HOUSEHOLD LABOR AND BETTER MANAGEMENT OF HOUSEHOLD RESOURCES, AS WELL AS THROUGH THE IMPACT ON THE AGRICULTURAL TRANSFORMATION AND SERVICE SECTORS. THE AREAS OF INTERVENTION INCLUDE: THE STRENGTHENING OF MANAGERIAL AND SKILLS TRAINING OF RURAL YOUTH, STRENGTHENING THE SYSTEM OF MANAGERIAL TRAINING FOR ADULT COOPERATIVES, AND THE INTRODUCTION OF A FUND FOR THE TRAINING OF MID-LEVEL TECHNICAL AND MANAGERIAL SKILLS FOR REPRESENTATIVES OF BOTH THE PUBLIC AND PRIVATE SECTORS. THE INVESTMENT IN HUMAN CAPITAL WILL PERMIT THE AGRICULTURAL SECTOR TO BETTER UTILIZE AVAILABLE RESOURCES AND INCREASE ITS PRODUCTIVITY.

C. COMPONENT 3: IMPROVEMENTS IN MANAGEMENT AND HUMAN CAPITAL UTILIZED IN COMPONENTS 1 AND 2 ARE EXPECTED TO INCREASE THE RATE OF PRODUCTIVITY INCREASES OVER TIME. THE TRANSFER OF CERTAIN ESSENTIAL TECHNOLOGIES IS EXPECTED TO ACCELERATE THIS PROCESS AND PERMIT A HIGHER SUSTAINED RATE GIVEN THE COMPLEMENTARITIES WITH INFORMATION FLOWS AND HUMAN CAPITAL. THE THREE LIMITED TECHNOLOGICAL INTERVENTIONS UNDER THE PROJECT INCLUDE THE INTRODUCTION OF THE FARMING SYSTEMS APPROACH TO RESEARCH AND EXTENSION, THE DEVELOPMENT AND EXTENSION OF NUTRITIONALLY SOUND FOOD PRODUCTION AND PROCESSING PRACTICES, AND THE DEVELOPMENT AND EXTENSION OF ENVIRONMENTALLY SOUND SOIL, WATER AND LAND USE PRACTICES. HERETOFORE THESE AREAS WERE NOT ADDRESSED SYSTEMATICALLY, WHICH HAS RESULTED IN A LESS THAN OPTIMAL UTILIZATION OF PUBLIC AND PRIVATE RESOURCES.

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5. COMPONENT 4: RISK AND UNCERTAINTY EFFECTIVELY CONSTRAIN THE OPTIMAL ALLOCATION OF RESOURCES. THE PROJECT IS NOT DESIGNED TO ELIMINATE OR EVEN SIGNIFICANTLY REDUCE RISK. RATHER, THROUGH SUPPORT TO PRIVATELY MANAGED VILLAGE COOPS, THE PROJECT WILL REDUCE CEREAL SUPPLY UNCERTAINTY AT THE LOCAL LEVEL. SUPPORT ON THE PLANNING UNIT OF OFNACER (NATIONAL STOCKS OFFICE) WILL INCREASE THE EFFICIENCY OF NATIONAL LEVEL SUPPLY STABILIZATION EFFORTS. FINALLY, THE IMPORTATION OF PREFERRED CEREALS AND OILS, UNDER A PL 480 TITLE II SECTION 206 PROGRAM, WITH GENERATED INPUTS TO BE UTILIZED BY THE MRD, WILL PROGRESSIVELY MINIMIZE THE IMPACT OF RISK IN ORDER FOR THE PRODUCER, THE MRD AND THE GOUV TO BETTER ALLOCATE RESOURCES AND INCREASE RURAL PRODUCTIVITY.

6. RELATIONSHIP OF PROJECT TO A.I.D. COUNTRY STRATEGY: THE HIGHEST PRIORITY OBJECTIVE OF THE USAID IS NUTRITIONAL SELF-RELIANCE WITHIN A CONTEXT OF COMPARATIVE ADVANTAGE. THE TOP PRIORITY SECTOR IS AGRICULTURE. THE EMPHASIS OF THE USAID' AGRICULTURAL STRATEGY IS THE STRENGTHENING OF ANALYTICAL CAPABILITY, MANAGEMENT AND POLICY-MAKING FUNCTIONS IN THE MRD. GOOD CENTRAL MANAGEMENT, POLICY ANALYSIS AND POLICY DECISION-MAKING ARE CRITICAL TO PROVIDING THE ENVIRONMENT IN WHICH THE VALUE OF AGRICULTURAL OUTPUT CAN GROW MOST RAPIDLY.

7. HOST COUNTRY AND OTHER DONORS: THE GOUV ACCORDS THE AGRICULTURAL SECTOR HIGHEST PRIORITY IN ITS DEVELOPMENT PLANNING AND CONSIDERS GROWTH IN AGRICULTURAL PRODUCTION AND MARKETS AS CRITICAL TO ATTAINING FOOD SELF-SUFFICIENCY AND HIGHER STANDARDS OF LIVING FOR THE MAJORITY OF VOLTANS. THIS POSITION IS WIDELY SHARED BY THE DONOR COMMUNITY AS EVIDENCED BY THE FACT THE AGRICULTURAL/RURAL SECTOR RECEIVES THE MOST RESOURCES. A COMPLEMENTARY ACTIVITY BY THE IBRD AND FRENCH CCCE IS A LOAN WHICH WILL BRING ABOUT A PHASED REDUCTION OF SUBSIDIES ON FERTILIZER.

8. BENEFICIARIES: AS THE PROJECT IS PRIMARILY INTENDED TO STRENGTHEN THE MRD AS AN INSTITUTION, IMMEDIATE BENEFITS WILL DIRECTLY IMPACT THE MRD PERSONNEL. BENEFICIARIES OF THE PROJECT INCLUDE THE MRD, OFNACER, THE DONOR COMMUNITY, THE PRIVATE SECTOR, PARTICULARLY THE AGRIBUSINESS SECTOR (INCLUDING CEREAL BANKS AND PRIVATE TRADERS) AND BAKING AND OIL INDUSTRIES. FARMERS (MEN AND WOMEN) AND THEIR HOUSEHOLD INDIRECT BENEFICIARIES INCLUDE THE ENTIRE AGRICULTURAL AND LIVESTOCK SECTOR. DALSIMER

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THE INVESTMENT RATIONALE FOR THE AGRICULTURAL DEVELOPMENT SUPPORT PROJECT (686-0255)

A PAPER SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR PROJECT APPROVAL

USAID/UPPER VOLTA

MAY 5,1983

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I. Introduction

The material presented in this paper is addressed to the questions and issues raised in the Agricultural Development Support PID review in January, 1983 as well as certain issues brought up at the CDSS review in March 1983. This paper is not intended to cover all aspects of the issues requested for the CDSS revision in STATE 109200 of April 21, 1983 but it does cover all the issues raised in Paragraph 3 of the PID approval cable (STATE 33844) for the Agricultural Development Support Project. The first section on the macro-economic policy setting is useful to understanding the overall USAID strategy set forth in the CDSS as well as providing an overview of the economy and an appreciation of the relative importance of agriculture. The next three sections deal more specifically with issues raised during the PID review which the USAID felt could be clarified on the basis of existing analysis and available documentation. This "hybrid" paper has been developed because many of the issues raised are overlapping and can be more easily understood when treated in a unified manner. For the reader whose concerns are more circumscribed, please refer to the appropriate section of the paper.

II. Executive Summary

The paper responds to two issues raised during the CDSS review, the paucity of macro-economic analysis and insufficient information about the general policy setting, and to paragraph 3 of the PID approval cable (STATE 033844). The points made in the paper are:

(1) Upper Volta has managed to achieve modest growth during the 1970's and maintains a conservative approach to its fiscal policy. Worsening of its chronic trade deficit and recent budget deficits reflect world economic stagnation and not a basic change in policies or underlying economic structures. Given its resource constraints and modest growth prospects Upper Volta has performed reasonably well.

(2) The policy framework is not optimal but neither is it grossly anti-economic. Fiscal policies are conservative and there is not much room to modify policy. Formal credit markets are constrained by the West African Monetary Union regulations limiting interest rates and margins. Domestic markets are not subject to price controls except for a few consumer goods which are imported or produced by import-substituting industries.

Grain markets are free to function as efficiently as they can given existing transportation and communications infrastructure with the National Cereals Office playing a limited role in the market. Agricultural export markets are controlled by marketing boards but the effective rate of taxation has not been excessive in general. Agricultural input markets are also managed by parastatals and could be more efficiently handled by the private sector, but the returns to modern input use are still relatively low. Overall the gains to be made from appropriate pricing and marketing policy reforms are small in the short run, but they are important for achieving economic efficiency in the long-run.

(3) Agricultural output data are not reliable, but available data indicate rapid growth in cotton output, but declining per capita output of basic grains. Overall food availability, however, appears to be maintained through food aid, incorporation of other foods such as roots, tubers and vegetables in the diet and the substitution of imported wheat and rice for local grains in urban areas. The data on food availability is incomplete, so we cannot be certain whether it has declined or remained the same. Growth in agricultural production is concentrated in the Southwest which has better farming conditions, access to modern inputs through the cotton company and a many times higher level of donor-financed investment. As a consequence, that region attracts rural migrant farm families from the Central Mossi Plateau.

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(4) The slow growth in agriculture is due to a set of physical and technological constraints which are expensive to overcome and not due to inappropriate pricing and marketing policies or an inappropriate role for the central government.

Given the available technologies, farming capacity is fully utilized and output has on average kept up with the growth in effective demand. The strategy for the sector must accord priority to increasing the economic efficiency of food production and concentrate on incremental improvements in the farming system and the agricultural resource base.

(5) The basic agricultural sector institutions are the Ministry of Rural Development, the Regional Development Organizations, the Volta Valley Authority, the National Cereals Office, the Voltan Union of Truck Farming Cooperatives, the National Agricultural Credit Bank and the Voltan Company for the Development of Textile Fibers. These institutions carry out the functions of extension, marketing, input supply and credit delivery. Their characteristics are described in Section IV.D.

(6) Three strategic options for investment in agriculture are considered: (a) direct investment in the private sector, (b) project investment through the Regional Development Organizations and (c) investment in central services, policy planning and management. The greatest returns are currently available in option (c) because of the lack of coordination of activities and programming guidance for regional project activities which result in much wasted effort and misallocation of resources and also because of the absence of viable institutions to reach the private sector more directly.

(7) Section VI summarizes the rationale for the investment strategy, discusses the selection of agricultural input pricing and marketing and export crop pricing and marketing as the priority areas for the formulation of policy reform proposals and describes the linkages between the project activities and the improvement of agricultural productivity. The final section summarizes the overall USAID strategy to put the agricultural strategy into perspective for the reader.

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III. MACRO-ECONOMIC SITUATION OF THE COUNTRY

A. Economic Structures and Performance

Since independence in 1960, the Voltan economy has changed its structure through the creation of import substituting industries, and through the expansion of commerce and services in part because of its position as West African headquarters for many regional and international organizations. As we shall discuss in greater detail below, the primary sector (agriculture, fishing, hunting, livestock and forestry) has grown more slowly than the other sectors. (Table 1 shows the changes in relative importance of different sectors from 1972 to 1982.

Table 1

Gross Domestic Product at Factor Cost

(billions of CFAF, current prices)

	1972 a)		1974 a)		1979 a)		1982 b)	
		%		%		%		%
Primary Sector (agriculture, fishing, hunting livestock, forestry)	50.8	47	56.6	43	95.6	38	135.0	38
Secondary sector (mining, manufacturing, utilities, construction)	17.6	16	18.7	14	39.8	16	58.0	16
Tertiary sector (commerce, transport, communications, public and private services)	40.8	37	55.7	43	112.4	46	162.6	46
Total GDP	109.2	100	131.0	100	252.8	100	355.6	100

Source: a) National Institute of Statistics and Demography, Ministry of Plan.

National Accounts and Economic Indicators of Upper Volta from 1970 to 1979

b) IMF Staff Projections.

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The relative importance of the private sector in the economy cannot be accurately assessed with existing data. Private producers dominate the primary sector and account for an unknown portion of the secondary and tertiary sectors. The private sector assessment which USAID/Upper Volta is to carry out in May and June, 1983, will attempt to quantify the value of private sector activities relative to total output.

Growth has been very uneven over the decade of the seventies. The stop-and-start nature of Voltan economic growth is due to the instability of output in dryland agriculture which depends heavily on highly variable amounts and timing of rainfall. Table 9 in section IV shows the area cultivated, yields and production levels for the major crops since 1961.

Although agricultural products (including livestock) constitute 87% of Voltan exports, the general stagnation of agriculture has not applied to cotton production or to shea nuts. The country's chronic trade deficit has nonetheless continued to grow is shown in Table 2.

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Table 2
Merchandise Balance of Trade
(billions of CFA Francs)

	Exports	Imports	Trade Balance
1970	5.1	13.7	- 8.6
1971	4.4	15.6	-11.2
1972	5.1	12.2	-12.1
1973	5.6	21.7	-16.1
1974 *	8.7	34.7	-26.0
1975	9.4	32.4	-23.0
1976	12.7	34.4	-21.7
1977	13.6	51.3	-37.7
1978	9.6	51.1	-41.5
1979	16.2	63.9	-42.7
1980	19.1	75.6	-56.5
1981	19.9	91.4	-71.5
Annual rate of Growth (1970 - 1981)	12.4%	17.3%	
Annual rate of price increases for exports and imports (1970 - 1981)	9.2%	10.0%	

* Figures for 1970 - 73 do not include duty-free importation.

Note: This table only accounts for exports and imports of goods. Table 3 also includes the net import of services which are freight and insurance on merchandise, transportation and other services.

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Upper Volta has also begun to diversify its trading partners with China, Taiwan, Japan and Hong Kong accounting for twenty eight per cent of Voltan exports in 1981, while the value of exports to France and Europe in general has failed to increase. The Ivory Coast is by far Upper Volta's biggest customer, taking 31% of Voltan exports in 1981. Niger is a distant second among African trading partners. Exports to America are negligible. Imports are principally from France (33%), the Ivory Coast (22%), the rest of Western Europe, America and Asia. The fastest growing sources of imports are the Ivory Coast and, on a smaller scale, Japan,

Growth in the trade deficit is far less alarming than it may appear because it is offset by almost equally rapid growth in migrant worker remittances, other private transfers and foreign aid in the form of grants. While the current acccunt deficit which includes these transfers has also grown, it is not dangerously large.

Table 3

Balance of Payments
(billions of CFA)

	1972	1973	1974	1975	1976	1977	1978	1979
Trade balance on goods & services	-18.4	-21.5	-30.2	-39.8	-36.8	-55.0	-61.0	-69.3
Unrequited transfers	17.4	22.1	29.3	30.9	29.0	34.5	47.4	57.2
(of which: remittances)	(6.4)	(6.8)	(5.7)	(5.5)	(7.6)	(8.3)	(10.1)	(15.2)
Current Account Balance	- 1.0	.6	- .9	- 8.9	- 7.8	-20.5	-13.5	-12.1
Capital Movements	1.5	4.0	1.6	6.9	4.2	13.3	5.8	13.1
Errors & Omissions	- .3	- .6	+ .2	+ .5	+ .4	+ .4	+ .2	+ 1.6
Global Balance of Payments	+ .2	+ 4.0	+ .9	- 1.5	- 3.2	- 6.8	- 7.5	+ 2.6

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Two-thirds to four fifths of the deficit in the trade balance is thus covered by remittances and foreign grants. These grants are in fact the source of many of the imports of machinery, vehicles and petroleum products which would not otherwise be imported. The remainder of the deficit has been covered wholly or in large part by long-term soft loans to the GOUV for development projects and long-term private capital movements. So, in spite of the low growth experienced by Upper Volta, and the slow expansion of exports relative to imports, there have not been balance of payments crises and the growth of the external debt has been kept within reasonable limits.

As we shall see below, the debt service has been increasing more rapidly than other items of the national budget. However, Upper Volta still enjoys a well-deserved reputation for fiscal conservatism and the size of the debt remains manageable.

Table 4
External Public Debt
(millions of U.S. dollars)

End of period	Oustanding	Disbursed	% of GDP
1977	299.1	137.8	16.9
1978	357.8	190.4	17.4
1979	430.4	271.1	20.6
1980	508.0	323.0	24.4
1981	496.0	n.a.	n.a

The public external debt is made up almost entirely of loans from bilateral and multilateral organizations which held 43% and 54% of the debt respectively as of 1981. Private lending sources held 14.8 millions dollars or only 3% of the external debt. Except for the private lenders and certain loans of the French Caisse Centrale de Cooperation Economique for commercial enterprises, the average lending terms are well below commercial rates and many involve only service charge payments (0.5 to 1.0%) with 3 to 10 year grace periods.

The foreign reserve position of Upper Volta remained adequate through the end of 1981 when it stood at 71 million dollars after recovering from a low of 36.3 million dollars in 1978. The reserve position at the end of September 1982 had deteriorated to 48 million dollars. This would indicate that the trade deficit continued to increase through the recession year of 1982.

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The deterioration in the trade and balance of payments situation of Upper Volta is a condition shared with the rest of the West African Monetary Union (UMOA). Under the pressure of a declining foreign reserves position, UMOA raised its interest rates in 1980 to prevent capital flight and to obtain further assistance from the IMF. Devaluations of the French Franc have also improved the competitiveness of exports from the CFA Franc zone since the French and CFA Francs are directly linked.

In March 1983 however, citing the general worldwide decline in interest rates, UMOA's Central Bank (BCEAO) reduced its discount rates and reiterated its policy of maximum margins for the zone's financial institutions. These are a maximum 3% lending margin for banks over the 8% preferential discount rate and a maximum 5% lending margin over the 10.5% normal discount rate. These low margins when combined with a fixed credit allocation per member country help maintain the stability of the CFA relative to the French Franc and make it possible for France to guarantee the convertibility of the CFA Franc into other hard currencies. Such a system reduces the risk of devaluation for international trade and guarantees the support of the French treasury.

The central government budget exercises have not contributed significantly to the growth of the external debt. The debt is almost entirely attributable to the financing of development projects with balance of payment support loans accounting for only 7.7% of outstanding debt. This is not to say the GOUV budget has always been in balance. To the contrary, France has provided budget support varying from 3.0 to 6.7 million dollars per year from 1975 to 1981 for a total of 31.3 million dollars or about 3.6% of GOUV revenues. In 1983 the GOUV has budgeted for 9.6 million dollars in external budget support out of a total budget of about 160.8 million dollars .($1.00 = 360 CFAF).

The official GOUV budget is almost exclusively devoted to operating expenditures, with only ten to fifteen per cent devoted to investments. This has fallen to less than ten per cent in 1982 and 1983. Almost all investment in the country is financed through external resources and is planned for as such in the National Development Plan. The Plan contains expected contributions from the budget, from the private sector and from foreign donors. The last plan expired in 1981 and a great deal of work has gone into preparing a plan for 1983-87 which is now under review by the current administration. The change in government and the new administration's desire to establish its own development program necessitated additional reviews and has delayed final adoption of a development plan.

The central government budget has been in deficit since 1978 when it last had a small surplus. The deficits grew uncomfortably and uncharacteristically large in 1981 and 1982, equalling 19.3 and 15.8 per cent of revenues respectively.

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The current administration has taken a number of austerity measures to reduce expenditures concentrating on reducing the perquisites of high level officials. For example the GOUV has terminated rental of housing for all employees formerly entitled to it and has substituted a smaller cash payment. Lower limits have been set on reimbursable telephone and utilities for high officials and first class international travel is not permitted for any GOUV employee except the President. These and other measures intended to reduce waste and hold down operating expenses have been adopted by official decrees.

The pressures to finance recurrent expenditures and the inevitable pressures from public employees unions to raise wages will make it difficult for the GOUV to hold the line on expenditures. Revenue projections may also prove to be somewhat optimistic. Hence the outlook is for continued deficits this year, although perhaps somewhat less than the past two years, given the GOUV's commitment to reducing public expenditure.

The overall central government budget is made up of budgeted operations and extra-budgetary special treasury accounts and other treasury operations. Budgeted operations include the operations of all the ministries, the debt service and investment expenditures. The treasury accounts are used to handle extra-budgetary expenditures and receipts. According to Central Bank figures, the basic budget has been in deficit since the surplus years of 1977 and 1978.

Table 5
Treasury Operations
(billions of CFA Francs)

	1976	1977	1978	1979	1980
Budget revenues	19.4	29.5	30.5	36.5	40.3
Budget expenditures	21.8	26.5	30.4	40.8	41.3
Balance	-2.4	3.0	.1	-4.3	-1.0
Special Treasury Accounts (net)	2.6	-5.0	- .8	- .7	- .1
Other Treasury Operations (net)	- .2	-	.7	1.0	2.4
Overall balance	0.0	-2.0	0.0	-4.0	1.3

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The Ministry of Economy and Finance estimates that the overall balances for 1981 and 1982 were -8.2 and -8.0 billion CFA respectively. This significant deterioration of the treasury situation is due to increases in the personnel and debt service categories of the budget and failure to budget for contributions to international and inter-african organizations which truly serve Upper Volta and for counterpart contributions to donor-financed projects. The shortcomings of the 1982 budget have been corrected in the levels set for the 1983 budget. The Ministry of Economy and Finance budget figures presented in the table below are calculated on a disbursement basis whereas the B.C.E.A.O.* makes a series of corrections to reflect accruals of expenditure obligations and revenues, so the two series are not directly comparable.

*Central Bank of West African States

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Table 6

Central Government Budget
(billions of CFA Francs)

	1979		1980		1981		1982		1983
	Planned	Actual Payments	Planned	Actual Payments	Planned	Actual Payments	Planned	Actual Payments	Planned
Debt Service	2.2	1.9	2.9	2.1	4.0	4.3	5.8	N/A	8.2
Personnel	19.4	19.8	20.3	22.3	23.1	24.9	25.6	N/A	31.7
Material	7.1	6.5	7.6	5.9	7.5	6.4	8.4	N/A	7.3
Public Interventions (e.g. Scholarships, contributions to international organizations)	5.7	4.6	5.2	4.2	5.2	4.8	5.5	N/A	6.5
Investment (includes recurrent costs and counterpart funds)	6.8	6.5	6.0	5.2	7.6	7.3	2.5	N/A	4.2
Total expenditures	41.2	39.3	42.0	39.7	47.4	47.7	47.8	53.2*	57.9
Total revenues	41.2	37.1	42.0	40.2	47.4	48.8	47.8	47.0*	57.9
Budget balance	-	-2.2	-	.5	-	1.1	-	-6.2	-

* latest Ministry of Economy and Finance estimates for 1982

There has been a clear tendency to underestimate personnel costs and to underfund material and other costs. The sharp increase in planned personnel expenditures for 1983 and the reduction in planned material expenditures are intended to make the budget a more realistic document than it has been in the recent past. The planned increase in revenues may be too optimistic, even if donors provide the 3.7 billion CFA subsidy which has been included in the budget. The outlook is for some improvement in the overall deficit of the central government. The budget is quite austere and includes items which should have been provided for last year. Nonetheless, the basic problem of underfunded operating costs remains and its significance has been recognized by the Budget Law of 1983 which sets the following regulations in Article 27.

"During the year 1983 with respect to personnel the following conditions are to be rigorously applied:

- The Personnel on the National Computer Center Status report of December 31, 1982 who are leaving in 1983 will not be replaced numerically by new recruitment as long as the budget proposals of each Ministerial department or Institution show the arrival of agents of the same qualification or category.

- No new recruitment of permanent personnel will be done by payment through Special Treasury Accounts or credit from the State Budget Title II, Material Expenditures".

This regulation puts an end to these often-used means of circumventing personnel limitations and should help control the expansion of GOUV personnel. The problem will require continued attention in future administrations, but it is clearly being attacked as directly as possible.

In summary, Upper Volta is in a period of stagnation and has adopted belt-tightening measures of various kinds to keep its external debt from growing out of proportion with its financing capacity. It has done reasonably well in this effort, but it must pay more attention to improving the return on foreign-financed development projects and stimulation of greater economic activity. We will investigate how this may be done in the agricultural sector in the final two sections.

B. The Macro-Economic Policy Setting

In this section we discuss the policy framework in the narrow sense of those economic pricing and marketing policies which shape the incentives for economic actors. In the discussion of constraints to growth in later sections we treat the shortcomings of national policies in the broader sense of national planning, resource allocation decisions and coordination of investment activities. Policies in the sense of pricing, marketing and allocation of credit, inputs and outputs can be broadly characterized as being not far from the appropriate set of policies for the country with the exception of credit policies which are partially beyond the country's authority and ability to change. Furthermore available evidence suggests that to the extent policies are not optimal they have only a small negative effect on input use, choice of crop mix and the total amount and value of output.*

Thus, to anticipate the basic conclusion of the policy setting section it is important to achieve some reform of price and marketing policy in the interest of long-term economic efficiency, but there are only modest short-term gains in efficiency to be obtained through policy reform. In this respect, no particular policy stands out as a high priority for reform. The reader should keep this in mind in considering our prioritization of policy reform in a later section. By contrast, the reader should not forget the importance of improving the policy framework in the broader sense of sound economic planning, national resource allocation and coordination of investment to achieve the country's economic objectives. Policy-making in this broader sense is in need of improvement.

Upper Volta has not avoided some common policy pitfalls in its economic policy framework and it has not used policy tools to achieve objectives in as subtle a manner as the Ivory Coast has, but neither has it adopted the grossly anti-economic policies of some of its neighbors and other African countries. In this section we will describe the general policy framework, including fiscal monetary, marketing and pricing policies and discuss the economic consequence of various policies.

Fiscal policy reflects the narrow range of policy choices available in a small, land-locked economy with a large non-monetized sector. The main source of central government revenue is taxes on imports and exports, accounting for about 55% of all revenue. Other important taxes are those on business gross earnings, licences and permits, and taxes on individual income. So called "head" taxes on adults in rural areas have been reduced by the GOUV to the point they are not a severe burden on any but the poorest peasant families.

* See I.B.R.D., Upper Volta Agricultural Issues Study, March 1982, pp 10-12 for a summary of these issues.

The Club du Sahel/CILSS study of recurrent costs described the wide range of taxes and their generally low yields, concluding that much could be gained from simplifying the tax structure, concentrating on equitable application of fewer high-yield taxes, and eliminating some nuisance taxes. This general observation applied to most of the francophone states. The study also concluded the tax burden in Upper Volta was comparable to other LDC's at the same level of income, implying that this level of taxation was about right and should not be increased. Rather, the emphasis on fiscal reform should be streamlining the unwieldy, inefficient tax collection system.

Monetary policy could simply be accepted as a given in the case of Upper Volta. As a member of the West African Monetary Union (UMOA), Upper Volta has far less weight in the decision-making process than the Ivory Coast or Senegal and certainly less than France, the guarantor of the CFA Franc's convertibility into the world's major currencies. Thus, for Upper Volta, the policies of UMOA are handed down ready to be applied. These include maximum interest rate charges on loans, prior approval through the Central Bank of West African States (BCEAO) for large foreign exchange transactions, and a fixed credit allocation from the BCEAO to Upper Volta's financial institutions.

Recent discussions with other donors and GOUV representatives at the CILSS/Club National Seminar on Voltan Agriculture and Food Strategy (Ouagadougou, April 13-15, 1983) have elicited a positive response from all parties with respect to raising interest rates or imposing fees or service charges to cover lending costs. The Ministry of Rural Development has not yet determined whether or not a waiver from UMOA is required in order for the National Agricultural Credit Bank (CNCA) and the Department of Rural Institutions and Credit (DIRC) to charge higher rates. However, it is taking the position that the CNCA and DIRC are exempt from UMOA rules on interest rates on teh grounds these are developmental rather than financial institutions. If a waiver is not necessary the Ministry may raise interest rates or levy additional service charges in order to cover the costs of inflation and management and improve the allocation of available credit to productive use. We support the MRD's position and are working closely with other donors, particularly the European Development Fund, to accelerate acceptance of this policy.

An initiative of this nature would reinforce our other efforts to charge macimum allowable rates through the Oncho-Freed Areas Village Development Fund project and the Partnership for Productivity project. It may also provide a means for reinforcing the Caisses Populaires or local savings and credit movement and the small-scale village lending activities such as found in our Volta Valley Authority activities. Relending from cereals banks by autonomous village groups tends to carry rates of 5% per month for short-term loans. An infusion of capital through "developmental institutions" at this level would help meet credit demand and result in more productive uses of borrowed funds than is the case on average through the formal financial institutions.

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In spite of the inefficiency of credit markets, Upper Volta could do much worse in terms of a monetary policy. The UMOA policies provide monetary stability comparable to that of the French Franc, which is far better than many small currencies. The interest rate ceiling of 15.5% and the carefully monitored rate of growth of money supply through the BCEAO credit allocation keep the economy from expanding too fast and inflating and may be better than trying to manage an independent currency with such a small resource base.

The UMOA's policies are not the only aspect of monetary policy in Upper Volta which may inhibit growth to maintain stability. Upper Volta does have control over the credit allocation within the country. Of course the sorting out of credit requirements must be done administratively since the interest rate ceiling encourages borrowers to request more credit than they would at market rates which would undoubtedly be higher. Irrespective of the interest rate, the credit allocation process is subject to distortion from pressure to meet the credit needs of enterprises in which the state owns a large interest prior to meeting other credit needs. This is very likely to result in a less than optimal use of available credit, but the state may prefer to keep its showcase modern industries operating. In Upper Volta, examples of some of the parastatal companies in financial difficulty are the national airlines, the slaughterhouse and the National Hotels Company.

To the failure to allocate credit efficiently and the interest rate ceiling policy, we add the absence of private financial institutions in Upper Volta. There are four banks in the country, all of which have majority state participation and a government-appointed Director General. The system of limited credit flows and a fixed loan rate rewards a conservative lending approach, i.e. to existing firms with established credit ratings or government backing. There are no financial rewards for engaging in the higher-cost, risker rural lending. In fact, the National Agricultural Credit Bank (CNCA) receives a preferential borrowing rate from the Central Bank, but under UMOA rules it must pass on this advantage to its rural borrowers. Its margin is no greater than for the urban-oriented banks although its lending costs are undoubtedly higher.* The Ministry of Rural Development is actively exploring the possibility of exempting the CNCA from UMOA rules, but it is not yet clear how much leeway there will be to increase the lending margin. The lack of financial rewards does not encourage an aggressive expansion of credit into costlier or riskier sectors of the economy. The combination of Monetary Union policies and risk-minimizing credit allocation practices favors the maintenance of the status quo and inhibits growth.

Upper Volta also maintains a limited number of price controls on bread, sugar, cooking oil, petroleum and cement, and practices uniform pricing for the two major urban areas, Ouagadougou and Bobo Dioulasso. However, it allows a variable margin to be added for transport costs outside the major towns, thus avoiding the major distortions of pan-territorial pricing practiced

* Thomas Stickle, The National Agricultural Credit Bank (CNCA), An Evaluation of its Organization and Policies, December 1980

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elsewhere. The GOUV has also tended to revise prices upward regularly so as to avoid incurring large subsidy charges. These subsidies, for goods such as cement and kerosene, show up as charges to the stabilization fund for consumer goods which covers them with revenues principally derived from petroleum products' import taxes. The GOUV likes to have stabilization funds available as a reserve source of financing, so it has studiously avoided large subsidies on these imported goods in the past.

With the exception of the goods listed in the paragraph above, Upper Volta has maintained a liberal approach to marketing and pricing. The most noteworthy example of this is domestic food grain marketing, which will be discussed at length under the Section on the Agricultural Sector. Other domestic markets for agricultural produce are equally unfettered. Markets are competitive, characterized by many buyers and sellers and the absence of any price controls. Farmers receive clear price signals from this system of domestic markets.

The same is not true for the pricing and marketing of export crops. These markets are distorted by the presence of marketing boards. The markets for agricultural inputs are also characterized by subsidies and state marketing structures, but the effect of these suboptimal policies on input use has probably not been significant. Nevertheless for reasons of long-term economic efficiency, distortions in the agricultural input markets and export markets should be reduced. These policy issues are treated in more detail in the Agricultural Sector discussion.

As the discussion in this section has attempted to indicate, Upper Volta could gain from futher market liberalization and a relaxation of price controls, but it is clearly far from the police-state atmosphere which has prevailed in other countries.

Controlled prices are not very far out of line with the market and are adjusted regularly. Agricultural goods for the domestic market are not subject to price controls or restrictions on movement. Domestic markets appear to function efficiently. Without changing UMOA rules, Upper Volta could try to allocate credit to more productive uses, but market forces cannot be brought to bear on financial markets without changes in the monetary framework or waivers from the interest rate regulations. As we discuss in the Agricultural Sector analysis, the market for agricultural inputs in particular should be privatized and the export markets should be opened up to private competition as much as possible. However, even with such changes, the prospects for Upper Volta's growth remain limited. The section below on policy reforms for the Agricultural Development Support project will discuss our prioritization of policy changes and the manner in which these changes will be tied to our project financing.

