(Eastern ORD)

PD-AAC-458-B

ACTION MEMORANDUM FOR THE ADMINISTRATOR

THRU : EXSEC

FROM : AA/PPC, Philip Birnbaum

25 OCT 1974

SUBJECT: Upper Volta - Integrated Rural Development Project

PROBLEM: Because this proposed grant exceeds $2.0 million your authorization of the attached Non-Capital Project Paper (PROP) is requested.

DISCUSSION: Located within the Sahel-Sudano zone of West Africa, Upper Volta has suffered from the effects of the current drought. The principal material resource in Upper Volta is livestock. Under normal conditions, 35 per cent of the country's total export earnings are represented by animals on the hoof. The animal population, however, was reduced by an estimated 25 per cent last year because of lack of forage. As well, Upper Volta was the recipient of emergency foodstuffs from the donor community in an international effort to prevent mass starvation. Now the Government of Upper Volta (GOUV) has requested AID assistance in dealing with a recovery effort in the hardest hit, eastern region of the country. In response to this request, and within the framework of the AID medium-term assistance program for the Sahel states, A.I.D. is prepared to assist in the financing of an integrated rural development project in the Eastern Rural Development Organization (ORD). The purpose of the project is to assist a drought-stricken population in this remote region to upgrade its quality of life by increasing agricultural and livestock production. As well, the project aims to improve the delivery of ORD social/development services.

The proposed grant will provide the core financing for the delivery of an intermediate technical package to the small farmers and herders of the region. Grant funds will also be provided to finance the expansion and improvement of the local administrative and management institutions. The project is now planned to cover a five year period at a cost to AID of approximately $3.8 million. $3,063,000 is required for the first three years of project activity and will be obligated against the Africa drought appropriation. This amount is complemented by UNDP funds of $860,000 and GOUV resources of $1,049,000 equivalent in local currency. Peace Corps has agreed to recruit eight special volunteers for the project. A.I.D. will finance the services of four U.S. contract employees, including the services of a full-time Project Manager who will work closely with the GOUV in the administration

of the project. The PROP originally programmed larger scale technical assistance inputs, but they have been reduced because of the agreement of UNDP/FAO to provide rural development advisors. Accordingly, the budget summaries on pages 5 and 105-109 have been revised, and the updated budget summaries are included as Annex H. According to current estimates, approximately $700,000 in regular program funds will be needed for the fourth and fifth years of the project, prior to which an in-depth evaluation will be performed. Annual evaluations will also be integrated with annual project work plans.

This integrated rural development project clearly meets the new criteria of the Foreign Assistance Act by directing assistance toward the poorest and least fortunate of the developing societies, while concurrently augmenting the production of food in these critically deficit areas. In addition there will be a substantial spread effect in the distribution of the project benefits.

The following criteria were used in appraising this project proposal:

(a) An adequate institutional framework

The project builds on a tried institutional approach. The rural development program is implemented by eleven geographically determined administrative units (ORDs). This organizational structure will be substantially improved and strengthened by the technical assistance that will be provided by A.I.D., UNDP and the Peace Corps. (see PROP pages 62-88).

(b) Technical soundness

A month-long study was completed by a nine-man A.I.D. design team. The technical components of the project are of minimum sophistication and appear to be realistic for the social/environmental setting. (see PROP pages 26-41).

(c) Financial viability

The financial framework of the project has been set in such a way that the Eastern ORD should be able to achieve self-financing status within a moderate time frame. The primary operational costs will be progressively shifted to the ORD to be financed from returns from marketing.

(d) Economic feasibility

The economic soundness of the project has been studied and found to be acceptable for projects of this type. (see PROP pages 56-60).

2

(e) Commodity Procurement

It is my view that compliance with normal A.I.D. procurement policies, i.e., restriction of procurement to U.S. sources, would, in the circumstances of this project, constitute a serious restriction against providing timely and beneficial assistance to the people of Upper Volta. Section 639A(b) of the Foreign Assistance Act of 1961, as amended (which specifically authorized the funds with which this project will be carried out), expressly provides that assistance to the drought-stricken nations of Africa may be provided "notwithstanding any ... restrictions contained in this or any other Act."

The situation in Upper Volta parallels that in the other Sahel states: with commodity imports almost entirely from France and the other EEC countries, U.S. equipment and commodities cannot be serviced or repaired in the event of breakdown. Spare parts are not available, and Africans are not trained in the maintenance of U.S. equipment. Audits and inspections of A.I.D. projects in this area which have included the provision of large amounts of U.S. equipment have been sharply critical of the difficulties of host governments in maintaining this equipment after project phase-out. An additional factor to be considered if procurement were to be restricted to the U.S. is the lead-time of at least one year for the delivery of commodity orders. (In the case of the procurement of Caterpillar equipment, for example, demand far exceeds production rates, and up to 18 months is required before the equipment on order is manufactured. Then the order must be delivered by surface and inland freight to the recipient country which requires an additional 6-8 months.)

In evaluating the commodity and equipment requirements for this project, needs have been kept to a minimum: $211,000 is requested in the first year for the procurement of four trucks (1 3-ton and 3 pick-up type), 2 roadgraders, two motor-pumps, shop and agricultural tools, office equipment and basic radio communication network equipment. Equipment requirements in the second and third years of project activity are $9,000 annually. European-make vehicle and truck dealerships are located in the capital city of Ouagadougou. Spare parts are readily available through the dealers, and shipment to the Eastern ORD will only require several days by land. As well, mechanics have been trained in the operation and maintenance of locally available heavy equipment.

On the basis of the above circumstances, commodity procurement from Geographic Code 935 (Free World) is requested for this project.

This project has been reviewed and cleared by all of the concerned A.I.D. offices and has the approval of the Executive Project Review Committee (EPRC). Lastly, Section 114 of the Foreign Assistance and Related Programs Appropriations Act of 1974 does not require Congressional

notification prior to Agency authorization of the use of FAA Section 639A(b) funds.

RECOMMENDATION: It is recommended that you approve the attached Non-Capital Project Paper (PROP) for Integrated Rural Development in Upper Volta.

Attachment: Non-Capital Project Paper

APPROVED: _____

DISAPPROVED: _____

DATE: 10/25/74

Clearances: AA/AFR:SCAdams
GC:AZGardiner

Other Clearances: AFR/CWR:DShear
AFR/DP:RHuesmann
AFR/DS:PLyman (draft)
PPC/DPR:AHandly (draft)
GC/AFR:EADragon

Drafted:AFR/CWR:DBlane:cmw:10/24/74

AID 1025-1 (7-71) (FACE SHEET)

CAPITAL PROJECT PAPER (PROP)

PAGE 1 of ___ PAGES

I. PROJECT IDENTIFICATION

1. PROJECT TITLE: Integrated Rural Development

APPENDIX ATTACHED: [X] YES [ ] NO 201

2. PROJECT NO. (M.O. 1095.2): 686-11-110-710

3. RECIPIENT (specify): [X] COUNTRY Upper Volta [ ] REGIONAL ___ [ ] INTERREGIONAL ___

4. LIFE OF PROJECT: BEGINS FY 75 ENDS FY 78

5. SUBMISSION: [X] ORIGINAL 7/30/74 DATE [ ] REV. NO. ___ DATE

CONTR./PASA NO. ___

II. FUNDING ($000) AND MAN MONTHS (MM) REQUIREMENTS

A. FUNDING BY FISCAL YEAR	B. TOTAL $	C. PERSONNEL (1) $	C. PERSONNEL (2) MM	D. PARTICIPANTS (1) $	D. PARTICIPANTS (2) MM	E. COMMODITIES $	F. OTHER COSTS $	G. PASA/CONTR. (1) $	G. PASA/CONTR. (2) MM	H. LOCAL EXCHANGE CURRENCY RATE: $ US ___ (U.S. OWNED) (1) U.S. GRANT LOAN	(2) COOP COUNTRY (A) JOINT	(2) COOP COUNTRY (B) BUDGET
1. PRIOR THRU ACTUAL FY	-0-											
2. OPRN FY 75	1,234	240	36	61	57	377	560					
3. BUDGET FY 76	848	240	36	79	75	29	500					
4. BUDGET +1 FY 77	981	240	36	58	55	23	660					
5. BUDGET +2 FY												
6. BUDGET +3 FY												
7. ALL SUBJ. FY												
8. GRAND TOTAL	3,063	720	108	198	187	429	1,720					

9. OTHER DONOR CONTRIBUTIONS

(A) NAME OF DONOR	(B) KIND OF GOODS/SERVICES	(C) AMOUNT
Peace Corps	Volunteers	$330,000
UNDP/FAO	Tech. Assistance	860.000

III. ORIGINATING OFFICE CLEARANCE

1. DRAFTER	Roy A. Stacy (Roy A. Stacy)	TITLE: Planning Officer, REDSO/WA	DATE: 7/30/74
2. CLEARANCE OFFICER	David Shear (David Shear)	TITLE: Director, AFR/CWR	DATE: 7/30/74

IV. PROJECT AUTHORIZATION

1. CONDITIONS OF APPROVAL

Conditions and special issues outlined in Annex I will be resolved during the negotiations on the Project Agreement or addressed in that Agreement to the satisfaction of the senior AID officer in Upper Volta.

Commodity procurement approved for Code 935, Free World.

2. CLEARANCES

BUR/OFF.	SIGNATURE	DATE	BUR/OFF.	SIGNATURE	DATE
AFR/DP	R. Huesmann	10/7	AFR/DS	P. Lyman	7/31/74
PPC/DPR	A. Handly/Ron Bober	8/5	GC/AFR	E.A. Dragon	10/24/74
AA/TA	S. Butterfield	8/2	GC	A. Z. Gardiner	10/24/74

3. APPROVAL AAs OR OFFICE DIRECTORS

SIGNATURE: Samuel C. Adams, Jr. DATE: 10/11/74

TITLE: Asst. Administrator, Bureau for Africa

4. APPROVAL AID (See M.O. 1095.1 (7-71))

SIGNATURE: Charles Parker DATE: 10/24/74

TITLE: ADMINISTRATOR, AGENCY FOR INTERNATIONAL DEVELOPMENT

5

PROJECT PROPOSAL

UPPER VOLTA EASTERN ORD

OUTLINE

PART I Introduction

PART I Introductory

Budget Summary

PART II ORD MAP PROJECT DESCRIPTION

PART II A. PROJECT DESCRIPTION Purpose and Target Group

1. Program Goals, Purpose and Target Group

2. Intensive/Extensive Programs

3. Justification of Project Sector Priorities

4. Host Country Program Sector Priorities

5. AID Strategy and Relationship of Project

6. to Host Country Strategy and Brought Proposed

B. PROJECT Other Donor Assistance, Present and Proposed.

B. PROJECT ANALYSIS Feasibility

1. Technical Feasibility Existing Technology

a. Limitations of Existing Technology

2. Recommended Technical Package

2. Economic Feasibility Credit Program

a. Marketing and Credit Program Distribution

3. Man Economic Benefits and Incomes Distribution

3. Management/Organizational Analysis Institutions and Capacities.

a. Existing ORD Organization, functions and
b. Capacities. Analysis

b. ORD Budget Analysis Needs, Staffing & Trng.

c. Future Organisational Needs, Staffing & Trng.

6

4. Social/Anthropoligical Feasibility of Project and Need for Additional Inquiry.

a. Cultural Characteristics of Target Groups

b. Social Implications of Project

c. Additional Study Needs.

5. Implementation Schedule

6. Project Budgets

PART III ANNEXES

A. Project Logical Framework (GPOI)

B. Program Elements

C. Summary of Design Team Feild Trip

D. List of People Consulted

E. Bibliography

F. Recommended Training Program for ORD Director

G. Radio Broadcasting Program

INTRODUCTION

This project paper recommending the initiation of an integrated rural development project was prepared during the four-week period April 8 to May 6, 1974. The team operated under severe time constraints, and consequently there are still some data and information gaps on the project. Those limitations notwithstanding, the technical package and the approach methodology should be carefully evaluated, not only for their applicability to Eastern Upper Volta, but as integral parts of AID's longer term strategy of food production in the arid sub-Sahelian zones. The project has been designed with its potential replicability in mind; to devise technical and administrative approaches that are positive responses to on-going currents of change and supportive of the social structure.

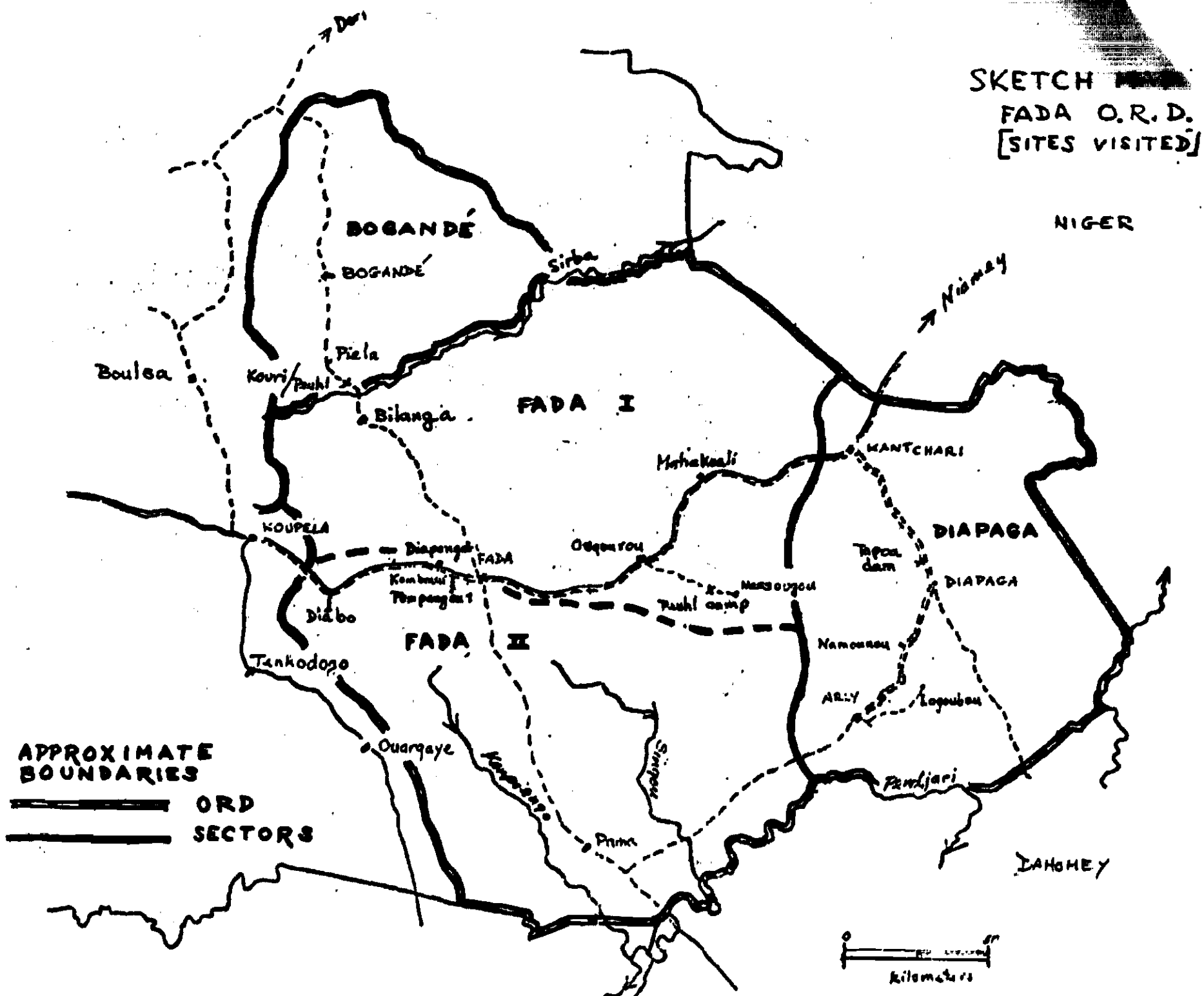
There are some risks involved; there are some unresolved issues. There will be limitations in what AID or any other donor can do in the environmentally determined marginalities of this area. However, with hopeful reality as the touchstone, the project proposal that follows can and should demonstrate that life need not be so tenuous in the Sahel, and that a determined, adaptable, and opportunistic people can produce sufficient food and thrive in this region. Accordingly, AID's major input should be the same sense of determination and adaptability.

Roy A. Stacy, Team Leader
Tom Luche, Rural Development Specialist
Dr. Wilford Morris, Agricultural Economist
Dr. David Wisenborne, Marketing Economist
Sam Litzenberger, Agronomist
Stan Remington, Engineer
Don Clark, Area Specialist
Dr. Michael Horowitz, Social Anthropologist
Mark Vahey, Financial Analyst

Eastern O.R.D. Rural Development Project
Budget Summary
(U.S. Dollars in Thousands)

	FY 75	FY 76	FY 77	FY 75-77	FY 78	FY 79	Total Project
Total Project Funding							
Administrative and Infrastructural Support							
Personnel Cost	$ 227	$ 482	$522	$ 1231	$ 563	$ 445	$ 2239
Construction Cost	245	10	15	270	-0-	-0-	270
Special Funds	105	185	180	470	165	-0-	635
Commodities and Equipment	217	9	9	235	2	-0-	237
Subtotal	794	686	726	2206	730	445	3381
Program Operations - Extensive and Intensive							
Commodities and Equipment	166	16	11	193	7	-0-	200
Training	54	65	51	170	-0-	-0-	170
Revolving Funds	100	240	380	720	170	50	940
Subtotal	320	321	442	1083	177	50	1310
Total Program	$ 1114	$ 1007	$ 1168	$ 3289	$ 907	$ 495	$ 4691
Funding Components 1/							
AID Contribution							
U.S. Costs	$ 222	$ 268	$ 264	$ 754	$ 260	$ 200	$ 1214
Foreign Exchange Cost	170	-0-	-0-	170	-0-	-0-	170
Local Costs	340	72	72	484	9	-0-	493
Funds	195	410	535	1140	245	50	1435
Total Aid Contribution	927	750	871	2548	514	250	3312
Peace Corps Contribution	60	90	90	240	90	-0-	330
Host Country Contribution	127	167	207	501	303	245	1049
Total Project	$ 1114	$ 1007	$ 1168	$ 3289	$ 907	$ 495	$ 4691

1/ UNDP/FAO Planning a project in the Eastern O.R.D. estimated at $860,000 over five years.


SKETCH
FADA O.R.D.
[SITES VISITED]
NIGER
BOGANDÉ
BOGANDÉ
Sirba
Niamey
Piela
Boulsa
Kouri
Bilanga
FADA I
KANTCHARI
KOUPELA
DIAPAGA
FADA
Diabo
FADA II
Tankodogo
Ouargaye
APPROXIMATE BOUNDARIES
ORD
SECTORS
DAHOMEY
kilometers

PART II - PROJECT DESCRIPTION

A. Program goal, purpose, target group:

The design approach taken in this project was essentially a "grass roots" effort accomplished through numerous discussions with small farmers, village leaders, and in close collaboration with ORD officials. In recommending the project that will follow, foremost in the minds of the team was to formulate a project that could, in a meaningful way, address the problems and agricultural limitations that were so clearly expressed by the farmers and herders.