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IV. THE AGRICULTURAL SECTOR

In this section, we will present the historical trends in Voltan agriculture and discuss the underlying causes for the lack of growth in output and the failure of yields per hectare or per labor unit to increase for most crops. Then we will identify the institutions which make up the agricultural sector and discuss their strengths and weaknesses. This analysis should provide the reader with sufficient knowledge of the constraints to judge the opportunity costs of different approaches to improving productivity in Voltan agriculture. The information for this section is drawn from two major studies conducted by the World Bank and Development Alternatives, Inc. respectively. *

A. Historical Trends in Agriculture

The relative importance of agriculture to the Voltan economy was described in Section I. Crop production and other primary sector activities are an important component of the economy which will continue to have a major impact on economic growth. The national accounts for the latest available year, 1979, estimate the product of the primary sector at factor cost as follows:

Table 7

Gross Domestic Product at Factor Cost, 1979

	(billions of CFA)	(millions of dollars)
Crop Production	63.3	297.4
Livestock	22.5	105.9
Forestry	8.7	40.9
Fishing	1.1	5.2
	95.6	449.4
Rest of the Economy	157.2	739.2
TOTAL	252.8	1,188.6

* I.B.R.D. Upper Volta Agricultural Issues Study, October 29, 1982

Development Alternatives, Inc., Agricultural Sector Assistance Strategy for Upper Volta, March 1982

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Crop production accounted for a quarter of the gross domestic product in 1979 and livestock accounted for 8.9% . These are the main sources of income for almost all of the primary sector labor force. The primary sector provides employment for eighty two per cent of the national labor force. While agricultural products and livestock are significant portions of national income, they have even greater significance in terms of export earnings. In 1981, they accounted for 86% of all commodity exports. These figures do not include remittances from Voltan migrant labor which is in a sense Upper Volta's principal "export":

Table 8

Officially Recorded Exports, 1981

	(billions CFA)	(millions of $)	%
Cotton	8.3	30.4	41.5
Sheanuts	3.0	11.0	15.0
Animal Products	4.9	18.1	24.7
Oilseeds and Oil-seed Products	.6	2.2	3.0
Fruits & Vegetables	.3	1.2	1.6
Other (non-agricultural)	2.8	10.4	14.2
TOTAL	19.9	73.3	100.0

The importance of primary sector exports is also reinforced by the limited amount of processing or transformation which goes into the exported agricultural product. Examples of processed products are meat, skins and raw leather, cotton thread and sheanut oil. These products still require additional processing before they are ready for the consumer and they accounted for only nine per cent of all agricultural exports in 1981. Unprocessed products dominate exports led by live animals, sheanuts, and fresh fruits and vegetables. Cotton is ginned before exporting but is not transformed any further except for small quantities of cotton thread.

In spite of the importance of agriculture to the Voltan economy, more attention was given by the central government to the development of import-substituting industries in the first decade after independence in 1960. The only exception to this rule is cotton, which has been vigorously promoted by the cotton monopoly, first the French Company for the Development of

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Textiles (CFDT) and since 1979 the Voltan Company for Textile Fibers (SOFITEX) with CFDT as minority partner . No other cultivated crop has been developed as an export crop and no other crop has benefitted from the special attention to input supplies and extension of more productive techniques.

The table below shows the changes in output and acreage for the major crops. Data are drawn from the I.B.R.D. report and from the Department of Agricultural Services (DSA) of the MRD for the final four years of data not available at the time of the World Bank's mission. While all data are subject to considerable error given the measurement techniques used in Upper Volta, the DSA data are consistent with the data adopted by the World Bank. The trends for the major crops are clearly identified.

Table 9

Area, Yields and Production for Major Agricultural Commodities

Cotton

Period Average	Area 000 ha	Area Index	Area kg/ha	Area Index	Production 000 mt	Production Index
61-65	41.4	100	158	100	6.6	100
66-70	70.8	171	348	220	25.1	380
71-75	68.1	164	502	318	33.7	510
76-80	74.4	180	790	500	58.8	890
81-82	72.6	175	1022	646	74.2	1124
			Sorghum and Millet			
61-65	1727	100	471	100	814	100
66-70	1825	106	500	106	912	112
71-75	1872	108	502	107	939	115
76-80	1946	113	515	109	1002	123
81-82	1996	116	542	115	1082	133

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Corn

Period Average	Area 000 ha	Area Index	Area Kg/ha	Area Index	Production 000 mt	Production Index
61-65	160	100	625	100	100	100
66-70	161	100	625	100	100	100
71-75	88	55	670	107	59	59
76-80	126	79	651	104	82	82
81-82	134	84	828	132	111	111
			Rice			
61-65	45	100	792	100	34	100
66-70	39	87	950	120	37	109
71-75	39	87	897	113	35	103
76-80	42	93	810	102	34	100
81-82	25	55	1120	141	28	82
			TOTAL CEREALS			
61-65	1932	100	491	100	948	100
66-70	2025	105	518	106	1049	111
71-75	1999	103	517	105	1033	109
76-80	2114	109	529	108	1118	118
81-82	2155	112	567	115	1221	129

Cotton area doubled during the sixties, peaking at 84,000 heactares in 1969. The area devoted to cotton declined during the drought years, then rebounded later on to earlier levels. The recent decrease in area is due to the increase in cereal prices relative to cotton. Yields have improved steadily and impressively throughout the post-independence period.

Sorghum and millet area cultivated has increased steadily at about 1%/year with the exception of the drought years. The increase in yields appears to be due primarily to a shift in production towards the southwest, particularly by benefitting from the effect of residual fertilizer in old cotton fields.

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The area devoted to corn remained constant during the sixties and then dropped precipitously during the drought. It has been slowly recovering since the drought years as farmers regained confidence in rainfall. In the past two years significantly higher yields have been obtained through the use of fertilizer and improved varieties.

Rice has been a constant source of trouble in marketing since the initial investments in rice production in the sixties. These problems are not easily resolved since rice imports have a comparative advantage over locally produced rice. Rice production has fallen over the past two years as the amount of rice imports has increased.

Total cereal production has increased by 29% in 21 years. Domestic cereal production fell from over 215 kilograms per capita during the sixties to an average of 204 kilograms per capita during the late seventies. Per capita availabilities have not changed much due in part to a shift towards imported cereals (wheat for bread and rice) and to food aid. However, performance over the past two years is encouraging for increases in area and particularly for increases in yields.

The only commodity which has demonstrated sustained increases in yield and acreage is cotton, which benefitted from considerable research and development efforts in the 50's and 60's. Cotton production has continued to grow in part due to the opening of the formerly onchocerciasis-plagued areas of the Southwest which have more fertile soils, increased use of petro-chemicals, continued variety development, and historically greater returns to labor than grain.

The situation in the Central Plateau region is more critical than the average production figures suggest for the country as a whole. In the East, the lack of infrastructure prevents closer integration of the region wiht national markets, so the improvement in the terms of trade has been transmitted only weakly to farmers in this region. The Sahel satisfies only a portion of its own demand for food grains and is better suited for herding activities. It would not make sense to promote a shift towards food crop production to the detriment of livestock production in this region of the country.

Yield figures for the Central Plateau show no long-term growth while the same figures for the Southwest show a 25% increase in cereal yields over the decade of the 70's. The country is relying more and more on the production of a surplus in the west and southwest to make up for the shortage of land and stagnation of yields in the Central Plateau. Per capital cereal production by region is shown in the table below for 1979.

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Table 10
Per Capita Cereal Production by Region

Region	kg/person (rural only)	kg/person (rural & Urban)
Southwest	319	267
Center	199	173
East	186	184
Sahel	102	102

Source: I.B.R.D., Upper Volta Agricultural Issues Study, p. 35

While the general situation of agriculture is not encouraging, the growth of cotton output and the increase in cereal yields and output in the southwest shows the agricultural potential of this region which continues to attract rural migrant farm families and also the responsiveness of its farmers to the economic incentives of improving terms of trade for agriculture as described below.

The same incentives apply to the Central Plateau, but land shortage and concomitant declining soil fertility along with higher unit costs of production have constrained cereal output from increasing more rapidly in this area.

B. Agricultural Sector Policies

In addition to the macro-economic policies described above, the agricultural sector is subject to a specific set of pricing and marketing policies for agricultural inputs and outputs. This section will discuss pricing and marketing of cereals, export crops and agricultural inputs. Both the DAI assessment and the World Bank agricultural issues study conclude that the pricing and marketing policies are not too bad. They point out where improvements may be made in these policies to achieve greater economic efficiency in the farmer's use of resources, but the gains to be made are marginal and more important for long-run considerations. Agricultural production and growth in output are not significantly constrained by pricing and marketing policies.

However, both reports are critical of public resource planning and management, the absence of coordination of donor-financed investments and the lack of programming guidance from the Ministry of Rural Development to the ORDs. The problemswhich arise from these lacunae are discussed in Section V.C Investment in Central Services,Policy Planning and Management.

With the exception of the goods listed in the macro-economic policy section, Upper Volta has maintained a liberal approach to marketing and pricing. The most noteworthy example of this is domestic food grain marketing. Because of the history of public interventions in Sahelian grain markets, there were concerns raised about support to OFNACER during both the Agricultural Development Support PID and CDSS reviews. To avoid any misunderstanding about the situation of the markets or the objectives of the GOUV we will treat this particular pricing and marketing policy issue at some length.

As noted in the World Bank Report, the CDSS, and the Agricultural Development Support PID, available information indicates that grain markets in Upper Volta are reasonably well integrated, prices are determined by conditions of supply and demand and unlike its neighbors in Mali and Niger, the Government of Upper Volta does not try to enforce official prices on private sector marketers. The question then is if the grain markets are efficiently run by the private sector and appear to be well integrated, what is the appropriate role for OFNACER? In order to address this question, it is important to understand the GOUV's development objectives, its strategy, and the perceived role of OFNACER as a development tool.

The GOUV's objectives are to assure sufficient availability of cereal commodities throughout the country in the short-run at reasonable prices, while simultaneously encouraging subsequent years' domestic production by assuring producers a remunerative post-harvest price. The GOUV therefore has accorded OFNACER a mandate with the following responsibilities:

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1) Maintain a "Security Stock" or emergency grain reserve of 30,000 metric tons. This quantity is sufficient to satisfy 1.5 million people with 33% of the daily minimal cereal consumption for 120 days until commercial imports or food aid could arrive;

2) Offer a remunerative price to producers in areas which have market supply potential in order to encourage adequate domestic production in subsequent years; and

3) Sell stocks as required to rotate the security stock and purchase in excess of the 10,000 metric tons required to replenish the security stockas necessary to stabilize prices at a remunerative level. Sales can either be at the wholesale level, exported as was the case in 1982, or sold to the Ministry of Interior and/or PVOs for targetted food aid as in 1983.

The maintenance of a 30,000 metric ton national security stock for emergency purposes is clearly a role which can only be fulfilled by the state and the sale of stocks as they are rotated out of the emergency reserves is required to assure that funds will be available to replenish the stock in subsequent years. The policy of attempting to establish a remunerative producer price, however, is an often-debated issue that requires a fuller understanding of local grain markets.

Briefly, economic theory states that over the long-run the producer will only sell his grain at a price which is remunerative and will increase his supply of grain to the market as prices increase. This theory is somewhat modified in Upper Volta by two factors: the wide swings in marketable supply from small variations in total output and the shortage of capital in rural areas. The large variations in marketable supply result in low prices for output in good harvest years and high prices in poor harvest years.

Decisions to sell or hold grain are largely functions of the demand for liquidity. Therefore, given the pent-up-demand for liquidity which is inherent in an agricultural system that has minimal opportunities for off-farm employment, the lack of rural financial institutions, and the fact that the months of January through March require the greatest cash disbursements for taxes, school fees, and social and religious obligations, the farmer finds that his available stocks are the most convenient means of generating needed revenues. This then results in a situation where post-harvest supply often exceeds post-harvest demand and prices may be consequently depressed below the remunerative level. The table below indicates the average market conditions for the western regions of Volta Noire, Hauts Bassins, and Comce in December of the respective years for the three principal commodities of sorghum, millet and maize.

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Table 11
Commodity Prices, 1979-1982
(CFA per kilogram)

	1979	1980	1981	1982
A. Sorghum				
Break-even Price Improved Technology	47	49	50	55
Average Market Price Pre-OFNACER entry	46	52	43	45
Official Prices OFNACER	40	45	50	58
B. Millet				
Break-even Price Improved Technology	49	52	55	58
Average Market Price Pre-OFNACER entry	46	55	45	48
Official Prices OFNACER	40	45	50	60
C. Maize				
Break-even Price Improved Technology	44	47	50	53
Average Market Price Pre-OFNACER entry	55	57	40	45
Official Prices OFNACER	40	45	50	55

(sources: I.B.R.D., Agricultural Issues Study, p. 199, DSA Production Cost Estimates; and OFNACER and PVO-Supplied Market Information)

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As can be seen in the table above, OFNACER has revised its policy, from being consumer oriented throughout the 1970s to that of serving as a policy instrument for the increase in cereal production in the 1980s. Through the Grain Marketing Development Project, USAID/Upper Volta has been able to have some influence with the Government of Upper Volta and it has supported OFNACER's and the Ministry of Rural Development's policy reform.

While USAID/Upper Volta does not believe that OFNACER should attempt to become a true price support mechanism which would require a significant increase in OFNACER's capacity and increase the financial burden on the state, we do believe that the efforts to offer a remunerative price in surplus potential areas is fully consistent with the GOUV's objectives and an appropriate role for OFNACER.

It must also be acknowledged that the Government of Upper Volta appreciates the complexity of the problem of highly variable supply, and perceives OFNACER as only one tool to address it. The GOUV is also supportive of the development of rural financial institutions, private sector cooperatives to manage village level cereal banks, off-farm employment and rural roads for isolated parts of the country. It is believed therefore that as these innovations develop within the rural milieu, the importance of OFNACER as a producer price support mechanism will decline. In the short-term, however, OFNACER is believed to be a valuable and relatively effective tool for the GOUV's objective of increased cereal production. An indication of its effectiveness is that during the 1981/82 campaign, OFNACER was able to bid up producer prices in the southwest from December through early May. When OFNACER had depleted its financial resources, the private sector price fell by 5-10%. Partially as a result of this intervention, farmers in the southwest increased the area planted to cereals by 5% in 1982. This has permitted increased production in the region and resulted in a situation where emergency food aid is not required even though the northern parts of the country suffered a severe drought which reduced production by approximately 30% this year.

Another area of concern is the effect of OFNACER on the consumer's markets. Given the high costs of maintaining OFNACER's operation and the lack of a GOUV subsidy, for financial reasons OFNACER must maintain a selling price that maximizes its revenues. The result is that in 1981/82 OFNACER charged 83.5 CFA/kg. During the past year OFNACER was only able to sell 16,000 mt (7% market share) and none until August and September, and exported 18,000 mt to neighboring countries in order to generate the revenues for this year's buying activities. The sales potential in 1983 appears much greater given the expected higher prices in the north. The GOUV, however, is very concerned with the alleged lack of effective demand. As a result, OFNACER is currently making grain available to PVOs at full cost for emergency distribution. USAID/Upper Volta believes that if these PVOs are able to target this food aid, the

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market distortions will be minimized while the GOUV will have taken a major step towards its objective of increased food security.

It is our intention to reinforce OFNACER's focus on the production side of the grain market and maintenance of a national security stock while continuing to downplay the consumer price regularization role. Our technical assistance is currently assisting the GOUV in devising a more flexible approach to pricing and marketing for OFNACER and defining more precisely the limits of and/or the criteria for its market interventions.

In contrast to domestic agricultural output markets, the markets for the export of agricultural produce are more subject of price control and state domination through marketing boards or parastatal companies. This is of course true of the cotton monopoly, SOFITEX, which sets farmgate prices and has a legal monopoly on cotton exports. It is also true to a less rigorous extent for oilseeds and sheanuts which are effectively taxed by the Agricultural Product Price Stabilization Fund (CSPPA). The smaller but high-growth potential market for fruit and vegetable exports is also constrained somewhat by the activities of the state-run cooperatives' union (UVOCAM). A change in structure for this particular market is contemplated, but it is further constrained by the limited air freight space available through the UTA-Air Afrique monopolization of Upper Volta air carriers to Europe (i.e. to Paris). This is not the case for livestock exports which are harder to control, particularly for herds which are trekked accross borders in the bush. Livestock exports are taxed, but there is no state marketing agency setting prices or taking an active role in any part of the marketing process.

The effect of controls and inefficient structures on the development of export markets has probably slowed down the expansion of export crops to the detriment of Upper Volta's growth. On the other hand, the cotton company has presided over a twelve-fold expansion of cotton output since 1960 by providing a reliable source of inputs (fertilizers, seeds, chemicals) and a reliable market for the output. Other markets have grown in spite of controls and without additional inputs (e.g. oilseeds, sheanuts, fruits and vegetables). While the GOUV can point to this record of expansion, a more positive set of policies could have led to better performance in export crops. We will request the Department of Studies and Projects of the MRD to undertake analyses of export pricing and marketing in order to indentify the constraints to expansion of export crop production and marketing. These analyses will focus not only on external demand conditions but also constraints to increasing supply such as implicit taxation of export crops and inefficiencies in the marketing structures.

One of the factors limiting expansion of all crops is the structure of agricultural input marketing. In areas where SOFITEX is not providing inputs for cotton farmers, the Regional Development Organizations (ORDs) have been responsible for providing inputs. For many years, sprayers, insecticides and fertilizers were obtained through SOFITEX on credit. Supplies were

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often delivered late and the ORD did not have an effective distribution system, but at least some supplies were available. SOFITEX now refuses to grant credit to the bankrupt ORDs so there are no inputs available in may regions except through donor-financed projects. This USAID considers this to be a major short-coming of the agricultural input marketing system and has made it first priority for policy reform in the direction of private input distribution networks. There are no quantitative measurements of the extent to which limitations on input supply have affected agricultural output, but there is a strong presumption that its effect has been negative.

In addition to the privatization of input supply markets, the pricing of inputs is a priority concern to us and the World Bank. The World Bank is negotiating a phased reduction of subsidies on fertilizer. Through the Seed Multiplication project we have instituted a procedure for setting improved seed prices which takes into account the costs of production and demand for different varieties as determined through the annual seed use survey. As a result of our assistance, the Department of Studies and Projects will analyze or contract for analysis of the effect of input pricing and market structure on efficiency of input use in order to formulate recommendations for the pricing and marketing of agricultural inputs.

One input which interests us particularly due to its use in increasing productivity is animal traction equipment. Currently, the parastatal producers are competing with private producers for this as well as other agricultural implements markets.

We remain interested in research and development work in equipment design and manufacturing, but we are not planning any assistance to the Ministry of Rural Development's production unit at this time in order to support the positions of the World Bank and the Swiss. They have insisted upon good financial management and a financial plan before proceeding with their assistance. We agree wholeheartedly with their position on this vital matter and do not wish to imply by an offer of assistance that the Bank's position is not well-founded.

C. Underlying Causes for the Observed Performance in Agriculture

As the preceding sections indicate, the slow growth in agriculture is primarily due to a set of physical and technological constraints which are expensive to overcome and not to inappropriate pricing and marketing policies or an inappropriate role for the central government. There are a few exceptions to this general principle, but the generalization is a robust one.

The economic incentives for agricultural production improved steadily over the past decade. Both market and official prices for food staples (sorghum, millet and maize) increased faster than either general inflation or the prices of agricultural inputs (fertilizers, improved varieties of seeds and insecticides). Subsidies on inputs grew larger and more credit was made available on easier terms. There has also been a steady increase in the level of foreign-financed investment directed at agriculture. The increasing attractiveness of agricultural activities relative to other activities and the free market for domestic output improved the incentives for the farmer to produce more.

Against this backdrop of improved economic opportunity, why did cereal production (and perhaps overall food production) expand more slowly than population growth? The answer appears to be a combination of the impact of food aid and commercially imported coarse grains, the substitution of preferred commodities (rice, wheat, vegetables, oil) and a shift to roots and tubers, as well as physical and technical constraints to increased cereal production. The physical constraints everywhere are particularly severe except in the southwest. These include inadequate and highly variable rainfall, the high cost of irrigation, poor soils, a high-density population and the high cost of modern technology. Low and variable levels of rainfall increase the difficulty of developing varieties as well as reducing the expected yield potential of traditional varieties. Improved varieties usually are more sensitive to drought conditions whereas traditional varieties do not respond so strongly to good growing conditions. Irrigation would allow better water control and the accompanying use of yield-increasing inputs, but there is relatively little irrigation potential in Upper Volta and it has proven to be very expensive compared to the value of output. Voltan soils have low natural fertility which is further reduced by leaching and erosion when they are cultivated. Fallow periods are not sufficiently long to restore soil fertility in the Central Plateau under traditional rotation systems and due to the high rate of population growth, even with out-migration, these insufficient fallow periods are being further reduced.

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The high cost of modern technology has also been a constraining factor. The World Bank analysis of financial and economic returns to the adoption of available technologies shows profitable returns to increasing output for most crops. However, it appears that raising the net financial and economic return per labor unit is dependent upon favorable natural conditions and proficient farming, i.e. good timing of operations, use of fertilizer, animal traction and manure. The I.B.R.D. analysis of financial and economic returns to adoption of new technologies demonstrates the scope for improvement of productivity is limited.

In summary of the technical constraints, it is apparent that are no "green revolutions" in sight for the farming conditions in Upper Volta. Rather USAID/Upper Volta perceives increased productivity in agriculture to be generated by the increase in productivity per hectare. Such increase in productivity are expected to be brought about through improved concervation practices to improve soil fertility and retain moisture, increased inter-cropping, and the shift towards higher value crops,as well as continued research and development of improved technical packages. Such a strategy is consistent with the World Bank conclusion that we must work towards "long-term changes consisting of incremental improvements in the farming systems and in the agricultural resource base".*

The general economic constraints to development of agriculture in Upper Volta are also severe. They are the classic constraints facing a landlocked agrarian economy, with the additional constraints of a poor physical resource base and emigration of labor to coastal countries which raises the cost of labor. These classic constraints are the higher cost of imported inputs and the lower value of exported outputs due to the overland transportation costs to the sea. Poor internal transportation networks also reduce the net value of output, particularly in the East. The openness of the economy and its small size mean Upper Volta is a price taker for imported and exported goods and has little scope for influencing the price structure. As an example of this, the high demand for meat in the Ivory Coast raises the cost of animal traction teams. To summarize , Upper Volta has a low level of technology, faces severe physical resource constraints, has high factor costs due to the demand for its labor in the Ivory Coast and the cost of imported inputs, and faces low world commodity prices.

In the context of these constraints, we conclude that Voltan agriculture has performed reasonably well. The country still meets almost all its internal demand for food, albeit at poor nutritional levels, in average years and it has successfully promoted the growth of cotton exports. Domestic markets are competitive and unconstrained and, with the exception of food aid sales, government intervention in these markets has encouraged greater production and has not displaced private trade. The GOUV needs to take a critical look at the input supply system and its handling of export crops, with a view towards privatizing these activities. However, the results of liberaliz tion in these areas are not likely to be revolutionary if the I.B.R.D. analysis of returns to new technologies is accurate.

*I.B.R.D., Upper Volta Agricultural Issues Study, p. 11

IV. D. Agricultural Sector Institutions

The basic institutions serving the agricultutal sector are the Ministry of Rural Development (MRD), the Regional Development Organizations (ORDs), the Volta Valley Authotity (AVV), the National Cereals Office (OFNACER), the Voltan Union of Truck Farming Cooperatives (UVOCAM), teh National Agricultural Credit Bank (CNCA) and the Voltan Company for the Development of Textile Fibers (SOFITEX). These institutions are concerned with the agricultural services of extension, marketing, input and credit delivery. In addition to these agricultural support services, there are research institutions concerned with providing the technical content for extension and there are training institutions to educate personnel for the support services. Several institutions are active in more than one agricultural service, so we will discuss institutions service by service.

Extension

The extension service is the principal responsibility of the ORDs. The goal of the extension program is to increase rural productivity through the adoption of improved farming, marketing and management practices. The extension service is charged with the key responsibility of being the effective informational link between the central government research institutions and the farm households.

Historically, the ORDs have had a broad mandate to implement multisectoral, integrated rural development programs. This has resulted in a minimization of true extension functions as the ORDs have concentrated on input and credit delivery, marketing, infrastructure development, health, education and so on.

The GOUV recognized the ORDs had become overextended and did not have the authority to carry out the coordination required by integrated rural development. A GOUV commission appointed in 1979 recommended narrowing the mandate of the ORDs to concentrate on agricultural promotion. This reform has been carried out, divesting the ORDs of responsibility for marketing, functional literacy training and civil works other than water control structures.

The ORDs are staffed at headquarters by technical personnel who provide backstopping to the field personnel. The latter are organized into geographical sectors (typically 4 to 6 per ORD) which are subdivided into from 5 to 7 subsectors which are in turn divided into 6 to 8 extension cells. Supervisory personnel at sector and subsector levels are generally civil servants whilethe extension agents are contractors.

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The ORDs are criticized for poor coordination between their technical and geographic or operational services and for the centralization of all coordination functions in the ORD Director's office. The Commission has proposed delegating authority to Deputy Directors for technical services and for administrative and financial affairs, but the tendency of Directors is to want to retain authority over operations rather than delegate it.

The integration of research results into ORD extension work has also been a weak point. The ties between research station work and the ORDs are too indirect and not enough research has been done in actual farming systems. This situation is beginning to change with efforts like the SAFGRAD project, but the linkages need to be directly addressed to incorporate research results into extension messages.

The problems of the extension service are therefore complex and interrelated. The lack of strong ties between both the research units and extension as well as the Central Government Support programs (conservation, literacy training, etc.) and extension has resulted in the lack of effective or coordinated measures available to the farmer which may be expected to increase production. This lack of effective and coordinated measures is compounded by the low extension agent/population ratio, the failure historically to incorporate farmer agents within the extension system; the allocation of agents' time to non-agricultural issues, and the recruitment of young, educated but relatively inexperienced agents to serve the rural population. The result has been that the extension system has not effectively served the rural population.

Due to this historic problem and the tendency of the donor community to invest in developing geographic regions or ORDs, experience has shown that improvements have been highly localized without linkages to transfer positive results beyond the region. The problem is currently being addressed by the FAO and World Bank efforts which are focusing upon local level research and development, increasing the role of farmer agents, and attempting to increase the dialogue between regional entities.

Marketing

Marketing is dominated by small private traders with the exception of cotton. The divestiture of marketing responsibilities from the ORDs, the transfer of OFNACER from the Ministry of Commerce to the Ministry of Rural Development and the abolition of OFNACER's theoretical monopoly have resulted in a liberal private trade in domestic agricultural output with limited public intervention. We continue to be involved in the refinement of OFNACER's role and marketing strategy as discussed at length above.

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Rice marketing is a special case of an imported grain against which locally produced rice is not competitive. Private importers pay only a part of legal import duties and the Army imports large quantities duty-free, much of which is sold to the public. The GOUV has not seriously attempted to protect its own irrigated production of rice which is marketed by OFNACER and SOVOLCOM (a state-owned retailer) at a loss. Thus the market is principally a liberal market for small quantities of local output and large quantities of imported rice. About 30,000 tons of rice were imported in 1980 primarily for consumption in urban areas. Since Upper Volta has no comparative advantage in rice production, we have no economic objection to the country maintaining a relatively liberal market for rice imports.

Fruit and vegetable marketing is handled by a Union of producers' cooperatives (UVOCAM). It was created as a private commercial entity but it has several civil servants working in its management as well as in the producers' cooperatives. The Ministry of Rural Development has discussed the privatization of UVOCAM, but has not yet taken steps to bring it about.

UVOCAM has expanded the export of green beans to France through attention to quality control prior to export and it has become involved in some processing activities. However, it has not produced financial reports and does not do cost accounting, so it is hard to say what its potential for expanded operations is or how efficiently it operates. It is however clear that its competitive position in the French market is affected by the UTA/Air Afrique freight rates which make up forty per cent of the Paris in-warehouse price. The charter airline charges a third as much as UTA/Air Afrique for its limited cargo space so there is clearly room for competition in this market. The constraints and the potential for private competition in export marketing warrant further analysis by the Ministry of Rural Development in its inquiry into privatization of UVOCAM.

Other marketing institutions are SOFITEX for cotton and the CSPPA for sheanuts. SOFITEX has a monopoly and relies on the world wide network of CFDT to market its cotton. CSPPA requires private sheanut exporters to sell 80 tons of sheanuts to it at a controlled price before they may export any other sheanuts.

While they have trouble enforcing this marketing requirement, it probably raises the costs of marketing for private traders. The GOUV should investigate other arrangements for taxing the incomes of these traders which would promote more efficient marketing of this collected tree crop. CSPPA is also responsible for groundnut exports, but in recent years the domestic market price has been above the official export price, so there have been almost no official exports. There too, the GOUV should study the possibility of privatizing groundnut exports and revising the method for taxing the income of producers and marketers.

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In summary, marketing is no longer a function of the ORDs and only OFNACER and SOVOLCOM are involved in internal markets for grain and some rice. The export markets are dominated by public agencies and parastatal firms. These structures should be carefully studied by the Ministries of Rural Development and Commerce, Industrial Development and Mines, with a view towards increasing private sector participation and the efficiency of export marketing.

Input Supply and Credit Delivery

Once again we must distinguish between the vertically-integrated SOFITEX structure for cotton areas and the ORDs and CNCA for other crops and non-cotton producing areas. SOFITEX imports and delivers insecticides and fertilizers at subsidized prices for its cotton farmers. It then recovers much of the subsidy when it buys back its cotton. For other crops and particularly in other regions, the ORDs are the principal input distributors. Except for the private distribution of chemicals used to protect grain after the harvest (actellic, gammagraine and thioral), the ORD extension agents are responsible for surveying needs by village group, stocking the supplies and distributing them within their zones This includes communicating the farmers'requests for credit from CNCA to finance the purchase of inputs.

The existing system suffers from the usual problem in communicating demand throug a bureaucratic supply system, placing orders with sufficient lead time and making deliveries in a timely manner. These disadvantages may outweigh the advantages of centralizing procurement and the system definitely discourages the development of a private distribution network. There is a clear need for analysis of the existing supply system and experimentation with private distribution in competition with the public network. The tendency on the part of the GOUV to want to keep input prices low so that poor farmers can afford them obviously discourages the development of private trade. Experimentation allowing such trade with no price limitations might yield some interesting results, and it would allow the comparison of regions with and without the private trade alternative.

The World Bank has suggested a more decentralized ORD procurement and supply management structure within the Bougouriba ORD. The rationale for this approach is to take advantage of economies of scale in procurement for a "thin" market. However, they also suggest experimenting in other ORDs with greater reliance on private licensed distributors for distribution from the ORD within the region.

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Credit delivery is closely linked to provision of inputs through the ORDs. The National Agricultural Credit Bank (CNCA) provides a large part of the credit for the marketing campaigns and for inputs. Farmers generally contract loans for purchase of inputs which are then delivered by the ORD agents. The farmer never actually handles cash, but picks out his piece of equipment or type of fertilizer in advance with a ballpark estimate of cost to be specified upon delivery and the ORD agent's explanation of CNCA credit terms. A portion of CNCA financing also goes to SOFITEX which it uses to purchase inputs. SOFITEX then recovers any credit for inputs at the purchase of the crop. The GOUV intends for all agricultural credit eventually to be channelled through CNCA, but there are still other funding sources for ORD credit programs and the Department of Rural Institutions and Credit (DIRC) is responsible for extending loans to village level cereal banks which are similar to village cooperative elevators in the United States.

The rural credit program also suffers from the low real rates of interest it charges in the sense that the incentives for good performance are solely bureaucratic and not economic. Credit funds cannot avoid decapitalizing over time even with good repayment rates. While these policies are not specific to agriculture, the disadvantages are much greater for rural lending. Administrative costs per franc lent tend to be higher on numerous small loans which comprise the institutions' portfolios. Furthermore, there is no possibility of profitable formal financial intermediaries if they are required to abide by a margin of 3% over the preferential discount rate for rural loans.

There may be some scope for private initiative in the Popular Savings Banks movement, but that is highly limited if they become legal financial entities and are required to work within the UMOA framework. For the foreseeable future, credit delivery will remain a heavily subsidized activity relying on fresh infusions of capital from UMOA and from donors who will accept the inevitable decapitalization of their funds and the distortions of the credit market through the state structure.

Research

The research institutions provide the basic raw material for the extension system to communicate to farmers. All research is done under the authority and supervision of the Voltan Institute for Agronomic and Animal Science Research (IVRAZ) of the Ministry of Higher Education and Scientific Research As of 1980 there were 20 different agencies active in research, including the University of Ouagadougou, IRAT, ICRISAT, IITA, Purdue University, Michigan State University (now departed), FAO, UNDP and a number of stations established by the French. The role of expatriate researchers is dominant and is changing only slowly.

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Much has been written about research in the semi-arid tropics. For the purposes of this paper, we would simply point out that the shortcomings of research in Upper Volta have been similar to those elsewhere, i.e. a station-oriented approach which is being modified to do on-farm trials and farming systems research. This is important in the highly constrained Voltan agriculture because of the need to take many factors into account before feasible productivity-enhancing modifications can be developed.

Second, the results of the farming systems research and on-farm trials must be communicated more effectively to and through the extension system. Finally, and most important, given the difficulty of the research tasks and the modest resources Upper Volta can contribute to its research agenda, external resources must be committed for the long-term if a research effort is to be sustained.

Training

There are several institutions involved in training personnel for the Ministry of Rural Development and the private sector. The University of Ouagadougou trains agricultural scientists ("Ingenieurs Agronomes") at a rate of about 20 a year. Approximately 15 more agricultural scientists return from abroad each year. The Matourkou Agricultural Training School trains all the rest of the civil service personnel at a lower level and there are specialized schools in forestry and animal husbandry for students who complete the two-year core curriculum at Matourkou.The field level extension worker is now trained exclusively at his ORD. He is not a civil servant and the level of training offered varies greatly from one ORD to another.