The overall goal of the project is to contribute to the development of the rural sector in Upper Volta through support to the ORD program. More specifically, the purpose of the project is to upgrade the quality of rural life in the Fada ORD through increasing agricultural and livestock production and improving the delivery of ORD development services. The basic approach is to create four intensive development centers in high potential areas, "foyers de progres," by building the supporting low-cost delivery system that can support the intensive centers in the short run, and expand the concepts throughout the ORD in the longer run.

The project is designed ultimately to benefit not only the people residing in the ORD but also those residing in food production deficit areas both in Upper Volta and Niger (the Fada ORD produces a surplus of agricultural and livestock products). More immediately, the project's target group consists of the small farmers and herders who make up the dispersed population of the ORD. The primary target group will be those

areas where density of population, soil fertility, accessibility, existence of marketing and extension, and the presence of currents of change indicate that significant and replicable production increases can be achieved.

Those residing in "unencadred" areas (areas not now exposed to new ideas, not yet reached by the extension service) will benefit from elements of the extensive program such as distribution of standardized grain volume measures, OND crops marketing, improved ag extension, radio programming, and increased availability of seed and harvest protection. As the extensive program spreads, these areas will become "encadred" and share in additional elements of the intensive program.

As a first step, "encadred" areas will benefit from agricultural credit on National Development Bank ("unsupervised") terms, additional technical assistance from more, better-trained and more mobile "encadreurs," greater availability of agricultural inputs and infrastructure improvements in water supply, access to markets, etc. "Encadrement" both spreads and intensifies and, over time, the intensification produces coverage and services similar to what is now proposed for the intensive program.

Recommended inputs to the project include: Four U.S.-financed experts (production economist, agricultural economist/marketing, livestock and range management specialist, credit and cooperative specialist); eight Peace Corps volunteers to work in the intensive areas, irrigation, livestock and women's programs; twelve UNDP experts (in a complementary village farm extension project proposed for Fada area), and host country agricultural agents/"encadreurs" and other staff. The project will also

provide: a technical package (includes animal traction, adaptation of seed varieties, livestock development, improved water use); commodities (trucks, mobylettes, radio equipment, road maintenance equipment); construction (farm machinery workshops, etc.); credit (for agricultural inputs, work animals, and animal traction equipment); and training (retraining of "encadreurs," training of new "encadreurs," training of farmers and herders).

The major outputs of the project include: four intensive development ("encadrement") centers (750-1,000 farm families participating in each); a greater outreach package and capability of the ORD (technology, manpower, vehicles, roads, communications); increased food production; increased marketable surpluses; increased disposable income among herders and farmers; improved water quality/availability; expanded health delivery; and additional self-generated financial resources of the ORD (funding, income derived from purchasing/marketing program for cash crops).

2. Intensive program - Extensive program:

Basically, the core of the project is the intensive program, i.e., the development of four intensive "encadrement" centers, one in a subsector of each sector of the ORD. It is our preliminary recommendation that these intensive centers be located at Piela, Nassougou, Diabo and Namounou. The program is based upon (with some modifications) the already-proven Matourkou village farm extension program near Bobo-Dioulasso. As such, the intensively developed center serves three purposes: 1) it will utilize higher potential locations for confirming

the potential of the technical package (increased agricultural and livestock production, expanded disposable income); 2) the intensive area serves as a demonstration center of what is replicable elsewhere; 3) as a "foyer de progres," it provides the basis for a multiplier effect, creating positive currents of expectation and change in surrounding villages.

The extensive program is vital to the success of the project. Not only does it provide an overall strengthening and support of the ORD, it is also important from a political point of view (offering a large program to only a few villages and neglecting the rest of the ORD would seriously undermine the ORD's ability to function in the area). More importantly, the extensive program is required because it complements and supports the intensive program and assures that the ORD could continue the rural development approach on some scale without U.S. assistance after the first three years.

It is important to recognize that the intensive development/village cluster approach is a short-term production/demonstration effort which makes sense only as a part of a longer term program which could be extended and self-perpetuated by the Upper Voltans themselves (which may be described as widespread intensive development). The idea is not only to create four intensive centers, but rather, four centers which as "foyers de progres" will provide observable models for future development of additional intensive centers throughout the ORD.

The intensive development/village cluster project is not designed

to test the validity of the delivery system (already tested at Matourkou). Rather, it is designed to take advantage of an extensive delivery system. The cluster approach also recognizes the limited manpower and funds available, the impossibility of doing everything everywhere at once, and the importance of successful demonstration villages to spread the technical package and improved practices throughout the ORD. The infrastructural and extensive costs of the project are essential if there is to be in the future expansion to other intensive centers.

It is unlikely that the ORD will be self-financing in the near future (other ORD's, having received external financing for more than ten years, have yet to achieve this). Nonetheless, the project is designed to allow the ORD to finance progressively more and more of its operations, to provide it with basic infrastructure, equipment, manpower, etc., and to provide farmers access to agricultural credit. As a result, the project should reduce the ORD's future needs for external financing. At a minimum, it will permit the ORD to make entrepreneurial decisions about allocating income to operating or income costs.

Evaluation of the project should include evaluation of both the intensive and extensive programs in terms of the objectives and targets of each. The extensive program will be evaluated on the basis of the ORD budget, income derived from the ORD purchasing program, prices paid to farmers for agricultural produce, the number of "encadreurs" and "encadred" villages, the number of village credit organizations organized, etc. The intensive program will be evaluated on the basis of the number of farm families participating in the program in each center, farm incomes,

crop yields, livestock production, crop prices, diet, etc. Benchmarks for these measurements have been outlined in the Logical Framework. However, early in the first phase of the project, accurate base line data should be established to assist in annual evaluations. These evaluations should be performed as a part of the preparation of annual work plans.

B. Justification of project:

The project is justifiable on several accounts. First, in terms of the drought, the project addresses one of the major problems facing Upper Volta as a country: the imperative to increase food production. The Eastern ORD has the potential to produce enough food to provide surpluses for other deficit areas. This can go a long way in reducing reliance upon imports and donations from other countries.

Secondly, the drought notwithstanding, the project is justified in terms of the potential of the area. Relative to other areas in Upper Volta, the Fada ORD has a very low population density, adequate rainfall for dryland farming in normal years, and boasts 18% of the Upper Volta's land surface. Although soils are poor in many areas, there is plenty of land available for agricultural and livestock development. Finally, there are several unused water resources ("bas fonds," existing dams) which with a technical and financial input could contribute significantly to greater production in the ORD.

Thirdly, the project is needed from a national equity standpoint in that the Eastern ORD is the only currently constituted ORD that is not receiving external assistance and consequently is ineligible for credit from existing credit institutions.

Fourthly, the objectives of the project are fully consistent with AID's interest in assisting the poorest and less fortunate sectors of these societies and contains within it achievable goals of income redistribution and social equity. In addition, the project is multilateral in natura, requiring technical inputs from both UNDP and Peace Corps.

Fifthly, the project approach is based upon a proven model - the Matourkou village farm extension program in Bobo-Dioulausso. Thus the project offers an opportunity to extend and expand an already successful demonstration program, disseminating those methods and techniques that have been proven by the pilot approach of another donor.

4. Host country sector priorities:

Although the economy of Upper Volta is predominantly dependent on agriculture, the country, even under normal climatic conditions, has had to import some 30,000 tons of grain annually. Even achieving self-sufficiency in food production has been a difficult task due to climatic conditions. The sectoral priority of the GOUV is quite clearly to increase agricultural production, both for food and export (cotton, peanuts) by a series of rural development programs (ORD's).

In 1970 gross income from agriculture was estimated at about $82 million with livestock adding another $30 million. Of the total land area under cultivation about 82% is normally in cereals production (see Table 3). This percentage could be even higher in 1974 since extraordinary high prices for cereals will undoubtedly shift some land out of the production of primary export crops (cotton) where there will be a small return relative to the higher inputs of labor required.

Even in times of good rainfall cereal yields have been low, averaging only 620 kg per hectare during the past years. In 1972 the national average was estimated to be only 420 kg per hectare. Aside from rainfall, the declining yields are caused by deteriorating soil fertility, poor agricultural practices, and the lack of improved varieties. While one can do nothing to influence rainfall, the other factors can be addressed with an appropriately designed technical package.

The GOUV unveiled its rural development strategy in 1965 with the establishment of the Organismes Régionaux de Développement (ORD's). As fully independent and self-accounting entities the ORD's are charged with promoting rural development within the geographic (and ethnically) defined areas within the framework of a national rural development policy. Eleven ORD's now cover the country, although that for the Sahel region is in an initial stage of establishment. Of the ten existing ORD's, all have had the benefit of some external financing with the exception of the Eastern ORD. In the others both investment and operating expenses have been financed by other donors or by investment companies (see Table [illegible]).

The functional mandate for the ORD's is provided by the list of its responsibilities:

- Motivating the population and assisting it in the elaboration and execution of a rural development program
- Training the staff needed for such programs
- Providing and organizing training for farmers and artisans
- Promoting improved agricultural techniques

- Assisting in agricultural research and testing
- Providing farm credit in cooperation with the Banque National de Développement (BND)
- Improving collection and marketing channels for farm products
- Preparing and executing infrastructural programs

Normally the Government provides each ORD with staff, equipment and buildings sufficient for only minimum operations out of the recurring budget. Each ORD, however, can recruit additional personnel if it can generate additional funds to meet costs. Each ORD is managed by a Director, appointed by a decree of the Ministry of Agriculture. The Director reports to a local steering committee which has been designated by a larger group, the ORD Assembly. These two bodies do not yet exist in the Eastern ORD since they cannot be legally established until outside financing has been assured (see Section on Organization and Manpower). Unless an ORD is successful in attracting outside financing its existence is relegated to a holding action since it in fact can pay only minimum recurring expenses and lacks investment funds for new programs and initiatives.

Despite their excellent concept the ORD's have had limited success in meeting expectations, particularly in efficiently functioning as the delivery system for sponsoring and maintaining the impetus of rural development. Aside from shortfalls in financing the major reasons have been:

1. The absence of a strong policy body at the national level. Development policy has frequently been left to the initiative of the local or external authorities managing the individual ORD's.

2. The central office Directorate de Développement Rurale (DDR) charged with management of the ORD's has been on an equal level with the technical services within the Ministry of Agriculture. As a result the technical services have often carried out their regional activities without reference to the ORD administration and program interests.

It is believed that an ongoing reorganization of the Ministry of Agriculture and the Rural Development Services will resolve these problems of fragmentation and lack of coordination both at the national and the ORD level. The Government is now creating a Secretariat for Development Services and DDR has been changed to DSA (Direction des Services Agricole).

In addition, a planning and evaluation unit responsible for the national rural development program will be established within the Ministry of Agriculture. This office will be staffed with approximately eight expatriates from UNDP and IBRD.

These changes will provide the ORD network with a much stronger hand over the technical services and consequently the ORD Directors should have increased coordinative authority at the local level over branches of the technical services such as Rural Engineering (Hydraulique et Equipment Rurale), Water and Forests (Eaux et Forêts), Livestock (Elevage), whose integral cooperation is critical to the ORD's development program. In anticipation of these changes the AID design team has presented DSA and the Fada ORD Director with a revised organization plan which we believe can more positively address the problems of integrated coordination that other ORD's have faced. That plan is presented on Page 14.

5. Project relationship to AID mid-term strategy, host country priorities and to the drought:

Consistent with the defined AID mid-term strategy, mid-term programs must begin to assist in the progressive development of sets of small farming and pastoral communities that are less susceptible to climatic changes. This development should be approached by expanding the range of options open to small producers and by protecting from further degradation, those economies as they currently exist. The potential delivery system for the approach should be existing local units rather than national level administrative bodies. The strategy is thus increased food production from both agriculture and livestock through the balanced utilization of fragile land, water, pasture, animal and human resources. A corollary social objective is to maximize the benefits of increased production to the greatest number of people. It is the conclusion of the design team that the ORD project is responsive to the highest country priorities and to the AID mid-term Sahel strategy.

This project was initially selected by the GOUV as their most critical rural need since the Eastern ORD had received virtually no development support since it was first established in 1970. As an alternative, consideration was given to additional financing for the Matourkou Valley project in the western part of the country. It was decided to proceed with the design process of the Eastern ORD because of the higher priority placed on it by Government, because of the more serious needs in the eastern area and because the Matourkou experience

21

and approach could be applied to the new OED to confirm its replicability in a different cultural setting.

UPPER VOLTA

CULTIVATED AREA, PRODUCTION, AND YIELD PER HECTARE

(1969/70-1971/72)

	1969/70	1970/71	1971/72	1969/70	1970/71	1971/72	1969/70	1970/71	1971/72
	----- Area '000 ha-----			-Production '000 tons-			----Yield kg/ha -------		
Sorghum	933	1,041	992	570	566	460	500	550	460
Millet	517	850	758	290	377	282	560	490	370
Maize	150	86	90	100	55	67	600	630	740
Groundnuts (unchelled)	100	158	122	75	69	66	700	530	660
Seed Cotton	84	78	77	36	24	28	430	300	370
Rice	40	41	42	40	34	41	900	890	980
Sesame	30	36	22	6	4	4	200	180	180
Total	1,854	2,290	2,103	1,117	1,129	948			

Source: Direction de Developpement Rural.

June 8, 1973

ORGANISMES REGIONAUX DE DEVELOPMENT (ORD) 1973

ORDs	Year of Establishment	Staff Number 1972	Budget 1972 (CFAF mi)	Source of Financing	Development Agency	Area 000's km² 2/	Farm Population 1972 (000's) 2/
1. Ouagadougou	1966	226	109	FAC	SATEC	24.2	857
2. Koudougou	1967	193	147	FAC	SATEC	26.3	757
3. Kaya (North Mossi)	1966	171	149	FAC	CFDT	21.6	605
4. Yatenga (Oubigouya)	1966	115	262	FED	BDPA	12.3	536
5. Dedougou (Volta Noire)	1066	125	156	FAC/IDA	CFDT	29.6	486
6. Banfora (South West)	1967	135	173	FED	SOTESA	18.4	218
7. Koupela (Center East)	1968	80	71	CIDA	CIDR	9.0	273
8. Fada N'Gourma (East)	1968	79	70 3/	GOVT.	GOVT.	50.0	278
9. Bobo-Dioulasso	1970	120	151	FAC/IDA	CFDT	28.3	332
10. Diebougou (Bougouriba)	1971	100	57	GOVT.	CIDR	17.5	353
11. Dori (Sahel)	Being established	-	-	(FED)	-	36.9	272
					Total	274.1	4.967

1/ Budget estimates as appear in the Plan, except for Dedougou and Bobo where figures represent actual expenditures.
2/ The 11 ORD's cover 100% of Upper Volta Territory and include 90% of the Rural population
Source: Plan Quinquennal de Developpement Economique et Social, 1972-76.
3/ORD figures for 1973 indicate a budget of CFA 42 million.

Region	Number of Villages	Area Sq. Kilometers	Total Population	Density	Normal Rainfall Millimeters
Fada N'Gourma	440	28,664	134,667	5.15	820 - 900
Bogande	202	6,548	86,664	13.2	750 - 830
Diapaga	32	14,780	68,779	4.6	860 -1000
TOTAL	674	49,992	287,110	7.65 (Average)	N/A

SOURCES: 1. Rural Development Program, Eastern ORD, March 1974

2. Reseau Meteorologique de Haute Volta, Isohyetes Moyennes, 1972

6. Other Donor Assistance

1. Past Assistance

The Eastern ORD has been somewhat of a neglected step-child of other donors until recently. There have been several small piecemeal inputs primarily by the French, but not as part of any comprehensive program:

FAC

The primary FAC input into this region of Upper Volta has been a series of earthen dams and hand-dug wells. These were constructed only for human and animal water supplies, and little or no use has been made of these water resources for agricultural purposes. There are no FAC technical assistance personnel working in the Eastern ORD, although the ORD does in theory indirectly benefit from the presence of experts working at the national level in the Ministry of Agriculture, Public Works, etc.

2. Present and Planned Assistance

Within the last year an increasing quantum of other donor resources has been made available for the region. Although originally programed as fragmented pieces, many of the components can be fit into the comprehensive program that has been proposed.

26

IBRD

In 1973 the World Bank made a rather precedent setting loan to Upper Volta. This Rural Development Loan provided $2.2 million in IDA funds for a variety of rural infrastructural needs (wells, dams, storage, and secondary roads). This project is totally for local costs, and funds are, in effect, granted to the ORDs through BND. Unfortunately, because of inappropriate preparation of activity requests by the technical services and the coordination problems that have existed in the past between the ORDs and technical divisions, only $100,000 (approximately) of these funds have been utilized to date. (Three storage warehouses are under construction in the Eastern ORD.) The team was assured by the BND that additional funds from this loan would be programed for wells, village storage, and bas fonds development in the Eastern ORD.

In addition, the World Bank onchocerciasis program will open up large areas of fertile soil in the southern part of the ORD along the Konpiengo River, but not until 1977 or 1978. When this is done, it will be important to prepare land use plans before actual development investments are made in the area.

African Development Bank (AFDB)

Although the AFDB does not currently have any resources programed for the ORD, it is recommended that a portion

of the AID Sahel funds (soon to be granted to AFDB) be used to conduct a requirements study of agriculture penetration and marketing roads. Building on the Wilbur Smith and Lyons studies of the Fada N'Gourma - Niamey Road, what is now required is an analysis of the induced development potential and marketing benefits of improving selected secondary roads. For instance, we recommend study of the Ougourou - Nassougou - Namounou - Diapaga alignment. This very rough track more or less parallels an area of better soils. Other important areas are the Fada N'Gourma - Kosinyanga alignment and a possible road from Matiakoali to the Sirba River Valley. For marketing purposes, the road triangle between Bogande - Boulsa and Piela should be studied for upgrading. Another area that could be opened for agriculture is the area southeast of the Gabnangou chain, which contains significant potential for bas fond development.

FAC

The French government has programed an aerial photography and pastoral mapping project for the Sahel ORD which will extend far into the Eastern ORD, down to the Fada N'Gourma Niamey Road. This will be an important input into the ORD's future planning, particularly regarding questions of land use and range management. AID has been asked to

28

provide a range management specialist for the French team. We strongly recommend that this be done.

One of the important early needs in the Eastern ORD is the more localized testing and adptation of sorgum and millet varieties. Since IRAT has done most of the major research work in Upper Volta, it is logical that they be called upon to perform this. Therefore, it is recommended that additional discussions be held with FAC and IRAT to secure their support for additional research and field trials in the Fada Region.

FED

The FED has currently programed the construction of the Fada N'Gourma Koupela Road as a 1975 project. The paving of this road-link to Ouagadougou is strongly encouraged, since most of the agricultural inputs and marketed surpluses will move to Ouagadougou over this road.

Federal Republic of Germany

The German government has established a tied line of credit for Upper Volta, totaling over 16 million marks. This money, with terms of 50 years at 3/4 percent interest, remains virtually untouched. The Voltaics have been reluctant to use loan funds recently, reflecting concern for their long-term debt servicing capacity. However, plans are

being formulated to use these funds, possibly for a fertilizer mixing plant. This could have a significant impact on agriculture production in all CRDs if such a plant materialized.

In addition, the West Germans have recently sent teams to the field to identify 6 - 8 million dollars in grant projects for each of the Sahelian countries. The Upper Volta team indicated a willingness to consider secondary roads and infrastructure needs if these could be related to food production. It is recommended that additional discussions be held with West Germany to identify possible areas of collaboration, possibly within the Eastern CRD.

UNDP and Peace Corps

There will be a significant input from UNDP and Peace Corps in this proposed project. The nature of their participation is discussed in detail in the project analysis sections that follow.

B. PROJECT ANALYSIS

1. Technical feasibility

The team has made a careful review of the results of research of IRAT (Saria and Farako-ba). In addition the results of the UNDP project at Matourkou and experience in other Voltaic ORDs suggest the following parameters for a technical package:

a. All currently available cereal varieties recommended by IRAT have been tested only under maximum fertility levels. While it is possible that these same varieties will do equally well under moderate fertility levels, this has not yet been verified. Additional local testing of varieties more practical at the farm level should be undertaken by IRAT. See table 6.

b. The introduction of plowing done correctly with work oxen extends the productivity of limited labor and increases yields. Land is not a limiting factor since less than 3 percent of the land in the ORD is now being farmed.

c. The use of the increased supply of animal manure as a by-product of keeping work oxen increases the yield. Similarly, increased utilization of legumes in the cropping rotation can materially increase cereal yields.

d. The introduction of early maturing rice, which could be followed by a short season cowpea (if sufficient soil moisture remains), in managed bas fonds can provide a dramatic corollary to dryland farming in cereal

production.[1/]

e. The expected response of sorghum and maize to fertilizer is about 10 kg. more grain per 1 kg. N or P_2O_5 added under anticipated farm conditions. If fertilizer can be purchased for use on cereals at the same price as for cotton (35 CFA per kilo), it will be recommended Otherwise fertilizer should not be used unless 1 kg. of N or P_2O_5 can be purchased and applied for the equivalent sale value of 8 kg. of grain at harvest, leaving farmers a margin of 2 kilos.

f. Livestock production contributes part of the cash income for most farmers and part of the diet of the farm family. Livestock purchases can serve more and more as a productive investment and livestock may be sold to buy food grain when the supply is inadequate.

g. Inaccessibility of certain producing areas and lack of information, together with the need for cash at harvest, cause large differences in grain prices between villages and between seasons. If grain production is to be augmented in the ORD, both pricing policy and marketing must be improved.

Ongoing Program

The ORD now functions with only a limited number of "encadreurs" and agents working in the field in a program with only four poorly financed and supported

1/ Bas fonds are low lands, flat, alluvial valleys of intermittent watercourses, found throughout Upper Volta where water accumulates during the rainy season and are the areas where the most fertile soils can be found. However, these lowlands are not now being cultivated because farmers have yet to learn to control the water. It has now been demonstrated that through the relatively simple means of building dikes on the contours, water depth and soil moisture can be controlled and maintained so that rice can be cultivated. The building of these dikes can be accomplished with hand tools and village labor with very little capital costs. It is estimated that there are approximately 960 hecteres in the ORD that can be developed into bas fonds and that up to 4 tons per hectare can be realized. Under certain circumstances double cropping in these bas fonds is feasible.

activities:

1. Promotion of new crops; rice, peanuts, vegetables, and tree fruits;
2. Improvement of production techniques and storage of existing major crops (millet/sorghum, peanuts, and sesame);
3. Supervision of marketing;
4. Promotion of cooperatives.

The promotion of new crops has had limited success (except for rice) primarily because there have been no new varieties with demonstrated superior results under the realities of local farm conditions. The production of vegetables and fruits has been limited due to the lack of technical and management advice, inefficient use of water resources, and because markets have yet to be developed for such produce. Some increase in rice production has taken place on the banks of the impoundments (this requires very little labor and gives quite good yields but is alleged to contribute to silting of the impoundment) and in the few bas fonds that have been developed. Peanut varieties have been successfully introduced in the Bogande region.

Improved production techniques, including sowing in rows and at the right stand, have been introduced but progress has been slow, not because of a lack of interest. Work animals, introduced about 20 years ago, have not been used in any great measure due to an almost total absence of farm credit in the area and the very limited capacity for producing farm equipment and training work animals. However, in many villages in the ORD the team talked with farmers who have successfully increased yields through the proper use of animal traction and spreading of manure. For instance, in the village of Piela the team located a farmer who through the use of animal traction has managed to produce surpluses even through recent years of inadequate rainfall. At the time of the team's

visit this farmer had approximately 30 tons of sorghum and millet in storage.

The promotion of the seed fungicide Thioral (poudre rouge) has been outstanding and only a few defects in the distribution system limit the number of users. Reduced losses in seed storage can be clearly documented. Promotion of the harvest protection insecticide Gammagrain (poudre blanc) has been only moderately successful. There is a tendency to ignore the fact that it needs to be used in a certain concentration and must be reapplied periodically for longer term storage.

The ORD's marketing program has been hindered by poor roads, inadequate transport and lack of funds to purchase commodities. While adopting such a policy in theory, the ORD has lacked the funds and capacity to implement a program of stabilization of prices and a strategy to increase prices to farmers at harvest time. The result is that both the ORD and the farmers have not benefitad from the ORD's power to buy and sell grain and to obtain income from the purchase and sale of peanuts. Some areas served only by commercants (private traders) suffer greatly from low prices of food grain at harvest due to the often exploitative methods of these traders. The ORD has been unable to counter these practices, but may be able to through the kind of marketing program that is now being recommended (see Section 2).

The fourth phase of the existing ORD program, development of cooperatives, has not progressed at all. (There is one cooperative at Dakiri supported in part by the Voltaic Army.) Since there has been no organized marketing or agricultural credit under the ORD, there has been little incentive for farmers to form such groups. In addition, the ORD has been unable to offer any professional and technical advice on this subject. There are also indications that the Gourmantche have demonstrated a high degree of spatial mobility for a sedentarized people. While this should not preclude the formation of farmer associations, there has not been a legacy of cooperative groupment in the traditional society.

(see Section 4).

Proposed program

The following program of related services is suggested as the comprehensive production approach that should be taken by the ORD in the next few years. It is based on the resources, technical and administrative realities of the area and assumes that much of the program can be undertaken by an expanded and retrained ORD administration. The heart of the proposed A.I.D. project and new ORD program is the creation of four centers of intensive production activity together with an essential supporting structure and services. Although these intensive areas receive the major emphasis, the existing extension and marketing activities of the ORD must be supported and strengthened if the intensive program is to be effective in the short run and have a spread effect in later years:

1. The intensive program

In cooperation with the UNDP, a series of four intensive extension centers for integrated agriculture production will be established along the lines of the Matourkou IV program.[2] Locations for intensive centers have been preliminarily selected on the basis of productivity potential, soil type and fertility, the availability of farm land, presence of "progressive farmers" and currents of change, accessibility, presence of marketing, and sufficient density of population to provide a basis for "encadrement" of 750-1,000 farmers in 3-4 years. The intensive village clusters recommended at this time are Piela, Nassougou,

2/

Matourkou I	Demonstration farms and school	
Matourkou II	1969-1973	215 family farms developed
Matourkou III	1974-1976	400 family farms to be developed including livestock plus program for Peulh
Matourkou IV	1976-	Establish extension centers to develop 1,000 farms each in 3 years

35

Namounou, and Diabo in each of the ORD administrative sectors (see map Table___). Each of these intensive centers are located within the boundaries of one of the sub-sectors of the ORD.

In these four intensive centers, a saturation program will be developed in food and livestock production and community action including the following:

a. Crop production and marketing;

b. Bas fonds development;

c. Livestock production and marketing;

d. Health services (supported primarily by voluntary agencies);

e. Workshops for production and repair of farm machinery;

f. Credit program through village associations (groupments communautaires);

g. Additional functional education after formal schooling in

-agriculture and livestock (including marketing)

-health and nutrition

-citizenship and cooperatives

-money management;

h. Support for women's programs (animation feminine).

Each intensive center will be run by a senior Voltaic with at least 10 agents (encadreurs) and a Peace Corps volunteer.[3/] The goal will be to successfully encadre 750-1,000 farmers with the technical package and marketing program in each center in 3-4 years. (See Annexes A & B for further details on the technical package.)

In introducing the technical package, the sub-sector chief of each intensive center will conduct practical demonstrations using students from the local farm

3/At least one agent should have had practical training in managing bas fonds.

36

school (Ecole Rurale). Demonstrations, which should be largely self-financing, should include the following:

a. A family-sized farm with work animals and other livestock including finishing ruminant and poultry;

b. A correctly developed bas fond including water control;

c. Testing of varieties and production and cultural practices including tillage, seed bed preparation, minimum applications of fertilizer, weed control, and rotation with grains and legumes on residual moisture. This work would be supervised by the Field Trials Officer of the ORD;

d. Production of the different products required to balance nutrition including pulses, fruits, vegetables, and livestock products.

Supporting services:

These intensive centers should include related services and activities such as:

a. A farm school for post-primary students, male and female;

b. Improved village water supplies both for human and animal consumption;

c. Operation of a small rural health clinic.

Some of these facilities already exist or are financed from separate sources and will only require upgrading or integration into the intensive program.

Livestock program:

The livestock program in the intensive centers would be administered by that section of the technical division of the ORD (Elevage). It is anticipated that almost constant coverage could be given to the intensive centers. The program is envisaged as follows:

a. Prophylaxis against the major epizootic diseases of cattle and small ruminants;

b. Control of internal and external parasites in cattle and small ruminants;

c. Prophylaxis against trypanosomiasis;

d. Multiplication and distribution of improved sires including the teaching of methods of selection;

e. Reduction of calf mortality through provision of feed and mineral supplements.

f. Provision of necessary mineral supplements for growing cattle, cows and calves;

g. Assistance with finishing of cattle and sheep including credit when necessary;

h. Assistance in pig and poultry husbandry;

i. Proper use of agricultural by-products for supplemental feeding;

j. Gathering and conservation of wild hay and straw;

k. Production of cultivated forage.

l. Introduction of range management in nearby grazing areas and the development of mechanisms to control grazing and animal zones.

The objectives of this program would be to introduce, in a balanced fashion, the improvement in animal health and the preservation of limited range with alternate sources of feeding. It is believed that the existing system of marketing will provide increased incentives for commercialization of livestock and when combined with the program above, commercialized off-take can be increased. It should be noted that the Eastern ORD is already a major livestock producing area in the country and the marketing system is well established.

Special intensive program for the sedentarized Peulh:

Livestock production will continue to be very important in the ORD. Aside from the foregoing program which is directed at the sedentarized Gourmanche, a program to begin to effect changes in the productive capacities of nomads should

be started where there are identifiable currents of change, and where people have indicated a desire for new options in their livelihood. One such site is the area of Kouri where Peulh have been farming and herding in a fixed location for over 60 years. In this area, Peulh-speaking agents should be located and trained to deliver the same crop production program as that for the fully sedentarized Gourmanche farmers in the intensive centers.

The Peulh agents will also coordinate the livestock program developed for the intensive centers in addition to a four element special program:

1. Mineral supplement to increase fertility of cows;
2. Mineral and feed supplement, plus parasite elimination to decrease calf mortality;
3. Improvement to the pasture/water resource and mineral supplement to improve growing conditions;
4. Small individual and group feed lots to encourage increased sale of surplus males at young age.

Adjacent to the settlement area, a program of range land development with improved surface water supply should be started. Suitable land areas will need to be identified for the different seasons which can be used exclusively by the Peulh in the villages involved, so that pasture use can be fully controlled. The range management program should be administered by a village graziers' association and would include fire protection (with burning only under control) and development of more reliable water supplies to permit improved use of the pasture. Accordingly, it will be necessary to provide limited facilities such as cattle trails and alternate water supply to permit the nomadic herds to bypass the restricted grazing area.

Once effective veterinary, mineral supplements, pasture development, etc.,

are introduced, a cattle feeding activity should be initiated to increase productive offtake and to provide an increased return to the livestock producers. Such a program would include the following:

a. Self-help in building and equipping lots and in water supply;

b. Help in buying feed and supplements;

c. Measurement of rate of weight gain on young feeders;

d. Conservation of manure for use on the land;

e. Group transportation of finished cattle to the export market.

In addition to increased food production and disposable income returns that would accrue to the Peuhl of this special intensive center, the purpose of this program is to reinforce that set of incentives that has stimulated this particular nomadic group to expand their options by seeking the benefits of both sedentary and pastoral lives. This center would act to demonstrate a new set of options that are open to other pastoralist communities in the ORD.

2. The extensive program

a. ORD-wide program to the "unencadred" areas

The distribution and sale of seed fungicide Thioral (poudre rouge) should be extended, with improved transportation of inputs to cover substantially the whole ORD. As far as resources of the ORD permit, a renewed campaign on the correct use of the harvest protection insecticide Gammagrain (poudre blanc) to reduce losses in stored grain should be launched.

Free distribution of a standard 20-liter measure (tine) bearing the ORD seal is proposed to reduce the fraudulent practices of the merchants. It is estimated that farmers could increase returns on commercialized grain by up to 20 percent with this standardization. (see Section 2.8)

Since these areas would not be eligible for agricultural credit with

40

no extension agents present, requests for other inputs, such as improved seeds, machinery, and sprayers would be responded to by the ORD but only when the purchasers have cash.

Agricultural broadcasts in Gourmantche would be improved in content and coverage. For instance, prices of standard commodities at the different market places throughout the ORD would be reported to the ORD by radio, and then broadcast on a regular basis.

On the livestock side of the program to unencadred areas, improved veterinary service, with emphasis on bovines, would be provided for both sedentary and migrant herds.

It is calculated that all of these programs can have a positive influence on agricultural and livestock production throughout the ORD and most would require only limited external financing.

b. Support for areas of existing "encadrement"

In addition to the above ORD-wide group of programs, the areas outside the intensive zones where there is already an encadreur present should be further supported by the following:

a. Radio communications at the sub-sector level with specialist services at the ORD and medical services in Fada;

b. Improved tests and demonstrations of varieties and production practices (dates of planting, moderate levels of fertilizers, rhizobial inoculation of legume seed, increased use of legumes in the cropping system, planting in rows and on contour, weed control, soil conservation (see crop production recommendations Annex);

c. Retraining of agents (recyclage) including basics of crop and livestock production, marketing, health, and nutrition;

41

d. Some increase in the number of agents;

e. Transportation allowance for agents (provided by ORD);

f. ORD/OFNACER seed distribution and commercial grain purchase program with price supports, making greater use of OFNACER facilities and resources.

g. Development of peanut purchasing program for those producing areas;

h. Formation of Groupements Communautaires for provision of credit on terms comparable to National Development Bank loans (including a sizable down payment) for:

-machinery and carts

-insecticides and chemicals

-draft animals

-grain stored in the village storage;

i. Improved infrastructure using self-help for:

-water supplies for livestock and human consumption

-access roads to market

-rural schools (ecole rurales), which can also serve as a general meeting house

-work animal training center

-housing for extension agents;

j. Improved veterinary service delivery for all classes of livestock, with special veterinary supervision of health of work animals;

k. A special additional series of agricultural activities for the low lying areas where bas fonds can be developed, areas with residual moisture out of season (dscrue) and areas with available irrigation water;

42

-repair of existing earthen dams and dikes and provision for continuing maintenance

-surveying and design service for management of bas fonds at ORD

-marketing and production economics studies of fruits and vegetables

-special health care for those who work in water[4]

If sufficient trained personnel are available, an agent should ultimately be located in each of the irrigation projects with over 15 ha. under cultivation.

Support for Administration centers

The three major centers in the ORD, Fada N'Gourma, Bogande and Diapaga are commercial centers with few if any of the facilities necessary to act as administrative centers. Investments from government or self-help sources will have to be made in education, health services, water improvement, roads housing, power supplies. At this time it is proposed that A.I.D. only provide funds for some housing, well development and a generator for Fada N'Gourma. (power distribution lines have been in place for some years now).

The ORD recognizes the need to spur greater animation of these centers. There is much that can be done by the ORD and the people of the area. In addition the ORD will call upon other sources of financing (the IBRD Rural Development loan) for assistance in school construction, village water supplies and improvement of the existing dam at Fada N'Gourma.

[4] Bilharzia should not be a problem in the bas fonds program since these areas go completely dry during the year, breaking the life cycle of the organism. In using dam water for irrigation, conclusive action should be taken to prevent spread of the disease.