The Government of Upper Volta also has an active young farmer training program in 600 functioning centers throughout the country. This program in vocational agriculture is designed to encourage rural youth to pursue farming as a livelihood using the most productive resources available. The program is also supported by the training of trainers for these centers and a post-graduate association of young farmers. The Department of Rural Institutions and Credit is responsible for offering classes on functional literacy as well as management, accounting and marketing. Finally, the National Center for re-training of Rural Artisans (CNPAR) is attempting to upgrade rural artisan skills with a view towards producing and/or adapting improved farm equipment.

This section completes our brief description of agricultural institutions and some of the weaknesses of institutions within the sector. The next section will discuss several alternative approaches to assisting development of agriculture and the concluding section will describe our rationale for the selection of a specific approach, our prioritization of policy reform issues and the linkages between our proposed investment and the improvement of productivity in agriculture.

V. OPTIONS FOR IMPROVING PRODUCTIVITY IN AGRICULTURE

The decision to streamline and strengthen the central government's management and policy-making capacity and the delivery of essential agricultural services was taken after consideration of reasonable alternatives and careful study of the reasoning and conclusions of two major studies of the Upper Voltan agricultural sector. Some of the findings of these studies are incorporated in the discussions above of the policy setting and the evolution of Voltan agriculture over the past two decades. The alternatives to be discussed in this section are direct investment in rural private enterprise and farming, investment through the ORDs, and investment in central management, policy-making, research and essential services.

A. Direct Private Investment

Over the past few years, a number of donors have attempted to place investment funds in the hands of local entrepreneurs. The basic problem which seriously constrains this type of activity is the lack of rural financial intermediaries. The United States, through the Entente Fund, and the I.B.R.D. have both made special lines of credit available for rural enterprises through the National Development Bank (BND). Very little of either line of credit was utilized. This inactivity prompted the U.S. to channel these lines of credit to other Development Banks where loans were being made such as the Ivory Coast. As a result of this experience, the I.B.R.D. is undertaking a study of the financial sector with the objective of finding mechanisms for improving rural financial intermediation.

To these conspicuous failures we added our reservations about providing credit on a subsidized basis. Given the small margin allowed the banks, including the National Agricultural Credit Bank (CNCA), and the high unit costs associated with making many small loans, an implicit subsidy would have been unavoidable in any public rural lending program. The subsidy is generally financed through the decapitalization of credit funds. Thus, unless we were willing to work through a financial system which itself is not structured along sound financial principles, we could not invest directly in rural private enterprise.

Even if we had decided to accept the undesirable implicit subsidy as an unavoidable cost of doing business in the CFA franc zone, we still faced the weak, poorly articulated financial sector with its built-in incentive not to expand rural credit aggressively. In one of our most successful PVO projects, Partnership for Productivity (PFP) has aggressively sought out loan possibilities, given management advice to small businesses and has developed a good small loan portfolio. Yet, at the price it may charge for its services, i.e. the 10% interest charge on its loans, it will be difficult to interest private entrepreneurs in taking over the business.

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Clearly, the incentives for PFP employees to do a good job are not related to the financial return on the loan portfolio. Nor are there strong financial incentives for the CNCA to seek out rural loan possibilities and act as investment bankers. Instead, CNCA must rely on other incentives such as career advancement for state employees who perform well. These incentives are not negligible in their effect on performance, but the scope for expansion of credit relying on such incentives is limited in comparison to direct financial incentives.

Without a dynamic financial institution to work through and given the problems outlined above, we have concluded that we are not in a position at this time to promote rural investment on a large scale. Rather our policy is to continue to engage in an active dialogue with the GOUV and the donor community in order to promote the adoption of sound financial principles which will permit viable revolving credit funds. This process of policy dialogue will be accompanied by a small (less than $1,000,000) capitalization of a revolving credit fund which is to be managed by the Department of Rural Institutions and Credit for lending to Village Cooperatives for the development of local level cereal banks. A condition precedent to the release of monies to this credit fund will be that the DIRC determine an effective interest rate (i.e. through straight interest and/or interest plus service charges) which will prevent the fund from decapitalizing.

As discussed above, the Government of Upper Volta fully appreciates that the lack of liquidity in rural areas is a major constraint to agricultural development. In addition, the GOUV perceives that one instrument to encourage rural savings and capital mobilization is the "Caisse Populaire" or Village level Savings and Credit Union. While the support of such institutions is extremely attractive conceptually to USAID/Upper Volta, there are currently too many uncertainties regarding the legal status of these institutions for this support to be included in the Agricultural Development Support Project. We will continue to discuss the prospects for village level financial institutions with the GOUV, and should the legal and financial considerations permit, a project supporting this endeavor will be developed at a later date.

A final approach being pursued by the GOUV is to strengthen the National Agricultural Credit Bank (CNCA) which has the major responsibility for managing credit to the rural private sector now and in the foreseeable future. Given uncertainties regarding the ability to satisfactorily achieve basic policy reforms and the current intervention levels by other donors, we believe intervention at this time is not feasible. We will continue to play an active role in the policy discussions, however, and should appropriate policy reforms be forthcoming, we will re-consider the provision of a line of credit as well as assist the GOUV to minimize lending costs through the improvement of recovery rates, computerization and the improvement of the selection criteria to constitute the best possible loan portfolio.

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In summary,we have concluded that increases in direct private investment levels is a necessary but not sufficient condition to assure increases in rural productivity. We have expressed our concerns in this area to the GOUV, and are currently engaged in policy dialogue with both the GOUV and the donor community. While we remain optimistic that appropriate reforms and clarifications which would permit a more active participation will be forthcoming, we acknowledge the fact that such dialogue will require a lengthy germination period and that in the short-term direct investment in addition to the DIRC - Cereal Bank credit fund is neither feasible nor the best allocation of resources.

B. Investment through Regional Development Organizations

The ORDs are supposed to be financially autonomous, but as a group they are deeply in debt, their decision-making autonomy has been questioned by the Ministry and, except in the West and Southwest they have not been particularly successful at extending new techniques and increasing productivity. To be fair, new techniques have just not been available for the low ra fall areas of the Center, North and East. Lacking cash crops and credible technical advice for farmers, even well-managed ORDs would have been hard-pressed not to go into debt to their suppliers.

As was discussed in the section on Extension, the ORD structure is charged with the essential responsibility of being an effective informational link between the Central Government/Research Institutions and the farm households. Historically the ORDs have had a broad mandate to implement multi-sectoral, integrated rural development projects. Such efforts involved several other ministries which often were unable or unwilling to allocate sufficient resources. This has often resulted in a situation here the ORDs are obliged to attempt to coordinate the programs of other ministries with neither the resources nor the legal authority to do so. The ORDs'mandate has been narrowed recently to that of an agricultural focus. Such a focus is in keeping with USAID/Upper Volta's goal of increased agricultural production leading to nutritional self-reliance.

It is believed, however, that a change of focus by itself will not permit the ORDs to become a truly effective extension service. As was discussed earlier, the problems of the ORDs are exceedingly complex and include the lack of both systematic linkages to the Central Government Services/Research Institution findings and the ability to effectively transmit available information to the rural population. The ORDs'effectiveness has been further diminished by the tendency of donors to concentrate their development efforts within the confines of a geographic region. This tendency,compounded by the infrequent information sharing sessions among donors and the lack of central government monitoring and evaluation capabilities,has historically resulted in the situation where the GOUV and the donors have spent an unacceptably high level of funds reinventing various wheels, including more than a few with defective axles.

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The general, albeit over-simplified, investment pattern within the ORD structure is that those donors which provide soft-loan financing (the World Bank, IFAD, and the French Caisse Centrale) generally locate in those areas which have the greatest potential return to investment (the ORDs of Volta Noire, Hauts Bassins, Comoe, Central West and East) while those donors that provide grant financing (the Dutch, Italians, Germans and USAID) are currently concentrating their activities in the ORDs of the Center, Central East, Central North and Yatenga. We believe that such a geographic distribution by funding type is an appropriate allocation of resources.

While it would be conceivable for us to assist in developing a relatively neglected ORD such as the Sahel, Yatenga or the Center, we believe that both the economic rate of return and USAID's comparative advantage are greater by strengthening the Central Ministry. As has been discussed on numerous occasions, our judgement in this context is that investment in central services, policy planning and management will have an additional impact on investment in all the regions which could not be equalled by a comparable amount of region-specific investments. For the GOUV to maximize the return to available resources it must develop and strengthen the Ministry level planning&management capabilities. Such an investment is expected to complement the investment of other donors in geographic regions by facilitating the flow of information in order that resources may be allocated more appropriately and effectively.

This is not to imply that we will not be concerned with regional development activities, only that our activities will be channeled through the Central Government. Due to the relatively greater financial resources available to the people of the Southwest, it is clear that in order to achieve national level programs relatively greater field level attention must be given to those regions which have historically not benefitted to the same degree. Therefore, for example, relatively greater attention will be given to the Mossi Plateau in the areas of conservation, farming systems research, literacy training, and local level food security in order that these relatively neglected areas may benefit from comparable albeit smaller programs than other regions. This will facilitate the unification of programs into national level strategies and policies which are well planned and well managed.

In summary, we believe that the ORD structure must be strengthened in order to assure an effective information flow between the Central Government/Research Institutions and the farm household. As was discussed in the section on Extension the principal constraints which diminish this information flow are the weak links between the ORD and the rural household. Given the FAO - World Bank efforts to strengthen the ORD/household link and the funding levels for those ORDs which have the greatest potential return to investment, we believe that while financing a currently under-supported ORD is a plausible option, based on our past experience it does not offer the greatest return to investment at this time. Finally, it must be acknowledged that suchastrategy does not preclude field-level activities in relatively under-supported areas which must indeed be strengthened in order to permit the development of national level planning and management.

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C. Investment in Central Services, Policy Planning and Management

The third investment alternative to be considered is reinforcement of selected central services and overall capacity to manage projects in the agricultural sector. This approach would be carried out through the Central Ministry of Rural Development, which is responsible for providing technical support for the ORDs and policy guidance. The departments ("directions") which provide supporting services or participate in extension are the Department of Agricultural Services (DSA), the Department of Livestock Services, the Department of Rural Institutions and Credit (DIRC) and the Department of Young Farmer Training Services (DSFJA). There are two other departments, the Department of Hydraulics and Rural Equipment (HER) primarily concerned with well-drilling and the Department of Studies and Projects (DEP) concerned with the coordination of data collection, policy analysis and project evaluation. The Ministry also has a department for financial management oversight of projects and parastatal operations ("Direction du Controle de Gestion des Organismes et Projets") (DCG), and exercises management oversight responsibilities through the office of the Secretary General for the ORDs, A.V.V., OFNACER, the Rural Development Fund (FDR), FAAC, and the Development Fund.

Although the Ministry is responsible for providing policy guidance and formulating policy proposals, the Department of Studies and Projects (DEP) is one of the newest and weakest departments in the Ministry. Its budget is less than one per cent of the Ministry budget. Equally small and ineffective is the DCG with fewer staff and resources than the DEP.

Thus financial monitoring of projects is almost entirely the defacto responsibility of the financing agencies. The department of Administrative and Financial Affairs (DAAF) does, however, administer the Ministry's operating budget which is set forth by department in the table below.

Table 12

Ministry of Rural Development

1983 operating budget
(millions of CFAF)

Department	Personnel	Material*	Total	%
Minister's Cabinet	44.5	3.0	47.5	1.7
Secretary of State's Cabinet	8.7	3.0	11.7	0.4
Secretary General	468.8	3.0	471.8	16.3
Technical Inspection	11.2	2.0	13.2	0.5
D.E.P.	20.5	2.6	23.1	0.8
D.C.G.	16.6	2.5	19.1	0.7
D.I.R.C.	39.2	1.9	41.1	1.4
D.S.A.	353.1	12.5	365.6	12.6
H.E.R.	176.5	15.0	191.5	6.6
D.S.F.J.A.	1040.0	15.3	1055.3	36.5
Livestock Service	504.5	20.0	524.5	18.1
D.A.A.F.	56.9	2.0	58.9	2.0
General Operating Costs	18.1	50.6	68.7	2.4
TOTALS	2758.8	133.4	2892.2	100.0

*The Ministry also receives a share of the "common expenditures" of the GOUV which covers rental, telephone, telex, utilities and some transportation. The total common expenditures for the GOUVare 4.7 billion CFA. The Ministry's share is probably about 360 million CFA or about the same as its share in the GOUV personnel budget. Addition of this share greatly increases its material budget but probably does not alter the relative importance of different departments.

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The most important departments by budget allocations are Young Farmers' Training, Livestock Service, the Secretary General's Office and Rural Hydraulics and Equipment. The majority of extension agents are paid through Young Farmers' Training. This is an administrative arrangement which makes DSFJA appear more important than it really is. The livestock service is an important service occupied with animal health care delivery. The Secretary General's Office manages the contributions to the eleven ORD budgets, the A.V.V. and several other projects. DSA and HER provide specific services in the field. DIRC is far smaller than these other departments, but is responsible for training and recycling of community development agents as well as training of village groups and developmental credit activities.

It is within and through these central departments that the third investment alternative would be implemented. The principal constraints to agricultural development were identified in both the DAI and IBRD studies as the absence of appropriate technological packages for semi-arid rainfed farming, a weak extension service, poor and degrading soils, competitive domestic markets which might function even more efficiently with better infrastructure and communications, inadequate technical support, financial control and coordination of regional development activities in extension, research and programming of investments, and inadequate resources devoted to operational expenditures on administration, research and extension. Given the complex and interrelated constraints, a central investment priority is the continued research and development of incremental improvements of current farming systems.

As improvements to the existing farming systems are developed, there is a need for a good extension service which makes good use of all the communications methods available to it. In an illiterate society this is principally face-to-face oral communication. This is a second area of investment which must be carried out through national technical back-stopping or support to ORD-specific programs.

The poor, degrading soil structure is of primary concern in lower rainfall areas, but migration to the southwest is advancing the time this will become a major concern in that favored region as well. The National Soil Service has begun some modest efforts in the Northern department and within the A.V.V. regions. Combined with poor water management and deforestation, the problem of maintaining productive capacity on the Mossi Plateau is increasingly difficult. Soil and water management is consequently a priority area for improvement in the delivery of services to assist in the design of water retention and anti-erosion structures and to assure follow-up to correct any deficiencies.

The inadequacy of infrastructure and communications is often cited as a constraint to all development activities. Its influence on transportation costs and information flow also affects the integration of markets which signal effective demand and supply through price differences. The high cost of transportation may limit spatial integration of markets and poor information availability can also prevent markets from adjusting. Beyond markets, poor

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roads and communications may isolate producers and inhibit the development of markets as is clearly the case in the Eastern region. Investments in roads and communication networks are clearly indicated for long-term development of national agricultural markets.

The inadequacy of technical support, financial control and coordination through the Ministry of Rural Development is identified by both the World Bank and D.A.I. as a major constraint to productive investment in agriculture. The Ministry has not and is not now providing guidance to the ORDs with regard to development planning and budgeting, nor is it coordinating donor activities among the ORDs. In short, the Ministry should be setting national priorities for the different ecological zones and planning resource use to achieve objectives in each zone.

Our own experience in the Eastern region is instructive in this regard. We observed several successful campaigns to promote new crops for the region, rice and soy beans. Farmers produced large quantities on the basis of promises of government marketing interventions when the crops came in. In neither case did this materialize and local markets could only absorb a small part of the increased output. With clear national policies and planning the Eastern ORD would not have been encouraged to embark on such adventures and farmers would not have produced unmarketable crops. The lack of technical backstopping was similarly apparent in all types of activities from the management of water impoundments to the absence of soil analysis and differentiated advice on ferilizer use. This compromised the potential value of numerous investments including the return on inputs which farmers purchased on credit from the ORD. These types of problems which we encountered in implementing projects caused us to consider remedying the central support problems before engaging in new regional projects.

The Ministry should also be providing technical guidance to the ORDs and supporting training of extension services. Better planning would indicate where the Ministry's resources should be concentrated to achieve the best results, not only by region but also by crop or other farming activity. The most important role which the Ministry has neglected is policy review, analysis and reform. While the policy framework is not as anti-economic as it is elsewhere in Africa, it is expected that as more and better information is analyzed, the MRD will be better able to direct its policies in a truly positive fashion and defend existing good policies against the policy proposals of other interest groups.

Another area of concern is the financial monitoring of project funds which has historically been weak. While this weakness has attracted the attention of the donors, particularly USAID, it has also become an important management issue for the GOUV which is attempting to maximize the return to available financial resources. Improvement of financial monitoring skills among GOUV project managers would improve the use of project funds and give the project a better chance to stay on schedule, avoid funding interruptions and thereby meet its objectives.

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The final general constraint which is related to the need for better policy, is the shortage of operating expenditures for administration, research and extension. This is related to policy because the GOUV must decide what role to play in agriculture and what activities to reallocate to the private sector. As an example, involvement of the DSA and the ORDs in the input marketing area could be greatly reduced thus freeing up resources for other activities. Similarly, subsidies on inputs could be reduced, also freeing up resources for more productive uses. However, the general problem is beyond the means of Upper Volta alone to resolve even with much improved policies and management.

In particular with respect to operational expenditures for research, the operating funds constitute part of the investment in the country's future production capacity. A similar argument can be made for the cost of extending new techniques. This recurrent expenditure is really part of the investment being made in agriculture. This is also true of administrative costs of development. An investment in recurrent operating costs would be made with the clear intention of getting out of the business once the productive potential is realized, as with any other investment. The GOUV should be in a position to capture a portion of the increasing rural revenues and eventually to fully support, along with the beneficiaries , the maintenance of any structures necessary to continuing production at the new higher level.

Investment at the central level is considered as a means to improving the policy framework and the technical support and policy guidance at the regional or project level. It is part of the recognition that in the Voltan context, the problems of agricultural development are not amenable to quick technological or even policy fixes so that resources must be allocated to achieve steady, long-term progress in agriculture. It is the absence of a clear capacity to make the resource allocation decisions that strengthening central services, policy planning and management is meant to remedy.

VI. USAID AGRICULTURAL DEVELOPMENT SUPPORT STRATEGY

The economic situation and policy setting described above are part of the environment which shape our strategy for development assistance in Upper Volta. The strategy and its rationale are described fully in the FY 85 CDSS. They are summarized briefly in Section VI.E below so the reader will understand the relative importance of the agricultural development support strategy within the overall program strategy.

A. Selection of the Option to Strengthen the Ministry of Rural Development

The preceding section set forth three options for investment in agriculture: direct investment in farming and rural enterprise through rural financial intermediaries, agricultural or rural development projects implemented through the ORDs and strengthening of central services and management through the Ministry of Rural Development.

Section V.A noted the limited activity of rural financial intermediaries and the difficulty of institutionalizing rural credit programs given the current restrictions on interest rates and margins.The problem of decapitalization of credit funds could be resolved technically if the GOUV agreed to replenish these funds, i.e. subsidize its rural credit program. However, this would not resolve the problem of allocating credit to its most productive uses which would remain an administrative exercise. Neither would it restore institutional incentives to expand the lending program, institute rural savings programs or act more as an investment banker in following up problems with its clients. While we believe that there is the potential for rural financial intermediation in the years to come, the current Voltan policy and the intervention levels of the French and European Economic Community significantly constrain the potential impact of USAID/ Upper Volta at this time. We will continue to monitor rural financial developments with the perspective of a possible intervention through either the public (CNCA) or private (Credit and Savings Union) sectors should the political and financial situation offer sufficient possibilities.

Section V.B discusses regional specific project activities and the ORD structure. According to our assessment, the ORDs' relative ineffectiveness is the result of weak linkages between both the Central Government/Research Institutions and the ORD as well as the weak linkages between the ORD and the rural household. Given the FAO/World Bank efforts to revitalize the ORD structure and improve the linkages to the rural household, we believe that the most serious constraint for USAID/Upper Volta to address at this time is the linkage/support services between the Central Government/Research Institutions and the ORDs. The reinforcement of these linkages is critical in order that the ORD agents will have access to and may transmit incremental improvements in the technical package (e.g. conservation practices, intercropping, shift of cropping mixtures, improved inputs etc..)

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It is also believed that those donors which provide loan financing have nearly saturated those ORDs which have the highest potential return to investment. In particular with respect to the southwest, the DAI assessment concluded "donor financing for the South (meaning the southwest) will not be a constraint. Thus the allocation of AID resources to this area would not have as large a net impact on Voltaic development as if they were spent in other ways".*

While there are other ORDs in the geographic region of the Mossi Plateau which are underfinanced, it is believed that the multiplier effect associated with support to the Centtal Ministry yields a greater return to to investment than direct investment to the ORD structure in the lower return areas of the Mossi Plateau.

The third alternative, strengthening central services, policy planning and management, is the one which our experience and analysis pointed to as critical to Voltan agriculture. It is also fraught with the risks of encouraging unproductive expansion of government and it is the least directly linked to production increases. It is nonetheless, given all the other activities underway in the sector, the most attractive investment opportunity in agriculture. On this point the DAI assessment states: "evaluations of ORD programs and projects have consistently found that the support provided by national institutions is inadequate. The effectiveness of these institutions constitutes a serious bottleneck to increased production; conversely, investments that made them more effective could be expected to have a beneficial impact on beneficial impact on ORD Programs throughout the country.
Along the same lines the World Bank Agricultural Issues Study states: "The most fundamental reforms which are recommended in the sector, however, involve strengthening institutions and planning capabilities at the center of government where technical and managerial skills are insufficient to provide the needed direction to the regional organizations. Therefore, a strong case can be made for donors to adopt a more programmatic approach to lending as well, which would provide a coherent framework for reforms with national, not just regional, applicability in the areas of price policy, reorientation o research and extension, marketing, and financial management. B strengthening the Ministry of Rural Development's capabilities of coordination and technical oversight, such lending would provide both the leverage and the administrative means necessary to link research and extension and to effect sector-wide policy changes which cannot be implemented through project loans alone". ***

* D.A.I. Agricultural Sector Assistance Strategy for Upper Volta, March 1982, p. 197

** Ibid, p. 196

*** I.B.R.D., Upper Volta Agricultural Issues Study, October 1982, p. 21

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To implement these recommendations the World Bank and USAID have been negotiating the type of support to selected central departments and services which would remedy the absence of policy guidance, the lack of technical direction and coordination of activities for the ORDs. The projects under design are attempting to minimize expansion of necessary services, provide support for operating expenditures to render existing personnel more effective and define a more appropriate role for government in order to concentrate on its priority tasks: policy making, direction of national research and extension programs and financial oversight of public investment.

B. Prioritization of Policy Reform Issues

In our presentation of the policy setting, and in part in our discussion of agricultural institutions, we have identified several areas where efficiency of resource use could be improved by greater reliance on private enterprise or closer approximation of market prices. In this section we will discuss the relative importance attached to reform in these areas and the likelihood of achieving such reforms. The areas in which there are economic gains to be made through reform are price setting and marketing of inputs, credit and exported outputs.

As we have argued in previous sections, pricing and marketing of goods produced for the national market cannot be improved upon except by measures such as investment in infrastructure and improved market information dissemination. There is no significant policy reform question in this area except for the refinement of OFNACER's intervention strategy. OFNACER's role continues to be limited to competition with private sector buyers in order to buoy up producer prices in surplus areas. The activity entails minimal market intervention, i.e. 10-15% of marketed coarse grains. Furthermore, consumer prices are set to cover expected intra-annual grain manipulation costs and OFNACER has consciously sought to avoid depressing consumer prices by exporting surplus stocks or selling grain to PVOs for targetted local distribution. Our continuing project with OFNACER has significantly improved its financial management and has begun to improve its capacity to develop and analyze market information in order to improve its marketing strategy.

Two areas in which there are obvious and persistent market distortions are air freight service to Europe (i.e. Paris) and credit allocation. We will continue to discuss these constraints with GOUV officials in our general discussions about policy, however, we recognize we will have virtually no influence in air freight service and that our influence in credit allocation is constrained by other donors' interventions.

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Air freight service affects the export of fruit and vegetables to France. There are no other links from Ouagadougou to Europe than the three commercial flights per week offered by U.T.A. and Air Afrique and an occasional freight - only flight. Upper Volta pays higher rates per kilogram to ship its produce than the Ivory Coast and there are problems in ensuring space will be available regularly. This bottleneck to increasing fruit and vegetable export to Europe will persist as long as there are no other major airlines serving Ouagadougou.

Historically, credit policies have not been set in Upper Volta, but rather by the West African Monetary Union (UMOA). UMOA reduced the discount rates of the Central Bank of West African States (B.C.E.A.O.) on April 1, 1983 from 12.5% to 10.5% for its regular discount rate and from 10% to 8% for its preferential discount rate. Banks operating within UMOA are allowed to add a margin of 0 to 5% to loans on regularly discounted funds and 1 to 3% may be added to preferentially discounted funds.

All banking commissions and fees must be included within the allowable margins. Rural development loans to land-locked countries are funded at the preferential discount rate, so the maximum allowable interest rate for rural loans in Upper Volta is 11%. This rate does not approximate market rates, so the credit committee of CNCA cannot rely upon the market to ration credit demand. They must instead be very astute at judging the most productive use of credit and allocate it accordingly. In fact, the process is somewhat haphazard and it is most likely that credit is not used optimally. Also, the small margin allowed the CNCA does not encourage expansion of its activities or greater risk-taking. Instead, fresh infusions of external capital are required to keep its loan portfolio from declining.

We are encouraged that the MRD has begun to concern itself with the decapitalization of credit funds and is open to the possibility of introducing real interest rates which will cover the cost of inflation plus administration. We are not yet certain, however, that the MRD position will prevail within the GOUV which tends to discount our argument that higher rates of interest would encourage a more optimal use of credit and could stimulate development of private financial intermediaries. In any case, Upper Volta is not prepared to establish its own currency and forego the benefits of the CFA franc. Given the preponderant roles of France, the Ivory Coast and Senegal in UMOA, we do not expect to influence UMOA policies from Ouagadougou. However, we are continuing our discussions with the MRD and other donors about establishing independently determined rates for lending by the CNCA and the DIRC.

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The two economic policy areas which Upper Volta has some control over and upon which we intend to exert influence through the Agricultural Development Support Project are pricing and marketing of inputs and, to a lesser extent, pricing and marketing of exported outputs. Our highest priority area for reform is the pricing and marketing of agricultural inputs, which we intend to pursue in two ways. First, by not becoming involved at this time in assistance to the Ministry of Rural Development's animal traction equipment producer, we are supporting the position of the World Bank and the Swiss as described in Section IV above. Second, through our support to strengthen the analytical capacity of the Department of Studies and Projects within the MRD, we will support the Department's efforts to investigate the economics of input supply and formulate appropriate policy recommendations. Our second priority area is the pricing and marketing of export crops which we also intend to influence indirectly thriugh development of the Ministry of Rural Development's analytical capacity.

With respect to our top priority, our own experience with input marketing (seeds, animal traction equipment and fertilizers) and the I.B.R.D.'s economic analysis lead to two similar conclusions. First the tendency to subsidize inputs has sometimes resulted in uneconomic uses of the inputs and has not encouraged efficient use of scarce inputs. Second, the public agencies charged with distribution of inputs have functioned inefficiently resulting in unmet demand for inputs and no alternative sources of supply. This second observation does not apply to cotton-farming areas which are covered very well by SOFITEX. SOFITEX recovers most of the subsidy through its low purchase prices for cotton. No similar structure exists for other crops, nor should any be created. Rather, to increase the efficiency of input use and improve the availability of inputs in non-cotton farming areas and for other crops in cotton areas, input subsidies should be gradually reduced and private trade in inputs should be encouraged.

The World Bank is negotiating a phased reduction of fertilizer subsidies over a five year period and has recommended greater use of private licensed traders in the distribution system. We believe there are significant gains to be made in extending price reform and marketing structure reform to other inputs. We have already undertaken this process with respect to improved variety seeds under the Foundation Seed Project. Thus far we have succeeded in promoting the adoption of a process for setting seed prices which takes into account costs of production and marketing as well as the results of the annual seed use survey to determine demand.

Significant gains are also highly feasible with respect to animal traction equipment, farm implements and carts of various sizes. The four producers, two public and two private, have failed to meet demand for the past three years and yet they function below capacity. They blame input supply problems, including long lead times for raw materials. The unmet demand indicates prices may be generally too low. An increase in prices would encourage producers to carry larger inventories of raw materials and finished products without choking off demand. A more fully developed analysis of the supply conditions for this particular set of inputs would clearly be useful in recommending appropriate pricing and marketing policies.

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With respect to insecticides, we are not prepared to advocate private distribution networks at this time given the serious health hazards and the general ignorance of proper precautions for use among the illiterate farming population. We expect use of these dangerous chemicals to remain mostly limited to cotton farming and/or to be applied by trained Ministry of Rural Development personnel in fighting specific types of insect infestations.

Our second priority for policy reform is the pricing and marketing of export crops. While Upper Volta cannot affect world market prices for its exports, it does have some control over the marketing structures for its exports and, through its marketing policies the GOUV can affect both the farm-gate prices of export crops and farmers' planting decisions. The case for removing the market distortions which now exist for cotton, sheanuts and oilseed export is not easily made since the profits of the marketing boards are returned to the rural sector through input subsidies, support for the ORDs and rural investments. However, these distortions discourage private marketing and thereby reduce the efficiency of the market. Against this consideration, the marketing boards provide an easily administered source of rural taxation and a system to reduce fluctuations in export earnings. Thus our second priority is to develop the capacity in the Ministry of Rural Development to commission the needed policy studies, interpret the findings and formulate policy alternatives for GOUV decision-makers.

Once in place, the policy review and formulation capacity can be applied to all the policy issues which arise in agriculture. Currently the Ministry of Rural Development does not have the capacity to analyze policy issues, to determine the appropriate role for the private sector in agriculture and to make informed judgements about price and subsidy policies, marketing policies, interest rates and the optimal use of public sector resources. Without being directly involved in the promotion of export crops, we can most effectively influence policy-making by improvement of policy analysis capacity in the Ministry of Rural Development. It is through our assistance in developing this capacity that we may expect to influence the policy-making process in the direction of economic rationality, just as we have done at the National Seed Service and within OFNACER.

In summary, there are several areas where policy reform would be clearly beneficial, but over which we cannot expect to exercise significant influence. The most notable examples of this are the air freight monopoly and the financial structure and credit policies. There are several other areas where

These are the pricing and marketing of agricultural inputs and of export crops. Both of these priority reform areas require redefinition of the roles of public and parastatal entities active in marketing to encourage competition within the market structure. We suggest above a direct influence on farm implement pricing and marketing through our discussions pursuant to the development of the Agricultural Development Support project and an indirect influence on other policy areas through development of the policy analysis capability at the Ministry of Rural Development.

C. Expected Project Impact on Policy Reform

USAID/Upper Volta has had excellent working relationships with several agricultural sector institutions over the past few years and has been influential in the adoption of policy reforms mentioned earlier, e.g. improved variety seed pricing, transfer of OFNACER to the Ministry of Rural Development in 1978 and the subsequent raising of official farm-gate prices and OFNACER's operating margin. We are a relatively important donor in rural development and we tend to find ourselves in agreement with policy positions adopted by the Dutch and the World Bank and sometimes, but not always, the European Development Fund, the French and the Germans. We believe we can continue to exert a positive influence on agricultural policies, but we cannot expect to bring about increased liberalization in either input marketing or export crop marketing without a long-term commitment to technical assistance and training programs. With a long-term approach, we can reasonably expect to see liberalization of the input distribution network within the time frame of this project and the phase-out of most subsidies. We can also expect to raise the policy issues surrounding both input supply and export crop promotion within the Ministry of Rural Development, but we are unlikely to make serious progress towards the proposal of alternative policies for export crops until the analytical capacity has been put into place by the end of the first phase. The prevalence of marketing boards throughout Africa, including capitalist success stories like the Ivory Coast, means alternative policies and/or better pricing policies for the marketing boards must be well conceived and cogently argued to be accepted.

The project is thus likely to foster some liberalization of input supply markets and to put into place the analytical capacity to propose alternatives to the current pricing and marketing structure for export crops. Further progress on these important policy issues will be part of our long-term continuing assistance to the agricultural sector.

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Perhaps the most important impact will be the improvement of the Ministry's ability to analyze the impact of all policies which constitute constraints to the development of agriculture, including issues such as rural financial intermediation and air freight pricing. We believe the most effective means of achieving sustained positive policy reforms is for the host country to have the capability to analyze its problems, consider alternative solutions and develop its own strategy for making the best use of available resources.

By strengthening the Ministry of Rural Development in this way, it should then be in a better position to present its arguments for policy reform based on systematic analysis of the issues. The impact of this type of change is much harder to foresee accurately, but it has potentially the largest impact of all.

D. Linkages Between the Mission Level Goal of Nutritional Self-Reliance, the Project Goal of Agricultural Production, and the Proposed Investment within the Ministry of Rural Development

As has been discussed above, USAID/Upper Volta does not envision major or dramatic increases in agricultural productivity over the short run. Given the existing physical, capital, and human resource base, the development strategy must be long-term, permitting gradual increases in capital with the increase in absorptive capacity, incremental increases in the quality of human resources, and efforts to minimize the degradation of the physical resource base. To achieve long-term increases in rural productivity, there is a need for stronger institutions to better understand the basic constraints and develop appropriate policies for the sector, to guide the national research program and to strengthen its linkages with extension and to improve the management of public resources through improved planning of investment allocation and coordination of donor and GOUV-financed activities.

In previous sections we have summarized in relative detail Upper Volta's economic and policy setting, the agricultural sector, the options for improving productivity in agriculture, and the rationale employed for the selection of certain activities within the Agricultural Development Support (ADS) project. Within this section, we will examine the linkages between the Mission goal of nutritional self-reliance, the project goal of increased agricultural productivity, and the specific project investments in order to permit the reader to better understand our concerns and methodology.

1. The Mission Level Goal - Nutritional Self-Reliance

The current Mission level goal of nutritional self-reliance is significantly different from the previous goal of food self-sufficiency in two important ways.

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First, by considering nutrition rather than food as the objective, we have substantially upgraded the qualitative dimension of our goal. In the past, food has too often been viewed simply as cereals, and most generally as the coarse grainsof sorghum and millet. We are now concerned with a much wider commodity mix to ensure adequate availabilities of not only carbohydrates but also proteins, fats, and vitamins. Secondly, by the term self-reliance we hav explicitly recognized the important role of trade and buffer stocks. The term self-reliance is synonymous with the original meaning in the literature of the term self-sufficiency. Unfortunately, the term self-sufficiency has been more narrowly interpreted in many quarters as the domestic production in a given year equal to domestic consumption. Such a concept simply does not represent the dynamic quality of reality, and if strictly adhered to may be expected to result in the misallocation of resources such as protectionist import substitution schemes in settings where there is no comparative advantage to domestic production.

2. Project Goal-Increased Agricultural Productivity

The goal of the project is increased agricultural productivity. Achievement of this goal will contribute to the wider mission goal in two ways. First, to the extent that food crop and livestock productivity is increased, a greater supply of food is potentially available domestically. Secondly, to the extent that there is growth in commercial agriculture (including marketed food crops and livestock as well as non-food commodities), producers will have greater disposable incomes to increase the demand for nutritious foods which may be satisfied by either domestic or imported commodities produced either during the consumption year or in previous periods. The project goal itself embodies several concepts which should be made specific.

The goal of increased agricultural productivity includes both food and non-food production. Thus support to cotton and other cash crops as well as food crops is not inconsistent with the project goal. The goal also recognizes the importance of trade and comparative advantage but does not ignore the economic arguments for balanced growth. Therefore, simple import substitution schemes in rice with implications for massive investments in infrastructure will not be considered. Rather, investments will be supported where clear advantage exists. However, we also recognize that a greater proportion of external resource flows are already going to regions of greater advantage (i.e. the Southwest with its better soils and rainfall) and we will pursue a policy of more balanced growth by focusing on increasing productivity in the relatively less well endowed area of the Mossi Plateau, where approximately one half the population lives. Lastly, the goal will be achieved largely by changes in technology which in turn will trigger substantial changes in cropping and production systems to provide a value mix.

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In other words, we are not expecting four to five per cent sustained growth rates in coarse grains. We are however, anticipating that technology gains in the production of coarse grains will free up scarce land, labor and capital for the production of more remunerative crops.

To impact on the goal in a positive manner, the project has four distinct purposes and related investments which will be discussed below:

1. to improve the management of aggregate resources and investment flows;
2. to improve the quality of human capital;
3. to accelerate the transfer of sound technology; and
4. to decrease production uncertainty largely through reductions in food insecurity.

3. Project Purposes, Project Investments, and Linkages to Increased Productivity

a. Improved GOUV Management of Available Resources

The first component of the ADS project is designed to improve the allocation of scarce resources (physical, human, and capital) to permit increased levels of production. The process is an indirect one comprised of support to those national level entities within the MRD which are charged with agricultural policy, planning and programming as they attempt to maximize the impact of capital flows into the agricultural sector relying progressively upon the private sector to assume a greater role in the construction of productive infrastructure, the marketing of inputs and export outputs, and the extension of appropriate technologies.

It is argued that the necessary first step to the realization of this purpose is a significant upgrading of agricultural statistics. Currently, many statistics which are essential for planning and management purposes are unavailable, while others are available only after significant processing delays which diminish their usefulness. It is also noted that most statistics currently available have been generated in a non-scientific fashion with unacceptable levels of accuracy. Therefore on a priority basis, the project will support the USDA Statistical Reporting Service as it introduces an area sampling frame to estimate crop and livestock production figures. It is expected that over time this frame will be employed in generating other socio-economic data which along with improved information on natural resources, land tenure, input and output markets, trade and consumption will permit the MRD and the GOUV to better gather and assess basic statistics.

The ADS project, recognizing that data are of little value if analysts and decision makers do not have access to information in a timely way, will strengthen the data and information processing and documentation systems within the MRD. Moreover, improved information is necessary for improved decision-making by all economic agents, especially the private sector.

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Therefore the project will focus on the timely dissemination of relevant information to the interested parties through extension agents, as well the press, television and radio.

While improved information is necessary, it is not sufficient from the GOUV perspective. It is imperative that information be well analyzed in order to serve as a basis for policy and programs. As was discussed above, the MRD, with the support of the donor community, has followed to the best of its ability given informational limitations a relatively progressive policy posture, with respect to the agricultural sector. Nonetheless, in a more modern and market-oriented agricultural sector, policy plays a more significant role. Therefore, the project will support both training and studies within the central ministry and other policy making entities in the MRD in order to support the MRD's policy planning and coordination functions and to assure that available public resources are channeled to their most productive uses within the sector.

Finally, as was noted above, due to the lack of effective informational feedback systems there has historically been misallocation of resources. Currently many project monitoring and evaluation activities are proceeding in an uncoordinated fashion. The ADS project proposes to address this problem through its support to the Department of Studies and Projects' Monitoring and Evaluation Unit which will increase the overall efficiency of the system and ensure that lessons are learned and have an impact on reprogramming more quickly.

In summary, better statistics and data processing, more and better studies and analysis leading to improved policy, planning and programming, and finally a comprehensive and coordinated system of project monitoring and evaluation will assure that external resource flows will be combined with domestic resources in a more effective and efficient manner. We of course recognize the process of such institution building is long term and a ten year commitment is implicitly being made to the MRD and the participating University.

While the linkage with production is indirect, we believe that the availability of more and better information to the public and private sectors should encourage greater productivity through the better allocation of resources at both the micro and macro decision making levels.

b. Improved Human Capital

Improved human capital is expected to have an impact on agricultural productivity through greater returns to household labor and the better management of household resources as well as through the impact on the agricultural transformation and service sectors. In Upper Volta, as elsewhere, the agricultural production function is that of capital, land, labor

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and climatic conditions. Given declining soil fertility, population growth, and the migration of labor from the Mossi Plateau to the previously under-cultivated southwest, the country can only depend upon an expansion of area under cultivation as a source of agricultural growth for a limited number of years. The keys then to sustained long-term growth are the increasing returns to labor and capital, assuming favorable climatic conditions. Furthermore, experience has taught us that while increases in capital may lead increases in human resources for a short period of time, the human resource base must be expanded in order to assure an efficient utilization of available capital.

As was discussed in the previous section, an expected output of the investment into the Central Ministry's Statistical Service is more and better information available to the private sector. Such information availability will not in itself lead to greater productivity unless it is introduced into the household's (production and consumption) decision-making process.

Assuming the availability of more and better information, it is expected that the agricultural sector in Upper Volta will become more dynamic. Therefore an increase in human capital is necessary to maximize resource allocation under dynamic conditions.

Under the ADS project we will concentrate on strengthening human capital in those selected areas where we have a comparative advantage given other donors' current and planned activities. These areas of intervention will include: the strengthening of managerial and skills training of rural youth; strengthening the system of managerial training for adult cooperatives; and the introduction of a fund for the training of mid-level technical and managerial skills for representatives of both the public and private sectors.

First, with respect to the strengthening of managerial skills training of rural youth, there is no question that the future of Upper Volta rests with its youth. Historically, a major factor in the slow growth of agriculture has been the "brain drain" from the farm to the more lucrative and prestigious vocations in urban areas. The GOUV has recognized that such a trend has had a negative effect on rural productivity, and has developed a system of vocational training in agriculture which will be partially supported under this project in those areas which are currently under-financed by other donors. It is believed this program will lay the groundwork for both short and long-term increases in productivity by introducing state of the science technologies and management techniques which can be employed by the youth as they begin farming and may have some impact on the families' household decisions.

Secondly, the project will strengthen the managerial training for adult cooperatives. This sub-component recognizes the fact that increases in human capital are required in the near-term as well as over time. While the training of rural youth is expected to have some impact on the introduction of new technologies and practices, it is acknowledged that the traditional practices

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of their parents will be slow in being replaced. Therefore, this component focuses upon the managerial training for those producers/ consumers who have organized themselves into cooperatives. Such training, which will focus upon literacy, basic applied accounting, and marketing, is expected to permit a greater response to the improved informational flows of the first component. It is also expected that this managerial training will complement the extension work financed by other donors and result in the indirect upgrading of both technical and managerial skills throughout the rural population.

Finally, the project will introduce a fund for the training of mid-level technical and managerial skills to representatives of both the public and private sectors. Upper Volta, like many developing countries, finds itself with a supply of low-level agricultural generalists, while the demand is for better trained agricultural specialists. This fund will permit the GOUV to begin to address this gap by providing training for mechanics, market agents of agricultural inputs, computer technicians, etc. who are expected to increase rural production through the provision of improved support services to the agricultural sector.

In summary, we believe the investment in human capital will permit the agricultural sector to better utilize available resources and increase its productivity. The decision to focus on rural youth, village coops, and the agricultural service sector reflects our efforts to support the GOUV strategy in areas where we have a comparative advantage at this time. It is expected that our efforts, coupled with a strengthened monitoring and evaluation unit within the central ministry, should permit complementarities with other donors' efforts which will multiply the returns to human capital investment by a factor that is greater than would otherwise have been possible.

c. Accelerated Transfer of Productive Technologies into the Sector

As was discussed above, Upper Volta has only recently begun to benefit from technological transfers. While an increase in information availability and human capital as described above is expected to increase the rate of productivity increases overtime, the transfer of certain essential technologies is expected to accelerate this progress and permit a higher sustained rate given the complementarities with information flows and human capital. As is the case with human capital, we are limiting ourselves to those interventions which are most appropriate and in which we have comparative advantage. The technological interventions under the ADS project will therefore be limited to the following: the introduction of the farming systems approach to research and extension; the development and extension of nutritionally sound food production and processing practices, and the development and extension of environmentally sound soil, water, and range management practices.

As was discussed above, a major constraint to the increase in agricultural productivity has been the lack of development of improved farming systems and the extension of available techniques to the farming population. In retrospect, it appears that research institutions and government officials have sought quick and easy solutions which did not satisfactorily address

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the complex and inter-related constraints faced by the producer. This search for easy solutions has emphasized "technical packages" and " high yielding varieties". While both areas offer some promise, it would be simplistic to believe the hope of significant productivity increases lies with the discovery of a new technological breakthrough. Rather, as stated earlier, the prospects for increased productivity are in long-term changes consisting of incremental improvements in the farming system and in the agricultural resource base. While the long-awaited technological revolution has not been forthcoming, the current farming systems research under the regional SAFGRAD project has demonstrated the potential of sustainable increased productivity through the use of inter-cropping techniques, crop rotation, the shifting of crop mixes, etc. To date, these advances in productivity have not been fully disseminated to the rural population due to the lack of information flows from the international research institutes to the central ministry to the ORDs.

The ADS project will systematically include farming system research within the Ministry of Rural Development and facilitate the flow of information through the extension service. Given the locational specificity of farming systems research and the potential for immediate feedback at the grass roots level, we believe this is the most cost-effective approach to applied research and extension and will complement directly the FAO/World Bank extension efforts as well as those of donors financing regional development programs.

The second intervention of developing and extending nutritionally sound food production and processing practices is expected to contribute to agricultural production through both its impact on human capital and the possible shift of time allocation practices to more remunerative activities. The general nutritional levels in Upper Volta rank among the lowest in the world. While this is especially true of children,poor nutrition also reduces the potential output per day of labor. Given the fact that during the agricultural season (particularly for the seasonal activities of planting and weeding) there is a labor constraint which effectively limits potential production, it is believed that improved nutritional levels will have a direct and positive impact on increased production. The second dimension is the potential shift of time allocation from food processing to other more remunerative (including restorative leisure) activities. Field research indicates that women in Upper Volta allocate a significant part of their day to food processing activities. The introduction of grain mills and oil presses, for example, into the rural household's production function will shift the time constraint and may permit the allocation of the time saved to farm production activities which would be expected to increase agricultural production, to off-farm employment which would increase rural productivity and effective demand , or leisure time which is a necessary restorative investment in the household production function as well as a consumption good.

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The final intervention under this component is to develop and extend environmentally sound soil, water, and range management practices. An extremely important factor of Voltan production is the land. Due to the pressures of population, the soils,which are of lateritic composition and lacking natural fertility,are becoming increasingly depleted. The result is that both the absolute and relative potential for crop and livestock productivity is diminishing over time. While the long-term goal of this component is to restore fertility and bring back into production areas which have been abandoned, the critical first step is to arrest the negative trends, particularly on the Mossi Plateau, and maintain the physical resource base in order that there may be sustained increases in agricultural productivity. The United States is recognized as having a comparative advantage in terms of identifying and addressing erosive tendencies. We believe therefore, that our proposed intervention with the soils and water service will directly complement other donors' activities and support regional development concerns.

In summary, these three limited technological transfers are believed to be areas in which we have a comparative advantage vis-a-vis other donors. They are all areas which heretofore have not been addressed systematically and have resulted in a less than optimal utilization of public and private resources. As is the case with the other individual components, this component is expected to have a direct positive impact on increased agricultural production. While this impact is not insignificant, the impact of this component can only be fully appreciated when the multiplier effect of the linkages with the other components is considered.

d. Decreased Food Insecurity

A final factor which affects resource allocation decisions and therefore production at both the macro and micro level is insecurity. The introduction of the concept of risk or insecurity as an exogenous variable into either the producer's or the policy-maker's decision-making process will tend to shift resource allocation away from the economically optimal point for long-term growth in production towards a less optimal point that minimizes risk. While there are many uncertainties which enter the decision-making process, by far the most important in the Voltan setting is the availability of basic food commodities, i.e. coarse grains, rice, wheat, meat, and oils (the availability of fruits and vegetables, and roots and tubers may enter into the production consumption decision of individual households, but are as yet not considered significant enough to enter the top level policy decision making process). While the ADS project cannot attempt to remove this insecurity, the final objective of the project is to reduce the insecurity in order that the producer and the MRD can realize a higher value of production given the constraints of land, labor, and capital. In particular, the project will: reduce cereal supply uncertainty at the local level, increase the efficiency of national level supply stabilization efforts, and reduce the uncertainty associated with the importation of preferred cereals and oils.

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The efforts to reduce village level insecurity will be directed through the establishment of a revolving fund to finance the establishment and expansion of privately managed village cooperative cereal banks. The establishment of such institutions providesthe first line of defense in catastrophic times, and if properly managed offer the possibility of dividends and/or expansion into other agricultural services such as the supply of agricultural inputs to producers or the development of rural financial institutions. It is argued that with the increased availability of coarse grains at the village level, uncertainty regarding the following year's supply will be reduced, and the farm household will be encouraged to shift surplus area out of coarse grains to more remunerative activities, particularly fruits, vegetables, and livestock. Such a shift will serve to not only increase the supply of more nutritious commodities, but will increase the effective demand as well.

the concept of village level uncertainty willalso be addressed indirectly through the continuing effects to strengthen OFNACER's planning unit. As was discussed earlier, OFNACER is currently attempting to follow a policy which will permit the Ministry of Interior and PVOs to purchase grain from OFNACER for emergency domestic distribution. While this is a noble notion the program is currently rife with definitional and institutional problems. It is hoped that over the life of the project the MRD will be able to develop criteria with the PVOs and the Ministry of Interior to assure that the truly needy will have adequate supplies available without encouraging market distortions which would depress producer prices.

A second sub-objective of the project is to increase the efficiency of OFNACER's supply stabilization program. As was discussed above, over the last two years, OFNACER has demonstrated that it can be an effective means of eliciting a supply response in the surplus potential areas of the country by purchasing approximately 15% of marketed domestic coarse grains. This improvement in effectiveness is noteworthy, but we believe that a leaner OFNACER can be equally as effective while permitting a more optimal allocation of public resources. The ADS project will therefore continue to support OFNACER's recently created Planning Unit which will work closely with the Department of Studies and Projects at the Ministerial level to analyze production and market conditions and adopt the appropriate market intervention practices given the GOUV objectives and resources. It is expected that the effect of this program will be similar to local level cereal bank operations. That is, as domestic production responds to remunerative prices, policy-makers will be less insecure regarding coarse grain availabilities which will gradually permit policies encouraging coarse grain production to be superseded by policies encouraging production of higher value and more nutritious commodities.

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The final intervention designed to decreasefood insecurity is the integration of the PL 480 Title II Section 206 Program. The 206 Program is designed to reduce the GOUV uncertainty regarding the availabilities of imported preferred commodities (wheat, rice, oil) for domestic consumption. When one examines recent trends in Voltan preferred commodity markets, one finds there is a rapidly increasing demand for preferred commodities which is believed to be associated with the rural to urban migration and increased real income levels. The insecurity arises from the lack of cash reserves available to purchase imported commodities and the fact that Upper Volta as a commercial importer of preferred commodities faces wide fluctuations in commodity prices. While world prices are currently depressed, the apparent success of the "Payment in Kind" or "PIK" program in the United States coupled with continued droughts in Africa and/or a major food shortage in the Soviet Union or elsewhere could very likely tighten world market conditions. If at the same time, Upper Volta were required to import 60,000- 70,000 mt to satisfy domestic demand and had sufficient cash reserves to cover the expected costs, the increase in world prices associated with a tightening of the market conditions may result in the inability to import sufficient quantities to meet demand. Such a shortfall would be expected to have domestic political repercussions which would effectively allocate public resources away from rural development and agricultural productivity. Therefore, it is believed that the Section 206 program will have a direct immediate impact in that it will help meet the incremental growth in demand for preferred commodities and will permit the GOUV to generate additional local currency resources to complement our Development Assistance funding. The program will also have the indirect effect of temporarily reducing uncertainties of balance of payments issues for preferred commodities which would be expected to increase the GOUV's own investment within the agricultural sector.

In summary, risk and uncertainty effectively constrain the optimal allocation of resources. The ADS project does not pretend to eliminate or even significantly reduce risk. Rather, this component, through support to privately managed village level coops, OFNACER, and the importation of preferred commodities with generated revenues to be utilized by the Ministry of Rural Development, intends to progressively minimize the impact of risk in order that the producer, the MRD, and the GOUV can better allocate resources and increase rural productivity.

4. Summary

In conclusion, the ADS project systematically addresses increased agricultural production through improved management, planning, and information flows; the improvement in human capital through managerial and technical skills training; the select transfer of production and conservation technologies; and the decrease of uncertainty regarding food commodity availabilities. While each of these components alone is expected to have a positive impact on agricultural productivity, we believe that the integration of the components into an overall project will permit greater returns to the investment over time inthatsuch a project structure focuses systematically upon the linkages as well as the implementing agencies. t is believed that this strategy, working in close collaboration with other donors and other ministries will facilitate and expedite the evolution of the agricultural sector to a position of optimal returns and minimal risks given

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the physical setting.

E. USAID Program Strategy

Our highest priority objective is nutritional self-reliance within a context of economic comparative advantage. The rationale for the adoption of this objective as our highest priority is the lamentable, unparalleled nutritional status of the Voltan population even when compared with other African populations. Anthropometric surveys identify 30-40% of pre-school children as stunted, an indication of chronic malnutrition. The same surveys found acute malnutrition in 3-22% of pre-school children. The evaluation of the Upper Volta PL 480 Title II program in January 1981 stated: "About half the children 0-6 years old in Upper Volta must be considered to be malnourished". *

The objective of nutritional self-reliance is also consistent with Upper Volta's first objective of national food self-sufficiency, which the GOUV is attempting to define more precisely through development of a National Food Plan. Our program is made up of activities which will contribute directly and indirectly to the attainment of the principal objective.

The top priority area is agriculture. Our basic purpose is to increase productivity through the development of improved and higher value farming systems. Such systems have been neglected in comparison to traditional cash crops. Work in regional research projects is just beginning to develop new varieties and improved farming techniques for semi-arid rainfed agriculture. Our projects will continue efforts to improve the quality and availability of agricultural inputs. A large training program for vocational skills useful to the private sector in agriculture is our primary emphasis in agricultural human resource development.

We will continue to build the national capacity to carry out agricultural research with emphasis on farming systems research. There will be a major effort to improve the nutritional data base and build nutritional criteria into agricultural policy decisions. Lastly, the central emphasis of our agricultural strategy will be the strengthening of analytical capability, management and policy-making functions in the Ministry of Rural Development. Good central management, policy analysis and policy decision making is critical to providing the environment in which the value of agricultural output can grow most rapidly.

The second priority area is natural resource management which we see primarily as a means of maintaining and eventually improving the soils, water and vegetation in order to preserve the productive resource base for agriculture.

* AID/FFP, Upper Volta Food for Peace/Title II Evaluation, September 1981, p. 9

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The strategy in this area consists of two major components. The first is soil and water management through the National Soil Service to combat erosion and reduce vulnerability to rainfall variation. The second is forest management through the Ministry of Transport, Environment and Tourism to assist in developing forest management plans and educating forestry agents. One objective of our assistance is to strengthen the coordination of conservation activities through the interministerial commission and help them develop a comprehensive national environmental policy.

Our third priority is human resource development, including rural health care delivery, basic education and family planning. Our role in the first two is complementary to other donor activities. We are taking the critical first step of improving health planning in order to design a rural health-care delivery system which incorporates user charges, minimizes recurrent operating costs and sustains its own functioning at a higher level of service than the current system. The World Bank will be following our health planning efforts with a large Health Sector Loan. We see the improvement of health status in rural areas, particularly through preventive care programs, as a contributing factor in raising agricultural productivity.

The rainy season is a period of increased morbidity which coincides with peak requirements for agricultural labor, improved health care can contribute to alleviating these peak-period labor shortages in agriculture.

In basic education, we continue our current levels of assistance to Catholic Relief Service's School Feeding Program. The World Bank is planning major assistance to the primary schools. We will be concentrating assistance in basic education to the Young Farmer Training Centers and Village cooperatives under the Agricultural Development Support project.

In family planning, after several years of sensitization and transfer of computer-based presentation capability to the Ministry of Plan, we are just beginning assistance to several private family planning associations. Without any doubt, reducing the rate of population growth in Upper Volta is a significant factor in the food and nutrition equation.

A little more than half of our development assistance funds will go into agriculture over the next five years, with the rest divided almost equally between natureal resource management and human resource development (including public administration). The regular PL480 program is projected to continue at 20,000 to 25,000 tons/year over the same period with 15,500 to 20,500 tons/year for the Catholic Relief Services' program and 4,500 tons/year for the food security component of the agricultural program.

This brief synopsis of the USAID/Upper Volta program is not intended to cover all aspects of the program thoroughly, but it is intended to provide a general overview within which context the reader can place the Agricultural Development Support project which has been described in detail above.

TRAINING CONTENTS OF THE FJA SYSTEM

In the FJA training system, training materials are designed according to the duties that the trainee will have to assume in the field.

Since these duties are generally complex and varied, all programs are composed of numerous elements:
- professional training
- technical training
general training.

The aim of the training is to provide the trainee with a quicksense of initiatives, in order to face all problems which will occur in the practice of his/her functions.

1. Training Contents of FJA teachers

a. Agronomy
- Plant biology and general phytology
- crop production factors: (climate, soils, plant nutrition, absorption and transformation of the elements by the plant)
- Improvements allowing increased production capacity of arable land (cultivation, irrigation, drainage, humus improvement, mineral fertilization, rotation cropping, soil and water conservation).
- Improvements allowing increased plant production capacity (crop protection, crop improvements).

b. Animal Science and Zoology
- Generalities on animal raising
- cattle reproduction
- foder
-cattle improvements
- choice of breeders

c. Rural Economics
- general economics
- Economy of rural enterprises (accounting, balance-sheet, techniques of analysis and of decision-making).

d. Linguistics
- national alphabet
- basic linguistics
- linguistics-related problems in Upper Volta
- literacy methods in Upper Volta

e. Psychology/Educational Methodology
-elements of psychology for children and teenagers
- psycho-educational methodology

f. Mathematics
- arithmetic, metric system, geometry

g. Sociology
- basic sociological terms
- applied sociology related to the village and its environment (family - village life - the village and "the outside world").
- Training on the methods and contents of the FJA system.

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2. Training contents of the FJA Assistants

a. Background:
- agricultural techniques
- general agriculture - special agriculture
- animal science
- sociology (general and applied)
- child and adolescent psychology (character and personality).
- education methodology
- linguistics: (languages - linguistic initiation - transcriptions - literacy and post - literacy methods).

b. Rural Development Problems
- Rural Development (major problems)
- Integrated rural development
- Different forms of development
- External interventions

c. Rural Organizations
- background
- farm management
- price fluctuations
- agricultural credit in Upper Volta
- marketing of agricultural products in Upper Volta

3. Training Contents of FJA Advisors/Conseillers

a. Thorough Knowledge of the FJA System
- objectives
- historical background
- organization and functions
- analysis of the different job positions
- training on the methods and contents
- study of the old training plans (by the instructors) and retraining plans

b. Education Methods
- methods-techniques-process
- definition of educational objectives
- extension techniques
- evaluation methods

c. Sociology
- elements of rural sociology
- methodology of studying the environment

d. Agro-pastoral techniques

e. Rural Economics
- community development
- accounting
- management

f. Home Economics and Nutrition
- human anatomy
- nutritional needs
- food
- family budgeting
- water and drink

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- hygiene
- rational utilization of firewood
- child care

g. Technology:
- rural construction
- artisanry (handicrafts)
- local product processing

h. General Education:
- writing
- mathematics

i. FJA System
- objectives
- background
- organization and functions
- training methods and contents

j. Contemporary Problems
- terms of exchange
- world hunger
- current educational systems
- inter-african and international organizations

k. Administrative Training
- study of the public service statutes
- basic laws (decrees, orders etc...)
- administrative writing

l. Linguistics
- language policy in Upper Volta
- linguistics initiation
- transcriptions
- literacy methods

m. Specific Techniques
- group dynamics
- chairing meetings
- conduct, design of human resources development-sessions and methods.

n. Instrumental Knowledge
- French
- Functional Math

One aspect of the FJA training system is the importance given to field visits. Thus, student trainers, Assistants and counsellors must during their training cycles, have "direct contacts" with field realities; this enables them to identify techniques and methods to tackle the problems.

PROPOSED

Memorandum of Agreement between the Ministry of Rural Development and the USAID Mission in Ouagadougou concerning the distribution and administration of scholarships for the Public Sector granted by USAID under the "Agricultural Development Support" Project.

The scholarships are offered by USAID in Upper Volta in the following areas:

i) agriculture
ii) civil and mechanical engineering
iii) administration sciences (production, marketing, financial management, computer programming, accounting)
iv) educational technology.

The purpose is to strengthen the operational capacity of the Ministry of Rural Development. These scholarships will be available to officers and employees of the Ministry of Rural Development and private individuals and enterprises in the agricultural sector. The private sector interest will be represented by the Chamber of Commerce of Ouagadougou.

The scholarships will be granted for two-years study in the United States or in recognized training institutions of francophone Africa.

A minimum of 52 scholarships will be for training in the United States. A minimum of 56 scholarships will go to internationally recognized institutions in francophone Africa. The conditions for granting these scholarships are as follows:

- The candidate must be a Voltan citizen
- The candidate must possess a technical baccalauréat series F for technical studies, a technical baccalauréat series G for management studies, or a Science baccalauréat series D or D' for agricultural studies.
- There must be a clear and visible connection between the studies being undertaken and the responsibilities and skills required by the position for which training is requested.

The granting of these scholarships for the United States is also subject to the following supplementary conditions:

- successful completion of the English language exam TOEFL (Test of English as a Foreign Language) or ALIGU (American Language Institute of Georgetown University).
- a final and binding decision by the office of degree equivalency regarding the equivalency of study in the American institutions where the scholarship recipients will be sent (documents on the training institutions will be submitted to the DAAF by the contractor - the contracting firm recruited by USAID for project implementation).

Scholarships in skills training are offered for practical training programs and short-term seminars organized by specialized Voltan or US training institutions in Upper Volta at the request of the public service or firms mentioned in section 1) above. To meet the conditions for the scholarships, the requesting organizations must demonstrate that the requested training is pertinent and that the training institution is qualified to provide such training. Scholarship applications which concern the Ministry of Rural Development directorates or other public institutions will be submitted to USAID through DAAF, which must approve them.

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USAID will apply the following procedure in administering the scholarships:

- The DAAF will be the sole intermediary in the administration of the scholarships granted through the scholarship fund of the "Agricultured Development Support" project.
- Each year, the contractor will provide the DAAF with a list including the number and type of scholarships and training programs; and the names and qualifications of the training institutions where these programs are available; as well as the specific conditions required for each scholarship.
- The DAAF will proceed to assign the scholarships by sector and by type and will select its candidates according to the procedures currently in place at the Ministry of Rural Development. Scholarships will be assigned to the private sector following a survey by the Chamber of Commerce, with the help of the contractor, of the type of specialists most likely to be recruited by firms in the private sector in three years. Private sector Scholarship candidates will be selected on the basis of personal merit and English language skills. The Chamber of Commerce will assist the DAAF in the selection of these candidates.
- The final list of scholarship recipients will be made available to the USAID mission which will proceed to approve and grant the scholarships to individuals and organizations upon verification of their records.

The joint approval of this memorandum by USAID and the DAAF is considered by both parties to be a preliminary condition for the granting of scholarships in the public sector in the framework of the Agricultural Development Support Project between USAID and the Ministry of Rural Development.

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SCOPE OF WORK FOR THE CONTRACTOR FOR THE MANAGERIAL TRAINING FUND ACTIVITY

The following types of functions will be carried out by the selected contractor for the Training Fund.

(1) The contractor will carry out a Training Needs Assessment of client organizations in the public and private sectors (operational units of MRD, private firms engaged in rural development projects, PVOs, etc.).

(2) The contractor will promote the types of training available under the Training Fund, to increase the awareness on the part of the client organizations that these are available to address their needs.

(3) The contractor will identify training institutions and programs in the U.S. and third countries of francophone West and North Africa at which two-year Associate Degrees or equivalent level training for this activity can take place. They will also identify in-country training institutions with prepackaged training material resources (books, slides, films, and audio visual materials) and training material production capabilities.

(4) The contractor will design all forms and procedures needed for making announcements of available training courses and relevancy forms to be filled out by client organizations.

(5) The contractor will construct an equivalency file for each U.S. institution used for the two year Associate Degree program. They will provide this information to DAAF and the Ministry of Higher Education for their decision on accreditation of equivalency. They will prepare an equivalency protocol on this basis and will have it signed by the Ministry of Higher Education and DAAF before individuals start. U.S. two year Associate Degree programs.

(6) The contractor will manage all aspects of the Training Fund including:
- The annual announcement to DAAF and the Chamber of Commerce on the nature, cost and conditions of admission of the two year scholarships;
- the annual survey of training needs in the private sector;
- assistance to DAAF and the Chamber of Commerce with the allocation of scholarships by sector and field, and selection of participants;
- recommendations to USAID on the participants and their ability to meet all criteria;
- preparation of PIO/Ps and submit participants' names to USAID for clearance;
- The organization of the English language training required for participants going to the U.S.

(7) The contractor will place, process and monitor all participants in training in the U.S. and third countries.

(8) The contractor will manage and monitor all in-country training carried out by existing training institutions.

(9) The contractor will organize and manage the delivery of technical skills training courses in Upper Volta. This will include:
- designing the operational procedures needed for delivery of these courses;
- providing technical assistance for task analysis, curriculum design, production of training materials and training local instructors for course implementation;

- negotiating the implementation arrangements with client organizations including the responsibilities of the client and the contractor in executing the course; and
- Contracting for local resources to implement the courses.

(10) The contractor will provide an annual financial plan to USAID on amounts spent on various training activities and make recommendations on shifting of funds between various training line-items.

(11) The contractor will follow up on all trainees with respect to where they are placed after their training programs.

(12) The contractor will monitor the impact of all training operations. This implies that there be some measurement criteria set up at the time of the needs assessment.

TRAINING INSTITUTIONS IN WEST AFRICA which can provide Technical and managerial Training for Technicien Superieur. (Baccalaureat + 2 years study)

1. Rural Development

   a. - I.P.D., Douala, Cameroun: Agent Technique de Development
   b. - Ecole Nationale d'Economie Appliquée, Dakar, Senegal: Animation

2. Engineering/Technology

   a. Centre Regional de Formation pour Entretien Routier (CERFER)* Lome. Togo.
      - Gestion des Stocks: Diplome d'Agent Technique
      - Mecanique: Diplome d'Agent Technique
        - Electricien Auto-Engin
        - Hydraulicien
        - Motoriste
      - Routes: Diplome d'Agent Tehcnique
        - Agent Geometre
        - Entretien Routier
      - Magasiniers de Pièces détachées: Diplome de Contremaitre
      - Mecanicien reparateur d'engins des Travaux Publics: Contremaitre
      - Tolier-soudeur-peintre: Contremaitre

   b. Ecole Inter-Etat des Techniciens Supérieurs de l'Hydraulique et de l'Equipement Rural (ETSHER) UPPER VOLTA
      - Developpement Rural
      - Genie Civil
      - Gestion
      - Hydraulique
      - Travaux Publics

   c. Institut Universitaire de Technologie (IUT) DAKAR, SENEGAL
      - Genie Civil
      - Genie Electrique
      - Genie Mecanique
      - Genie Rural

      All DUT (Diplome Universitaire de Technologie) equivalent to Technicien Supérieur

3. Management.

   Institut de Technologie Tertiaire (ITT) Abidjan
   - Finance
   - Comptabilité

   Both 2 years studies and Diplome Universitaire de Technologie (DUT)

* CERFER admit participant with a BEPC (4 years of secondary studies) + 3 years of experience. Graduates receive a certificate which is equivalent to a Certificat d'Aptitude Professionnelle (CAP)

USAID/Upper Volta Draft

Request for an Expression of Interest to Provide Training and Advisory Services to the Upper Volta Ministry of Rural Development on Policy Analysis and Project Evaluation.