43

CROP	Varietal Research Institutes IFAT, IRHO, IRCT	Recommendations: OUAGADOUGOU ORD	Recommendations: FADA ORD	Recommendations: for special seed increase	Fertiliser Formulations (N - P205 - K20 rates in Kg/Ha): IRAT	Fertiliser Formulations (N - P205 - K20 rates in Kg/Ha): Suggested minimum formulations for farmer use	Pest preceding crop sequence named crop IE
MILLET	500-600 mm rainfall Dori (1.5) P 9 Kolo (1.5)	Synthetique 71 Local varieties	Synthetique 71 Local varieties	Zalla Synthetique 71 Mil du G.A.M. (p2 Bilgues)	31 - 25 - 0 41 - 50 - 0 63 - 50 - 0	20 - 10 - 0	Groundnut Cowpeas Cotton Corn Sorghum Jachere
	650 - 850 mm Zalla (2.5)						
	850 - 1000 mm M.9 (2.0)						
	1000 - 1200 mm M. 12 (2.5) Safa (2.0)						
Sorghum	650 - 750 mm Short - 137 - 62 (3.5) - CE - 90 (3.0) Tall - Belko (3.0) Nongom soba (3.7)	Saria 29 Yifiri Local varieties	Quedesoure Ticadi Local varieties	137 - 62 Yifiri Belko Sorgho 29 Zalla Gnofing Ticadi Quedesoure	31 - 50 - 0 41 - 50 - 0 85 - 50 - 30	40 - 20 - 0	Groundnut Cowpeas Cotton Rice
	750 - 950 mm Short - Saria 132-3 (3.8) Saria 135 - 2 (3.0) Tall - Saria 29 (3.4) Zalla (3.2)						
	950 - 1200 mm Tall - Frikau (3.0) - Gnofing (3.0) - Quedesours (3.0)						

RICE	900 mm and above [5] Upland 63 x 83 (1 - 15) - Dourado Precoy (3.5) Irrigated Gambiaka (5-6) - Sosson (6-7) - IR 8 (6-7) [7] Bas fonds - Gambiala (4-5) - C 74 (3-4) - Sintane Diofor (3-4) - Dourado (4-5)	C 74 IR 8 Sintane Diofor Gambiaka Dourado	C 74 IR 8 Sintane Diofor Ganbiaka Dourado	C 74 Dourado IR 8	41 - 50 - 0 [2] [4] 65 - 50 - 30	40 - 20 - o	Groundnuts Cowpeas
MAIZE	900 mm and above Jaune Hatif de FC (4.5) Blanc Massayomba (5.0) Aldiobla	Local	Jaune Hatif de F C Massayomba	Jaune de F C Massayomba Western Yellow Samaru 123	63 - 50 - 30 [3] 110 - 50 - 60 [4]	40 - 20 - 0	Groundnuts Cowpeas Cotton Sorghum Millet
GROUNDNUTS	(IPHO) 47 - 16 (Va) Bambey 55 - 437 (Sp)	V 90 28206 T E 3 (Early)	1020 (Mid early 55 - 437 T E3		10 - 15 - 25 [3] 10 - 30 - 50 [4]	0 - 20 - 30	Millet Cotton Jachere
COWPEAS (Niebe)	Bambey 88 - 63				10 - 10 - 0 [3] 10 - 30 - 50 [4]	0 - 20 - 30	Millet Sorghum Corn
SOYBEANS			G 5			10 - 20 - 30	
SESAME	(IPHO)		842			40 - 20 - 0	

1 Values in parenthesis are the grain yield potential in tons per hectare.

2 Rates following cotton.

3 General formulation recommended to farmers.

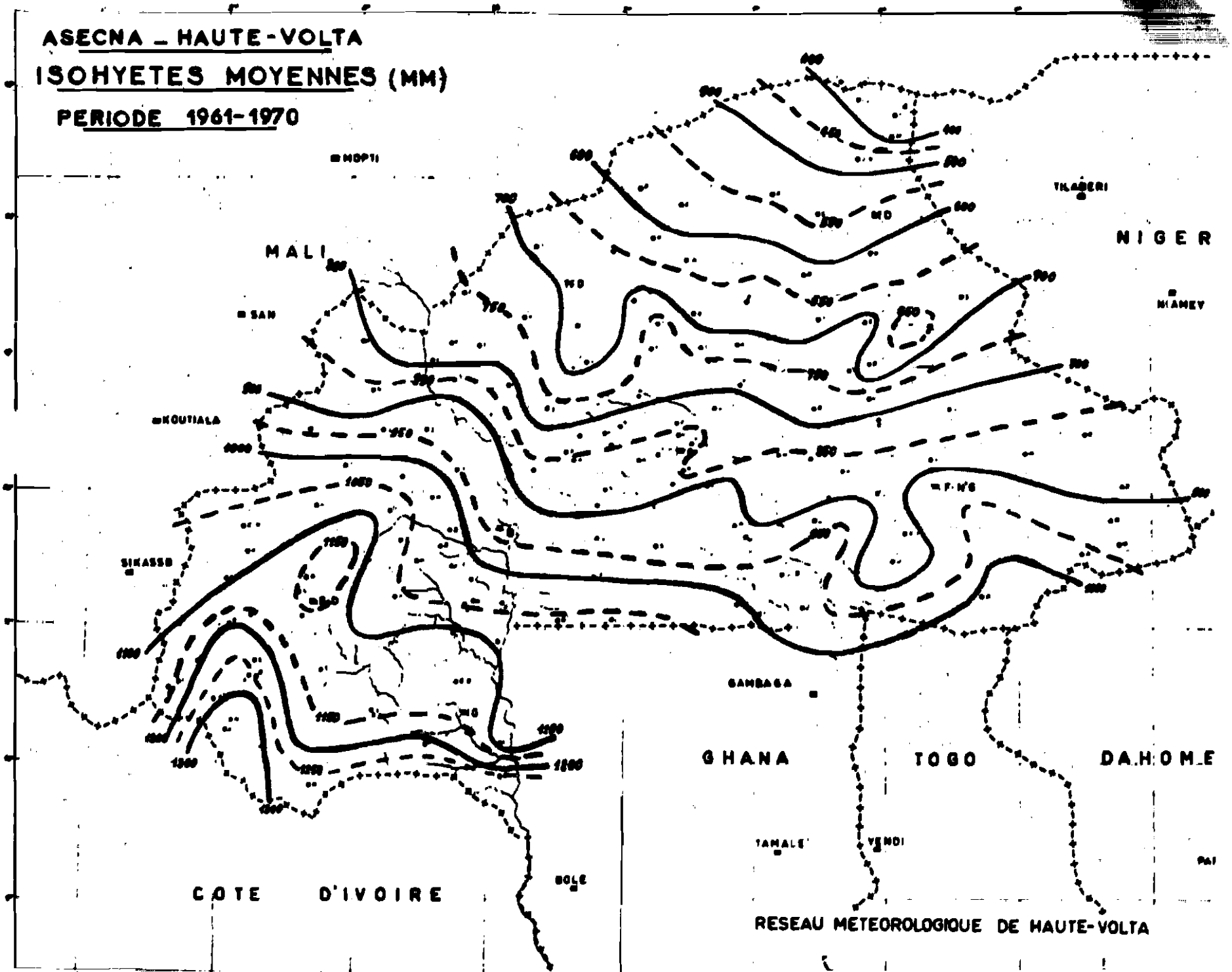
4 Heavy rates for maximum production and rates used for varietal comparisons.

5 From listing prerared by seed supply design team (Peter Daniels, chief).

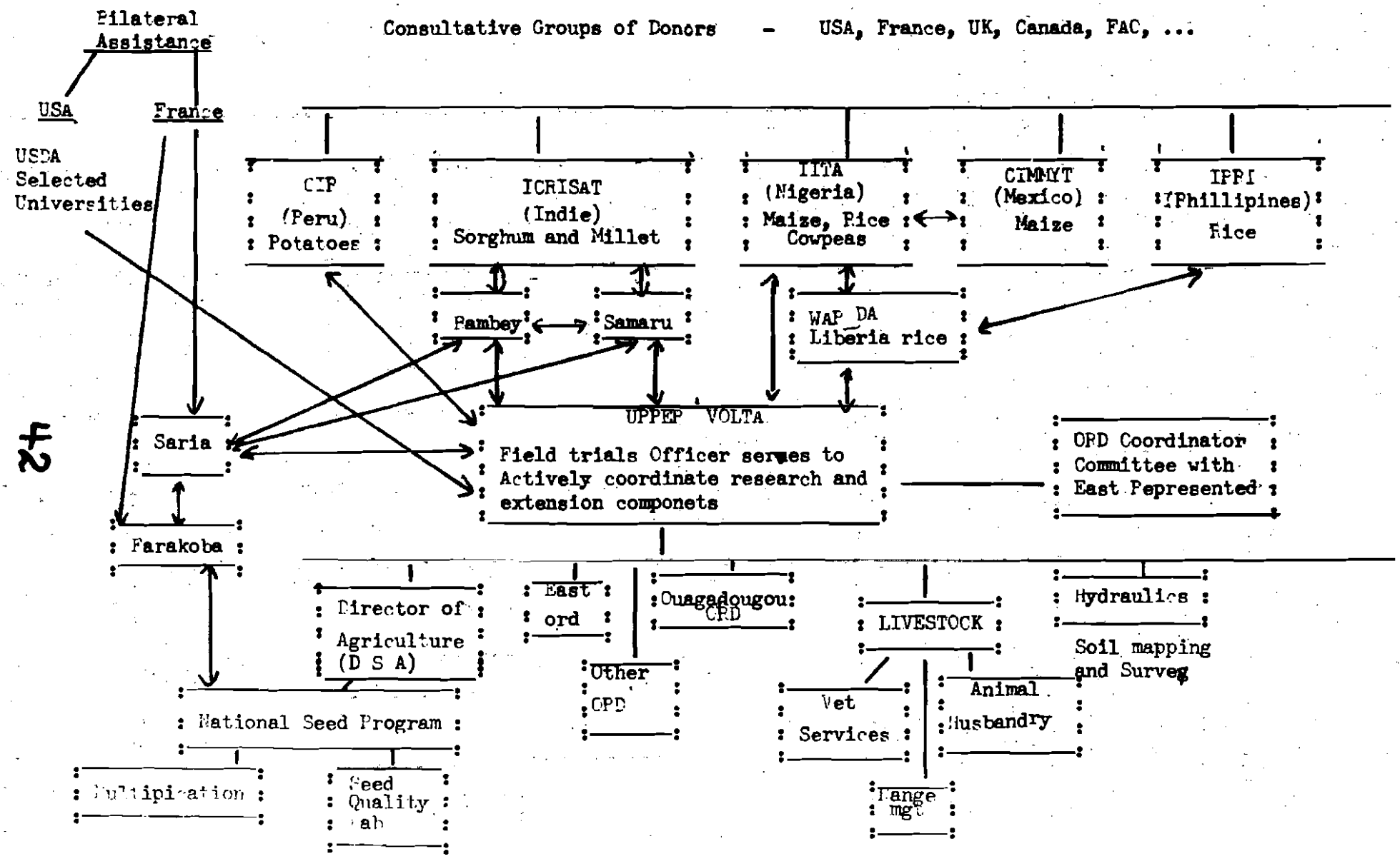
6 63 x 83 recommended only in South west where rainfall is 1000 mm or more and Dourado Precoy for area where rainfall is 900 mm and above.

7 Can be double cropped.

TABLE 6a


ASECNA – HAUTE-VOLTA
ISOHYETES MOYENNES (MM)
PERIODE 1961-1970
MALI
NIGER
GHANA
TOGO
DAHOME
COTE D'IVOIRE
MOPTI
SAN
KOUTIALA
SIKASSO
TILABERI
NIAMEY
GAMBAGA
TAMALE
VENDI
BOLE
RESEAU METEOROLOGIQUE DE HAUTE-VOLTA

INTERNATIONAL RESEARCH NETWORK



2. ECONOMIC FEASIBILITY

a. CROP MARKETING AND CREDIT

National marketing

Major crops produced in Upper Volta are normally classed as cash or export crops including cotton, groundnuts, sheanuts, and sesame, and cereals, including millet, sorghum, maize and rice. There are substantial marketing differences between the two classes. The major export crop, cotton, is handled by two monopolies: the Association en Participation for lint and the Caisse de Stabilization de Prix de Produits (CSPP) for seed. The other export crops are marketed by private traders (licensed by CSPP) and the OHD's directly to exporters. Prices for the export crops are established and published each year by CSPP.

Cereals, on the other hand, have generally been a modified free market operation. Cereals entering commercial channels in Upper Volta are estimated to be 20-30% of the total production. The other 70-80% is retained on farms for family consumption needs. The 20-30% entering marketing channels is normally handled by private traders and some part of this (perhaps one third to one half) never leaves the local villages. Since Upper Volta suffers a chronic deficit in cereals even in normal years (about 30,000 MT per year in 1965-69 period), the market system must be prepared to distribute these quantities. In drought years, the burden is even greater. Producers sell grain to private traders at a free market level and the grain moves through commercial channels to the ultimate consumer. The system functions fairly well in normal years from a distribution standpoint but there are many problems in pricing and in producer access to alternative market outlets.

In 1970, the Government created the National Office of Cereals (OFNACER*) to stabilize prices to producers and consumers and to assist in distribution of grains (both domestic and imported) but this effort has been of very limited success to date. The problem is that OFNACER prices offered to the producer have been set at unrealistically low levels and, as a result, OFNACER has not been a real competitor in the market. OFNACER has also unsuccessfully attempted to buy grain by contracting with private traders but this approach also failed to guarantee a meaningful price to producers. A final problem is that OFNACER is under the Ministry of Commerce while the ORDs are under the Ministry ofAgriculture. This has resulted in a lack of coordination between the two. As a result of OFNACER's inability to cope with the cereal marketing problem, wide fluctuations continue in the traditional way.

Marketing in the Eastern ORD

The greatest problem faced by grain producers in the Eastern ORD is the low prices received at harvest coupled with extreme pressure to sell at harvest. There are several interrelated reasons for this situation. First, there is no institutional credit in the Eastern ORD and producers must now borrow from non-institutional sources such as private traders. Not only does this involve a high interest rate but "loans" must be repaid at harvest which forces the producer to sell grain at the lowest point in the price swing. In addition, producers have normal cash requirements for taxes (usually in January), clothing, essential food items, etc., which exert pressure to sell at harvest.

*See KSU study for more detail on OFNACER.

Although harvest level prices are always lower than other times of the year, the producer frequently finds himself receiving prices below what might be considered a normal harvest level price. Unless he lives relatively near to a town with a large market, the producer generally has only one outlet for his grain, the private trader. (In fact there may be only one trader in an area.) Knowing that the producer has limited outlets and transport, the trader will often pay less than market prices. Due to poor market information, the producer may not even know that the price is abnormally low. Finally, if the producer does have alternatives, the trader resorts to other means to abnormally expand his profit margin. ORD employees have caught several traders using false tines. (A tine is a 20-liter measure which holds about 16 kilos of grain.) Apparently traders often use the false tines which hold 20 or more kilos but pay the regular or possibly a slightly higher price. The grain would be resold using the standard 16 kilo measure, thus losing the producer approximately 20% of his grain, price levels notwithstanding.

Transportation is another major problem within the ORD. The roads are extremely poor, making transport difficult and costly. In fact, the seemingly excessive margins taken by traders may at least partially reflect the difficulty of reaching producers.

On-farm storage was actually found to be farther advanced than anticipated, but storage losses continue to exist. This is especially true with producers who do not treat the grain against insects or fail to use enough insecticide. Some estimates of loss are as high as 20%.

Recommended marketing program for Eastern ORD

Attacking the problem of low cereal prices at harvest will require a

joint OFNACER-ORD effort. OFNACER must adopt a price policy which allows the setting of realistic harvest level prices on a national basis (recognizing that there will be transport differentials to more remote areas - otherwise a price subsidy will be required). They must also back those prices with a policy of buying from all producers who offer grain for sale. Only in this way will private traders be forced to pay the same minimum level set by OFNACER. However, even if OFNACER is able to make the program operational, many producers in isolated areas with no transport will be unable to sell to OFNACER even if they know the price is higher. Traders, knowing their dilemma, will still be able to pay unfairly low prices. It is in this area that ORD participation in the marketing becomes important.

In the Eastern ORD, OFNACER is now constructing two 1500 MT storage facilities in Fada N'Gourma. Producers in the Fada area will soon have the alternative of selling to OFNACER and/can demand the same price from traders. However, other portions of the ORD will be largely unaffected unless OFNACER can establish several other buying points. The ORD, through an agreement with OFNACER, is prepared to play this role. ORD offices and storage facilities exist in Bogande and Diapaga. (Approximately 400 MT of storage being built in each village.) Producers in these two areas could sell to the ORD at the OFNACER price and thus have access to a new outlet. In addition, in more remote areas where the OFNACER price had no effect, the ORD could reach such areas with mobile buying units (trucks). The movement of these trucks could be announced by radio along with pricing information. In this way a major portion of the ORD would be reached by the coordinated marketing program. To accomplish this part of the program three inputs are required: storage facilities, trucks, and a working fund for purchase.

As indicated, OFNACER has currently under construction 3000 MT of storage facilities in Fada N'Gourma. The ORD currently has about 400 MT in Fada and is constructing another 400 MT unit. In addition, the ORD has funds for a 400 MT unit in Bogande and Diapaga. This yields a total ORD-OFNACER capacity in the ORD of about 4600 MT. In 1970, 14,500 MT of millet, sorghum, corn and rice were marketed in the ORD. A general rule of thumb is that a price stabilization program must be prepared to handle up to 20% of the grains marketed or in 1970 about 2900 MT. Thus, even if total marketings increase substantially in the ORD the combined ORD-OFNACER storage will be sufficient to do the job. (This also recognizes that the ORD will need part of their capacity for input storage.) As a result, no new storage facilities are recommended at this time.

It is assumed that OFNACER has the vehicles and working capital required to carry out their part of the program. However, although the ORD can use OFNACER working capital, it does not have enough vehicles and a budget item for a sufficient number of trucks is included in the project.

The question of a working fund for the buying operations is very important to the long-term viability of the ORD. There is very little basis on which to estimate the amount of grains and peanuts that the ORD will buy in any given year. In the case of grains, however, the ORD should be able to use the OFNACER funds to buy. In a short year, when prices are high, neither the ORD nor OFNACER will need to buy much grain. On the other hand, a good harvest with resulting low prices implies an active role for the ORD in buying grains to help increase harvest level prices and funds would be needed. It is doubtful that the ORD on its own account would need much grain in a given year. They may wish some for seed and for local relief programs not reached

by other sources but the amounts should be minimal.

With respect to peanuts, last year only 200 MT were bought in the ORD. They wish to increase this amount and it would appear that 3000 MT would be a maximum during the project life (about 7500 MT were marketed in 1970). It is assumed that the ORD would buy about 1000 MT the first year, 2000 MT the second, and 3000 MT thereafter. The fund should be a total of $185,000 for the first 3 years. (This is based on the assumption that the ORD could turn the funds 3 times in a given harvest and therefore would need funds for only 333 MT the first year.)

This fund is important because it is through peanut marketing that the ORD can raise significant resources for its operations. For this reason U.S. funding for the purchasing program will be required only for the first 3 years. This fund would be handled through BND. If it turns out that the ORD cannot use OFNACER operating capital for grain purchases, inclusion of this into the purchasing fund should be given further study.

The marketing needs are too large for either the ORD or OFNACER to do alone and will require a joint effort on their part. It is realized that current relations between ORDs and OFNACER need improvement. However, the GOUV has stated that measures are underway to alleviate the problem particularly with the Eastern ORD and the Banfora ORD.

As a corollary effort it is important that the ORD act to establish a market information and statistics system. A marketing economist is being recommended for the ORD and should be charged with this task along with his other duties which include handling the grain buying operations and doing market research. As a minimum, data on prices to producers and on the marketed surplus should be collected. The communication network being

provided to the ORD will allow timely collection of prices which can in turn be rebroadcast by radio to producers in the ORD. The OFNACER price must also be widely publicized at harvest time as well as times when ORD or OFNACER purchasing trucks will be in villages.

Further assistance can be given to the small producer by an activity to relieve pressure on producers to sell at harvest. This is proposed in the credit component discussed in the following section of this report. Basically it involves allowing a farmer to deposit grain at harvest in a local association storage facility to cover his loan liability. However, he would retain title to the grain and have the right to withdraw and sell later in the year to repay the loan and make a profit for storing. To increase producer bargaining power, the association could act as an agent for all producers with grain on deposit and any others who wanted to sell at that time in dealing with traders. It is believed that adequate local storage can be found for the 'cooperatives' use but, if not, it can be constructed. The association will be able to borrow from the revolving fund to build additional storage if needed.

In order to solve the problem of false tines a low cost but potentially dramatic input is proposed. An official ORD tine should be manufactured and distributed to each village chief. This tine should be made of aluminum or some other material which is difficult to duplicate locally and should carry an imprint of the ORD seal. In this way, each chief will have a means to check on the traders coming to buy grains. In theory, this simple input alone can increase producer returns by 20%.