This request is in three parts. The first provides a brief background on Upper Volta, its agricultural sector and the policy environment and institutions. The second part provides a description of the overall USAID Agricultural Development Support Project (686-0255) of which the Policy Analysis and Project Evaluation activity is one of eleven separate activities. Finally, the specific request for expression of interest and the type of response desired is presented.

General Information

1. Background on Upper Volta

Upper Volta is a land-locked country of approximately 6.3 million people in Sahelian West Africa. It lies to the south and east of Mali, to the west of Niger, and to the north of the Ivory Coast, Ghana, Benin and Togo. It covers some 274,000 square kilometers, of which about one-third is considered arable. The climate is primarily sudanic, although the northern part is sahelian, and the southern part is sudano-guinean. Rainfall increases from an average of less than 500 mm per year in the north to over 1200 mm in the south. Hence, Upper Volta includes a diverse set of micro-climates within the semi-arid tropics.

Upper Volta's *per capita* income of about US $180 makes it one of the poorer countries in West Africa. Its economy is primarily agricultural. The agricultural sector accounts for about 45 percent of GNP and between 80 and 90 percent of the workforce. The industrial sector contributes approximately 20 percent of GNP, while services including government, contribute about 5 percent of GNP and between 80 and 90 percent of the workforce. The industrial sector contributes approximately 20 percent of GNP, while services including government, contribute about 35 percent. Of the 10 percent of Voltans who earn an income in excess of the poverty line for Africa (US $205 *per capita*), only half live in rural areas. Given the fraction of land which is arable, and the fact health problems limit the habitability of parts of Upper Volta, those regions where agriculture is practiced are among the most densely populated regions of West Africa.

Upper Volta's population is increasing at an annual natural rate of about 2.5 percent, with a crude birth rate of 48 per 1000 per year. Emigration is an important part of determination of Upper Volta's population growth, since it reduces the overall annual population growth rate to 1.6 percent. Migration within Upper Volta is also important, as population pressure in the more densely settled regions of Upper Volta forces farmers to seek new lands in the South as these lands are freed of disease.

The health of Upper Volta's population is poor by any standard. Infant mortality equals 161 deaths per 1000, while more than 270 of every 1000 children born die before the age of 5. The presence of onchocerciasis, trypanosomiasis, malaria and other diseases are also important factors limiting resettlement to the less densely populated regions of the country.

Education in Upper Volta is limited. Only 18 percent of primary school age children attend school. The illiteracy rate of 91 percent is one of the highest in the world.

Most agricultural activity practiced on the densely populated Mossi plateau provides a subsistence existence at best. Marketed surpluses are seldom generated and deficits which must be met through food purchases are paid by repatriated earnings of migrant workers in coastal areas. Cash crops (cotton, groundnuts, sesame, sheanuts, fruits and vegetables), which account for 60 percent of exports, are mostly grown in the less densely populated South and West. Hence, the majority of Upper Volta's population is dependent upon agricultural production from a modest resource base, with low and variable rainfall, and on soils of low fertility. The consequence is that in 1975, which was a relatively good year, cereals production was only 180 to 190 kilograms *per capita*. During the worst drought years, domestic cereals production of 156 kilograms *per capita* provided only 73 percent of calorie needs and 56 percent of protein needs of the population.

2. The Agricultural Sector

In this section, further details on the structure and problems of Upper Volta's agricultural sector are presented. At the outset it is important to note that agricultural statistics in such an environment are difficult to collect, and discrepancies exist between alternative data sources. The data presented below are taken from various sources and should be viewed as presenting only a general picture of the state of Upper Volta's agricultural sector.

a. Agricultural Production

Millet and sorghum are the basic staple crops in Upper Volta. They account for 80 percent of the 2.4 million hectares of land under cultivation. A small amount of maize and rice are grown on about 90,000 hectares and 40,000 hectares, respectively. Sorghum, millet, maize, and rice production amount to around 650, 400, 60, and 30 thousand tons per year, respectively. These cereals taken together contribute approximately 80 percent of the domestic value of the output of Upper Volta's agricultural sector excluding livestock. Cereals production is highly variable from year to year, ranging from a high of 1,196 thousand tons in 1977 to a low of 812 thousand tons in 1974. Production is also variable across regions of Upper Volta, ranging from a high of 420 kilograms *per capita* in the Department of Banfora, where 4.1 hectares *per capita* of arable land are available, to 109 kilograms *per capita* in the Sahel region, where 2.8 hectares *per capita* are available. In the Ouagadougou area, where 1.0 hectares of land *per capita* are available, cereals production amounts to 180 kilograms *per capita* on average. These numbers are subject to considerable inter-annual variation, as well.

Cash crops grown largely for export include cotton, oilseeds and oils, fruits, and vegetables. Cotton utilizes 70 thousand hectares and is concentrated in the South and West. The domestic value of cotton production equals about 4 per cent of agricultural output value. Oilseeds account for about 9 per cent of the acreage and 7 percent of the value of output. Fruits and vegetables are grown on a negligible amount of land, but contribute 10 per cent of the value of output.

Other important crops include fonio, roots and tubers and sheanuts. Livestock is another important part of Upper Volta's agricultural production and exports, accounting for 11 percent of GNP, but occupying only 8 per cent of the labor force.

b. External Trade

Agricultural exports are an important components of Upper Volta's external trade. In 1977, agricultural exports accounted for 78 percent of total exports, with cotton alone providing 47 percent of total exports. Oilseeds provided 26 percent and vegetables 3 percent. The export value of fruits and vegetables had been slowly and steadily growing until 1978, when a substantial decline occurred. Cotton and oilseed exports have been growing rapidly, but export values for both have been highly variable. Since agriculture accounts for such a large fraction of total exports, increasing their level and stability is quite important to Upper Volta's economy. Also, since imports are substantially greater than exports, increased export earnings would reduce the balance of payments deficit. Even with large remittances from emigrated workers, Upper Volta continues to run a balance of payments deficit.

Agricultural imports are an important part of Upper Volta's trade picture as well. Agricultural imports accounted for 14 percent of total imports in 1978, and cereals alone were 12 percent of that total. Cereal imports have been increasing rapidly, and the cereals import issue is one of the important policy issues facing the GOUV. While representing only 5 percent of total cereals production, these imports raise a problem because they are largely preferred cereals (55 percent wheat and 38 percent rice). There are limited quantities of wheat grown in Upper Volta and domestic rice production is about the same as imports. Thus wheat and rice are largely consumed in urban areas. With a growing urban population and incomes, the demand for these imported cereals will increase. However, Upper Volta's comparative advantage probably lies in the production of staple crops, such as millet and sorghum, as they are better suited to the prevailing climate.

There is some formal and informal trade of millet and sorghum between Upper Volta and neighboring countries, but the quantities involved are not known. Such trade is largely between rural areas in neighboring countries or between rural areas and nearby cities in other countries, and probably does not have a large influence on preferred cereals demand in Upper Volta.

c. Internal Trade

With highly variable rainfall, surplus and deficit areas exist in different locations within the country each year (although some areas such as the South and West are usually better off than other areas such as the Sahel). Because consumption data are not now collected, consumption levels in each region must be inferred from production data and estimates of external and internal trade. Internal trade among regions is handled both by private markets and by a government agency, OFNACER. OFNACER relies on local grain purchases and sales, and food aid, to achieve this redistribution. It must also maintain grain stockpiles to ensure food security in the event of widespread drought.

d. Agricultural Prices

The trend in agricultural prices in recent years is symptomatic of changes in underlying agricultural supply and demand forces. Millet and sorghum prices rose by a factor of six between 1968 and 1979, while domestic general price levels only doubled. Market prices of rice and groundnuts actually fell in real terms during the same period. Hence it appears that farmers saw strong price incentives to move towards the preferred cereals, increasing the preferred cereals demand described above.

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Official sorghum and millet support prices increased slightly faster than general domestic inflation from 1970 through 1979, but remained substantially below market prices. Official rice price increased more than 200 percent, and the difference between the official and market price for rice was far less than that for millet and sorghum. The differences between official support and market prices and the ability of the government to achieve its policy objectives through market operations is another key policy issue.

Another issue related to agricultural pricing policy is the high transportation costs both within the country and to international trading ports. Given these high transport costs, the use of international prices as a standard for policy may be less appropriate than for other countries. Curently most agricultural prices are somewhat below world prices.

3. Policy Environment and Institutions

The agricultural policies of the GOUV have been characterized as being part of a growth-oriented strategy mindful of regional disparities. Rural development is accorded the highest priority, although both food self-sufficiency and expansion of cash crop production are also considered important. The Ministry of Rural Development (MRD) policy objectives as outlined in the 1981 Conference of the MRD Cadres are as follows: (a) to attain food security, (b) to coordinate regional level programs, (c) to train rural youth, (d) to mobilize village level groups, (e) to accelerate the development of water infrastructure, (f) to ensure the fiscal integrity of the Regional Development Organizations (ORDs), and (g) to improve animal production. Policy is formulated and implemented through several agencies which are described briefly below.

a. Regional Development Organizations

Eleven regional development organizations were created in the mid-1960s to create and implement regional rural development plans. The scope of the ORDs was recently limited to soley agricultural development ORD activities include extension, input distribution, credit, marketing, organization of farmer groups, data collection, and planning. They have some flexibility in making regional policy for the Ministry of Rural Development.

b. Ministry of Rural Development

The MRD is charged with the responsibility of implementing agricultural programs and policies at the national level, with providing support to the ORDs, and with the coordination of several function-specific parastatals. To carry out its responsibility, the MRD operates through two administrative departments off the Minister's cabinet and six program departments off the Secretary General's office. The ORD's and several parastatals are also attached to the Secretary General's Office, while others parastatals and special function offices and bureaus are coordinated by the various program departments. The MRD is continually undergoing self-review leading to fiscal and administrative reform and reorganization as it attempts to increase both the effectiveness of its programs and the efficiency of its staff. The 1983 operating budget for the MRD excluding the ORDs and parastatals was approximately 8 million dollars. Over ninety five percent of the operating budget was for personnel costs. Investment program funds are all donor financed. The ORD's and parastatals were designed to be financially independent but all receive transfer payments from the GOUV or the donor community.

In terms of policy, issues and problems are usually surfaced through the various departments charged with implementing programs and supporting the ORDs. Policy recommendations are also usually extended by these same departments. However, in the 1981 reorganization, a new department, the Department of Studies and Projects (DEP), was created to provide support to the Ministry in carrying out the following functions:

(1) establishing and maintaining a system for monitoring and evaluation of all projects undertaken with the MRD;
(2) performing economic studies of planning and policy alternatives for the agricultural sector;
(3) establishing a system for and conducting feasibility studies of potential agricultural projects in collaboration with the technical service departments; and
(4) developing and implementing an agricultural statistics system for the MRD.

c. Other Relevant Institutions

Not all agricultural policy is formulated and implemented by the MRD. Parastatals comparable to those in the MRD exist in the Ministry of Commerce for the purpose of formulating and implementing pricing policy for cotton (SOFITEX), oilseeds (CSPPA), and fruits and vegetables (UVOCOM). SOFITEX is also responsible for input subsidies for cotton, and it sells fertilizers and pesticides to the ORDs. Agricultural production research is the responsibility of the Institut Voltaique de Recherches Agronmiques et Zootechniques (IVRAZ), which is part of the Ministry of Higher Education and Scientific Research.

International organizations conducting important food grain research programs include IRAT, ICRISAT, and CERCI. International research organizations dealing with cash crops include IRCT, IRHO, FAO, and UNDP. Livestock research is being conducted by CRTA. Few of these are closely integrated into the activities of the MRD.

Still other Ministries and agencies are responsible for infrastructure development and external trade. Another parastatal, CENATRIN, has a national monopoly on collection and processing of information and statistics using modern computer technology. The Ministry of Plan has the overall responsibility for coordinating activities of the various Ministries in developing national plans.

In summary, there are a variety of institutions charged with parts of the overall responsibility for agricultural development. Policies exist to address the problems of Voltan agriculture, but the information and analytcal capacity to analyze and adjust these policies is limited. International donors are continually introducing new projects to Upper Volta which may or may not fit in with Upper Volta's agricultural sector development objectives. The purpose of this Project is to introduce into the MRD and DEP the capacity to conduct such analysis and evaluation in a more comprehensive fashion.

4. Description of the Agricultural Development Support Project

The long-term goal of the ADS Project is to increase agricultural output. The ADS Project is a major part of the USAID agricultural program whose overall goals are nutritional self-reliance and enhancement of the natural resource environment in Upper Volta. In order to meet these program goals and the Project goal, the purpose of the Project is to strengthen the capacity of the Ministry of Rural Development to formulate and manage agricultural policies and to promote a more efficient use of resources in the agricultural sector.

The ADS Project has four components, each with its own sub-purpose contributing to attainment of the overall purpose:

(a) to improve management of sector resources and investments; (b) to expand the managerial and technical skills base within the agricultural sector; (c) to accelerate the process of transferring productive technologies into the agricultural sector; and (d) to decrease food insecurity. Each of these purposes are mutually reinforcing and are aimed at upgrading the institutional capability of the sector to absorb a greater influx of external capital required to adequately accelerate growth. The overall Project is envisioned as a ten year commitment to improving agricultural productivity in Upper Volta.

The first Project component, which is designed to improve the planning and management of agricultural sector resources and investments consists of three activities. The first activity aims at strengthening the agricultural planning and programming capability of the MRD by improving policy analysis and project evaluation in the DEP. A more detailed description of this activity is provided later. The second activity is a strengthening of the agricultural data collection and management system within the MRD. It is envisioned that the Statistical Reporting Service of USDA will assist the DEP in implementing a new system for agricultural statistics based on area frame sample procedures. Accurate agricultural statistics on crop area, yield, production, prices, input use, and other variables do not exist at present. Implementation of this new statistics system is essential for the policy analysis and project evaluation components of this Project. The third activity is to provide the MRD administrative department support to improve budgeting, personnel, documentation and financial management systems.

The second component of the Project is to expand the managerial and technical skills base within the agricultural sector. Improving technical and managerial skills is critical to increasing the efficiency of current investments. This component concentrates on filling the voids in skills training at the low and middle management level where implementation actually occurs. The Project will support training throughout the country in both the public and private sectors. The Project includes technical and managerial training for about 1,200 pre-cooperative groups, equipping 155 young farmer training schools and supporting skills training for about 8,000 rural youth. Finally, Associate Degree level training in the United States and West African institutions for about 100 people, and short-term management training for about 500 people will be provided.

The third component of the overall Project is to accelerate the process of transferring productive technologies into the agricultural sector. This consists of three activities: (a) introducing the farming systems approach into the research and extension department within the MRD, (b) developing and extending nutritionally sound food production and processing practices, and (c) developing and extending environmentally sound soil, water, and range management practices. These tasks focus on improving communications links between rural producers/consumers and the research community by supporting field-level stations. This component will concentrate on the central plateau region of Upper Volta.

The fourth component is designed to decrease food insecurity. In this component, food security is increased directly by guaranteeing to the Government of Upper Volta a mix of cereals and vegetable oils over at least a three year period and by improving market infrastructure which allows for more efficient storage and distribution of cereals. The U.S. support for this component is in the form of a PL 480 Title II Section 206 agreement for a mix of cereals and vegetable oils totaling about $2 million annually. Proceeds from commodity sales will provide the funds for the Upper Voltan contribution to the ADS Project. Most of the AID dollar funds in this component will support the National Cereals Office (OFNACER) where there will be a contract with a U.S. university to assist OFNACER with policy studies.

5. Request for Expression of Interest

The purpose of this request is to identify interest in the U.S. university community to assist the MRD in reinforcing the Policy Analysis and Project Evaluation functions of the DEP. The overall objective of policy analysis and project evaluation (PAPE) is to strengthen the capabilities of DEP to perform economic studies and agricultural policy analysis and to strengthen its capability to evaluate and monitor projects in the agricultural sector. Achievement of this objective will require the contractor to engage in the following types of activities:
(a) provide training for DEP staff in areas such as computer programming, statistics and econometrics, mathematical programming, economic theory, macroeconomic planning tools, and benefit-cost analysis; (b) conduct policy studies both for the purposes of training and to provide policy guidance to the MRD jointly with the DEP, and (c) establish a system for assessment, monitoring, and evaluation of agricultural sector projects, again jointly with the DEP. Because the PAPE activity involves training, policy analysis and project evaluation, implementation by a U.S. university is viewed as highly desirable. At the conclusion of the Project, it is expected that DEP will have in place the trained personnel, computer facilities, and established procedures necessary to perform competent analytical policy studies and to carry on the system for project analysis. A more specific discussion of the responsibilities of the contractor, the DEP and USAID is presented below.

a. Contractor Responsibilities

The first major contractor responsibility is to work with USAID/Upper Volta and DEP/MRD collaboratively in designing the project. During the design phase, detailed implementation procedures will be developed. These will include plans for training, an agenda for policy studies, a plan for implementing the project evaluation system, a management plan, a staffing plan, a data base management system, and computer operations procedures. The remaining responsibilities are concerned with implementation of the project.

It is expected that training will be provided both in Upper Volta and at the U.S. university. Selected individuals from DEP/MRD may be sent to the U.S. university for advanced graduate training in agricultural economics, economics, statistics, or other related fields. It is also envisioned that training will be offered in Upper Volta to the staff of DEP/MRD. On-the-job training in policy analysis and project evaluation will be likely an important dimension of the project, as well.

A very important contractor responsibility is coordination of analysis and data base management functions throughout the Agricultural Development Support Project. The ADS Project consists of several components which will need to make use of common data bases, computer systems, and analytical procedures. These include the agricultural statistics system (with DEP), the food security studies (with the grain stabilization unit) the farming systems research (with the Department for Agricultural Services - DSA), the nutrition analysis (with DSA), and the policy analysis and project evaluation component (with DEP). Coordination with the agricultural statistics contractor is especially important because both will be working with DEP with the same computer systems, data management software, and hopefully, the same analytical software. The agricultural statistics developed by the statistics unit within DEP will be the data used in the economic policy studies and for the project monitoring and evaluation system. During the

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course of the Project, it is expected that DEP and the contractors will need to develop effective coordination mechanisms within the MRD.

The computer system to be used for this Project will be selected jointly by DEP, the agricultural statistics system contractor, and the university contractor for the policy analysis and project evaluation components. The selection will be made during the design phase of this contract. The computer system, power conditioning equipment, and software will be purchased as part of the ADS Project.

In addition to the computer hardware, the two contractors and DEP will also agree on software to be used on the Project. Some of the software may have to be written as part of the Project. For example, it is likely that much of the benefit-cost and project evaluation software will be written for the actual conditions existing in Upper Volta. Similarly, original software will be needed for many of the modeling activities. For the basic econometrics and math programming software, canned packages will be selected.

One of the major contractor responsibilities will be to work with DEP in conducting high priority agricultural policy studies. Following is a list of some of the possible issues and topics:

(a) The structure of cereals demand and its implication for agricultural policy, including analysis of the demand for preferred cereals, imports and their implications for food aid and other policies;
(b) Farmer supply response under alternative policy environments;
(c) Agricultural pricing policy;
(d) Analysis of marketing institutions and their relationship to policy choices;
(e) Analysis of technology adoption in agriculture;
(f) Analysis of long run consequences of alternative trade policies and alternative investment strategies in agriculture;
(g) Evaluation of the effects of property rights and land tenure on resource allocation decisions;
(h) Analysis of income distribution and other equity issues such as women in development;
(i) Analysis of linkages between energy (especially fuelwood) and agriculture;
(ii) Evaluation of means for handling the recurrent costs for agricultural data collection and analysis.

During the design phase, priorities will be assigned to studies on these and other issues. Another major contractor responsibility is to work with DEP in establishing and maintaining a project analysis capability. This includes project feasibility (benefit-cost) studies, project monitoring including project data base management, and project evaluation. Currently DEP is responsible for project analysis with no structured system or data base management capability. In establishing the project analysis system, the contractor and DEP will need to coordinate with other agencies within DEP and with other foreign donors to try to make the system as widely usable as possible.

In addition, the contractor will be responsible for examining the gender-linked dimensions of research and the implications to the private sector in all the studies.

The contractor will be responsible for providing adequate administrative support both in Upper Volta and at the university. Decisions of logistic support responsibilities for AID and the university will be made during contract negotiation.

b. <u>DEP Responsibilities</u>

The MRD is responsible for providing sufficient increases in staff (as agreed upon in the design phase) to conduct the policy studies and implement

the project analysis system. The skill mix needed for new staff will be determined during the design phase. During the course of the Project, funds for the staff increases will be provided to MRD through the sales of P.L. 480 commodities as described below under AID responsibilities.

During the design phase and throughout the Project, MRD/DEP and the contractor will establish research priorities. High priority studies will be conducted jointly by DEP and the contractor. Similarly, DEP staff and the contractor will jointly design and implement the project analysis system.

DEP and the MRD will make staff time available for short and long-term training both in Upper Volta and in the United States. It is anticipated that virtually all the DEP staff will participate in some type of formal training in addition to the on-the-job experience.

DEP and the MRD will be responsible for providing office space for all long and short term university contractor staff in Upper Volta. Also, DEP will be responsible for providing space, grounded electric wiring, and proper air conditioning for all computer equipment to be used in the Project.

c. USAID Responsibilities

During the design phase, AID will need to provide all necessary and customary support services in Upper Volta. These include but are not limited to transportation, secretarial support, assistance with local appointments, and emergency health care.

Much of the incremental GOUV cost for the ADS Project will be financed from the sale of P.L. 480 Title II Section 206 commodities. It is anticipated that about $2 million of cereals and vegetable oil will be available annually. It is AID's responsibility to ensure availability of these commodities on a timely basis to ensure continuity of Project funding.

On-going evaluation for the ADS Project will be handled by a joint USAID-GOUV technical committee to be formed at the beginning of the Project. The committee will likely include the five USAID/Upper Volta Project Officers, the Chefs de Service of each of the participating MRD Departments and parastatals plus contractor representatives. The committee will be chaired jointly by the Chef de Service of DEP and the university contractor working on the policy analysis and project evaluation component. AID will be responsible for approving monitoring and evaluation procedures established for the Project.

AID will also act as a coordinator for mid-term and end-of-project evaluations. Evaluation of the Project at selected intervals is designed to ensure long term project viability. The initial implementation contract will be for four years with anticipated extensions for an additional five years. The initial evaluation will occur at the end of the first two years of the contract for a possible three year extension (through year eight of the Project). The second major evaluation is scheduled at the end of year five for a possible final two year extension through year ten.

6. University Response to this REI

The university response to this REI should consist of three parts.

(a) Response to the objectives and procedures outlined in this REI;
(b) Outline of institutional capabilities; and
(c) Specific personnel information.

No cost information should be included in this response.

(a) The university response to the objectives and procedures outlined in this REI should include preliminary ideas on how the university would approach the Project. This could include comments on the various Project activities,

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indications of preliminary staffing plan (i.e., the numbers and skills of both long and short term personnel needed for the Project), ideas on appropriate administrative procedures, and a description of how the university would structure the Project to achieve the objectives efficiently and effectively. This section may be no longer than ten single spaced typewritten pages.

(b) This section describes the institution's capabilities to undertake the Project and should include the following:

(1) A description of the institution's capability to address the problems described in the REI;

(2) Any related experience, whether in the country or region or in the problem area; and

(3) A demonstrable commitment of the institution to support the Project.

The responses should address the capability, experience, and commitment to this particular Project.

(c) The response should specify the following planning and personnel factors:

(1) The design team plan and scope of work for each member;

(2) A list of candidates for the design team and their credentials;

(3) A list of possible candidates for long-term assignment to the Project. (Since there has been no project design, the specific technical assistance slots and technical responsibilities are vague. But it is expected that at least half of the personnel needs can be estimated early in the Project. The institution should make its best guess for the team and present to A.I.D. the persons or types of persons with whom they are likely to contract.)

Twenty copies of the response are due in Washington sixty days from issuance of this REI.

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Other Donor Activities with OFNACER

The primary donor involved with OFNACER in the past have been the West Germans (RFA) and USAID, with the FAO and Swiss having constructed warehouses during the drought years. The RFA has been responsible for the development and maintenance of the 30,000 MT security stock. However, due to the terms of their bilateral agreements, intervention or institutional development beyond the security stock has been limited. The current RFA program which began in 1977 is expected to continue through 1984 with the possibility of an extension.

While USAID is the second largest donor, we are the donor which has been most consistently interested in institutional development of OFNACER through the Entente Fund and the Grain Marketing Development projects. To date USAID assistance has concentrated upon improving OFNACER's financial management and micro-economic analytical capabilities. As discussed in the PP, OFNACER has demonstrated progress in these areas, and is therefore believed capable of evolving into a more macro-role more appropriate of Government.

The FAO and Swiss are jointly next most active donors in that they have one management specialist attached to the Planning Unit and are providing short-term management training.

Given the progress demonstrated by OFNACER over the past years, other donors are recognizing that OFNACER has the potential to serve as a positive policy instrument of the GOUV. This has led to the "Meetings of Coordination and Dialogue on OFNACER", and the "Comité Restreint" or Limited Committee consisting of the RFA, FED, France, Holland, and USAID. This committee was created in order to better coordinate donor assistance to ensure there would be no duplication of efforts, and that individual countries could provide assistance within their areas of expertise.

To date the FED, France, and Canada have scheduled short-term training in management and storage, and the Dutch have provided a fleet of trucks and received a request for additional warehouses. The general outline of the USAID intervention has been discussed with the other donors who support the program. They may be expected to complement our efforts as their programming cycles develop.

ANNEX R: FOOD FOR DEVELOPMENT (SECTION 206)

PROGRAM PAPER

FOOD FOR DEVELOPMENT PROGRAM PAPER

FFD-PP

1. COUNTRY : Upper Volta

2. PROGRAM TITLE : Agricultural Development Support -- FFD

3. ESTIMATED DURATION : 3 Years INITIAL: FY 1984
FINAL : FY 1986

4. ESTIMATED COST :

Source of Funding	Fiscal Year						
	FY 83	FY 84	FY 85	FY 86	FY 87	FY 88	TOTAL
A. PL 480 Total Commodity Value	0	2,060	2,156	2,156	0	0	6,372
B. Aid Dollar Assistance	8,365	4,760	6,000	7,700	3,175	0	30,000
C. Host Government	225	2,000	2,400	2,650	2,686	461	12,422
D. Other (Transportation value of commodities)	0	770	829	888	0	0	2,487
E. Peace Corps	0	80	80	80	80	0	320
TOTAL	8,590	9,670	11,465	13,474	5,941	2,461	51,601

5. PL 480 ANNUAL COMMODITY INPUT:

Year	Commodities	Tonnage	Estimated $ Value
1984	Northern soft wheat	3.000 MT	450
	Vegetable oil, drum	2.000 MT	1,520
1985	Northern soft wheat	3.000 MT	546
	Vegetable oil, drum	2.000 MT	1,610
1986	Northern soft wheat	3.000 MT	546
	Vegetable oil, drum	2.000 MT	1,610

6. PROGRAM PURPOSE: to reinforce the capacity of the Ministry of Rural Development to manage and promote a more efficient use of resources in the Agricultural sector through the improved management of aggregate resources and investment flows, improved human capital, on acceleration of the transfer of sound technology, and the decrease in food insecurity.

Executive Summary

USAID/Upper Volta has implemented a Section 206 Program as an integral component of the Grain Marketing Development Project (686-0243). This project, which was the first in the Africa Bureau to have fully integrated a Section 206 Program into its project paper was reviewed in November 1982. The review committees found that the integration of the Development Assistance and PL 480 resources was highly appropriate and to be commended. It was further found that in the integration, the de-linking of local currency generation from the Development Assistance components had worked to the benefit of the project. It was believed particularly noteworthy that the PL 480 component of the project has moved ahead as intended in spite of the significant delays in fielding the long-term technical assistance teams. This progress was attributed in large part to the National Cereals Office's (OFNACER's) ability to receive, distribute and deposit grain receipts and USAID/Upper Volta's persistence in working with OFNACER to make them financially accountable. We have found that the integration of the components has permitted USAID/Upper Volta to support OFNACER and the Ministry of Rural Development in its reform efforts. We believe, therefore, that the integration of a subsequent Food for Development Program with the ADS Project will permit continued implicit and explicit leveraging and a greater realization of project objectives than Development Assistance financing alone would permit.

We have found in our analysis of the country setting, with the exception of the drought years, that there has been a continued increase in coarse grain production. We have found that the country currently meets approximately 90% of the FAO standard and more than 95% of the effective demand through domestic production. The country is facing however, a structural and growing food deficit for the preferred cereals of wheat and rice as well as oils. The underlying causes for these deficits are Upper Volta's comparative disadvantage in production. Upper Volta can therefore expect to import significant tonnages of these commodities annually for the foreseeable future in order to meet domestic demand. Such imports will require greater export earnings primarily from the agricultural commodities of cotton, coarse grains and fruits and vegetables. In order for Upper Volta to improve its position of nutritional self-reliance, it will be necessary therefore for the country to improve its coarse grain productivity and shift its commodity mix to higher value crops.

It is our assessment that the slow growth in agricultural productivity is primarily due to a set of physical and technological constraints and not due to inappropriate pricing and marketing policies or an inappropriate role of the State. The ADS Project intends to address these areas through its purpose of reinforcing the capacity of the Ministry of Rural Development to manage and promote a more efficient use of resources in the agricultural sector , and the objectives of improved management of aggregate resources and investment flows, improved quality of human capital, an acceleration of the transfer of sound technology, and a decrease in food insecurity. The Food for Development Program will provide not only the local currency generations to finance these activities but also through the Self-Help Measures will encourage the institutionalization of necessary relationships to promote greater nutritional self-reliance.

During the design phase of the Food for Development Program, we seriously considered alternative forms of financing. We eventually rejected the proposal of a greater GOUV contribution due to the lack of financial means within the GOUV. Secondly, we rejected the concept of 100% financing due to the loss of leveraging associated with such a program. Finally, we considered a Title III Program. While it is our hope that Upper Volta will eventually "graduate" from a Section 206

to a Title III Program, we acknowledge the fact that currently the GOUV does not have the financial, institutional, or technical capacity to implement a Title III Program.

The planned Section 206 Program conforms to the guidance of STATE 170920 (June 29, 1981), the "Africa Bureau Food Aid Policy and Programming Guidance" (July 21, 1982), and AID Policy Determination:"Programming PL 480 Local Currency Generations" (February 22, 1983) in that: 1) the Government of Upper Volta is and will continue to undertake Self Help Measures, 2) the use of sales proceeds will be jointly programmed in writing to complement the Development Assistance financing of the ADS Project to address the project goal of increasing agricultural productivity, 3) there are adequate in-country storage facilities, and 4) the commodities to be delivered will not displace or interfere with sales or domestic procurement.

The planned Section 206 Program will have a duration of three years (FY 84-86). A minimum of a fourth year will be required to assure adequate local cost financing for the ADS Project. A mid-term evaluation of the Section 206 Program will determine if it is most appropriate to extend the current program, develop a new Section 206 Program, or develop a Title III Program. The commodities (3,000 MT Northern Soft Wheat and 2,000 MT vegetable oil in FY 1984) will be determined annually based on the local market conditions, commodity availability, value of the commodity delivered to Upper Volta, exchange rate,etc. It is our intention to utilize the annual Transfer Authorization to leverage appropriate Self-Help Measures as well as progressively require more timely deposit plans. Such a program should help the GOUV prepare for a Title III Program in years to come. Finally, the commodity selection discussed above is designed to meet the expected annual increase in demand, maintain the current UMRs, and not result in market distortions. Our decision to charge the value of landed commodities is also designed to minimize market distortions, discourage unintended shifts in consumer tastes, and prepare the GOUV for more commercial programs in years to come.

In summary, the proposed PL 480 Section 206 Program is a critical part of USAID/Upper Volta's overall development strategy that is consistent with the objectivesof the GOUV and the efforts of the donor community.

I. Country Setting and Program Rationale

A. Background - The Economic Setting

With a per capita income of $240 in 1981, Upper Volta is ranked among the 36 "Least developed countries (LLDC's)" and the fifteenth poorest country in the world. Upper Volta has improved its relative standing over the five past years in spite of a virtual standstill 0.1% per year growth of real per capita income since independence in 1960. The most rapid growth in output and employment has occurred in industry and services albeit from a small base (see Table I). Agricultural output, which includes fishing, hunting, forestry, and animal husbandry as well as crops has grown more slowly than the population.

The structure of the economy has changed through the creation of import-substituting industries, the expansion of export crops (primarily cotton and green beans), the growth of the public sector, and services such as commerce, hotels, and transport. These structural changes have lead to increases in the value of output at a rate which is barely ahead of population growth.