Economic impact of the marketing program

The average producer in the Eastern ORD now markets 16% of his total

production of cereals in a normal rainfall year. Most of this would be sold at harvest since, as indicated earlier in this section, this is the time when producers have the greatest pressure to sell. While the harvest price will vary from year to year, for purposes of an example, the price for millet and sorghum of about 17 CFA per kilo will be used. The current consumer price in the Eastern ORD is about 32 CFA per kilo and indications are that this will increase to perhaps 40-50 CFA prior to the next harvest. Thus, at the extremes, the farmer to consumer price spread for this year will likely be between 23 and 33 CFA per kilo.

Kansas State University (A Study and Plan for Regional Grain Stabilization in West Africa) estimated that a fair return for all concerned would be realized if this spread were reduced to 12 CFA per kilo. Thus, in the current year the spread will be 11 to 21 CFA higher than a reasonable spread. It is this situation that the OFNACER-ORD program will try to correct.

Assuming the average producer has about 210 kilos of grain to sell in a given year and that the ORD-OFNACER program were operating to hold the spread to 12 CFA, then the producer would have gained 1155 CFA ($4.71) to 2205 CFA ($9.00) in the current year. (This is based on the fact that he would receive one half of the excess spread, 11 to 21 CFA, and consumers would get the other half.) Thus, the farmers reached by the OFNACER-ORD program could expect almost a doubling of income. This is discussed in greater detail in Section 2.3 of the project proposal.

A final benefit from such a program is that the reduction of market risk to the producer through guaranteed minimum prices and greater market access provides an environment in which producers will be more willing to assume greater production risks in the form of new technology and, hence, raise yields.

Agricultural credit

National level

Institutional agricultural credit in Upper Volta is handled by the National Development Bank (BND). The BND makes both long- and short-term loans to agricultural producers. The normal interest rate for short-term production credit is 10% while medium- to long-term credit for oxen or farm machinery is 8-11%. Down payments on long- and medium-term loans are frequently as high as 50%.

In addition to BND, there also exists a substantial non-institutional credit market in Upper Volta consisting of merchants, private traders, family members, friends, etc. Rates are high; in some cases 100% or more. (Actually, part of the apparent interest rate is caused by seasonal changes in the value of cereals which are often used as the medium of exchange. The loan is made at a time when cereal prices are high and the borrower repays after harvest. This may be a loan of one bag of grain which is to be repaid with two bags at harvest; which seems like 100% but, in value terms they may in fact be equal.) This credit may be for consumption purposes as well as for productive inputs.

Credit in the Eastern ORD

As the Eastern ORD has never been legally constituted as an ORD, the BND has never made credit available to the ORD or its producers. Thus the only form of credit available at this point in time is ad hoc and non-institutional. Since the recommended credit program proposed below for the Eastern ORD will be a result of a special revolving fund set up in the BND, considerable flexibility is possible in the design.

Proposed credit program

It is proposed that a revolving fund be established within the BND for producers in the Eastern ORD to provide both short- and medium-term funds to purchase productive inputs. Funds will be channeled through the ORD to local farmer Associations (Groupement Communitaires). The system for crop production will involve a series of steps as follows:

1. Groupement Communitaires will have been formed and producers wishing to use credit will deposit a nominal sum to become members. The Associations would be managed by a committee of local villagers and advised by ORD encadreurs and the ORD cooperative credit man at Fada.
2. Several months prior to planting, the local Association will work with producers to determine the amount of short-term and medium-term credit needed for the coming year. This information will be passed back to the ORD in terms of the amounts of various inputs needed including farm machinery and oxen or donkeys. The encadreurs in the area will assist the Association in making this determination.
3. The ORD should receive the needs from all Associations and compile orders for the necessary inputs from the Input Purchasing Fund.
4. The ORD would pay for, receive, and distribute the inputs to the Associations prior to the planting season. (In fact, prior to the rains.) All inputs and machinery would, at least initially, be furnished in kind except for oxen and donkeys and debited against the account of the local Association. For draft animals the funds will be provided to the encadreur who will assist the producer in buying. Because of the difficulty in collection for animals a 50% down payment would be required in Associations formed in the Extensive Areas. In

the Intensive Areas, no down payment should be required (due to the greater control of credit which will exist), or a nominal one. On shorter term credit for seeds, chemicals, fertilizers, etc., loans would be for the season only. For the intermediate term (farm equipment) a 3-5 year repayment would be used. For oxen, the first year should be a grace period with three years to pay. Producers using oxen would be encouraged to sell the oxen and replace them after the first three years as they could make a substantial profit (estimated at CFA 30,000) because of the increase in animal weight and the consequent increase in market value. Donkeys would have a three year repayment term with no grace period.

5. At harvest, producers would deliver sufficient grain to repay the loan or loans to the Association (the price used to credit liabilities would be the OFNACER minimum floor price or, in the event that the OFNACER prices remain unrealistic, the normal harvest price in the village or area). To further assist the producer, it is proposed that the grain be held in bond in the farmer's name for resale later in the year at a higher price. The value to the producer in this approach is that he is not forced to actually sell his grain at harvest time when prices are lowest. (Interest charges would continue on the loan funds and the farmer would be responsible for a small storage-service charge for the Association.) In the event prices were reasonably high at harvest the Associations could accept a sufficient quantity of grain immediately at harvest and credit the farmer's loan. The Association would then repay the BND revolving fund.

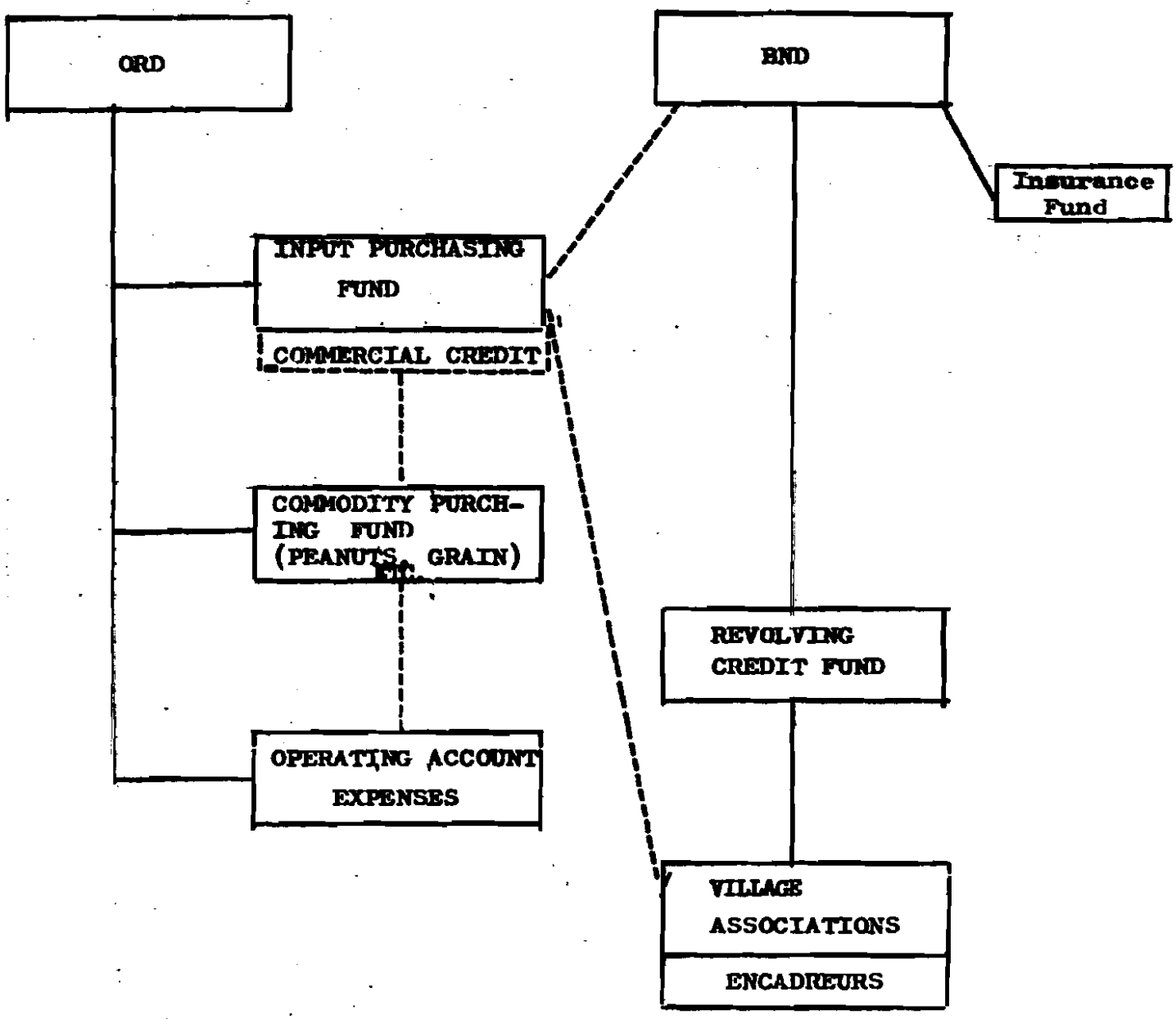
Short-term credit to buy livestock for feeding purposes will also be provided under this program. However, loans for the purchase of breeding stock are not recommended. The Associations may wish to consider loans for livestock feed and vet supplies on single season terms.

It is proposed that the Associations will be able to borrow from the revolving fund for carts and for grain storage units. The carts would pay for themselves through an Association rental program to farmers.

Default rates are expected to be very low because of the use of collective liability through the village Associations. The village Association will be expected to assume a responsibility for each borrower to the extent that the Association will make good his loan if he defaults, and the goods cannot be repossessed. This approach has been successfully applied in Matourkou. In the case of a general drought or other disaster repayments can be deferred to a later period (both short- and medium-term). Finally, if a farmer loses his oxen due to causes beyond his control the program provides that they will be replaced for him at no extra charge through an insurance fund established as part of the revolving fund. (See Table 9 for schematic details of the institutional relationships in the proposed credit program.)

TABLE 9

FINANCIAL FUNCTION CHART



b. ECONOMIC BENEFITS AND INCOME DISTRIBUTION

Extensive program

The benefits of the programs in the short run should be about the same in both intensive and extensive programs. The extensive program could have the greatest immediate effect and affect the largest number of people. Its major benefit is limited to what can be accomplished with 1) a sound marketing program by the ORD, collaborating with OFNACER in cereals; 2) the additional impact of complete coverage of the ORD with the seed treatment thioral; and 3) a better coverage and utilization of Gammagrain, the grain storage insecticide.

The marketing program will have several desirable effects:

- it will reduce consumer price in the ORD toward the end of the dry season and during the crop production season, thereby indirectly increasing the farmer's disposable income.
- along with other measures it should assure a higher producer price at harvest than the farmer normally receives.
- it will provide a major source of income to the ORD through trading in peanuts and sesame.

The effect of "encadrement" on farm income, intensive zones, and other "encadreured" areas

The average nuclear family has about five members, 2.6 man equivalents for farm work. They live with a blood related family, averaging two families in a concession. With the traditional tools, they cultivate about 3 ha., mainly in sorghum and millet, with a few peanuts, some cotton and rice as cash crops, and a little maize and beans or cowpeas. The family has about 1 ha. close to home which is manured each year, and 2 ha. which is in a

slash-and-burn rotation to maintain fertility. A little seed is purchased or obtained on an advance against repayment from the crop and most is preserved from the preceding harvest.

Intensive program

Over the medium run the potential increases in income from the intensive areas is considerable. The value of production (31,000 CFA) minus the value of seed and other costs (4,000 CFA) in an average year is now 27,000 CFA ($110);[a] that is, 10,385 CFA per worker ($41) or 5,400 CFA ($22) per family member. Of this production, the family consumes approximately 17,000 CFA or 70%; of the 10,000 CFA surplus they pay 1,500 or 2,250 tax, depending on whether the third worker is 14 or over. Their yearly disposable income is then 7,750 CFA ($31), or 1,550 CFA ($6) per head. (See table 10)

Improvement in prices alone could increase their disposable income between $5.00 and $9.00 per year (see crop marketing section). Reducing their cereal storage losses by a maximum of 10% at the end of the storage period (say equivalent to an average of 5% of their total consumption) would save about another $5.

Growing about 0.2 ha. of rice in a bas fonds would present an extra workload but would more than double the disposable income (bringing in 9,500 CFA, $38 more a year). Table 10 compares a bas fond development farm with an ox traction farm which has not developed its bas fond. Farmers would be encouraged to do both if soils permit.

The ox-drawn cultivation system would require an investment of 70,000 CFA, $280. Assuming that the family gets half of the expected benefit in the first year and the full benefit in the second, the family is expected to triple its disposable income in the first year of use, and to quadruple it

a/ Exchange rate @ 250 CFA = U.S. $1

in the second year* after deducting interest and amortization of the loan (see Table 10). After the fourth year, when the loan is expected to have been paid off, the disposable income should be six and one half to seven times that before the change. Even so, the value of production minus direct costs is about $314 ($63 a head) and the disposable income about $210 ($42 a head). Looking at all of the elements in totality, it is possible that farmer disposable income could increase from the $32 per year current estimate to $264 per year in the intensive zones.

No account has been taken of the compounding effect from investing part of the profits in productive livestock which brings a further return in meat and livestock products sold and from manure applied to the land.

These farmers also benefit from the extensive program.

Benefits from livestock program

The Eastern ORD is, after the Sahelian region, the most important area of surplus livestock production in Upper Volta.** The ORD produces a surplus of cattle, small ruminants, pigs and probably poultry.

Livestock is seen as the most productive investment that a farmer can make as well as a liquid asset as a hedge against insufficient production of grain.

The small livestock program for the Gourmantche involves veterinary, breed improvement and nutritional measures to increase the efficiency of production of small livestock.

For cattle, the ingredients of the proposed project are designed to increase the fertility of the breeding herd (now about 35% a year), decrease calf mortality (now 30-40% in the first year), increase the rate of growth

* Assuming a modest increase in consumption and gifts.

** In 1973, the estimated livestock population in the ORD was: 280,000 cattle, 300,000 sheep, 400,000 goats, 10,000 pigs, 4,500 horses, and 10,000 donkeys.

and to finish cattle one to two years earlier than is traditional. This increases the disposable surplus from 11-12% up to 18-19%, without greatly increasing the stocking of the pastures (because of earlier disposal of the males).

Improved breeding stock will also make a considerable difference to the efficiency of production of pigs and poultry. The production of a low-cost ration for these animals will greatly increase the potential production.

Employment and spread effect

The approach used is, of necessity, labor intensive and with the introduction of intermediate technology equipment and draft animals, the equipment will also be produced with intensive use of labor. In part, this is because there are no immediately available imported inputs that will increase productivity profitably.

The ox cultivation permits approximately doubling the area farmed by the nuclear family (from 3 ha. to 6 ha.) with a modest increase demonstrated in yield due to better soil - moisture relationships (less run-off) and more timely field work.

In Upper Volta a dominant factor in the labor market has been the seasonal and the career out-migration, first of young males and now of young people of both sexes. It is assumed that a major part of the migration is due to lack of opportunity at home and expectation of a better opportunity somewhere else.

Agricultural development, by providing greater disposable incomes and better training and some opportunities for young men wanting to start in farming, is expected to slow the out-migration from the region and to keep these workers profitably employed in Upper Volta.

The proposed marketing program will have the overall effect of insuring consistently higher producer prices while reducing the profit margins now received by commercants. This will have a redistributive effect on income in the region.

TABLE _____

PROJECTED EFFECT OF TWO TYPES OF DEVELOPMENT PROGRAMS ON A TYPICAL GOURMANTCHE FARM

All figures in CFA
Conversion to dollars in text @ 250 CFA = U.S. $1

	Existing Farm	OX TRACTION					Increase in rice/bean rotation in bas fond
	3.00 ha.	+1.50 ha. Year 1	6.00 ha. Year 2	6.00 ha. Year 3	6.00 ha. Year 4	6.00 ha. Year 5	+0.2 ha. Year 7
Gross value of crop production	31,000	64,500	93,000	93,000	153,000*	93,000	44,000
Minus value of seeds	3,000	4,400	6,000	6,000	6,000	6,000	3,500
Minus other costs	1,000	7,300 a/	8,800	8,800	38,800*	88,000	1,000
Value of production - cash cost	27,000	52,800	78,200	78,200	108,200	78,200	39,500
Family consumption and gifts	17,000	20,000	22,000	22,000	22,000	22,000	20,000
Surplus	10,000	32,800	66,200	66,200	86,200	66,200	19,500
Head tax	2,250	2,250	2,250	2,250	2,250	2,250	2,250
Surplus after tax	7,750	30,550	53,950	53,950	83,950	53,950	17,250
Interest on loan & amortization of loan	-	5,600 b/	19,600	18,800	45,360	-	-
Value of disposable surplus	7,750	24,950	34,350	35,150	38,590	53,950	17,250

OUTPUT PER CAPITA
(NUCLEAR FARM FAMILY OF 5, 2.6 EFFECTIVE WORKERS)

Value of production/worker	11,923	24,808	35,769	35,769	58,846	35,769	16,923
Value of production - cash cost/worker	10,385	20,308	30,077	30,077	41,615	30,077	15,192
Disposable surplus/worker	2,981	9,596	13,212	13,519	14,842	20,750	6,635
Value of production/family member	6,200	12,900	18,600	18,600	30,600	18,600	8,800
Disposable surplus/family member	1,550	4,990	6,870	7,030	7,718	10,790	3,450

* In the fourth year the pair of oxen is sold or 60,000 CFA (export grade steers, 450-500 kg.) and a pair of young oxen purchased (cash) for 30,000 CFA

a/ Includes 1,200 CFA/year cattle tax through succeeding years

b/ Incurs ox-plow loan of 70,000 CFA over 3 years @ 8%

TABLE 10

3. MANAGEMENT/ORGANIZATIONAL ANALYSIS

(a) ORGANISME(s) REGIONAL DE DEVELOPMENT (ORDs) IN UPPER VOLTA

History and Background

The first ORDs were created in 1965 as a means to involve local populations in the development process and to offer the range of services required on an integrated and more locally accessible basis. Their creation presumably addressed the problems of weak central government line services and transport and communication difficulties and attempted to enlist regional sentiment and desire for tangible benefits as a motivating force for national development.

ORD statutes are generally uniform and provide for a legal personality and self-accounting status. ORD geographic limits may include several Cercles, (the standard politico-administrative unit). However, ORDs are more intended to define homogeneous population groups with similar agricultural activities.

In practice, ORDs were not utilized to distribute the full range of government services available until assisted by an outside donor or expatriate Societé d'Intervention (project management and technical assistance organizations). All ORDs receive central government budget support in at least two categories: direct payment of salaries and

perquisites to civil servants assigned to the ORD, and an ORD capital and operational expenditures budget including salaries and allowances for encadreurs, (3-year term contractual employees) who serve at the lowest level of the extension network.