TABLE I

TABLE 1. GROSS DOMESTIC AND LABOR FORCE */

	Labor Force (in thousands)		Rate of Growth	Gross Domestic Product (in millions of 1980 $)		Rate of Growth
	1960	1980	1960-80	1960	1980	1960-80
Agriculture	2,073	2,651	1.2%	317	392	1.1%
Industry	113	420	6.6%	72	176	4.5%
Services	68	162	4.3%	123	412	6.0%
Resident Population	4,350	6,092	1.7%			

*/ IBRD, World Development Report 1982, August 1982

In the face of the current world recession and the accompanying weakness in commodity markets, Upper Volta is struggling to maintain its export earnings from cotton, shea nuts, sesame seeds and even cattle and meat. About one-half of its trade is within the franc zone, but the devaluation of the French franc, and therefore the CFA franc, relative to other hard currencies reduced Upper Volta's purchasing power for goods and services from other trading partners and has not yet resulted in greater demand for its agricultural commodities.

The external debt grew rapidly under the expansive Third Republic (1978-1980) and has continued to grow under subsequent regimes. As shown in Table 2 the balance of trade deficit has increased from 8.6 billion F.CFA in 1970 to 71.5 billion F.CFA in 1981. While this growth in the trade deficit is worthy of concern, it is believed that it is far less alarming than it initially appears as it is offset by almost equally rapid growth in migrant worker remittances, private transfers, and foreign aid in the form of grants. While the current account deficit which includes these transfers has also grown, it is not dangerously large.

TABLE 2

Merchandise Balance of Trade

(billions of current CFA Francs)

	Exports	Imports	Trade Balance
1970	5.1	13.7	- 8.6
1971	4.4	15.6	- 11.2
1972	5.1	12.2	- 12.1
1973	5.6	21.7	- 16.1
1974*	8.7	34.7	- 26.0
1975	9.4	32.4	- 23.0
1976	12.7	34.4	- 21.7
1977	13.6	51.3	- 37.7
1978	9.6	51.1	- 41.5
1979	16.2	63.9	- 42.5
1980	19.1	75.6	- 56.5
1981	19.9	91.4	- 71.5
Annual rate of Growth (1970-1981)	12.4%	17.3%	
Annual rate of price increases for exports and imports (1970-1981)	9.2%	10.0%	

* Figures for 1970-73 do not include duty-free importation.

Note: This table only accounts for exports and imports of goods. Table 3 also includes the net import of services which are freight and insurance on merchandise, transportation and other services.

TABLE 3

Balance of Payments

(billions of current CFA Francs)

	1972	1973	1974	1975	1976	1977	1978	1979
Trade balance on goods & services	- 18.4	- 21.5	- 30.2	- 39.6	- 36.8	- 55.0	- 61.0	- 69.3
Unrequited transfers (of which remittances)	17.4 (6.4)	22.1 (6.8)	29.3 (5.7)	30.9 (5.5)	29.0 (7.6)	34.5 (8.3)	47.4 (10.1)	57.2 (15.2)
Current Account Balance	- 1.0	.6	- .9	- 8.9	7.8	20.5	- 13.5	- 12.1
Capital Movements	1.5	4.0	1.6	6.9	4.2	13.3	5.8	13.1
Errors & Omissions	- .3	- .6	+ .2	+ .5	+ .4	+ .4	+ 2	+ 1.6
Global Balance of Payments	+ .2	+ 4.0	+ .9	- 1.5	- 3.2	- 6.8	- 7.5	+ 2.6

For the group of low-income sub-Saharan African oil-importing countries, the World Bank predicts at best 0.1% per capita annual increases in income and a strong possibility of a continuous decline in per capita incomes over the coming decade[1/]. While Upper Volta will not necessarily follow the average, this prediction is indicative of the generally difficult situation in which low-income African countries find themselves today. To perform better than this dismal forecast, Upper Volta must pay attention to both policy and managerial issues affecting the agricultural sector's growth in particular and economic growth in general, and build the institutions which will sustain productivity increases in agriculture, industry, and services.

B. The Agricultural Sector

In this section, we will present the historical trends in Voltan agriculture and discuss the underlying causes for the lack of growth in agriculture. We will then examine the recent (since 1970) trends in the supply and demand situation for coarse grains as well as for commodities of wheat and rice. While we at USAID/ Upper Volta are fully cognizant of the need to examine market conditions for all commodities including fruits and vegetables, roots and tubers, and oils, the statistical base for these commodities does not permit analysis.

1/ IBRD, World Development Report 1982, Table 4.4, p. 37

1. Historical Trends in Agriculture

The relative importance of agriculture to the Voltan economy was described above. Crop production and other primary sector activities are an important component of the economy which will continue to have a major impact on economic growth. The national accounts for the latest available year, 1979, estimate the product of the primary sector at factor cost as follows:

TABLE 4

Gross Domestic Product at Factor Cost, 1979

	(Billions of CFA)	(Millions of dollars)	% of GDP
Crop Production	63.3	297.4	25.1
Livestock	22.5	105.9	8.9
Forestry	8.7	40.9	3.4
Fishing	1.1	5.2	0.4
Agricultural Sector	95.6	449.4	37.8
Rest of the Economy	157.2	739.2	62.2
TOTAL	242.8	1,188.6	100.0

Crop production accounted for a quarter of the gross domestic product in 1979 and livestock accounted for 8.9%. These are the main sources of income for almost all of the primary sector labor force. The primary sector provides employment for eighty two per cent of the national labor force. While agricultural products and livestock are significant portions of national income, they have even greater significance in terms of export earnings. In 1981, they accounted for 86% of all commodity exports by value. These figures do not include remittances from Voltan migrant labor which is in a sense Upper Volta's principal "export".

TABLE 5

Officially Recorded Exports, 1981

	(Billions CFA)	(Millions of dollars)	%
Cotton	8.3	30.4	41.5
Sheanuts	3.0	11.0	15.0
Animal Products	4.9	18.1	24.7
Oilseeds	.6	2.2	3.2
Fruits & Vegetables	.3	1.2	1.6
Other (non-agricultural)	2.8	10.4	14.2
TOTAL	19.9	73.3	100.0

Few agricultural commodities are processed or transformed prior to export. Examples of semi-processed products are meat, skins and raw leather, cotton thread and sheanut oil. Those products which require additional processing before they are ready for the consumer accounted for only nine per cent of all agricultural exports in 1981. Unprocessed products which dominate exports are led by live animals, sheanuts, and fresh fruits and vegetables. Cotton is ginned before exporting but is not transformed any further except for small quantities of cotton thread.

In spite of the importance of agriculture to the Voltan economy, more attention was given by the central government to the development of import-substituting industries in the first decade after independence in 1960. The only exception to this rule is cotton, which has been vigorously promoted by the cotton monopoly; first the French Company for the Development of Textiles (CFDT) and since 1979 the Voltan Company for Textile Fibers (SOFITEX) with CFDT as minority partner. No other cultivated crop has been developed as an export crop and no other crop has benefitted from the special attention to input supplies and extension of more productive techniques. It is therefore argued that with research and development extension, and the development of input and output markets, other commodities should experience increases in productivity. Given the resource constraints facing Upper Volta, however, it is highly unlikely that the results will approach those experienced by cotton.

Table 6 below shows the changes in output and acreage for the major crops. Data are drawn from the IBRD report and from the Department of Agricultural Services (DSA) of the MRD for the final four years of data not available at the time of the World Bank's mission. While all data are subject to considerable error given the measurement techniques used in Upper Volta, the DSA data are consistent with the data adopted by the World Bank.

TABLE 6

Area, Yields and Production for Major Agricultural Commodities

Period	Area		Yield		Production	
Average	000 ha	Index	kg/ha	Index	000 mt	Index
Cotton						
61-65	41.4	100	158	100	6.6	100
66-70	70.8	171	348	220	25.1	380
71-75	68.1	164	502	318	33.7	510
76-80	74.4	180	790	500	58.8	890
81-82	72.6	175	1022	646	74.2	1124
Sorghum and Millet						
61-65	1727	100	471	100	814	100
66-70	1825	106	500	106	912	112
71-75	1872	108	502	107	939	115
76-80	1946	113	515	109	1002	123
81-82	1996	116	542	115	1082	133

Corn

Period	Area		Yield		Production	
Average	000 ha	Index	kg/ha	Index	000 mt	Index
61-65	160	100	625	100	100	100
66-70	161	100	625	100	100	100
71-75	88	55	670	107	59	59
76-80	126	79	651	104	82	82
81-82	134	84	828	132	111	111
			Rice			
61-65	45	100	792	100	34	100
66-70	39	87	950	120	37	109
71-75	39	87	897	113	35	103
76-80	42	93	810	102	34	100
81-82	25	55	1120	141	28	82
			TOTAL CEREALS			
61-65	1932	100	491	100	948	100
66-70	2025	105	518	106	1049	111
71-75	1999	103	517	105	1033	109
76-80	2114	109	529	108	1118	118
81-82	2155	112	567	115	1221	129

These production figures clearly indicate the major trends over the past 20 years. We have chosen 5-year averages in order to emphasize the long-term trend and minimize the statistical interference associated with annual shifts in the cropping mix.

While in this annex we are primarily concerned with the production and consumption of food commodities, the inclusion of cotton is important in the effect that it has on both rural production and consumption decisions. Historically in Upper Volta cotton and livestock have been the commodities produced for revenue generations while coarse grains have been produced primarily for home consumption. It is currently estimated that of the 1.2 million MT cereals produced in Upper Volta, only 200,000-225,000 MT (16-19% are marketed).

Table 6 shows that cotton area increased significantly during the 1960s. The area devoted to cotton declined during the drought years. This decline is believed to have resulted in part from water scarcity and in part due to the shift from cotton to cereals as producers attempted to minimize food insecurity. Following

the drought, area planted rebounded to an average of 74,400 hectares. The slight decrease reported in 1981/82 is due to the increase in cereals price relative to cotton which has led to a corresponding increase in the market supply of coarse grains. Yields have improved steadily and impressively throughout the post-independence period due to the research and development of varieties and technologies.

The area of sorghum and millet cultivated has increased steadily at about 1% per year with the exception of the drought years when significant acreage in the North Central area was taken out of cultivation due to the lack of rainfall. Table 6 indicates that the yield has also been increasing over time at 1% per year. It is found that sorghum and millet production has increased at an annual rate of 1,6% from 1963-1982 as opposed to the 1,72% annual increase in resident population.

The area devoted to corn remained constant during the 1960s and then dropped precipitously during the drought. It has been slowly recovering since the drought years as farmers regained confidence in rainfall. In the past two years significantly higher yields have been obtained through improved varieties and the practice of planting corn on land that was planted to cotton in the previous year and has retained a portion of the fertilizer input.

The figures for rice reflect highly variable yields and a decreasing area under cultivation. In Upper Volta rice is produced using both rainfed and irrigation technologies. A review of the irrigated area programs show a slight decrease in area planted due to the farmers difficulties in maintaining the technical conditions for production. The greatest reduction in area is found in the low-lying (bas-fonds) rainfed areas. Due to the progressively diminishing water supplies, area has been taken out of rice and planted to other commodities. A final factor is that of marketing. Briefly domestic consumers prefer a long grain, less starchy, rice while domestic production is oriented towards shorter grains with a high percentage of brokens. These factors combined have reduced domestic production and increased the importation of rice.

2. Food Supply and Demand Situation

Before discussing the supply and demand situation for cereal commodities, it is important to acknowledge that the data base from which these analyses are derived is extremely weak. The production statistics are drawn from the IBRD Upper Volta Agricultural Issues Study , October 29, 1982 for 1970-79. These statistics are complemented by production estimates of the Department for Agricultural Services (DSA). The figures for 1978/79 and 1979/80 are common to both sources. To date, there have been no systematic consumption studies undertaken in Upper Volta. The GOUV, using local studies in Kaya and Fada N'Gourma,estimates that demand is equal to 215 kg/capita. USAID/Upper Volta however does not recognize this figure as valid due to the localized nature of the studies, regional differences in diet, the age and structure of the population, and the lack of effective demand. We therefore utilize the FAO consumption requirement of 192 kg/capita as an approximate measure of total cereal demand. We believe, as our growing knowledge of market prices and GOUV ending stock estimates would suggest, that this is slightly greater than the equilibrium demand given relative prices. The demand estimate is therefore found by multiplying the GOUV population estimate by 192 kg/capita. Commercial imports are for official imports only. There are no current estimates of "clandestine" imports/exports. While it is an over-simplification, we accept the hypothesis that in an average year clandestine imports (primarily from Mali) equal exports (primarily to Niger). Finally the food aid figures were compiled by USAID/Upper

Volta from CRS, the World Food Program, FAO, the Government of France, the European Economic Community, and the National Cereals Office (OFNACER).

Table 7, 8, and 9 as well as Figure A presented below clearly indicate that there is a structural and recurrent cereal deficit problem in Upper Volta. While these tables (particularly Table 9) and the figure show that Upper Volta has been able to supply from all sources on average 94.6% of the minimum requirements, the country has never been truly self-sufficient (i.e. domestic production equal to or greater than consumption requirements) over the past 13 years. It is found that on average the country is 85.7% self-sufficient,with a median of 89.3%. This means that in order to meet consumer demand the GOUV and the private sector have had to pursue a strategy of commercial importation and food aid to assure adequate cereal availabilities. Table 7 shows that the GOUV has received a total of 544,000 MT of food aid from 1971/72 through 1982/83 (Mean-45,300 MT, median - 39,000 MT, and range of 23,000-95,000 MT). More importantly, once food aid programs began in the early 1970s, they have continued to supply a small but necessary amount (an average of 4.4% of total cereal supply) which has permitted the country to meet its residual cereal needs over the past decade. Finally, it must be noted that due to the growth rate of the resident population (1.72% per annum), it is unlikely that Upper Volta will be able to sustain a production figure of 192 kg cereals/ capita in the near future. In 1981/82, Upper Volta had a record harvest of 1,278,000 MT, yet due to increased demand the country was less self-sufficient than it was in 1978/1979.

TABLE 7

Total Grain Availability by Source and Year, 1970/71-1982/83

Year	Domestic Supply (000 mt)	Commercial Imports (000 mt)	Food Aid (000 mt)	Total Supply (000 mt)	Population (000)	Per capita Availability (kg)
70/71	879	30	0	909	5126	177
71/72	908	19	39	966	5216	185
72/73	853	40	37	930	5307	175
73/74	702	58	95	855	5400	158
74/75	1000	75	24	1099	5494	200
75/76	939	26	23	988	5590	177
76/77	993	28	25	1046	5686	184
77/78	881	84	88	1053	5784	182
78/79	1031	39	41	1111	5883	189
79/80	1032	58	39	1129	5984	189
80/81	862	191 a/	38	1091	6087	179
81/82	1083	47	56	1186	6192	192
82/83	1015	57	39	1111	6299	176

a/ Commercial Imports increase is attributed to production shortfall of

TABLE 8

Total Cereal Supply Expressed as a Percentage by Source

Year	Domestic Supply	Commercial Imports	Food Aid	TOTAL
1970/71	96.7	3.3	0	100.0
71/72	94.0	2.0	4.0	100.0
72/73	91.7	4.3	4.0	100.0
73/74	82.1	6.8	11.1	100.0
74/75	91.0	6.8	2.2	100.0
75/76	95.0	2.6	2.4	100.0
76/77	95.0	2.7	2.3	100.0
77/78	84.0	8.0	8.0	100.0
78/79	92.8	3.5	3.7	100.0
79/80	91.4	5.1	4.5	100.0
80/81	79.0	17.5	3.5	100.0
81/82	91.3	4.0	3.7	100.0
82/83	91.4	5.1	3.5	100.0

TABLE 9

Percentage of FAO Standard Met by Year and by Source

Year	Domestic Supply	Commercial Imports	Food Aid	TOTAL
1970/71	89.2	3.0	0	92.2
71/72	90.6	1.9	3.9	96.4
72/73	83.7	3.9	3.6	91.2
73/74	67.7	5.6	9.2	82.5
74/75	94.8	7.1	2.2	104.1
75/76	87.7	2.4	2.1	92.2
76/77	90.9	2.6	2.3	95.8
77/78	79.3	7.6	7.9	94.8
78/79	91.2	3.5	3.6	98.3
79/80	89.9	5.0	3.4	98.3
80/81	73.7	16.3	3.3	93.3
81/82	92.3	4.0	4.7	100.0
82/83	84.0	4.7	3.2	91.9

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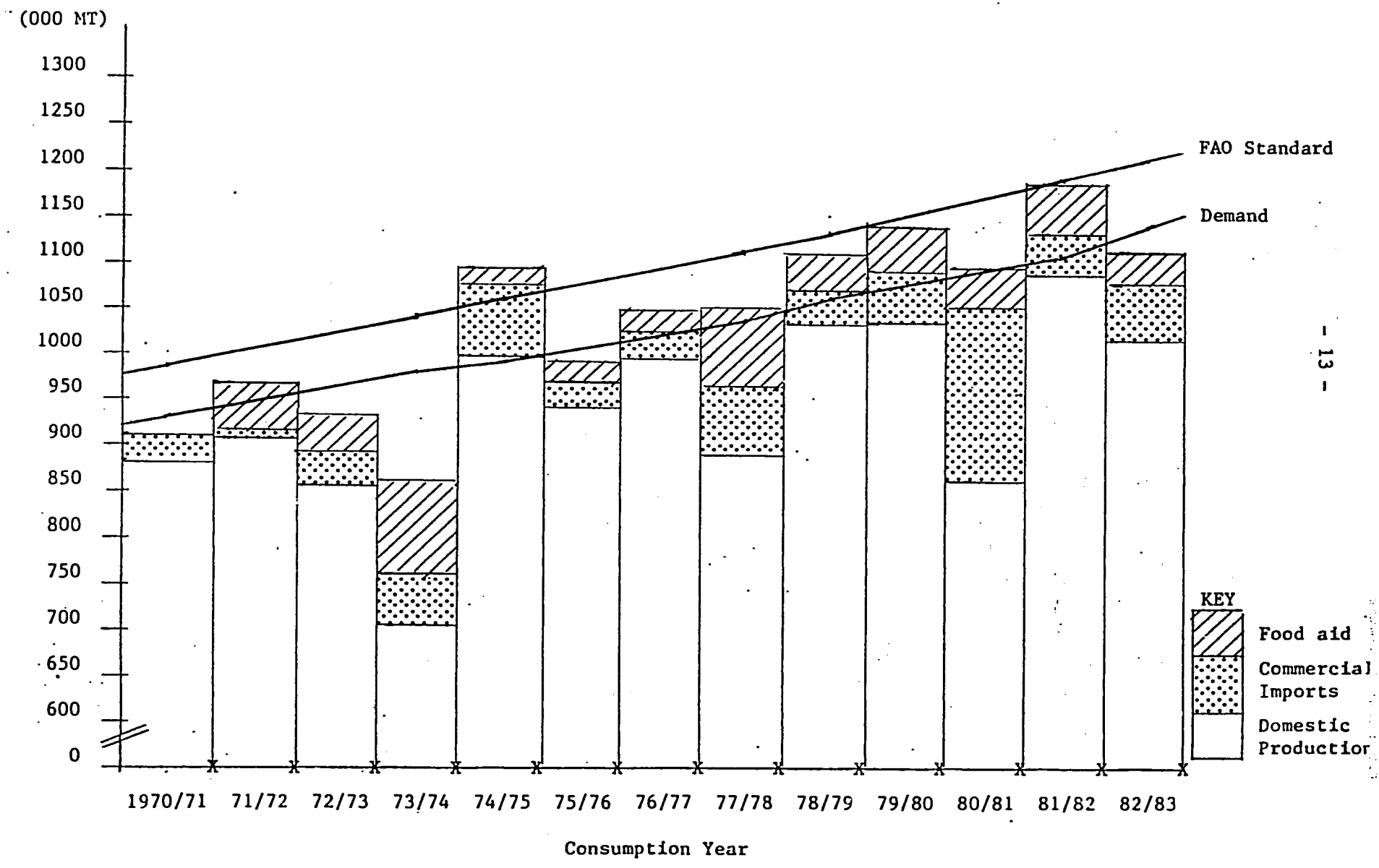
Figure A: Estimated Supply and Demand for All Cereals 1970/71 -- 1982/83



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2.A - The Coarse Grain Supply and Demand Situation

Before discussing the situation for coarse grains, it is important that the reader understand USAID/Upper Volta's methodology for calculating demand. As was discussed above, there is a serious lack of consumption data in Upper Volta. We have therefore assumed the 192 kg/capita FAO consumption requirement as an approximation of total cereal demand. In order to calculate the demand for coarse grains we have substracted the implicit demand for the preferred cereals of wheat and rice from total grain demand.

Coarse grains are the staple of the Voltan diet and are a necessary but not sufficient condition for nutritional self-reliance. As can be seen by comparing Table 7 and Table 10 coarse grain production is equal to 96-98% of total grain production. This production while only on average 90% of the FAO consumption standard has nonetheless nearly met effective demand. We note in particular that 1981/82 calculations based on the FAO standard project only a 10,000 MT surplus, while the ending stocks estimate reflect a surplus of 52,000 MT. This data plus the fact that market prices were greatly depressed in 1981/82, and that the GOUV elected to export 18,000 MT of millet and white sorghum in 1982/83 to reduce surplus stocks and increase market prices as an incentive to greater production suggest that while the FAO standard is a useful benchmark, actual demand as reflected in Figure B is probably 50,000-60,000 MT less than reported in Table 10.

The general trend has been to rely on domestic production in most years with additional food aid deliveries beyond the normally programmed 20,000 MT for targeted food aid (CRS and WFP) being made in years of moderate to heavy distress. In summary, Upper Volta has historically produced 90% of the FAO standard and probably in excess of 95% of effective demand. We believe therefore, that coarse grains are at a position of near static equilibrium we cannot state with confidence that the importation of non-targeted coarse grains would not depress market conditions. We note that given the increased importation of preferred commodities and the apparent unmet demand in oils which are discussed below, the growth in lower value coarse grain production has been insufficient to generate necessary export earnings. It is our opinion that in order to attain the program goal of nutritional self-reliance, the Government of Upper Volta must develop an agricultural strategy based on comparative advantage which will permit the country to maintain an acceptable level of security in coarse grains while generating sufficient revenues to cover the costs of importing commodities which cannot be produced competitively within the country. This implies that the GOUV should establish policies which may encourage the production of coarse grains above the levels required for domestic self-sufficiency. As can be seen from the accompanying tables, Upper Volta has not yet attained these production levels.

2.B - Preferred Cereal Supply and Demand Situation

While Upper Volta is near self-sufficiency in coarse grain production, it is experiencing a growing dependency on external markets for the preferred commodities of rice and wheat. This growing dependency is explained by the increasing demand for wheat and rice relative to coarse grains and is compounded by Upper Volta's comparative disadvantage in production.

As can be seen in Tables 12 and 13 as well as Figures C and D, demand for wheat and rice has been increasing at an average annual rate of 6.6% over the past twelve years. This rate of increase has resulted in more than a doubling of the consumption of preferred commodities (from 50,000 mt in 1970/71 to 107,000 mt

TABLE 10

Estimated Coarse Grain Availability by Source and Demand, 1970/71.

Year	Domestic Supply (000 MT)	Commercial Imports (000 MT)	Food Aid (000 MT)	Total Supply (000 MT)	Total Demand (000MT)	Per Capita Supply (kg)	Per Capita Demand (kg)
1970/71	847	0	0	847	933	165	182
71/72	874	0	39	913	949	175	182
72/73	825	10	37	872	960	164	181
73/74	673	23	95	791	977	146	181
74/75	966	35	24	1025	983	187	179
75/76	903	0	23	926	1000	165	179
76/77	954	0	23	977	1018	172	179
77/78	844	26	84	954	1030	165	178
78/79	1001	0	32	1053	1041	176	177
79/80	989	0	29	1018	1059	170	177
80/81	839	130	30	999	1071	164	176
81/82	1058	0	42	1100	1090	178	176
82/83	992	(18)	30	1004	1102	159	175

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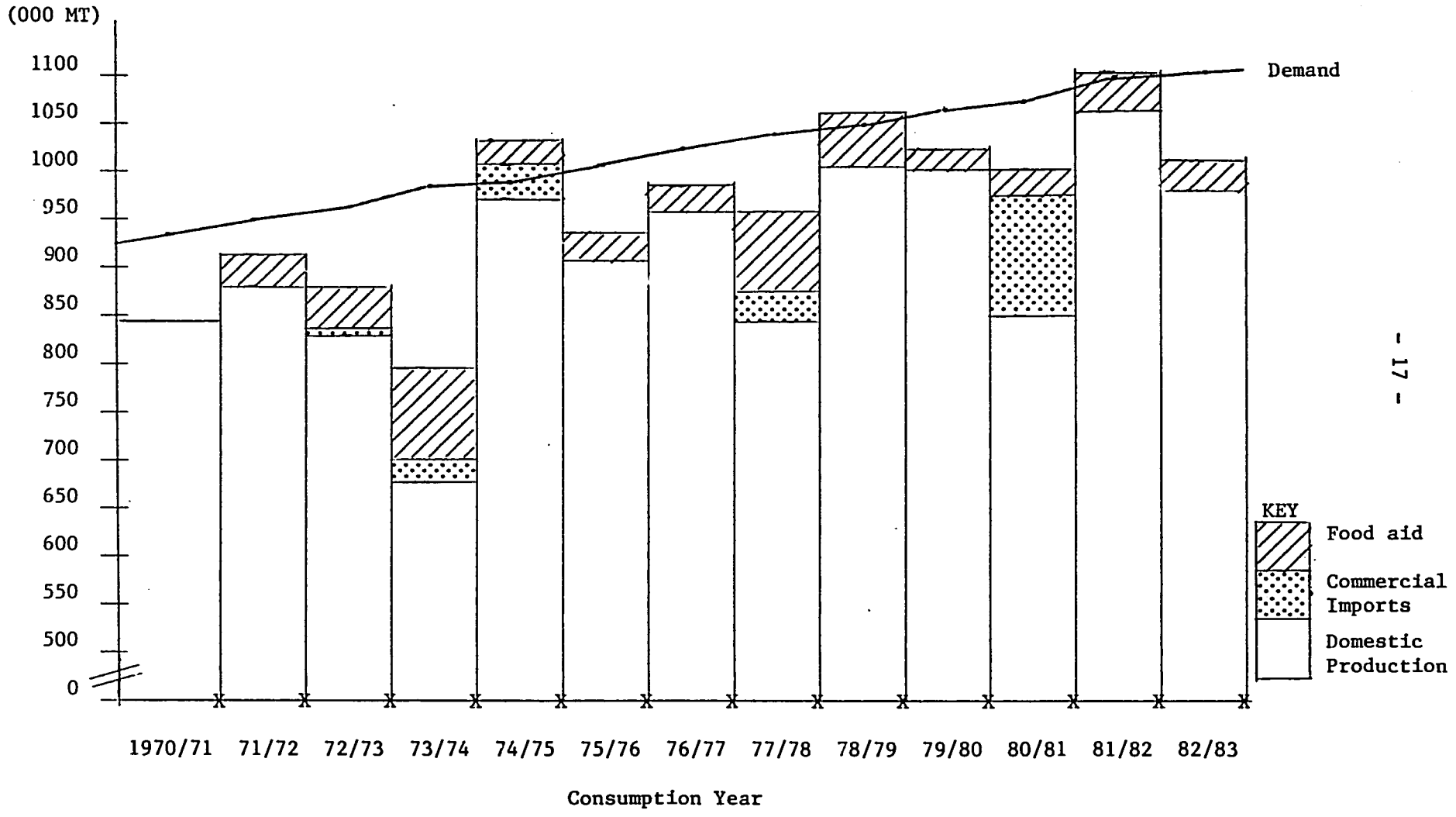
Table 11

Total Coarse Grain Availability Expressed as a Percentage by Source

Year	Domestic Supply	Commercial Imports	Food Aid	Total
1970/71	100.0	0	0	100
71/72	95.7	0	4.3	100
72/73	94.6	1.1	4.3	100
73/74	85.0	2.9	12.1	100
74/75	94.2	3.4	2.4	100
75/76	97.5	0	2.5	100
76/77	97.6	0	2.4	100
77/78	88.5	2.7	8.8	100
78/79	96.9	0	3.1	100
79/80	97.2	0	2.8	100
80/81	83.4	13.0	3.6	100
81/82	96.2	0	3.8	100
82/83	98.8	(1.8)	3.0	100

Figure B: Estimated Supply and Demand for Coarse Grains 1970/71 -- 1982/83



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in 1982/83). It must be noted, however, that the principal reason for this high rate of increase is the extremely low base figure of 50,000 mt in 1970/71. As shown in Table 12, the increase in demand has been a reasonably constant 4,000-6,000 mt per year in absolute terms. Table 12 also indicated the gradual increase in preferred cereals as a part of the Voltan diet. In 1970/71, on average 10 kilograms of wheat and rice were consumed per capita. This figure increased to 15 kilograms/capita in 1978/79 and 17 kilograms in 1982/83. While these figures indicate that per capita consumption has increased by 70% over the time period examined, consumption of preferred cereals is still less than 10% of total cereal consumption. USAID/Upper Volta hypothesizes that this increase in demand is a function of increased urbanization (including regional and sectoral centers of population in the 3,000-10,000 range), increasing disposable income convenience and the increased availabilities of preferred commodities.

When one breaks down the demand for preferred cereals commodity (as shown in Figures C and D) one finds that on average the demand for both commodities are increasing by approximately 2500 mt to 3000 mt/year. The percentage increase for wheat, however, is much higher given its lower base (FYI: the demand for wheat in 1982/83 is estimated at 41,000 mt while rice is 66,000 mt). Finally due to the lack of consumption data, we cannot state with certainty the percentage of these commodities consumed in rural and urban areas, nor can we predict the elasticity of demand. While it is believed that the greatest share of preferred cereals are consumed in urban areas, it is noted that there are supplies of preferred cereals throughout the country which suggests that there is a demand for preferred cereals in outlying areas. It is hypothesized that the greatest constraint to increased demand in rural areas is the lack of disposable income which is closely linked to the low growth in agricultural productivity. We believe therefore that increasing demand for preferred cereals is consistent with Upper Volta's growth path, and given the importance of the agricultural sector may serve as impetus to future growth in agricultural productivity.

As mentioned above, Upper Volta's increasing dependency on external markets is also a function of its comparative disadvantage in production. As shown in Table 12 and 13 and Figure C, in 1970/71, Upper Volta produced 32,000 MT of rice which equaled 100% of the rice supply and 51,6% of total preferred cereal supply. In 1979/80 domestic availabilities of rice had increased to 43,000 MT but were only equal to 38,7% of total preferred cereal supplies, while in 1982/83 domestic availabilities had fallen to 23,000 MT or 21,5% of total supplies. The decreasing ratio of domestic supply to total supply is a function of the increasing demand for wheat, of which less than 200 MT is produced annually as part of an experimental irrigation program, and the substitution of relatively less costly but preferred imported rice for domestic rice. In the case of wheat, it is clear that Upper Volta does not have the natural resource base to produce wheat competively and can import wheat more cheaply on the international market. Still, given the uncertainty of world market prices and the high costs of transportation, Upper Volta may have a locational advantage which justifies the investment in irrigated wheat production. This is a subject which requires more detailed analyses by the GOUV. Continued increases in the demand for bread will necessitate imports of wheat. The only alternative to this scenario which the GOUV is currently exploring is the use of domestically produced corn flour as an extender to wheat flour. Such a program, which has developed spontaneously within the private sector during periods of wheat flour shortage could be institutionalized and may ultimately reduce the demand for wheat flour by 5-10%. For rice, it is estimated that during the 1970s the country was 75-80% self-sufficient. During the mid 1970s, however, the country began importing greater quantities of Thai,

TABLE 12

Estimated Preferred Cereals Availability by Source and Demand,

1970/71 - 1982/83

Year	Domestic Supply (000 MT)	Commercial Imports (000 MT)	Food Aid (000 MT)	Total Supply (000 MT)	Total Demand (000 MT)	Per Capita Supply (kg)	Per Capita Demand (kg)
1970/71	32	30	0	62	50	12	10
71/72	34	19	0	53	53	10	10
72/73	28	30	0	58	58	11	11
73/74	29	35	0	64	62	12	11
74/75	34	40	0	74	70	13	13
75/76	36	26	0	62	73	11	13
76/77	39	28	2	69	75	12	13
77/78	37	58	4	99	82	17	14
78/79	30	39	9	78	86	13	15
79/80	43	58	10	111	92	19	15
80/81	23	61	8	92	96	15	16
81/82	25	47	14	86	101	14	16
82/83	23	75	9	107	107	17	17

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Table 13

Total Preferred Grain Supply Expressed as a Percentage by Source.

Year	Domestic Supply	Commercial Imports	Food Aid	Total
1970/71	51.6	48.4	0	100.0
71/72	64.2	35.8	0	100.0
72/73	48.3	51.7	0	100.0
73/74	45.3	54.7	0	100.0
74/75	45.9	54.1	0	100.0
75/76	58.1	41.9	0	100.0
76/77	56.5	40.6	2.9	100.0
77/78	37.4	58.6	4.0	100.0
78/79	38.5	50.0	11.5	100.0
79/80	38.7	52.3	9.0	100.0
80/81	25.0	66.3	8.7	100.0
81/82	29.1	54.6	16.3	100.0
82/83	21.5	70.1	8.4	100.0

Figure C: Estimated Supply and Demand for Rice 1970/71 -- 1982/83

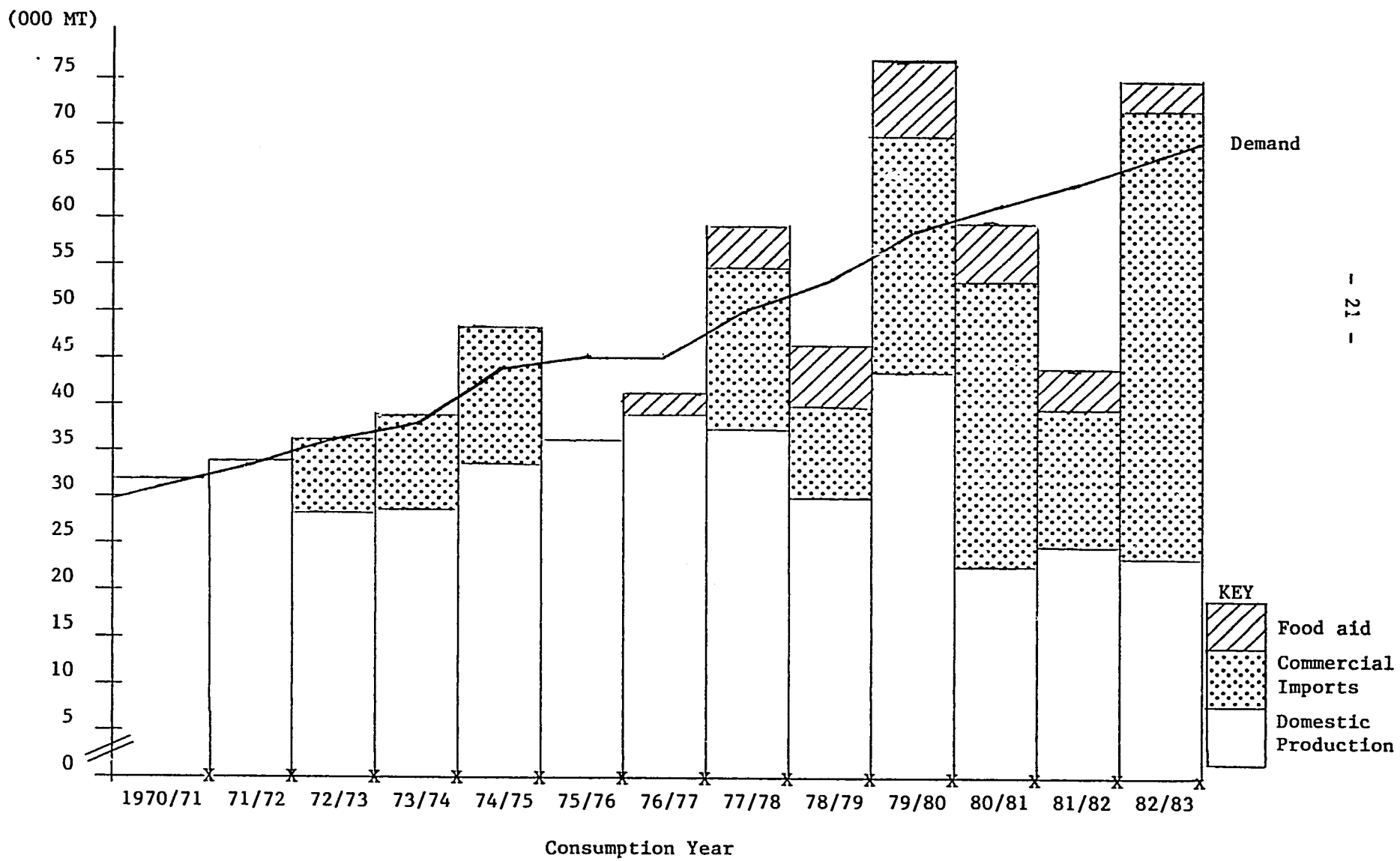

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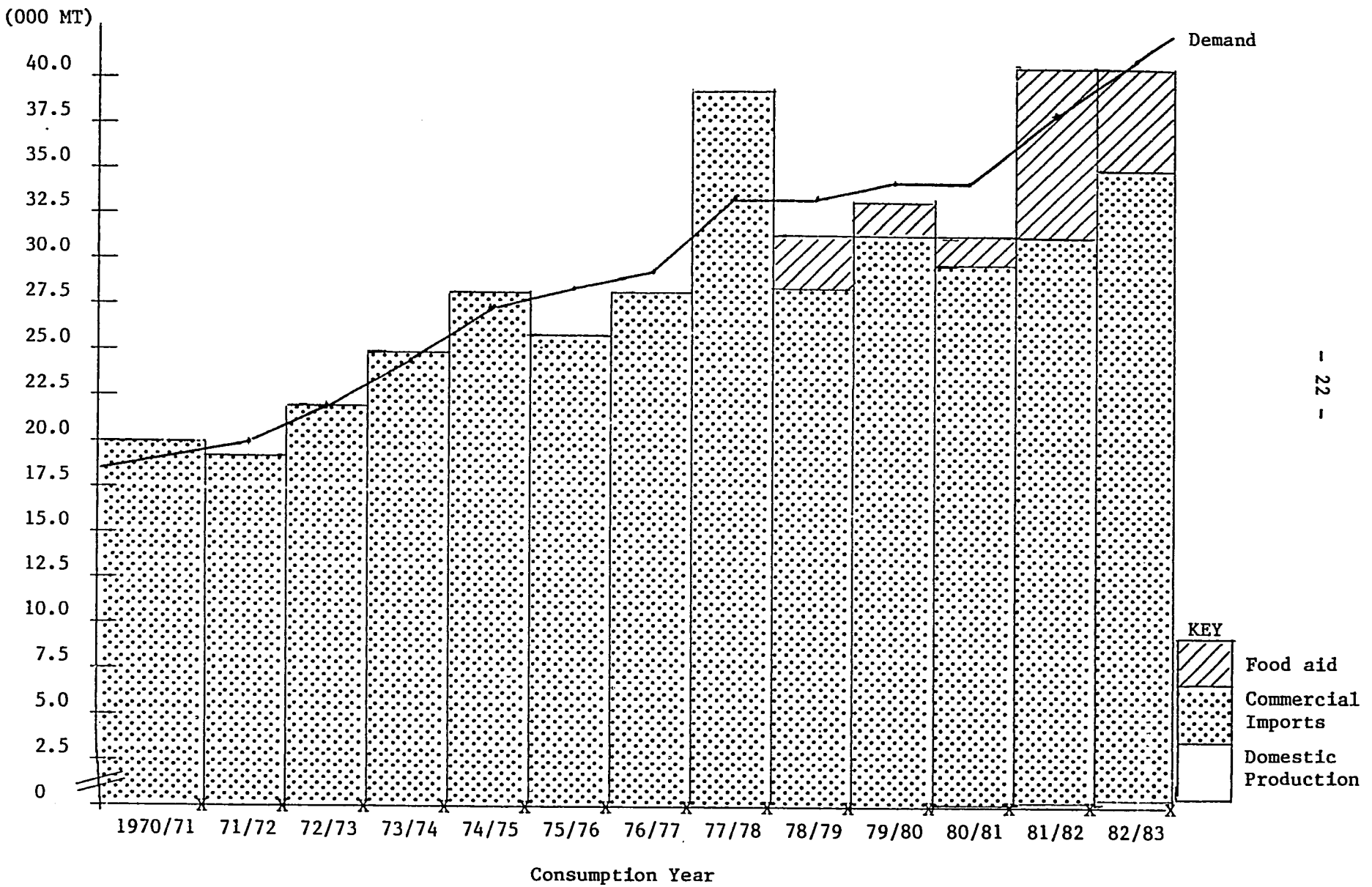
Figure D: Estimated Supply and Demand for Wheat 1970/71 -- 1982/83



Burmese, and Pakistani rice. These imports were found to be preferred by the domestic consumers due to their qualities of being relatively long grained, polished, and the small percentage of brokens. These taste factors combined with the fact that Asian imports cost approximately the same as domestic rice have induced consumers to shift their purchasing patterns. The shift in consumption patterns has depressed local market conditions and is partially responsible for 17,000 hectares being taken out of rice production over the last five years.

In summary, it is evident that Upper Volta will need to continue to import the preferred cereals of wheat and rice for the foreseeable future to satisfy domestic demand. We believe that this strategy is consistent with the objective of nutritional self-reliance and comparative advantage in production. The critical issue at this juncture is how the country can afford to finance additional balance of payments deficits. Given the discussion of the first section it is clear that due to the lack of mineral resources and the limited industrial export potential within the country the importation of these commodities must be largely financed by the agricultural sector itself. This in turn reinforces the need for increases in the productivity of coarse grains and shifts to the higher value commodities of small ruminants, oilseeds and vegetables. Such strategies are long-term but often slow to emerge given the existing base of land, labor and capital. To date other donors, most notably the Canadians and the EEC, have developed their food aid sales programs in order to partially meet the annual increase in preferred cereal demand while utilizing the revenue generations for agricultural sector projects. While such efforts are only temporary measures to more fundamental problems, we share the concerns of these donors and propose to work collaboratively to address the most critical deficit commodities as we attempt to assist the GOUV's efforts to stimulate agricultural productivity.

2.C - Oils Supply and Demand Situation

The base line information to complete a thorough analysis of the supply and demand situation for oils is virtually impossible to compile due to the lack of firm estimates for both supply and demand. We have calculated demand by multiplying the FAO standard of 14.6 kg/capita by the resident population. In order to calculate supply we consulted with the Ministry of Commerce, the World Food Program, and Catholic Relief Services.

Throughout the 1960s and 1970s Upper Volta earned an average of 1.12 billion FCFA or 17.1% of all export earnings from the export of oil and oilseeds. This trend peaked during the years 1974-76 when oil and oilseeds earned on average 3 billion FCFA or 29% of export earnings. As noted in Table 5 above, in 1981, oilseed exports generated 600 million FCFA in earnings which represented only 3% total export earnings. It should be noted that the GOUV and World Bank terminology of "Oil and Oilseeds" may be some what misleading since with the exception of sheanut butter (a semi-refined oil used for cosmetics, margerine and lubricants) exports of "oils" have been minimal. Rather, the exports have primarily consisted of peanuts, sheanuts, and some sesame seeds in their crude form. Due to the ready market for these unprocessed commodities, and the cost of developing medium-scale processing enterprises, the industry has never really developed beyond the household or village level. This factor has severely limited the availabilities of domestically produced oils. As reported in Table E following this text, domestic production has been approximately 40,000 MT for the period 1977 through 1983. This represents less than one half of the FAO recommended minimum standard. Since 1977/78, commercial imports have equaled an average 3,400 MT while vegetable oil food aid has averaged 4,000 MT. Together these imports add 18.5% to the domestic base. This increment however only results in increasing total supply to 60% of

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the FAO standard. This supply shortage is reflected in market prices. In Ouagadougou, the current price for peanut oil is 400-450 FCFA per liter or $ 1,096-$ 1,233 per metric ton. Given these prices, it is clear that oil is unlikely to become an important component of the diet until supply expands to meet local demand conditions.

2.D - Summary of the Food Supply Demand Situation

In summary, the analyses presented above indicate that there is a structural and growing deficit for the preferred cereals of wheat and rice as well as oils. This trend is expected to continue and should increase balance of payments deficits, particularly if the value of imported commodities increases in response to the tightening of world market conditions as is an expected result of the Payment-In-Kind (PIK) Program. The underlying causes for this structural deficit are an increasing demand due to increased disposable incomes, the lack of domestic production possibilities, and the lack of sufficient investment in the small to medium scale oil processing industry. For coarse grains, our analysis does not support the hypothesis that there is a structural deficit. While undoubtedly coarse grain imports will be required to relieve emergency situations following abnormally low years of rainfall and targeted coarse grain food aid may be required to assure minimal nutritional standards for high risk groups, we believe that the sustained programming of coarse grains under a Section 206 Program has a high probability of depressing local market conditions for commodities in which Upper Volta has a comparative advantage in production.

3. Underlying Causes for the Observed Performance in Agriculture

As the preceding sections indicate, it is possible to divide the agricultural sector into two categories: commodities in which Upper Volta has comparative advantage in production (primarily coarse grains and cotton but also livestock and some fruits, vegetables, and tubers); and commodities for which it does not have a comparative advantage in production. In short, as discussed above Upper Volta has not been able to realize sufficient growth in productivity for those commodities in which it has a comparative advantage in production.

As was discussed in the CDSS, the Agricultural Development Support PID, the Investment Rationale Paper, and elsewhere in this Project Paper the slow growth in agriculture is primarily due to a set of physical and technological constraints which are expensive to overcome and not due to inappropriate pricing and marketing policies or an inappropriate role of the central government. Upper Volta has maintained a liberal approach to marketing and pricing policies. Available information indicates that commodity markets are reasonably well integrated, prices are determined by conditions of supply and demand and unlike its neighbours in Mali and Niger, the GOUV does not try to enforce official prices on private sector marketers.

In order to achieve sustained growth in agricultural productivity the production possibility frontier must be shifted to the right and the allocation of available resources should be maximized. To date there has not been a significant shift in the production possibility frontier due to the physical and technological constraints. The physical constraints are particularly severe throughout the country with the exception of the Southwest. The constraints, which are mutually reinforcing include marginally adequate and highly variable rainfall, the high cost of irrigation and limited irrigation potential, poor soils, a high density population, and the high cost of modern technology. Low and variable rainfall

increase the difficulty of developing improved varieties as well as reducing the yield potential of traditional varieties. Improved varieties are usually more sensitive to drought conditions whereas traditional varieties do not respond so strongly to favorable growing conditions. Irrigation would allow better water control and the accompanying use of yield-increasing inputs, but there is relatively little irrigation potential in Upper Volta and it has proven to be very expensive compared to the value output. Voltan soils have low natural fertility which is further reduced by leaching and erosion when they are cultivated. Fallow periods are insufficient to restore soil fertility in much of the country, and the high rate of population growth even with out-migration further reduces these periods.

The high cost of modern technology has also been a constraining factor. The World Bank analysis of financial and economic returns to the adoption of available technologies shows profitable returns to increasing output for most crops. However, it appears that raising the net financial and economic return per labor unit is dependent upon favorable natural conditions and proficient farming, i.e. good timing of operations, use of fertilizers, animal traction and manure. The IBRD analysis of financial and economic returns to adoption of new technologies demonstrates the scope for improvement of productivity is limited.

In summary of the technical constraints, it is apparent that are no "green revolutions" or dramatic productivity increases in sight for the farming conditions in Upper Volta. Rather, USAID/Upper Volta perceives increased productivity in agriculture to be generated by the incremental increase in productivity per hectare. Such increases in productivity are expected to be brought about through improved conservation practices to improve soil fertility and retain moisture, increased intercropping, and the shift towards higher value crops, as well as continued research and development of improved technical packages. Such a strategy is consistent with the World Bank conclusion that we must work towards "long-term changes consisting of incremental improvements in the farming systems and in the agricultural resource base".

The general economic constraints to development of agriculture in Upper Volta are also severe. They are the classic constraints facing a landlocked agrarian economy, with the additional constraints of a poor physical resource base and emigration of labor to coastal countries which raises the cost of labor. These classic constraints are the higher cost of imported inputs and the lower value of exported outputs due to the overland transportation costs to the sea. Poor internal transportation networks also reduce the net value of output, particularly in the East. The openness of the economy and its small size mean Upper Volta is a price taker (rather than a price getter) for imported and exported goods and has little scope for influencing the price structure. As an example of this, the high demand for meat in the Ivory Coast increases the cost and opportunity cost of maintaining animal traction teams. To summarize, Upper Volta has a low level of technology, faces severe physical resource constraints, has high factor costs due to the demand for its labor in the Ivory Coast and the cost of imported inputs, and faces low world commodity prices.

In light of these constraints, we conclude that Voltan agriculture has performed reasonably well. As discussed above, the country still meets most of its demand for food albeit at poor nutritional levels, and has successfully promoted the growth of cotton exports. Domestic markets are competitive and unconstrained and, with the exception of coarse grain food aid sales, government intervention in these markets has encouraged greater production and has not displaced private trade.

While the GOUV in our opinion has not followed policies that are extremely negative or are disencentives to domestic production, one cannot say that the GOUV policies and programs have contributed positively to increases in agricultural productivity. Due largely to the lack of funding the Ministry of Rural Development has not been able to develop the appropriate policies and programs to encourage greater production. This lack of central Government investment in planning and analysis, coupled with incomplete information and the inherent risk-minimization of producers and consumers who face food insecurity have further reinforced the technical and physical constraints to result in an agricultural sector which has not demonstrated the dynamic qualities necessary for sustained increases in agricultural productivity.

II. The USAID/Upper Volta Section 206 Program

A. Background

USAID/Upper Volta was the first African Mission to develop a PL 480 Title II Section 206 Program which was fully integrated with the Development Assistance financing of the Grain Marketing Development Project (686-0243). The objectives of this project were somewhat more narrow than those proposed under the Agricultural Development Support Project in that they were directed towards improving the National Cereals Office's (OFNACER's) operational efficiency and effectiveness. We have found that in spite of marketing difficulties associated with U.S. sorghum, which is considered an inferior commodity to local sorghums in non-deficit years, the Section 206 Program has succeeded reasonably well. Not only have the local currency revenues been generated in a timely fashion to permit the financing of grain warehouses and a revolving fund utilized by OFNACER to purchase 10,000 MT of domestic grain per year as part of the producer floor price strategy to increase coarse grain production in the Southwest, but more importantly we have found that the integration of PL 480 food aid with development assistance financing serves to complement and reinforce components. The suspension of the PL 480 program by USAID/Upper Volta in 1980 and the conditioning of the 1981 emergency assistance were important factors in OFNACER's efforts to become a more efficient organization (1). While the evolution of OFNACER towards a production oriented policy instrument and away from consumer protectionism was initiated by the Ministry of Rural Development itself, it is well known that the Ministry referred to the USAID/Upper Volta and West German programs in its defense of the reorientation before the Council of Ministers. We believe, therefore, that such an integration of Development Assistance and PL 480 resources should permit USAID/Upper Volta and the Ministry of Rural Development to participate in an active dialogue which will permit a greater realization of project objectives than would otherwise be possible.

During the development of the Agricultural Development Support Project we considered at length alternative sources of local cost financing which would permit such complementary leveraging. Briefly, the alternatives considered were a contribution from the GOUV Treasury, an increase in Development Assistance financing by $ 10 million, or a Title III program. We believed that based on a range of economic, financial, administrative and institutional criteria, a Title II Section 206 Program is clearly preferable. The first option of Host Country financing by the GOUV is not viable. Had the GOUV the available resources to commit to the

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(1) USAID/Upper Volta suspended the second shipment of 6,000 MT in 1980, due to inadequate financial management by OFNACER. A condition of the continued DA and PL 480 support of the Grain Marketing Project 686-0243 was the design and implementation of an improved financial management system.

Agricultural Development Support Project, they would have been committed and the local cost component of the Project would have been developed differently.

The second alternative of an increase in development assistance financing is a viable option but would decrease the leveraging flexibility associated with annually negotiated self-help measures. It is our judgement that annually negotiated Transfer Authorizations and local cost budgets enhance the case and attention of the GOUV to the improved management of its own resources. Since the proposed financing is a net addition to current GOUV support to the Ministry of Rural Development, this process is expected to create a greater awareness on the part of the GOUV of the costs associated with strengthening the Ministry's capabilities. For these reasons we believe that a Food for Development Program is the most satisfactory means of generating the local currency requirements of the ADS Project.

The final option is a Title III Program. While this is a possible option, our assessment is that Upper Volta is not yet ready to assume the responsibilities associated with a Title III Program. The basis for this position is that with a per capita income of $ 240 Upper Volta qualifies as a "relatively least developed country". While the country needs to improve its analytical capabilities and policy implementation, these improvements may be satisfactorily addressed through modest self-help measures of a Section 206 Program rather than the comprehensive reforms required under Title III. We believe at this time that the GOUV is severely limited in its institutional and technical capacity to analyze the causes of poor agricultural performance, and has a limited capability to plan and implement a responsive food and agricultural sector strategy in the absence of close collaboration with the donor community. Finally, we acknowledge that currently the GOUV does not have the administrative capacity to negotiate and contract commodity procurement with American companies and must depend on USAID/Upper Volta as an intermediary to perform the necessary contracting and shipping functions. In summary, it is our hope that as a result of progressively stricter transfer authorizations, the GOUV will be in a position to "graduate" from a Section 206 Program to a Title III Program in the future. For now, however, the GOUV simply does not have the capacity to undertake such a program.

B. Section 206 Goal and Purpose

The proposed Section 206 Program is fully integrated with the USAID/Upper Volta Agricultural program in general and the Agricultural Development Support Project (686-0255) in particular. The current Mission level goal of nutritional self-reliance is significantly different from the previous goal of food self- sufficiency in two important ways. First, by considering nutrition rather than food as the objective, we have substantially upgraded the qualitative dimension of our goal. In the past, food has too often been viewed simply as cereals, and most generally as the coarse grains of sorghum and millet. We are now concerned with a much wider commodity mix to ensure adequate availabilities of not only carbohydrates but also proteins, fats, and vitamins. Secondly, by the term self-reliance we have explicitly recognized the important role of trade and buffer stocks. The term self-reliance is synonymous with the original meaning in the literature of the term self-sufficiency. Unfortunately, the term self-sufficiency has been more narrowly interpreted in many quarters as the domestic production in a given year equal to domestic consumption. Such a concept simply does not represent the dynamic quality of reality, and if strictly adhered to may be expected to result in the misallocation of resources such as protectionist import substitution schemes in settings where there is no comparative advantage

to domestic production.

The goal of the project is increased agricultural productivity. Achievement of this goal will contribute to the wider mission goal in two ways. First, to the extent that food crop and livestock productivity is increased, a greater supply of food is potentially available domestically. Secondly, to the extent that there is growth in commercial agriculture (including marketed food crops and livestock as well as non-food commodities), producers will have greater disposable incomes to increase the demand for nutritious foods which may be satisfied by either domestic or imported commodities produced either during the consumption year or in previous periods. The project goal itself embodies several concepts which should be made specific.

The goal of increased agricultural productivity includes both food and non-food production. Thus support to cotton and other cash crops as well as food crops is not inconsistent with the project goal. The goal also recognizes the importance of trade and comparative advantage but does not ignore the economic arguments for balanced growth. Therefore, simple import substitution schemes in rice with implications for massive investments in infrastructure will not be considered. Rather, investments will be supported where clear advantage exists. However, we also recognize that a greater proportion of external resource flows are already going to regions of greater advantage (i.e. the Southwest with its better soils and rainfall) and we will pursue a policy of more balanced growth by focusing on increasing productivity in the relatively less well endowed area of the Mossi Plateau, where approximately one half the population lives. Lastly, the goal will be achieved largely by changes in technology which in turn will trigger substantial changes in cropping and production systems to provide a value mix. In other words, we are not expecting four to five per cent sustained growth rates in coarse grains. We anticipate, however, that technology gains in the production of coarse grains will free up scarce land, labor and capital for the production of more remunerative crops. In order to meet this goal, the purpose of the project is to reinforce the capacity of the Ministry of the Rural Development to manage a more efficient use of resources in the agricultural sector.

C. Activities Financed by the Section 206 Component

The project has four sets of objectives under this general purpose which include: improved management of aggregate resources and investment flows, improved quality of human capital, an acceleration of the transfer of sound technology; and the decrease in food insecurity. Since the PL 480 component is designed to provide the local cost financing of each of these components, it is perhaps useful to present in general terms the activities to be financed by PL 480 sales proceeds. For a more detailed examination the reader is encouraged to refer to the text of the Project Paper.

1. Improved GOUV Management of Available Resources

The first objective of the ADS project is designed to improve the allocation of scarce resources (physical, human, and capital) to permit increased levels of production. The process is an indirect one comprised of support to those national level entities within the MRD which are charged with agricultural policy, planning and programming as they attempt to maximize the impact of capital flows into the agricultural sector relying progressively upon the private sector to assume a greater role in the construction of productive infrastucture, the marketing of inputs and export outputs, and the extension of appropriate technologies.

It is argued that the necessary first step to the realization of this purpose is a significant upgrading of agricultural statistics. Currently, many statistics which are essential for planning and management purposes are unavailable, while others are available only after significant processing delays which diminish their usefulness. It is also noted that most statistics currently available have been generated in a non-scientific fashion with unacceptable levels of confidence. Therefore on a priority basis, the project will support the USDA Statistical Reporting Service as it introduces an area sampling frame to estimate crop and livestock production figures. It is expected that over time this frame will be employed in generating other socio-economic data which along with improved information on natural resources, land tenure, input and output markets, trade and consumption will permit the MRD and the GOUV to better gather and assess basic statistics.

The ADS project, recognizing that data are of little value if analysts and decision makers do not have access to information in a timely way, will strengthen the data and information processing and documentation systems within the MRD. Moreover, improved information is necessary for improved decision-making by all economic agents, especially the private sector. Therefore, the project will focus on the timely dissemination of relevant information to the interested parties through extension agents, as well as the press, television and radio.

While improved information is necessary, it is not an end in itself. It is imperative that information be well analyzed in order to serve as a basis for policy and programs. As was discussed above, the MRD, with the support of the donor community, has followed to the best of its ability, given informational limitations, a relatively progressive policy posture, with respect to the agricultural sector. Therefore, the project will support both training and studies within the central Ministry and other policy making entities in the MRD in order to support the MRD's policy planning and coordination functions and to assure that available public resources are channeled to their most productive uses within the sector.

Finally, as was noted above, due to the lack of effective informational feedback systems there has historically been misallocation of resources. Currently many project monitoring and evaluation activities are proceeding in an uncoordinated fashion. The ADS project proposes to address this problem through its support to the Department of Studies and Projects' Monitoring and Evaluation Unit which will increase the overall efficiency of the system and ensure that lessons are learned and have an impact on reprogramming more quickly.

In summary, better statistics and date processing, more frequent and higher quality studies and analyses leading to improved policy, planning and programming, and finally a comprehensive and coordinated system of project monitoring and evaluation will assure that external resource flows will be combined with domestic resources in a more effective and efficient manner. We of course recognize the process of such institution building is long term and a ten year commitment is implicitly being made to the MRD and the participating university.

We believe that the availability of more and better information to the public and private sectors should encourage greater productivity through the better allocation of resources at both the micro and macro decision making levels.

2. Improved Human Capital

Improved human capital is expected to have an impact on agricultural productivity through greater returns to household labor and the better management of household resources as well as through the impact on the agricultural transformation and service sectors. In Upper Volta, as elsewhere, the agricultural production function is that of capital, land,labor and climatic conditions. Given declining soil fertility, population growth, and the migration of labor from the Mossi Plateau to the previously undercultivated southwest, the country can only depend upon an expansion of area under cultivation as a source of agricultural growth for a limited number of years. The keys then to sustained long-term growth are the increasing returns to labor and capital, assuming favorable climatic conditions. Furthermore, experience has taught us that while increases in capital may lead increases in human resources for a short period of time, the human resource base must be expanded in order to assure an efficient utilization of available capital.

Assuming the availability of more and better information, it is expected that the agricultural sector in Upper Volta will become more dynamic. Therefore an increase in human capital is necessary to maximize resource allocation under dynamic conditions.

Under the ADS project we will concentrate on strengthening human capital in those selected areas where we have a comparative advantage given other donors' current and planned activities. These areas of intervention will include: a) the strengthening of managerial and skills training of rural youth; b) strengthening the system of managerial training for adult cooperatives; and c) the introduction of a fund for the training of mid-level technical and managerial skills for representatives of both the public and private sectors. First, with respect to the strengthening of managerial skills training of rural youth, there is no question that the future of Upper Volta rests with its youth. Historically, a major factor in the slow growth of agriculture has been the "brain drain" from the farm to the more lucrative and prestigious vocations in urban areas. The GOUV has recognized that such a trend has had a negative effect on rural productivity, and has developed a system of vocational training in agriculture which will be partially supported under this project in those areas which are currently under-financed by other donors. It is believed this program will lay the groundwork for both short and long-term increases in productivity by introducing state of the science technologies and management techniques which can be employed by the youth as they begin farming and may have some impact on the families' household decisions.

Secondly, the project will strengthen the managerial training for adult cooperatives. This activity recognizes the fact that increases in human capital are required in the near-term as well as over time. While the training of rural youth is expected to have some impact on the introduction of new technologies and practices, it is acknowledged that the traditional practices of their parents will be slow in being replaced. Therefore, this activity focuses upon the managerial training for those producers/consumers who have organized themselves into cooperatives. Such training, which will focus upon literacy, basic applied accounting, and marketing, is expected to permit a greater response to the improved informational flows of the first component. It is also expected that this managerial training will complement the extension work financed by other donors and result in the indirect upgrading of both technical and managerial skills throughout the rural population.

Finally, the project will introduce a fund for the training of mid-level technical and managerial skills to representatives of both the public and private sectors for agricultural support services. Upper Volta, like many developing countries, finds itself with a supply of low-level agricultural generalists, while the demand is for better trained agricultural specialists. This fund will permit the GOUV to begin to address this gap by providing training for mechanics, market agents of agricultural inputs, computer technicians, etc. who are expected to increase rural production through the provision of improved support services to the agricultural sector.

In summary, we believe the investment in human capital will permit the agricultural sector to better utilize available resources and increase its productivity. The decision to focus on rural youth, village coops, and the agricultural service sector reflects our efforts to support the GOUV strategy in areas where we have a comparative advantage at this time. It is expected that our efforts, coupled with a strengthened monitoring and evaluation unit within the MRD, should permit complementarities with other donors' efforts which will multiply the returns to human capital investment by a factor that is greater than would otherwise have been possible.

3. Accelerated Transfer of Productive Technologies into the Agricultural Sector

Upper Volta has only recently begun to benefit from technological transfers. While an increase in information availability and human capital as described above is expected to increase the rate of productivity increases over time, the transfer of certain essential technologies is expected to accelerate this progress and permit a higher sustained rate given the complementarities with information flows and human capital. As is the case with human capital, we are limiting ourselves to those interventions which are most appropriate and in which we have comparative advantage. The technological interventions under the ADS project will therefore be limited to the following: the introduction of the farming systems approach to research and extension; the development and extension of nutritionally sound food production and processing practices, and the development and extension of environmentally sound soils,water, and land use practices.

As was discussed above, a major constraint to the increase in agricultural productivity has been the lack of development of improved farming systems and the extension of available techniques to the farming population. In retrospect, it appears that research institutions and government officials have sought quick and easy solutions which did not satisfactorily address the complex and interrelated constraints faced by the producer. This search for easy solutions has emphasized "technical packages" and "high yielding varieties". While both areas offer some promise, it is unrealistic in the Voltan context to rely upon the discovery of a new technological breakthrough to achieve significant increases in productivity. Rather, as stated earlier, the prospects for increased productivity are in long-term changes consisting of incremental improvements in the farming system and in the agricultural resource base. While we still await technological breakthroughs, the current farming systems research under the regional SAFGRAD project has demonstrated the potential of sustainable increased productivity through the use of inter-cropping techniques, crop rotation, the shifting of crop mixes, etc. To date, these advances in productivity have not been fully disseminated to the rural population due to poor coordination and the lack of information flows from the international research institutes to the MRD to the ORDs.

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The ADS project will systematically include farming system research within the Ministry of Rural Development and facilitate the flow of information through the extension service. Given the locational specificity of farming systems research and the potential for immediate feedback at the grass roots level, we believe this is the most cost-effective approach to applied research and extension and will complement directly the FAO/World Bank extension efforts as well as those of donors financing regional development programs.

The second intervention of developing and extending nutritionally sound food production and processing practices is expected to contribute to agricultural production through both its impact on human capital and the possible shift of time allocation practices to more remunerative activities. The general nutritional levels in Upper Volta rank among the lowest in the world. While this is especially true of children, poor nutrition also reduces the potential daily output of adult labor. Given the fact that during the agricultural season (particularly for the seasonal activities of planting and weeding) there is a labor constraint which effectively limits potential production, it is believed first that improved nutritional levels would have a direct and positive impact on increased production. The second dimension is the potential shift of time allocation from food processing to other more remunerative (including restorative leisure) activities. Field research indicates that women in Upper Volta allocate a significant part of their day to food processing activities. The introduction of grain mills and oil presses, for example, into the rural household's production function will shift the time constraint and may permit the allocation of the time saved to farm production activities which would be expected to increase agricultural production, to off-farm employment which would increase rural productivity and effective demand, or leisure time which is a necessary restorative investment in the household production function as well as a consumption good.

The final intervention under this component is to develop and extend environmentally sound soil, water and land use practices. An extremely important factor of Voltan production is the land. Due to the pressures of population, the soils, which are of lateritic composition and lacking natural fertility, are becoming increasingly depleted. The result is that both the absolute and relative potential for crop and livestock productivity is diminishing over time. While the long-term goal of this component is to restore fertility and bring back into production areas to their highest and best use, the critical first step is to arrest the negative trends, particularly on the Mossi Plateau, and maintain the physical resource base in order that there may be sustained increases in agricultural productivity. The United States is recognized as having a comparative advantage in implementing soil conservation programs. We believe therefore that our proposed intervention with the soils and water service will directly complement other donors' activities and support regional development concerns.

In summary, these three limited technological transfers are believed to be areas in which we have a comparative advantage vis-à-vis other donors. They are all areas which heretofore have not been addressed systematically and have resulted in a less than optimal utilization of public and private resources. As is the case with the other individual components, this component is expected to have a direct positive impact on increased agricultural production. While this impact is not insignificant, the impact of this component can only be fully appreciated when the multiplier effect of the linkages with the other components is considered.