Other national program assets such as the IBRD Rural Development Loan administered by the Banque Nationale de Développement (BND) require ORD initiation or inputs, but the work is carried out by the technical services, and costs are reimbursed directly to the implementing service.

Organization

A fully constituted ORD has a local policy group, the Assemblé Général, whose purpose is to elaborate general policies for the ORD. In principal, the assembly's membership includes the Commandants of the Cercles included within the ORD, the National Assembly Deputies, local political party figures, representatives of trade and professional organizations, representatives of the BND, the Director of Commerce (Ministry of Finance, the Office of Commercialization and local (otherwise undesignated) government representatives. The body which acts for this diverse group is a Comité de Direction (Steering Committee) of 10 - 12 members designated by the Assembly. The President of the Assembly (the Commandant

at the Cercle where the ORD has its headquarters), as well as other official members, are part of the Committee by statute.

In practice, the role and importance of these bodies varies considerably from a pro-forma requirement to an active group lobbying for additional central government resources for the region. Under the Ministry reorganization now being implemented, the Director of the DDR (now DSA) represents the government vis-a-vis the Assembly and Steering Committee, not the Director of the ORD. The Director theoretically reports to the Steering Committee as well as to DSA from a subordinate standing.

The ORD Director's control now extends vertically through a Section de Vulgarisation Agricole (Extension Section) composed of specialized staff (rice culture, horticulture, home economics, rural youth, etc.) to Sectors (managed by a Chef de Secteur) to sub-sectors to Unités d'encadrement, geographic zones which are the responsibility of an individual agent.

The ORD Director has had (again, pending completion of the reorganization) no horizontal control over regional offices of sister services within the Ministry of Agriculture (Rural Engineering, Livestock, Forestry). It appears, however, that there has been local coordination and mutual cooperation

among the Ministry's services and between the ORD and local offices of other Ministries (Public Works, Health, etc.). This "system" has been fragile, and is frequently disrupted by personality differences, opposing policy directives from services headquarters in Ouagadougou, and a different geographic organisational base for different agencies.

Apart from these general similarities, the programs and concentrations of ORDs vary greatly, and some have more specialised extension/motivation approaches and structures. Many concentrate on particular cash crops (e.g., cotton) and/or intensive production (high input - high output) technologies in restricted areas. The choice of strategy employed by a particular ORD seems to depend as much on the strengths and interests of its donor as on its inherent agricultural comparative advantage.

All ORDs, as presently constituted, are limited to agricultural (particularly crops) production, marketing, and extension approaches, and they themselves cannot offer the full range of services and activities implied by integrated rural development. Their program further suffers by inconsistencies and anomalies in national direction and policies (e.g., base price levels for grain are set well below current market rates; tight credit policies; inter-ORD competition for resources, particularly personnel; and inadequate exchange of information, etc.)

Despite short-comings, and especially in view of the proposed reorganization, the ORDs appear to be a promising mechanism for the Government of Upper Volta's Rural Development Program. They are conceptually an excellent way to handle Upper Volta's difficult physical and social communications problems and (given adequate financing) provide its rural people with a single source for many development services.

(b) THE EASTERN ORD

The Setting

Descriptions of the geographic, social, and economic characteristics of the ORD have been prepared by various agencies, largely from Voltaic source material. The ORD's area is approximately 50,000 klm^2 located in the eastern and southern limits of Upper Volta bordered by Niger, Dahomey, Togo, and the ORDs of Sahel, North Mossi Plateaux and Center-East. Its area, 18% of Upper Volta's total land space, is by far the largest of any ORD. Its form is a large peneplain averaging 950' - 1050' in elevation with three of its four major drainages (the Kompiengo, Singou and Pendjari) flowing south into the Volta basin and the Sirba flowing east-northeast into the Niger system. A range of small hills (collines) flanks the Sirba Valley and more important ranges (the Gabnangou, the Atakora) are found in the eastern and southern border areas.

The ORD lies within the ISOHYETS of 600 mm. (approx. 24") and 1000 mm. (approx. 33") with the south and south-east sections being the wettest. The climate is described as Sahelo-Sudanian with well marked seasons; dry from mid-October to early June, rainy from June through September. The coolest period occurs December/January, the warmest April/May, with cool temperatures varying between 65 degrees to 95 degrees Fahrenheit during the month and hot temperatures varying from 80 degrees to 110 degrees Fahrenheit. Highest temperatures reach 120 degrees Fahrenheit in the shade.

Vegetative cover is north Sudanian Savannah throughout most of the ORD with Sahelian bushy steppe in the northerly reaches.

The road system is very limited. The one all weather road in the ORD is the main Ouagadougou - Niamey road and the total length of roads and tracks of any description is about 750 klms. Nearly all of these secondary roads are in need of repair and grading. For substantial periods of the year, access is virtually impossible and delivery of inputs or marketing of produce is impossible.

Demography and Administrative Features

Population estimates for the ORD range from 280,000 - 300,000 inhabitants, including 30,000 largely migratory Peuhl, 200,000 - 215,000 Gourmantchés, and 50,000 - 55,000 Mossi, the latter two groups primarily sedentary dry land farmers.[a]

a/ Total and ethnic breakdown figures are constructed from various sources.

The Mossi tend to be concentrated along the western border of the ORD, especially south of the Sirba River. The Peuhl range throughout the ORD, but tend to cluster in the northerly half.

Population growth estimates range from 1.6% to 2.0% per annum, with a birth rate of 5.0% to 5.2%, and a death rate of 2.3% to 3.1%.

The population of the Eastern ORD is roughly 5% of Upper Volta's total, and is sparsely settled (the major determinant of village location being year round water availability for people and animals). Its population density is 5.6 - 6 persons per klm^2 compared to a national average of 17.5 persons per klm^2. The ORD average can be further broken down by Cercles to demonstrate substantial variance: Bogandé - 12.9 persons per klm^2, Diapaga - 4.7 persons per klm^2, and Fada N'Gourma - 4.5 persons per klm^2. Family size per concession is calculated at 11 persons of whom 6 are considered as workers. Nuclear family size is estimated at 6, based on information from other areas.

Out of the total area of the ORD, only 2.8% (1,382 $klms^2$) is now under cultivation[b/], 13% is in fallow, and 54.4% is used for rangeland. The remaining 30% lies in forest reserve or is unused due to onchocerciasis infestation, poor soils,

b/ 1970 data.

or other limiting factors. More detailed agriculture and livestock production data is presented in other sections of the paper.

ORD Organization

The FADA ORD was created by decree No. 68/279/PRES/AGRI-EL on November 23, 1968, and its statutes were approved by decree No. 68/293/PRES/AGRI-EL on December 3, 1968. It is not "officially" constituted as yet, having no General Assembly or Steering Committee. The ORD Director anticipates that this will take place in late 1974 (or when the ORD has a Société d'Intervention, either AID, the UNDP, or both). The current Director is the third since the ORD was created in November 1968. While operating in a semi-official state, the ORD cannot avail itself of agricultural credit lines from the National Development Bank.

The ORD is subdivided into four sectors, two corresponding to the Cercles of Bogandé and Diapaga, with Fada Cercle divided into Fada I Sector, roughly north of the Fada - Niamey Road, and Fada II, south of the road. The sectors are divided into 14 sub-sectors whose offices are usually located at Canton or sous-division (several cantons) seats. There are 22 cantons within the ORD and village counts range from 674 to 734.[c/]

c/ Proper demographic and administrative system data were not readily available. The ORD itself needs this for planning purposes, and agreements must be reached with the cercles or the Ministry of Defense to provide it. Questioning of villagers is often counterproductive, since the same data is required for tax purposes (head tax) and habitually altered or vague.

Encadreaurs work under sub-sector direction in Unités d'Encadremant, geographic zones which contain 12 to 20 villages ranging in size from 100 to 2,000 inhabitants. Among these, encadreurs may "effectively" (regularly, working with collaborating families) cover 5 to 10 villages depending on access, mobility, energy and good advance preparation (animation). Experience in one sub-sector indicates that about 10 families collaborate with the encadreur during a visit and that out of 12 villages, he will work closely with about 70 heads of families.

The ORD's current organization is presented in chart form as Table 12, and includes current staffing.

The general pattern of the ORD's geographical expansion/encadrement is to form a sub-sector office when 3 - 4 encadreurs are available for work in new areas. (See Table 13 for sketch of area coverage in Bogandé sector.) At the present level of encadrement, sub-sector boundaries follow cantonal (or larger) limits. Within these gross limits (average, for the ORD, of 2,270 km^2 per canton) actual work sites (exploitations, e.g., bottom land development, animal traction, seed variety and other demonstrations) will be clustered around the densest population centers. However, much travel will still be required for relatively little contact.

75

Staffing and Training, Current Situation

The Eastern ORD is formidably under-staffed. Among the 10 established ORDs, it ranks last in manpower, first in total area, and eighth in farm population. It is functionally improperly organized to carry out the new programs. See Table 12 for a schematic presentation of the existing organization.

Encadreurs

In addition to being completely inadequate in numbers, ORD personnel, particularly at the key encadreur level, are not now provided with transport (bicycles or mobylettes) nor housing, and a prime (allowance) to cover these as well as food while away from post amounts to only $US 6.00/month. (Contrary to the practices of other ORDs) Encadreurs purchase their own mobylettes or bicycles on credit, and part of their prime is used to defray carrying costs. Eastern ORD encadreurs have a starting salary of 7,800 CFA/mo. and a prime of 1,500 CFA. This compares to 17,000 CFA/mo. in a CFDT-assisted ORD and 6,500 CFA/mo. in the lowest pay scale ORD. Pay, but more particularly allowances and transportation, are a source of morale problems in the ORD. The team was told of a "work action" which took place in late 1973, and the ORD Director is very conscious of the need to assure equity in treatment within the ORD and comparability between the Eastern ORDs allowance schedule and those of the other (foreign assisted) ORDs.

The ORD's encadreurs are recruited from within its boundaries from among Gourmantché speakers who have primary school certificates (B.E.P.C., C.E.P. or equivalent). Those meeting requirements exceed the number of spaces available at the Matourkou Training Center, but there are six currently in training who will be available by February 1974.[d]

ATAs are apparently serving encadreur functions in this ORD, either as apprenticeship for Sub-Sector Chief roles, their usual placement, or for lack of encadreurs. ATAs are drawn from throughout Upper Volta, and may not have requisite language skills; but if placed in the Sub-Sector, they can function adequately without it. The ATAs not serving as encadreurs or at Sub-Sector and Sector levels are presumably employed on the Agricultural Extension Section Staff in Fada.[e]

CTAs are employed at the Extension Section or as Sector Chiefs. The sole ITA is the ORD Director, Julien Thiombiano.

We have no observations on the suitability of the respective classifications to their functions, except that Upper Volta

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d/ Dormitory space additions would add an additional 40 spaces to the Matourkou training cycle output. It is hoped that this will provide an additional 25 per year (June to February, 9-month cycle) for the Eastern ORD if negotiated as a quid pro quo for constructing the dormitory.

e/ ATAs Agents Technique Agricole - Vocational middle school level
CTAs Conducteurs de Travaux Agricole - Associate degree school level
ITAs Ingeneurs de Travaux Agricole - University degree school level

is desperately short of trained people. The FAO Sociologist at Matourkou, working at an established, well-funded project since 1969, makes do with an ATA as his counterpart. IBRD studies, based on experience in other foreign assisted ORDs, indicate that management skills are probably more important than technical background.

The current ORD Director is in his early thirties and received his ITA degree in France with a forestry specialization. In the course of his studies or after graduation, he underwent various training/observation sessions (stages) in Germany, Italy, and Spain. His first GOUV assignment was with the Waters and Forestry Service in the Bobo Dioulasso area. When he learned of his appointment as ORD Director (presumably, among other reasons, for his Gourmantché heritage), he visited the Matourkou UNDP/FAO staff to assess their experience. Most observers are impressed by Director Thiombiano's intelligence and ability to conceptualize. His management skills remain an unknown factor.

Eastern ORD Budgets--Past and Current

The budget for the ORD comes from two sources: a "civil service" budget covering salaries and allowances for permanent civil servants (19,000,000 CFA), and an ORD budget including salaries and allowances for encadreurs, and operations and capital expenditures (23,000,000 CFA). The Voltaic fiscal

18

year runs from April 1 to March 30, and budget requests must be made the preceding June.

	Last FY (73/74)	This FY (74/75)	This FY Budget Request
Personnel Budget (Civil Service)	19.0 m. CFA	19.0 m.	unknown
ORD Budget	23.0 m. CFA	23.0 m.	32.0 m.
Encadreurs	9.0 m.	9.0 m.	10.0 m.
Operations	10.0 m.	10.0 m.	15.5 m.
Capital Costs	4.0 m.	4.0 m.	6.5 m.
TOTAL	42.0 m.*/	42.0 m.	

The FY 73 (73/74) ORD budget allocation of 23,000,000 CFA comes from a Ministry of Agriculture Rural Development operating expenses line item of 260,800,000 and a Regional Development Offices investment (capital) budget item of 184,000,000. The overall increase in budget over the past 3 years has been + 11%, the total investment budget increase over the same period has been + 1%. In fact, the total national budget (11.7 billion CFA) is routinely supplemented by an additional 8.0 billion CFA in foreign aid from all sources, much of which goes into investment expenses.

*/ IBRD Sources list the FY 72 (72/73) Budget at 70.0 m. CFA. This is either an error or includes extra budgetary sources (lines of credit, Rural Development loan allocations, etc.)

(c) PROPOSED ORGANIZATIONAL CHANGES

In order to carry out the program described above, we are recommending substantial staff increases and the accumulation of new functions. We are assuming that the IBRD proposed reorganization of the Ministry of Agriculture will take place. This will give control within an ORD to what are currently co-equal services. This and other aspects are indicated on the new organizational chart, Table 14. Both the Ministry of Agriculture and the ORD Director concur in the newly-recommended organization.

Staffing and Training of ORD Staff

The realization of the new organization will require an increase in Voltaic personnel from its current level of 88 to 170 at the end of the third year of AID project inputs, and 195 personnel by year 4 (6/30/78). We are assuming this is to be a leveling-off point of adequate staffing for the programs contemplated. See Table 15.

The "encadreur" levels can be reached if we can assume that, by year 2 of the project, a Matourkou output of an additional 25 encadreurs per year will be assigned to the Eastern ORD.

For other levels, it appears that the number of ATAs is sufficient for the next four years.

For ITAs and CTAs, the Ministry of Agriculture will have, available for assignment in CY 75, 10 more ITAs and 15 more CTAs.

We have projected that the Eastern ORD will receive a good share (8 CTAs, 2 ITAs) but the ORD has no assurances of this. Short fall in these categories can be made up by increases in ATA assignments.

With the expansion of Supporting Services (see Table 14) other skills such as mechanics, radio men, additional drivers, office staff, etc., will have to be hired, either as contractuels or assigned from civil service roles.

The total increase planned is not unreasonable by other ORD standards; Ouagadougou ORD, established in 1966, has 226 total staff to serve 857,000 farmers, and Bobo-Dioulasso ORD (est. 1970) has 120 staff to serve 332,000 farmers in a much more compact area than the Eastern ORD.

Training of staff is to be a continuous process (recyclage) and will be necessary to prepare personnel for new project activities not yet undertaken in this ORD.

Some training can be done by existing ORD staff (including transferred elements of other services) and by expatriate staff. Other training will have to be scheduled outside the ORD (at Matourkou, other African states, or where appropriate, other foreign countries). In addition, specialized training teams will probably have to be brought in for certain techniques (preparation of base line sociological and economic data, evaluation).

An amount of $170,000 will be budgeted for training purposes of the three project years, to be refined as needs and costs are better determined. This includes a six-week training/observation tour in the U.S. programmed for the ORD Director, to begin if possible during the first project year and to be completed before the project inputs arrive on site.

Budget Implications of Additional Local Staff

In discussions with ORD and GOUV officials, the design team has taken the position that it would be difficult for AID to finance salaries, allowances, and other perquisites of permanent civil servants or contractuels. Accordingly, the GOUV has indicated that they can meet the salaries and allowances of the new staffing that will be required. To accelerate the process of this new staffing, it is recommended that AID provide transport, equipment to assist in providing lodging for encadreurs, office and staff buildings, and operating funds for equipment, program moneys, etc. This approach will permit the gradual shifting of recurring costs to the government or ORD as the project progresses. The personnel increases alone will have the following minimum effect on Voltaic budget contributions:

	Year 0 6/30/74		Year 1 6/30/75		Year 2 6/30/76		Year 3 6/30/77		Year 4 6/30/78	
	Budget	Personnel	Budget	Personnel	Budget	Personnel	Budget	Personnel	Budget	Personnel
Civil service*/	19.0m.**/	48	23.2m.	58	24.8m.	62	24.8m.	62	24.8m.	62
Encadreurs	9.0m.	28	11.4m.	58	18.9m.	63	26.4m.	88	33.9m.	113
Total personnel cost	28.0m.	76	34.6m.		43.7m.		51.2m.		58.7m.	

Total (42.0m.)**/ (non-add)

TABLE 11

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*/ Does not include "others" assumed to be covered under operations costs; does include ATAs, CTAs, and ITAs.

**/ An IBRD report indicates that Eastern ORD budget for 1972 totals 70.0m. CFA. We are assuming that the difference covers extrabudgetary sources (lines of credit, Rural Development, loan allocations) and/or a general pool of civil service expenses such as pension, housing, etc. The per capita civil service costs are too low (400,000 CFA/man/year) compared to the encadreurs (300,000 CFA/man/year).

Foreign Staff

Foreign staff, serving either as advisors with assigned counterparts or provisionally as operational personnel, are an important factor in the project design.

As a result of discussions with ORD and Ministry officials, and taking into consideration prospective UNDP/FAO and Peace Corps inputs, we have identified the positions listed below and their costs for AID financing.[f/] The positions occur in areas where Voltaic skills appear most wanting. These inputs are tentatively agreeable to the GOUV despite reluctance to accept a large foreign contingent due to management and "cost-of-aid" considerations. The interplay between AID financed and UNDP functions is footnoted below to indicate possible consolidation or re-allocation of positions. See table, next page.

"Systems" Implications of an Expanded ORD Organization

In addition to the general increase in Voltaic staff and the expatriate personnel additions, we are recommending additional and/or expanded administrative and support functions

f/ Agreement was reached with both the UNDP resident representative and the Peace Corps Director that they would attempt to provide additional staff as a complementary input to the AID program. As of this writing the exact positions of the UNDP program are being jointly planned between the GOUV, FAO, and a member of the design team.

84

AID financed (contract) (All new positions)	Year of Arrival Year 1	Year 2	Year 3	Year 4	No. Man/Yrs.
1 Production economist	X				4 man/yrs.
1 Ag economist (marketing)	X				4 man/yrs.
1 Livestock & range mgmt. specialist	X				4 man/yrs.
1 Credit & coops specialist	X				4 man/yrs.
(4)					16 man/yrs.
Peace Corps (New positions, in addition to existing 4 ORD positions)					
4 Ag extension/agronomists (intensive zones)	XX	XX			14 man/yrs.
1 General agriculture (pastoralist/Peuhl/settlement)	X				4 man/yrs.
1 Irrigation specialist (Tapoa dam project)	X				4 man/yrs.
1 Hydrologist (Fada staff)	X				4 man/yrs.
2 Women's programs specialists (Fada staff)	X	X			7 man/yrs.
(9)					33 man/yrs.
UN personnel, UNDP/FAO*/ (All new positions)					
Experts					
1 UNDP project director/ORD Sr. advisor	X				4 man/yrs.
1 Community Development advisor	X				4 man/yrs.
1 Administration & mgmt. advisor (accountant)	X				4 man/yrs.
1 Agronomist	X				4 man/yrs.
1 Ag organization expert	X				4 man/yrs.
1 Extension advisor	X				4 man/yrs.
(6)					24 man/yrs.

UN Volunteers/ "Associate Experts"*/ (All new positions)	Year of Arrival Year 1	Year 2	Year 3	Year 4	No. Man/Yrs.
1 Youth affairs specialist	X				4 man/yrs.
1 Nutrition & sanitation specialist	X				4 man/yrs.
1 Rural handicrafts specialist	X				4 man/yrs.
1 Rural sociologist	X				4 man/yrs.
1 Agronomy specialist	X				4 man/yrs.
(5)					20 man/yrs.
TOTAL EXPATRIATE PERSONNEL (24)					93 man/yrs.
Expert level 10					
Volunteer level 14					

*/ Positions in these categories subject to revision after reviewing UNDP project in light of AID inputs.

which will include various kinds of equipment and vehicles. These will put a maintenance and repair burden on the governmental and commercial facilities in the ORD and on centralized services available elsewhere in Upper Volta.

The administrative and support recommendations, costed and described in the budget, are based on the assumption that the ORD should have a minimum necessary capability to repair and maintain equipment, supplemented by budget allocations to contract (with other government services or commercial sources) for major tasks and peak load routine services. Obviously, because of incomplete information, some assumptions and costs may have to be refined. For instance, it is assumed that the ORD can call on its own Ministry, other relevant Ministries (Public Works, etc.) and Voltaic and foreign technical agencies to specify and provide certain kinds of equipment, personnel, and repair services at going prices.

(1) General vehicle, equipment and construction services:

The ORD will need to develop a repair and spare parts capacity for a vehicle augmentation which will increase its motor pool by at least 200%. Additional mechanics and aides will have to be hired and replacement parts warehoused. This staff should be able to do routine maintenance and

emergency road repairs and be able to supervise work which is contracted out. There are commercial vehicle service facilities in Pada which are used by truckers.

Some assistance will be required in developing specs for vehicles and equipment and, possibly, in procurement. Services for this assistance is called for early in the implemmutation plan.

Equipment, maintenance and repair requirements will need to cover items ranging from office equipment, generators, water system plumbing and pumps and electrical circuitry. Construction needs, masonry and carpentry, will require a minimal staff to maintain and repair buildings and facilities and supervise work contracted out. Building supplies, such as lumber and cement, will have to be stockpiled.

(2) <u>The road brigade</u>:

This service should be capable of road grading and post-rainy season repairs; ford, culvert and small bridge construction; and skilled supervision of labor involved in this work. The equipment needs are limited to two graders and sets of hand tools. Equipment should be compatible with existing Ministry

86

of Public Works stock. There is a regional Public Works shop in Fada which can do maintenance and repair work which cannot be handled by the repair facility described in (1) above. A service contract for this is estimated and budgeted.

(3) Radio communications system:

AID/W (OPS/Tech Services) is making a tentative systems and budget recommendation for radio communications based on our identification of user need, distances and terrain features, power sources and probable technical and repair capacity in-country. Before proceeding with this project input, a communications specialist should visit the Eastern ORD to design the system as well as to assess the radio communications repair and servicing capacity in-country.

Training users of the radio network will be a simple matter, but it is hoped that an existing service, e.g., the Ministry of Interior or the Ministry of Defense, will be capable of and willing to undertake technical maintenance and repair requirements. If this does not prove to be the case, a commercial contractor will have to be identified.

CURRENT ORD STRUCTURE

Directorate, O.R.D
Dir. - J. Thiombiano (ITA)

- Secretariat
- Accounting
- Management/Personnel

Agricultural Extension Section Chief - F. Gali (also act'g. Dir.)

Rural Youth	Rice culture	Horticulture	Home Economics	Plant protection
(1)	(1, plus 2PCVs)	(1)	(1)	(2)

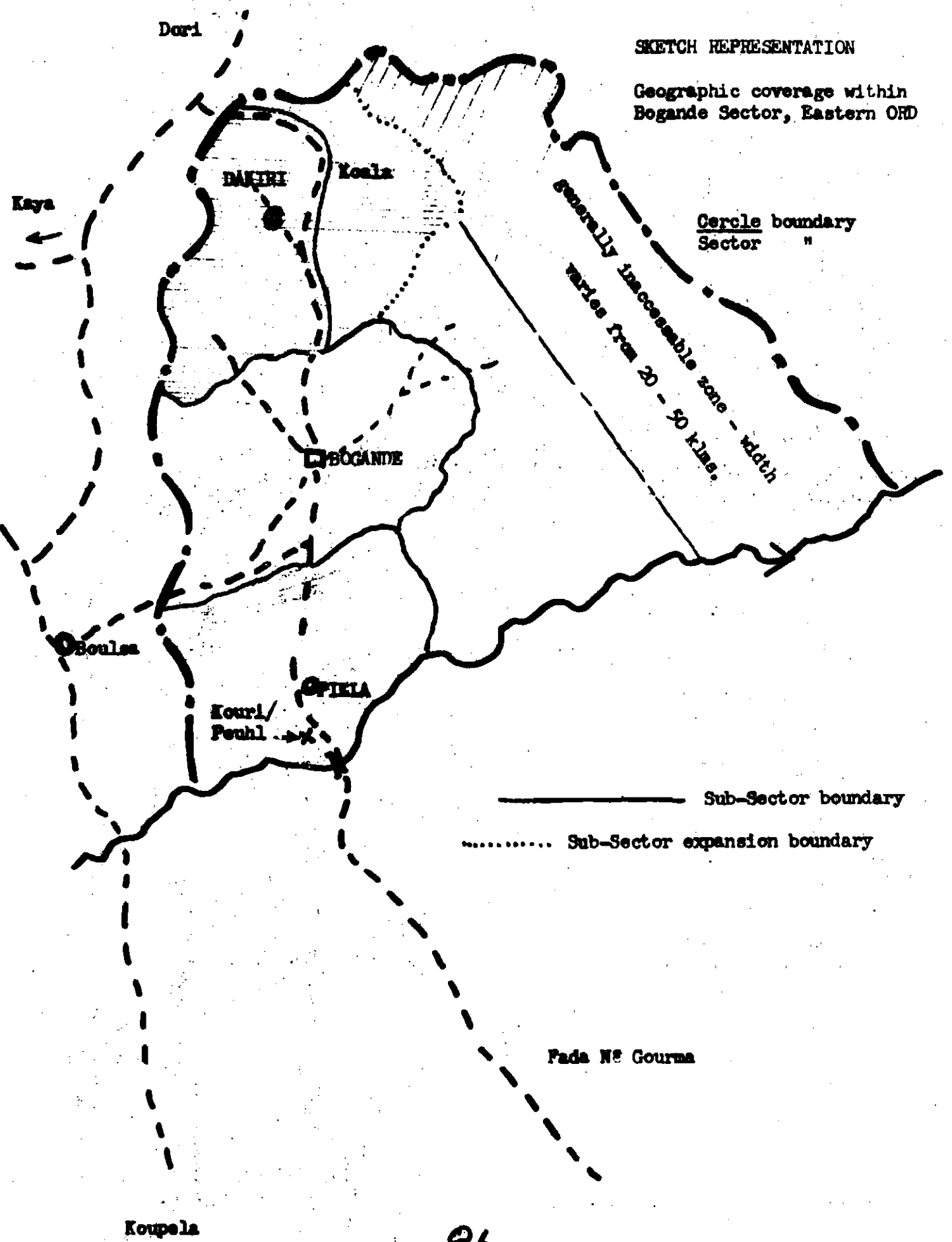
7

SECTORS	SUB-SECTORS		ENCADREURS
BOGANDE (C) Sector Chief S/Sector Chief as Deputy	Bogande (C)	1 PCV	4
	Piela (c)	1 Frere des Hommes volunteer	3
	Dakiri (c) incl. Keala		3
PADA I. (C) No. of Pada-Niamey road	Tibga (c)		
	Bilanga (c)		
	Matiakoali (c)		
	Pada Nord (s?)		
	Pada Est (s?)		
PADA II. (C) So. of Pada-Niamey road	Pama (s)		
	Komin-Yanga (c)		
	Diabo (c)		Maurice Cola
DIAPAGA (C)	Diapaga (C)		3
	Namounou (a)	1 PCV	3
	Kantchari (s)		4

28

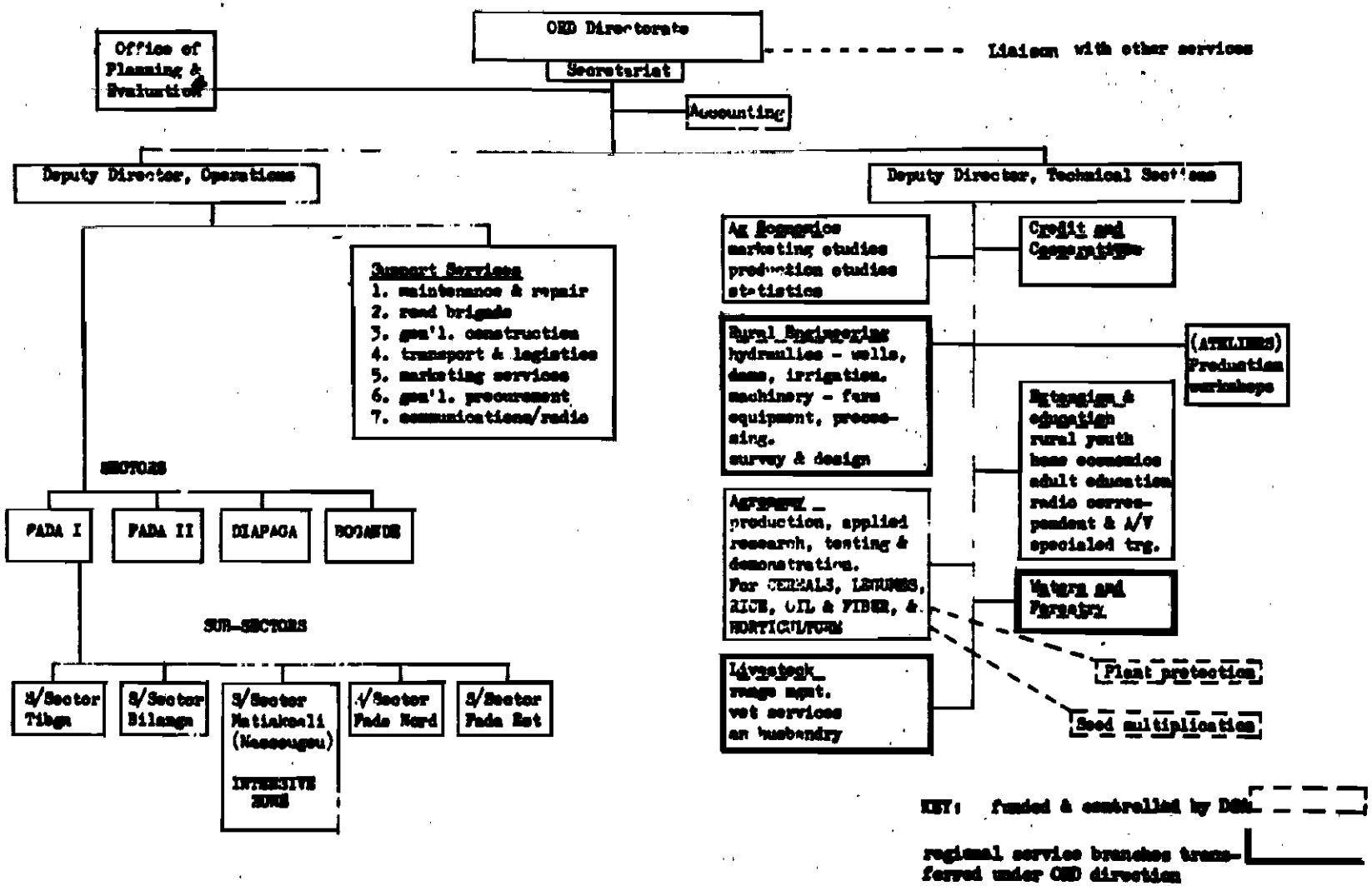
Current Staffing: 1 ITA (Ingenieur de Travaux Agricole) University level
8 CTA (Conducteur " ") approx. A.A. level
TOTAL: 88, as of early 1974 — 39 ATA (Agent Technique ") vocational middle school
28 Encadreurs
12 other capacities - typists, clerks, drivers, warehousemen, etc.

Location Designation Symbols: (C) = Cercle HQ, (s) = sous-division HQ, (c) = canton HQ, (a) = autonomous village


SKETCH REPRESENTATION
Geographic coverage within Bogande Sector, Eastern ORD
Dori
Kaya
DAKIRI
Koala
BOGANDE
Boulsa
FIKLA
Kouri/ Peuhl
generally inaccessible zone - width varies from 20 - 50 klms.
Cercle boundary
Sector "
Sub-Sector boundary
Sub-Sector expansion boundary
Fada N° Gourma
Koupela

91

PROPOSED "MODEL" ORGANIZATION - O.R.D. de l'Est



ANNEX 14

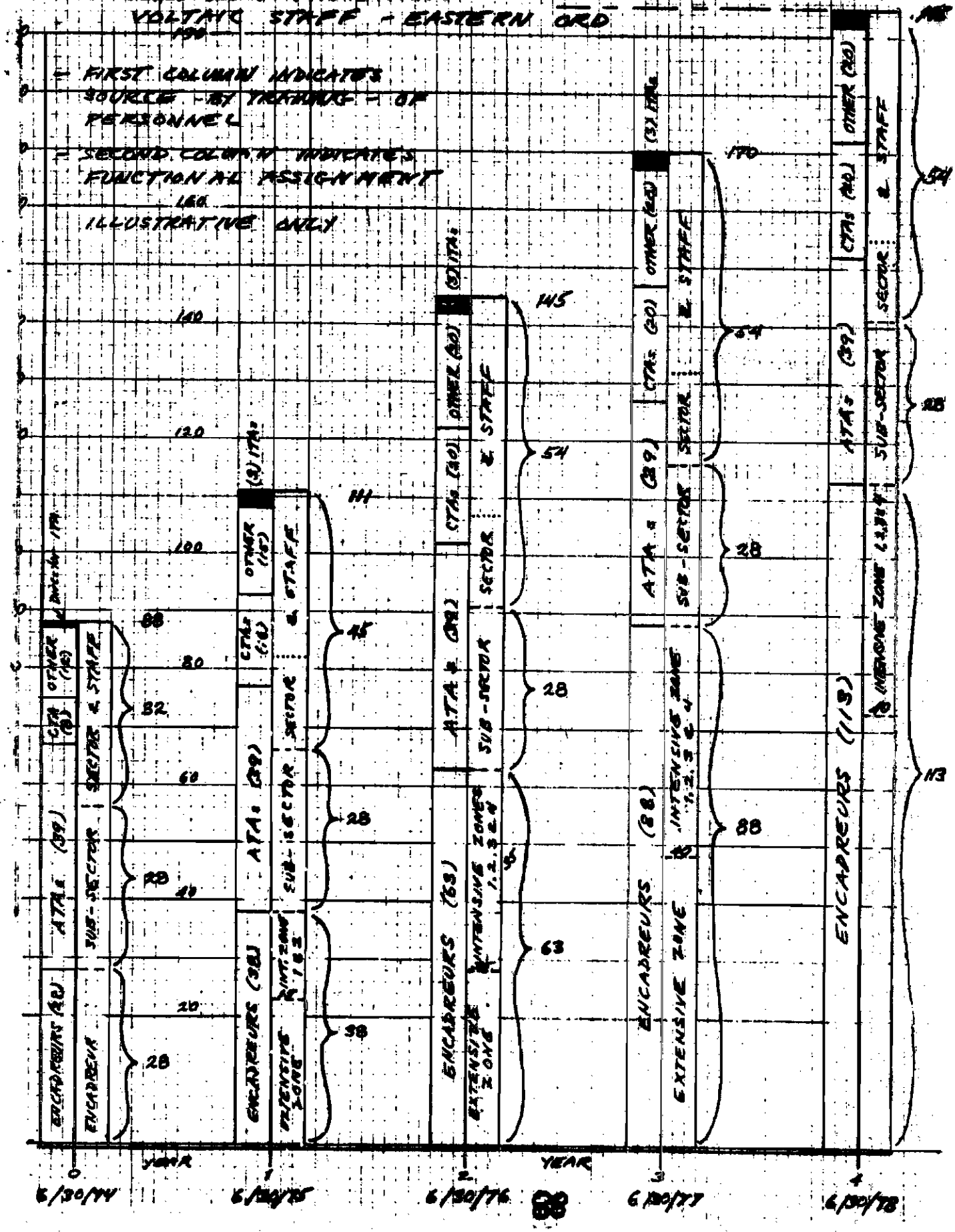
TABLE 15

MANPOWER PROJECTIONS
VOLTAIC STAFF - EASTERN ORD

LEVELING OFF POINT

- FIRST COLUMN INDICATES SOURCE - BY TRAINING - OF PERSONNEL
- SECOND COLUMN INDICATES FUNCTIONAL ASSIGNMENT

ILLUSTRATIVE ONLY



4. Social Anthropological Feasibility of Project and Need for Additional Inquiry

Cultural Characteristics of Target Groups

We are somewhat hampered in our assessment of the social anthropological feasibility of the project because of the extreme paucity of documentary material on the region.. Isolated and seen as economically uninteresting by the French (although, curiously, Fada N'Gourma is reputed to be the site of the original, and failed, Boussac textile factory), the extreme eastern part of the Upper Volta has also received little attention from social scientists. The Gourmantche, the majority population in the area, have enjoyed very little study. We have consulted two articles on lineage organization and family by Michel Cartry (L'Homme 1966) and a geographical inquiry by Jacques Senechal, Espace et Mobilité Rurale en Milieu Soudano-Sahelien, Le Changement dans l'Isolement (Gourma du Nord, Haute Volta), (O.R.S.T.O.M., 1973). Two other papers have been noted, but were not available: Castinel, J., "Le mariage et la mort dans la région du Yanga", Bulletin de l'I.F.A.N. 7:148-155, 1945; and Manjaud, H., "Documents ethnographiques sur le Gourma", Journal de la Société des Africainistes 2:35-47, 1932.