D. Decreased Food Insecurity

A final factor which affects resource allocation decisions and therefore production at both the macro and micro level is risk and insecurity. The introduction of the concept of risk or insecurity as an exogenous variable into either the producer's or the policy-maker's decision-making process will tend to shift resource allocation away from the economically optimal point for long-term growth in production towards a less optimal point that minimizes risk. While there are many uncertainties which enter the decision-making process, by far the most important in the Voltan setting is the availability of basic food commodities, i.e. coarse grains, wheat, meat, and oils (the availability of fruits and vegetables, and roots and tubers may enter into the production/consumption decision of individual households, but are as yet not considered significant enough to enter the top level policy decision making process). The final objective of the project is to reduce insecurity in order that the producer and the MRD can realize a higher value of production given the constraints of land, labor and capital. In particular, the project will: reduce cereal supply uncertainty at the local level, increase the efficiency of national level supply stabilization efforts, and reduce the uncertainty associated with the importation of preferred cereals and oils which lead to inefficient import-substituting production policies.

The efforts to reduce village level insecurity will be directed through the establishment of a revolving fund to finance the establishment and expansion of privately managed village cooperative cereal banks. The establishment of such institutions provides the first line of defense in catastrophic times and the most efficient means of assuring local cereal security, and when properly managed offer the possibility of dividends and/or expansion into other agricultural services such as the supply of agricultural inputs to producers or the development of rural financial institutions. It is argued that with the increased availability of coarse grains at the village level, uncertainty regarding the following year's supply will be reduced, and the farm household will be encouraged to shift surplus area out of coarse grains to more remunerative activities, particularly fruits,vegetables and livestock. Such a shift will serve to not only increase the supply of more nutritious commodities, but will increase the effective demand as well.

The concept of village level uncertainty will also be addressed indirectly through the continuing efforts to strengthen OFNACER's planning unit. OFNACER is currently attempting to follow a policy which will permit the Ministry of Interior and PVOs to purchase grain from OFNACER for emergency domestic distribution. While this is a noble notion the program is currently rife with definitional and institutional problems. It is hoped that over the life of the project the MRD will be able to develop criteria with the PVOs and the Ministry of Interior to assure that the truly needy will have adequate supplies available without undue market distortions which would depress producer prices.

A second objective of the project is to increase the efficiency of OFNACER's supply stabilization program. Over the last two years, OFNACER has demonstrated that it can be an effective means of eliciting a supply response in the surplus potential areas of the country by purchasing approximately 15% of marketed domestic coarse grains. This improvement in effectiveness is noteworthy, but we believe that a leaner OFNACER can be equally as effective while permitting a more optimal allocation of public resources. The ADS project will therefore continue to support OFNACER's recently created Planning Unit which will work closely with the Department of Studies and Projects at the Ministerial level to analyze

production and market conditions and adopt the appropriate market intervention practices given the GOUV objectives and resources. It is expected that as domestic production responds to remunerative prices, policy-makers will be less insecure regarding coarse grain availabilities which will gradually permit policies encouraging coarse grain production to be superseded by policies encouraging production of higher value and more nutritious commodities. The final intervention designed to decrease food insecurity is the integration of the PL 480 Title II Section 206 Program. The 206 Program is designed to reduce the GOUV uncertainty regarding the availabilities of imported preferred commodities (wheat, oil) for domestic consumption. When one examines recent trends in Voltan preferred commodity markets, one finds there is a rapidly increasing preference for these commodities which is believed to be associated with the rural to urban migration and increased real income levels. The insecurity arises from the lack of cash reserves available to purchase imported commodities and the fact that Upper Volta as a commercial importer of preferred commodities faces wide fluctuations in commodity prices. While world prices are currently depressed, the apparent success of the "Payment in Kind" or "PIK" program in the United States coupled with continued droughts in Africa and/or a major food shortage in the Soviet Union or elsewhere could very likely tighten world market conditions. If at the same time, Upper Volta were required to import 60,000-70,000 MT to satisfy domestic demand and had sufficient cash reserves to cover the expected costs, the increase in world prices associated with a tightening of the market conditions would result in the inability to import sufficient quantities to meet demand. Such a shortfall in food supplies would be expected to have domestic political repercussions which would effectively allocate public resources away from rural development and agricultural productivity. Therefore, it is believed that the Section 206 Program will have a direct and immediate impact in that it will help meet the incremental growth in demand for preferred commodities and will permit the GOUV to generate additional local currency resources to complement our Development Assistance funding. The program will also have the indirect effect of temporarily reducing uncertainties of balance of payments issues for preferred commodities which would be expected to increase the GOUV's own investment within the agricultural sector.

In summary, risk and uncertainty effectively constrain the optimal allocation of resources. This component, through support to privately managed village level cooperatives, OFNACER, and the importation of preferred commodities with generated revenues to be utilized by the Ministry of Rural Development, intends to progressively minimize the impact of risk in order that the producer, the MRD, and the GOUV can better allocate resources and increase rural productivity.

4. Summary

In conclusion, the ADS project systematically addresses increased agricultural production through improved management, planning, and information flows; the improvement in human capital through managerial and technical skills training; the select transfer of production and conservation technologies; and the decrease of uncertainty regarding food commodity availabilities. While each of these components alone is expected to have positive impact on agricultural productivity, we believe that the integration of the components into an overall project will permit greater returns to the investment over time in that such a project structure focuses systematically upon the linkages as well as the implementing agencies. It is believed that this strategy, working in close collaboration with other donors and other ministries will facilitate and

expedite the evolution of the agricultural sector to a position of optimal returns and minimal risks given the physical setting.

D. Inputs

The Section 206 Program will provide over the life of the project approximately $ 9,75 million worth of value landed commodities. While we anticipate an annual commodity mix of approximately 3000 MT of wheat and 2000 MT of vegetable oil (55 gallon drums) for the three year program (FY 84-86), the annual commodity mix will be determined through discussions with the Ministry of Rural Development and the GOUV/Donor Food Aid Coordination Committee which is to be formed as a Self-Help Measure under the initial Tranfer Authorization. The sale of commodities and deposit of sales proceeds are outputs of the PL 480 program which are utilized as inputs for the ADS activities discussed above.

E. Self-Help Measures

The Section 206 program is an integral part of the ADS project. As such it has the common goal of increasing nutritional self-reliance and agricultural productivity as well as the common purpose of reinforcing the capacity of the Ministry of Rural Development to manage and promote a more efficient use of resources in the agricultural sector. The Section 206 Program also fully supports the project objectives particularly with regard to developing an improved planning capacity and reducing insecurity of food supply. Due to this integral relationship we propose a series of Self-Help Measures which are consistent with the project, GOUV objectives, and other donors efforts. Since the ultimate objective is to build sound institutions, the initial (FY 84) Self-Help Measures will be largely institution-creating. These initial Self-Help Measures will then be followed-up on as necessary by more stringent measures to assure that these newly created institutions function effectively to promote better management and increased food security.

1. General Self-Help Measures

a. National Food Plan. The Ministry of Rural Development, particularly the Department of Studies and Projects (DEP), the Department of Agricultural Services (DSA) and its service of Production and Food and Food Technology, and the National Cereals Office (OFNACER), will participate actively in the development and implementation of the Voltan National Food Plan which is based on the Terms of Reference developed by the World Food Council. The institutions referred to above will form a working group which will develop an adequate food data system within the life of the project. The DSA Production Unit and the DEP will concern themselves with production information, the Food and Food Technology Service will be concerned with consumption and demand information, and the National Cereals Office will provide information on disaggregated stocks and prices. This working group within the Ministry of Rural Development will strengthen the existing food data system and contribute to the MRD's analytical and policy formation capabilities.

The benchmarks for the Self-Help Measures in FY 84 will be the formation of a working group as evidenced by a charter and reports of the meetings will be submitted to USAID/Upper Volta. In subsequent years these measures will be strengthened as required given the individual offices' capabilities.

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b. The Formation of a Food Aid Coordination Committee. Historically, food aid coordination in Upper Volta has been neglected. Due to the lack of sound food sector analyses by the GOUV, individual donors have developed their own programs which may or may not have destabilized market conditions and resulted in unintended disincentives to agricultural production. This Coordination Committee will be chaired by the National Cereals Office and include representatives of all food donor organizations in order to assure that the GOUV has the maximum mix and appropriate regional distribution of food commodities to complement the private sector.

The benchmark in FY 84 will be the formation of a Coordinating Committee which is capable of determining the commodity mix and regional distribution for food aid commodities to be delivered in FY 85. Due to the absence of such a Coordinating Committee, USAID/Upper Volta has developed current programs with various divisions and offices of the GOUV. In the future, prior approval through the Coordinating Committee will be required.

c. The Development of a Voltan Emergency Food Distribution Plan

Historically, the GOUV has not participated in domestic free food distribution plans due to the difficulties associated with the lack of financial resources and the inability to clearly distinguish the criteria for recipients. However, if the country is to develop a program of food security as a means of increasing agricultural productivity, the producer/consumer must be assured that there will be adequate cereal availabilities. During the 1970s, OFNACER provided heavily subsidized commodities in relief efforts. These policies not only resulted in the depletion of OFNACER's financial resources but may have caused disincentives to production. It is therefore proposed that the Ministry of Rural Development work in collaboration with the Ministry of Interior, PVOs, and the Ministry of Economy and Finance to develop the criteria for emergency relief assistance recipients as well as budgeting sufficient funds to reimburse OFNACER the full costs of providing such emergency assistance.

The benchmark of this activity are reports of the Ministerial Meetings regarding criteria for emergency assistance and a proposed financial plan.

2. Specific Self-Help Measures

In addition to the general self-help measures which will be progressively strengthened through the annually negotiated Transfer Authorizations, USAID/Upper Volta perceives the need to include the following specific self-help measures as appropriate and feasible given changing political and economic conditions. Presented below are the specific self-help measures to be included in the FY 84 Transfer Authorization. These self-help measures are consistent with the recommendations prepared by the Ministry of Rural Development and approved by the participants (Voltan, CILSS/Club du Sahel, and representatives of the bilateral donor community) at the National Seminar on Agricultural Policy and Food Strategy held April 13-15, 1983.

a. Producer Price Policy

In order for the official price to serve as an incentive for increased production it must be remunerative to the producer and announced publicly prior to planting. The Ministry of Rural Development will submit the analyses which determine the remunerative price level per region to USAID/Upper Volta. Should

the GOUV continue to implement a one-price policy for the entire country, it will clearly explain how this policy was determined given varying costs of production. The Ministry of Rural Development will also explain how the production floor price conforms to the GOUV goal of coarse grain self-sufficiency and regional as well as national security. The Ministry will announce the producer price(s) over public radio no later than April 15, 1984.

The benchmark for this self-help measures is that USAID/Upper Volta will receive a copy of the requested analyses and transcripts of the radio broadcast, which should be transmitted weekly no later than April 30, 1984.

b. Dissemination of Market Price Information

Since optimal resource allocation by the farmer requires knowledge of market conditions, OFNACER will gather market price data from at least the regional centers of Banfora, Bobo, Gaoua, Pô, Dedougou, Koudougou, Ouahigouya, Dori, Fada and Ouagadougou. This price information will be broadcast weekly over public radio.

The benchmark for this measure is that USAID/Upper Volta will receive transcripts of the weekly radio broadcasts beginning in January 1984.

c. Financial Viability of OFNACER

In order to assure that OFNACER as a policy instrument for increased production and national level security has the necessary means to achieve its stated objectives of stabilizing producer prices at a remunerative level, the GOUV will examine the feasibility of reimbursing OFNACER for the maintenance of a public insurance policy in the form of the security stock. The GOUV will also consider the policy proposal of establishing a line of credit for OFNACER's use. Should such a line of credit be opened, USAID/Upper Volta would encourage the GOUV to charge preferred client commercial interest rates.

The benchmark is that the GOUV will inform USAID/Upper Volta of its deliberations and announce its proposed strategy no later than June 30, 1984.

Beneficiary Participation

The intended beneficiaries of this Section 206 Program vary by phase. As discussed below, the National Cereals Office is the receiving agency for the GOUV. While the wheat will be delivered directly to the Grands Moulins Voltaïques (the mixed capital flour mill), OFNACER will receive and sell the shipment. As such both OFNACER and the Grands Moulins Voltaïques (GMV) are expected to realize some marginal improvements in operating capacity. The second phase of beneficiaries will be the private sector baking and oil industry which will purchase the commodities from the GMV and OFNACER at the wholesale level and re-sell them at the retail level. The final level of beneficiaries of the commodities are the consumers themselves. The direct beneficiaries will be those consumers who purchase the PL 480 commodities, while the indirect beneficiaries will be those who benefit from the increased availability of wheat and oil. While it is expected that the direct beneficiaries will be found in the regional centers which have populations in excess of 3,000 persons, the indirect beneficiaries should be throughout the country. While wheat and US vegetable oil are preferred commodities and hence not perfect substitutes for coarse grains or peanut and cotton oil, theory indicates that the availability of these commodities on the market should permit a substitution effect which will result in an increase of coarse grains

(primarily corn) and domestic oils to lower-income consumption groups.

The direct beneficiaries of the PL 480 sales proceeds will be the Ministry of Rural Development who will utilize these funds to strengthen its analytical and management capabilities as described above. It is expected, however, that the rural sector will benefit both directly and indirectly from the utilization of these funds. Examples of direct beneficiaries are the private sector village cooperatives who will receive training and credit funds as well as the recipients of technological transfers. The indirect beneficiaries are those persons who are able to benefit from the improved MRD services offered.

As such, we see this Section 206 Program as benefitting either directly or indirectly both the public and private sectors as well as consumers and producers.

G. Commodity Selection and Levels

The criteria employed to determine the commodity mix and levels are as follows: expected domestic production, the history of commercial imports as reflected in the usual marketing requirement (UMR) and food aid shipments, domestic market conditions, the value of U.S. commodities delivered to Upper Volta, the expected exchange rate, and the local cost financing necessary to implement the ADS project. After a careful examination of these factors we have determined with the Ministry of Rural Development that the appropriate commodity mix for FY 1984 is 3,000 MT of Northern soft wheat and 2,000 MT of vegetable oil in 55 gallon drums. While we currently expect similar Section 206 levels of wheat and oil in FY 85-86 as part of the three year program, we believe that due to the dynamics of the agricultural sector it would be an error to program commodity levels this far in advance.

As was discussed in the analyses of the supply and demand situation for food commodities and as presented in the tables used to determine the UMR which follow the text of this Annex, it is shown that the consumption for both wheat and rice is a function of available supplies. The demand for wheat increased dramatically from 20,000 MT/year in 1970 to 30,000 by the mid 1970s. In 1981/82, the Canadians and EEC began their food aid sales programs. These programs permitted the importation of 10,000 MT of food aid wheat equivalents and resulted in a 4,000 MT increase in the demand for wheat. This increase plus the expected increase of commercial imports to 35,000 MT in 1982/83, and the use of corn flour to extend wheat flour in the bread industry indicate that there is a unmet demand for wheat. We expect therefore, that the 3,000 MT of PL 480 wheat will not have an impact on the UMR (1977/78-1981/82) of 32,814 MT. Should it be found that the GOUV is substituting food aid for commercial imports, we will work within the structure of the GOUV/Donor Food Aid Coordinating Committee to assure that the UMR is maintained.

A second concern is that the rapid increase in the availability of preferred commodities may result in shifts in Voltan consumption patterns. For this reason, we intend to limit the importation of northern soft wheat to 3,000 MT/Year. Furthermore, is our intention to require the PL 480 sales proceeds to equal or exceed the value of wheat delivered to the G.M.V. in Banfora. This full costing of transportation charges will eliminate any subsidy by the U.S. Government and assure that the introduction of PL 480 wheat serves to meet unmet demand rather than encourage a shift in consumer preferences. Our analysis of market conditions indicates that at the expected

exchange rate of 350 FCFA = $ 1 US, US wheat is competitive with that of other nations and can be fully charged without creating distortions in the local market.

The analyses for rice indicates that this commodity should be considered under the Section 206 Program as well. Indeed in the PID rice was included within the illustrative commodity mix. While domestic market conditions, particularly the increasing demand support its inclusion, we have found that US rice is simply not competitive. Thai and Pakistan rice can be delivered to Upper Volta commercially for the same cost as US rice Stateside. Given the principle of non-subsidization this fact effectively eliminates the commodity from consideration. While we believe that U.S. rice is a higher quality product than Asian rice delivered to Upper Volta, we do not believe the consumer will be willing to pay 75% more for a slightly better commodity.

The analysis for oil suggests that while commercial imports are increasing steadily, the country suffers seriously from unmet demand. While this commodity is quite dynamic and the market will undoubtedly go through an adjustment process once greater supplies are made available, we believe that since retail prices for lower quality peanut and cotton oils are approximately equal to the proposed wholesale price of US vegetable oil, we will not contribute significantly to market distortions. The quantity of 2000 MT was determined largely due to the local cost financing required under the ADS. Given the local market conditions and the position of the critical unmet demand, the USAID supply of a 3.5% market share should have minimal impact.

For coarse grains, we have historically contributed U.S. Red Sorghum under the Section 206 Program. Given the analysis presented above, however, we cannot state with confidence at this time that the importation of coarse grains will not be a disencentive to domestic production. For this reason we have elected to not continue the importation of coarse grains at this time. Coarse grains will however be considered as an alternative commodity in future transfer authorization negotiations if domestic market conditions so justify.

H. Bellmon Determination

In accordance with the Bellmon Amendment (Section 401(b)) of PL 480, the Secretary of Agriculture must make a determination that 1) adequate storage facilities are available in the recipient country at the time of exportation of the commodity to prevent spoilage or waste of the commodity, and 2) the distribution of the commodities in the recipient country will not result in a substantial disencentive to or interference with domestic production or marketing in that country.

With regard to the first condition, OFNACER has adequate facilities (total capacity of 80,000 MT and average stocks of 55,000 MT) to store 2,000 MT of vegetable oil (4,456 drums) for wholesale distribution. The GMV has 4000 MT holding capacity in Abidjan and 3750 MT capacity in Banfora. The GMV has an additional 4000 MT storage capacity for grain stored under tarpaulins during the dry season. USAID/Upper Volta has tentatively reserved 3000 MT bulk space for January 1984 pending approval of this program . Given continued collaboration in the programming of wheat deliveries, and the 4000 MT bulk holding capacity in Abidjan we attest that the first condition of the Bellmon Determination is met for both wheat and oil.

With regard to the second condition, USAID/Upper Volta and the GOUV propose releasing only small quantities of wheat and oil at a time in order to meet demand conditions. The magnitude of importations is expected to have minimal impact on market structure, conduct, and performance. We therefore attest that this program will not have a substantial disincentive to or interference with domestic production or marketing in Upper Volta.

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I. Financial Plan

1. Expected Revenue Generations

a. FY 1984

Commodity	Value/MT ($)	Ocean Transport/MT ($)	Rail Transport/MT ($)	Net Proceeds/MT ($)	Quantity (MT)	Net Proceeds ($) (100)
Wheat	180	70	40	290	3000	870
Vegetable oil drum	760	160	60	980	2000	1,960
Total					5000	2,830

b. FY 1985

Commodity	Value/MT ($)	Ocean Transport/MT ($)	Rail Transport/MT ($)	Net Proceeds/MT ($)	Quantity (MT)	Net Proceeds ($) (100)
Wheat	182	75	44	301	3000	903
Vegetable oil, drum	805	170	66	1041	2000	2082
Total					5000	2985

c. FY 1986

Commodity	Value/MT ($)	Ocean Transport/MT ($)	Rail Transport/MT ($)	Net Proceeds/MT ($)	Quantity (MT)	Net Proceeds ($) (100)
Wheat	182	80	48	310	3000	930
Vegetable Oil,drum	805	180	72	1057	2000	2114
Total					5000	3044

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d. FY 1987 (Assuming an Extension of the Current 206 Program, A follow-on Section 206 Program or a Title III Program).

Commodity	Value/MT ($) 1/	Ocean Transport/MT ($) 2/	Rail Transport/MT ($) 3/	Net Proceeds ($)	Quantity (MT)	Net Proceeds ($) (1000)
Wheat	190	90	53	333	3000	999
					TOTAL	999

Explanatory Notes

1. Value for 1984 and 1985 are the most recent price estimates received by USAID/Upper Volta (November 17, 1982).

2. USAID/Upper Volta estimated costs of shipping commodities to Abidjan on competitive bottoms.

3. Rail Transport from Abidjan to Banfora, Upper Volta (wheat) and Abidjan to Ouagadougou are quoted current prices by the R.A.N. calculated at an exchange rate of 350 FCFA = $ US 1.

4. Commodity mix for 1985 and 1986 assumes continuation of current market conditions.

5. Commodity Mix and Levels for 1987 are estimated requirements for local cost financing of ADS Project. These factors will be considered by the mid-term PL 480 Evaluation Team.

2. Expected Utilization of funds ($000 Local Costs-ADS)

Project Component	1984	1985	1986	1987	1988	Total
1. Planning and Management	259.2	386.6	432.8	337.8	336.9	1,753.3
2. Human Resource Development	766.7	988.2	805.9	391.4	352.0	3,304.2
3. Technological Transfer	589.1	779.2	740.1	796.4	625.1	3,529.9
4. Food Security	165.0	246.0	241.2	244.4	216.0	1,112.6
Evaluation	Ø	Ø	25.0	Ø	25.0	50.0
TOTAL	1,780.0	2,400.0	2,245.0	1,770.0	1,555.0	9,750.0

3. Expected Cash Flow ($ 000)

	1984	1985	1986	1987	1988	Total
Beginning Balance	0	1,050	1,635	2,434	1,663	-
PL 480 Generations	2,830	2,985	3,044	999	0	9,858
Utilizations	1,780	2,400	2,245	1,770	1,555	9,750
Ending Balance	1,050	1,635	2,434	1,663	108	108

The expected ending Balance of $ 108,000 will be jointly programmed in 1988 to complement the activities financed under the ADS project.

4. Description of Local Currency Generation and Management

The Host Country institution responsible for the generation and deposit of PL 480 revenues is the National Cereals Office (OFNACER). While this institution had a history of poor financial management from 1980-81, it has benefitted from the USAID assistance provided under the Grain Marketing Development Project and is currently implementing a financial management system capable of generating monthly reports for over 100 selling centers within fifteen days after the close of the month.

The improvements in OFNACER's financial management system were duly noted in the November 1982 Review of the current 206 Program. This Review found it "particularly

noteworthy that the PL 480 portion of the project has moved ahead as intended in spite of the significant delays in fielding the long term technical assistance teams. More than anything this is due to OFNACER's basic ability to receive, distribute, sell, and deposit grain receipts -- and USAID/Upper Volta's persistence in working with OFNACER to make them financially accountable".

In previous Transfer Authorizations, USAID/Upper Volta has permitted OFNACER to deposit funds on an "as-commodities-are-sold" basis. While this procedure is appropriate for coarse grains given OFNACER's cash flow difficulties and the long-storage period often required to sell coarse grains, we do not believe it is appropriate for the preferred commodities of wheat and oil. We therefore intend to include clauses within the Transfer Authorization which require that the funds are deposited into the special ADS counterpart account as sales occur, and that at least 25% of the generations are deposited monthly following delivery. In subsequent TAs, these deposit conditions will be progressively strengthened as we develop an understanding for expected storage duration. Reports will be submitted monthly by OFNACER to USAID/Upper Volta on the stocks and revenues generated. OFNACER will deposit the gross proceeds into the blocked special account and submit a bill for the costs of storage and administration. Through the exchange of letters USAID/Upper Volta and OFNACER will jointly determine those handling costs which are to be reimbursed to OFNACER.

The generations are to be deposited into a special interest earning blocked bank account administered by the Department of Administrative and Financial Affairs (DAAF) of the Ministry of Rural Development. The Secretary General of the MRD and the Department of Studies and Projects (DEP) will be responsible for receiving and reviewing the budget requests of the individual project implementation offices of the MRD. The DEP will then submit to USAID/Upper Volta annual and quarterly budgets for approval. USAID/Upper Volta will formally approve the proposed annual budget and the initial quarterly transfer of funds to the separate project accounts established for each authorized activity under the Section 206 Program through a budgeting Project Implementation Letter. Subsequent quarterly transfers of funds will be approved once USAID/Upper Volta has verified the available financial resources and expected ADS local cost needs of the GOUV implementation offices.

The individual activity accounts will be managed by the GOUV counterparts and monitored by the USAID Project Officers. The USAID/Upper Volta Controller and the Director of the DAAF will provide accounts management advice and guidance as required. Issues which cannot be resolved at the implementation level will be referred to the Director and the Minister of Rural Development for resolution. All accounts under this project are to be made available for examination and for audit by officials of either the GOUV or USG.

Recurrent costs

An analysis of recurrent costs issues is presented within the text of the P.P. The actual recurrent cost financing under this project is minimal since the local costs financing is directed towards investment and/or expansion of current activities rather than the maintaining of previous investments.

J. Implementation Plan

Date	Action	Office
1983		
July	Submission and Approval of PP	USAID, AID/W
July	Draft Transfer Authorization	USAID, AID/W
August	Negotiation of FY 1984 TA	USAID, MRD
September	FY 1984 Budget	USAID, MRD
October	Food Aid Coordination Committee is created	MRD, Donors
1984		
January	Radio Broadcasts of Prices	OFNACER, MRD
January	Formation of National Food Plan Working Group	OFNACER, DSA, DEP
January	Delivery of 3000 MT Wheat, 2000 MT oil	AID/W, REDSO/WCA USAID, OFNACER, GMV
February	Emergency Food Distribution Plan Drafted	MRD/Min. of Interior
February	Deposit of at least $ 704,500	OFNACER
March	Deposit of at least $ 704,500	OFNACER
April	Deposit of at least $ 704,500	OFNACER
April	Analyses and Reports on Prices	MRD
April	Producer Prices Broadcast	MRD
May	Deposit of remaining revenue balance	OFNACER
June	Annual Progress Report	USAID, MRD
July	Strategy to assure OFNACER financing	MRD
July	Submit Progress Report and draft TA to AID/W	USAID
September	Negotiation of FY 85 TA	USAID, MRD
1985		
January	Delivery of Food Commodities	AID/W, REDSO USAID, OFNACER GMV

It is expected that subsequent years calendars will ressemble that of 1984.

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K. Monitoring Plan

The Monitoring Plan of the PL 480 component is included within the framework of the Project Paper. The MRD and USAID/Upper Volta will jointly prepare an Annual Progress Report as part of the effort to develop subsequent Transfer Authorizations. This report is to be submitted with the Draft Authorization no later than six months after commodities arrive and will assess: the role and performance of the USG and the GOUV in fulfilling the terms of the agreement; the progress and achievements with reference to the agreed upon objectives, self-help measures, outputs and inputs; the receipt of commodities, revenues generated, and project disbursements; and the need for changes in the program or its procedures.

USAID/Upper Volta also encourages a mid-term evaluation by AID/W and REDSO/WCA personnel to assist with the monitoring of the PL 480 Program and to assist the GOUV and ourselves develop an appropriate follow-on to the FY 84-86 Program.

TABLE A

Supply and Demand Situation for Cereals by Consumption Year 1977/78-1983/84 1/

(000 Metric Tons)

	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84
Beginning Stock	107	85	103	120	81	117	59
Domestic Production	1,033	1,190	1,196	1,019	1,278	1,194	1,252
Commercial Inputs	84	39	58	191	47	57	81
Food Aid	88	41	39	38	56	39	40
Losses and Seeds	(153)	(160)	(165)	(158)	(196)	(180)	(185)
Total Supply	1,159	1,195	1,231	1,210	1,266	1,227	1,247
Industrial Use	15	15	15	15	15	15	15
Human Consumption 2/	1,059	1,077	1,096	1,114	1,134	1,153	1,173
	1,074	1,092	1,111	1,129	1,149	1,168	1,188
Ending Stock	85	103	120	81	117	59	77

Source: Compiled by USAID/Upper Volta from data made available by the Ministeries of Commerce and Rural Development, Government of Upper Volta, World Food Program, Catholic Relief Services, the European Economic Community and the Government of France.

1/ Consumption Year is from October 1 - September 30, 1982/83 and 1983/84 are projections. This table is a summary of the individual cereal commodity analyses which follow : (Table B - Coarse Grains, Table C - Wheat, Table D - Rice).

2/ Human Consumption is the residual of the estimates.

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TABLE B

Supply and Demand Situation for Coarse Grain by Consumption Year 1977/78 - 1983/84 1/

(000 Metric Tons)

	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84
Beginning Stock	106	69	96	95	60	112	55
Domestic Production	993	1,157	1,149	992	1,249	1,167	1,225
Commercial Imports	26	Ø	Ø	130	Ø	(8)	Ø
Food Aid	84	32	29	30	42	30	30
Losses and Seeds	(149)	(156)	(160)	(153)	(191)	(175)	(180)
Total Supply	1,060	1,102	1,114	1,094	1,160	1,116	1,130
Industrial Use	15	15	15	15	15	15	15
Human Consumption	976	991	1,004	1,019	1,033	1,046	1,060
Total Demand 2/	991	1,006	1,019	1,034	1,048	1,061	1,075
Endin Stock	69	96	95	60	112	55	55

Source: Compiled by USAID/Upper Volta from data made available by the Ministries of Commerce and Rural Development, Government of Upper Volta, World Food Program, Catholic Relief Services, the European Economic Community and the Government of France.

1/ Consumption year October 1 - September 30, 1982/83 and 1983 and 1984 are Projections. Coarse grains include sorghum, millet, corn and fonio.

2/ Human Consumption is the residual of the estimates.

TABLE C

Supply and Demand Situation for Wheat by Consumption Year 1977/78-1983/84 1/

(000 Metric Tons)

	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84
Beginning Stock	Ø	6	4	3	Ø	3	2
Domestic Production 2/	Ø	Ø	Ø	Ø	Ø	Ø	Ø
Commercial Imports	40	29	32	31	32	35	38
Food Aid	0	3	2	1	10	6	8 3/
Losses 4/	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Total Supply	39	37	37	34	41	43	47
Total Demand	33	33	34	34	38	41	45
Ending Stock	6	4	3	Ø	3	2	2

Sources: Compiled by USAID/Upper Volta form data made available by the Ministries of Commerce and Rural Development Government of upper Volta, World Food Program, Catholic Relief Services, the European Economic Community and the Government of France.

1/ Includes Wheat Flour expressed in wheat equivalents. Consumption Year October 1 - September 30, 1982/83 and 1983/84 are projections.

2/ Production from a pilot Wheat Irrigation project which in 1982/83 = 200 MT.

3/ As of April 15, 1983 there are no firm commitments of wheat food aid. The total includes 3.000 MT proposed under the Section 206 Program for delivery December 1983/January 1984.

4/ Losses are calculated at 3% of Stocks.

UMR 1977/78-1981/82 = 32,814 MT
Expected UMR 1979/80-1983/84 = 33,493 MT
Avg. Food Aid 1977/78-1981/82 = 3,348 MT
Expecte Average Food Aid 1979/80-1983/84 = 5,455 MT

Average annual increase in demand 1977/78-1981-82 = 1,250 MT or 3.8%

Expected Average annual increase in demand 1979/80-1983/84 = 2,750 MT or 7.4%

TABLE D

Supply and Demand Situation for Rice by Consumption Year 1977/78-1983/84 1/

(000 Metric Tons)

	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84
Beginning Stock	1	10	1	22	21	2	2
Domestic Production	40	33	47	27	29	27	27
Commercial Imports 2/	18	10	26	30	15	49	43
Food Aid	4	6	8	7	4	3	2
Losses 3/	(3)	(3)	(4)	(4)	(4)	(4)	(4)
Total Supply	60	56	80	82	65	68	70
Total Demand	50	53	58	61	63	66	68
Ending Stock	10	3	22	21	2	2	2

Sources: Compiled by USAID/Upper Volta from data made available by the Ministries of Commerce and Rural Development, Government of Upper Volta, World Food Program, Catholic Relief Services, the European Economic Community, and the Government of France.

1/ Consumption year is October 1 - September 30. 1982/83 and 1983/84 are projections

2/ Officially recorded only

3/ Losses are calculated at 5% of stock

UMR 1977/78-1981/82 = 19,923 MT
Expected UMR 1979/80 = 29,800 MT
Average Food Aid 1977/78-1981/82 = 5,978 MT
Expected Food Aid 1979/80-1983/84 = 4,871 MT

Average annual increase in demand 1977/78-1981/82 = 2,600 MT or 6%
Expected Average increase in demand 1979/80-1982/83 = 2,500 MT or 4.0%

TABLE E

Supply and Demand Situation for Vegetable Oil by Consumption Year 1977/78-1983/84 1/

(000 Metric Tons)

	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84
Beginning Stock	0	0	0	0	0	0	0
Domestic Production	48	9	39	44	26	45	48
Commercial Imports	3	3	3	4	4	5	6
Food Aid	1	1	6	7	4	5	6
	52	13	48	55	34	55	60
Total Demand 2/	82	83	85	87	88	90	91
Estimated							
Unmet Demand	(30)	(70)	(37)	(42)	(54)	(35)	(31)

Source: Compiled by USAID/Upper Volta from data made available by the Ministry of Commerce, Government of Upper Volta, World Food Program, and Catholic Relief Services.

1/ Consumption year is from October 1 - September 30. 1982/83 and 1983/84 are Projections.

2/ Demand is calculated by multiplying population by the FAO Standard of 14,6 kg/capita.

UMR 1977/78 - 1981/82 = 3,400 MT
Estimated UMR 1979/80 - 1983/84 = 4,400 MT