There are three principal ethnic groups in the O.R.D. de l'Est: the Gourmantche (or Gurma), the Peul, and the Mossi. (There are doubtless a few persons, primarily traders, of Hausa and of Songhai-Djerma origins.) The Gourmantche, who may number some 200,000 persons, are one of the ethnic units grouped under the rubric "Voltaic Peoples", along with such far better described people as the Senufo, Bobo and Bwa, Dogon, Grunshi, Dagomba, Mossi, and Tallensi. While the overall outlines of regionalethnography

94

are reasonably well understood, the Gourmantche seem to exhibit sufficient peculiarities as to render most tentative any generalization derived from comparative analysis. These generalizations, such as made by G.P. Murdock (Africa: its Peoples and their Culture History, 1959), may be suggestive but insufficient as a basis for planned intervention. For example:

> Political organization derives largely from a religious conception - the deification of the earth. Each local community has a ritual headman charged with responsibility for maintaining good relations with the earth and thus assuring the welfare of his people. He is regularly the head of the lineage that traditionally first occupied the land, and on his death he is succeeded by the eldest surviving male of the lineage. He propitiates the earth with sacrifices at planting and harvest time and must ritually validate any conversion of untilled land to agricultural use (Ibid.: 85).

Such an observation is limited precisely because political organization is one of the most variable items of Voltaic society. Whereas most Voltaic people severely circumscribed the political authority of their chiefs, rarely allowing political units to extend beyond the village, the Gourmantche, like the Mossi, seem to have had a true state system, with a privileged, exploitative, hereditary nobility. This nobility was confirmed in position, if not in power, by the French, and they today provide the chefs de canton, the highest level of traditional authority still recognized by the modern state.

In theory, in pre-colonial days, the power of the traditional chiefs was absolute, not counterbalanced by village assemblies, councils of elders, nor even village meeting places, where commoners might gather to constrain their chiefs. The ultimate recourse was flight:

> Une famille conjugale isolée dans sa petite concession aurait été une proie trop facile pour les fauves et pour les nobles qui ne

valaient guère mieux. En effet, la noblesse refusait de travailler et vivait de prélèvements sur le peuple. Aucune convention semble-t-il ne precisait les droits et les devoirs réciproques, si bien que les prélèvements faits par la noblesse, au lieu d'apparaître comme un impôt régulier, prenaient l'allure, aux yeux des paysans, d'un pillage arbitraire et souvent intolérable. Le meilleur moyen de résister était encore d'être nombreux de façon à intimider les nobles ou les chefs trop exigeants. Si la noblesse exagérait, on ne se révoltait pas: on quittait en masse son commandement et on allait s'installer ailleurs (Senechal, op. cit.: 80).

It is likely that the traditional chieftanship has endured, albeit with substantially reduced authority, precisely because the area was deemed of slight interest to the colonialists. There was little incentive to replace the traditional regime by a colonially-appointed system of direct rule, although a dual system did emerge: an outward-facing "staff" chief, appointed by the modern state, and an inward-facing "bonnet" chief, selected by the people (by mechanisms of which we are not certain) though confirmed by the state.

While the nobility no longer has the power of pre-colonial days, the chefs de canton continue to receive labor on their fields from the commoners. This is not forced, but is offered rather in a voluntary manner, as a symbolic testimony to the chiefs' right to prestations from the people. Whether their power is token or substantive, the chiefs remain a force in the region, and it would appear critical that the existing authority structure be well understood if we are to be successful in introducing and sustaining the interventions proposed.

Social Implications of the Project

A major feature reported by Senechal for the northern range of Gourmantche society is the exceptionally high degree, for a sedentary agricultural people, of spatial mobility. People are not tied to a

particular piece of land or to a particular village. We have already noted that the threat of moving away from a chief's jurisdiction was a check on the unlimited abuse of his authority. The corollary of this is that people had some place to go, that they were received in another village. Senechal reports that more than 60% of the household heads censused at the village of Kirguen in 1958 were censused elsewhere in 1954! This high turnover of population at the village level would seem clearly to have implications for the introduction of joint-action groups, cooperatives or, to use a more politically neutral term, "groupements communautaires"; if the population of a village is so unstable that more than half its residents are found elsewhere in four years, can the village provide an effective basis for corporate action? Are there other structures, lineal or political rather than residential, whose memberships are less fluctuating, which provide a more effective arena for collective behavior? This question, whose resolution would seem to be fundamental to some of proposals, cannot be answered on a theoretical basis; it will be necessary for a precisely delimited field study to be effected, to assess the likely consequences of focusing on different forms of organization.

The problem can be layed out in a schematic form:

A. There is no salaried agricultural labor in the region. There is sufficient free land for everyone who wishes to farm. Land is neither bought nor leased. Already cleared land may sometimes be obtained from a friend or relative, and bush land - except that allocated for pasturage - may be received by simply requesting it from the chief.

B. Cultivated land is divided into three principal categories:

(1) manured land immediately around the village, the manure obtained both from domestic animals (cattle, sheep, and goats) and humans. Manured fields are estimated as covering about one-third of all cultivated land.

(2) unmanured land more remote from the village (some of which may be sparsely manured by transient passage of animals or post-harvest pasturing). This land, some two-thirds of all cultivated land, is both less productive and consumes more energy in its cultivation than manured land, as people are required either:

(i) to travel considerable distances from the village to the fields, or

(ii) to build huts in the fields, and spend the growing season in the lonely, sometimes dangerous, bush.

Energy is also consumed in the periodic clearing of new fields.

(3) bas fond, dacrus, and irrigated land.

(C) Manured land is relatively scarce; unmanured land is readily available, and unimproved bas-fonds seem reasonably available.

(D) The Gourmantche live in nucleated villages; they do not live in isolated farmsteads. Historically, this may have been due to a fear of predation from Mossi, Fulani, and, as Senechal notes, from their own chiefs. There is also a continuing fear of lions and poisonous snakes which tend to avoid areas where people congregate. It is also difficult for an isolated household to obtain water during the dry season, as a certain minimum number

of persons are necessary to build and maintain wells.

E. People try to obtain as much manured land as they can work, but the amount of such land is insufficient to meet the productive needs of the population. It is likely that the society is segmented into those persons with access to manured lands and those without. Persons who have manured fields achieve greater yields per unit land and per unit labor. In the absence of social monitoring of excess income, which would redistribute the greater yields, persons farming the manured fields and the improved bas-fonds will be more affluent and will have a vested interest in remaining in their village, to maintain their more productive farms. These people are likely, therefore, to form a stable "core" of the village, and to pass on their lands to their male children (descent in Gourmantche society being patrilineal). The typical village contains a number of households surrounded by their manured fields, with unmanured fields further out, often at a distance of several kilometers. Newcomers to the village obviously have less opportunity to obtain sufficient manured land in the village itself unless they have special links to residents, and have to content themselves with the more distant and less productive unmanured fields. We suspect that these persons are likely also to be younger farmers, and for that reason more likely to be willing to experiment with the interventions proposed.

F. Senechal reports, for one village, a 60% turnover of adult males (household heads) in a four-year period, and believes that while this may be an atypically high figure, rapid and extensive movement

between villages is characteristic of the society. (It should be noted that Don Clark, the team member most familiar with Gourmantche society, does not confirm Senechal's estimate of spatial mobility in the area of his familiarity).

G. The people seem to have a mystical relationship to the earth (cf. Murdock, above). Although productive factors may be fundamental in an individual farmer's perception of a given field, other elements also operate. Bad luck, infertility, illness, poor relations with neighbors or kinsmen, these may all be attributed to a bad relationship with the land. A man who is farming low yield unmanured fields, and who has ready access to similar land elsewhere, might well chose to migrate if he felt his relationship to his land had deteriorated. The mystical conection seems to receive confirmation in the fact that when a person decides to relocate he presents his alternate land choices to a diviner, who advises him as to which field is most propitious. It is clear that the man has already made an assessment of the economic pay-offs of alternate choices, and is requesting the diviner's guidance on other bases.

H. Without pretending that a one-to-one relationship exists, it is suggestive to explore the hypothesis that spatial mobility varies inversely with access to manured land. The 60% or so of those who moved during the four year period are more likely to have been farming the 67% of the land which is unmanured than to have been farming the 33% of the land which is manured. If this is true, then persons who farm unmanured land are likely to constitute an <u>instable</u> component of the village. (We recognize, of course, that some persons will farm both kinds of land.)

I. Where a high degree of individual movement exists, rendering the village a rapidly fluctuating membership, it may be difficult or inefficient to attempt to organize collective action, groupements communautaires, on the basis of co-residence alone. Some other arena, such as corporations based on descent or age or political affiliation, might prove to be more appropriate.

J. The input package which is suggested for the ORD, intensifying livestock production including oxen and carts, may have the effect of increasing the manuring of lands more remote from the village (i.e., extending the percentage of manured lands) and, through use of carts, reducing the energy expended in transporting persons, tools, manure and crops from the field to the village. This could have the subsequent effect of reducing village emigration, as more persons profit from increased yields. As membership in the village tends more and more to stabilize as a consequence of the interventions, the village itself may increasingly become the appropriate unit of communal action.

Fortunately, there exist in the Upper Volta, two institutions who are well-equipped to undertake the inquiry: Centre Voltaique de la Recherche Scientifique (CVRS) and Société Africaine d'Etudes et de Développement (SAED). The former, originally a branch of the Dakar-based Institut Francais (now Fondamental) d'Afrique Noire (IFAN) is well known. What is perhaps less well-known is the CVRS is prepared to undertake applied as well fundamental or pure studies, and has already published a detailed work by Queant and Rouville, Agriculteurs et éleveurs de la région du Gondo-Sourou, 1969. While CVRS was very largely, until recently, an expatriate (read

French) research institute, and continues to receive the bulk of its financial support from the French ("...moitié par la République française, moitié par le budget national voltaique aux termes d'accords culturels et scientifiques passés entre les deux gouvernements..." (Rapport d'Activité du CVRS pour l'Année 1972)), its research and administrative staff are increasingly Voltaique.

SAED is a new organization, a private corporation of shareholders, founded in February, 1972, and has an entirely Voltaic professional staff. The young director, Mr. TRAORE Soumana is a rural economist and agricultural engineer. The other staff members include Mlle. GUISSOU Josephine, who is preparing a license in sociology at the University of Paris; a specialist in socio-economic studies with a diploma from ORSTOM; an economic journalist; and others. In addition to undertaking contract studies relating to government and private development activities, SAED publishes a bi-weekly Revue d'Information Economique and undertakes public relations work. Among their completed studies which we have examined are Etudes du Milieu pour la Mobilisation de l'Epargne Rurale, December 1972, carried out in the ORD de la Bougouriba, and Projet de Formation et de Modernisation Agricole (Cercle de Leo), February 1974, carried out in the ORD Koudougou.

The design team recommends that one or both of these institutions be invited to prepare a study which would guide the project in determining the most effective unit of Gourmantche society - whether based on co-residence, on descent, on political affiliation, or on some other or combination of features - within which to organize collective action. The study should include an analysis of spatial mobility and its implications for development, and should determine the degree of typicality of Senechal's

striking observations on spatial mobility in the northern part of the ORD.

A second major area of social anthropological inquiry lies in the social and ecological relationship between Gourmantche farmers and Fulani (i.e. Peul) nerdsmen, whether semi-sedentarized or migratory, and between various groups of Fulani themselves. Relations between Fulani and Gourmantche, particularly in the north of the ORD, seem to exhibit that mixture of consensus and competition which characterizes such relationships throughout the Sudano-Sahelian zone. According to Senechal, most Fulani in the region have been there a long time, and accept the authority of the local Gourmantche chief. Although there are intimate economic relationships between the two, in which the Fulani enter into "contrats de fumure" with the farmers, social interaction, says Senechal is restricted, and there is no intermarriage. (As with all of Senechal's observations, this may be limited to the particular part of the region, the north, in which he worked.) It is important to note that in the north the Gourmantche raise their own animals including cattle. They do not consign them to the Fulani. In Bogande, Senechal writes, "las gens ... sont éleveurs depuis des temps immémoriaux."

> La première fonction du cheptel bovin est de constituer un capital productif ... La seconde fonction est de fournir du fumier ... Ceux qui n'ont pas de boeufs bénéficient de l'aide de leurs parents... Et ceux qui n'ont même pas cette possibilité essaient de s'entendre avec les Peuls. Mais il y a eu tellement de querelles entre Gourmantche et Peuls à cause de dégâts faits aux cultures ou parce que des contrats ont été plus ou moins bien honorés par l'une ou l'autre partie, que les Peuls sont aujourd'hui très méfiants. Le Gourmantche est nettement demandeur mais très souvent le Peul refuse pour éviter des "histoires" (Senechal, op. cit.:102).

Sheep and goats are far more numerous among the Gourmantche than cattle.

Their manure is preciously kept to fertilize the fields which surround the house; "...c'est la petit bétail qui assure la survie des familles après de mauvaises récoltes." Small stock is sold and the family purchases millet.

The project envisages an improvement of pasture and water resources among sedentarised Fulani herders, and a program to increase cattle fertility, decrease cattle mortality, and provide, through the establishment of feeding installations, for the sale of younger, better quality animals, and thereby modifying the charge on existing pasture. In order that this be accomplished, there must be some way of regulating relations with migratory Fulani in order that the now improved pasture not be overrun with additional herds. The problem is not simple, because the current population - sedentarised and transhumant - respond to a particular set of ecological conditions. If these conditions change, and the Project proposes to change them, there is no reason to believe a priori that only those groups currently in contact will be involved. Unfortunately, we know relatively little about the micro-ecology of pastoral movement. We suspect, however, that if pasture is ameliorated, not only must the local transhumants receive some benefits as well as the sedentarised, but some way must be developed to regulate relationships and control access from herding groups who are at present remote from the area, but who may be attracted by new ecological opportunities. It would appear again appropriate for one or both of the Voltaic research organisations to undertake an inquiry which would resolve this question: how can the rewards of development best be distributed in this situation to maximise productivity without social conflict or environmental degradation?

We cannot at this point design the research program in all its details.

We propose that the SAED be invited to apply to study the question of the nature of the Gourmantche grouping best suited to communal action, including an analysis of land-man relations, political organization, and population stability, and that CVRS be invited to apply to study the question of pastoral-sedentary relationships both between Gourmantche and Peul and among different Peul groups. These studies would not only provide information necessary to the successful execution of the development program, but also enhance the Voltaic capacity to carry-out development related inquiries. Each study should be able to be completed, from design to field work, analysis, and report, within a three month period, recognizing, however, that relationships are variable depending upon which segment of the annual productive cycle is coterminous with the study. A rough budget estimate of $10,000 to $15,000 should allow for the inquiry among the sedentary Gourmantche farmers, and $15,000 to $20,000 for the study of the herdsmen.

It may be useful to conclude this section with Senechal's judgment on the possibilities for economic development in the region:

> ...social evolution over the past decades has been entirely favorable to development because today most farm heads are young men and this society today gives to each about the same chance. Contemporary social structure is eminently favorable to economic progress; isolation remains the main obstacle.

PROJECT IMPLEMENTATION SCHEDULE

Action	Timing
1. For upcoming planting season (June-July 1974) in well encadred village	June 1974
a. Take orders for up to 25 pairs of oxen and poly-cultivators. Oxen supplied locally and trained locally; polycultivators and harness from BIT Bobo Artisan Center and/or for local workshops;	
b. Provide credit at Piela and Diabo for purchase of up to 50 donkeys and polycultivators.	
c. Take orders and provide credit for up to 20 carts but not draft animals. All from R&R activity.	
2. Request funds (possibly from R&R) for establishing four varieties, cultivation methods and fertilizer trials from U.S. Embassy. Technical assistance from U.S. Field Trial Officer, Dakar, and/or Major Cereals Project, Zaria, with IRAT Saria.	June 1974
3. Liason with UNDP on the coordination of Matourkou East (underway).	May 1974
4. Selection of further candidates for encadreur training by Director ORD de l'Est, in collaboration with Director Samon and Director Fradozio (Matourkou). (Boarding expenses hopefully from R&R funds.)	June 1974
5. Negotiate and sign Grant Agreement with GOUV;	June 1974

legal constitution of ORD by appointment of Assembly and Steering Committee.

6.	A.I.D. Direct Hire Doy Services to prepare specifications for all commodities.	June 1974
7.	A.I.D. Direct Hire Doy Services to further plan radio network, prepare specifications and survey country repair and maintenance capacity.	June 1974
8.	Preparation of project work plan and evaluation system with GOUV, negotiation of detailed budget for project	July 1974
9.	Satisfaction of all Conditions Precedent	July 1974
10.	Order all commodities and equipment for project. Prepare procurment source waivers if necessary.	July 1974
11.	Order standard Tines for distribution prior to 1974 harvest (October/November 1974).	July 1974
12.	Preparation of designs and letting of contracts for construction of housing, offices, and dormitory at Matourkou.	July 1974
13.	Peace Corps recrutment begins for additional 8 volunteers.	July 1974
14.	GOUV begins planning recrutment and training programs for additional Voltaic staff as called for in reorganization, work out secondment of staff from other services.	July 1974

15.	Additional discussions with other donors and voluntary organizations regarding timing of inputs.	August 1974
16.	Agreement negotiated with BND on placement and disbursement procedures on agriculture credit and other funds. Include ad-hoc 1974 harvest crops buying program if possible.	August 1974
17.	Initiate necessary preliminary sociological and base line studies through contracts with Voltaic or other African firms. Collection of base line data for future evaluation component.	August 1974
18.	Begin training programs for Voltaic staff through ORD and special Matourkou workshops.	September 1974
19.	ORD director departs for six week U.S. training program.	September 1974
20.	With assistance from BIT plan and locate farm machinery workshops. Begin manufacture of equipment needed for 1975 planting season.	November 1974
21.	Plan purchasing program for all agriculture inputs jointly with ORD and BND. Work out commercial credit for purchase of inputs.	November 1974
22.	Sign contract for A.I.D. technicians.	December 1974
23.	Begin language and area training for A.I.D. contract technicians.	December 1974
24.	Begin planning for joint OFMACKR/ORD purchasing program	December 1974

188

for 1975 harvest.

25.	Install radio communications system and initiate program of gathering and dissiminating market information.	January 1975
26.	Agreement with IRAT on program of localized reaearch and varietal testing.	January 1975
27.	Reorganization of ORD completed with arrival of additional staff.	January 1975
28.	Arrival of trucks, graders and other commodities.	February 1975
29.	Completion of building construction, housing, dormatory space and offices. Encadreurs are in place for 2 Intensive Zones.	March 1975
30.	Arrival of A.I.D. financed technical staff. While the timing of Peace Corps and UNDP staff cannot be determined at this time it is hoped that arrival will coincide.	April 1975
31.	Credit program is functioning and inputs are being transported to encadred areas.	April 1975

It is proposed that a detailed work plan will be developed with the GOUV shortly after the Grant Agreement is signed. This work plan and budget document would be a condition to disbursement of funds and would specify in greater detail the implementation actions of the first year. It is further proposed that an annual evaluation and work plan be prepared which will outline implementation actions for subsequent years.

Eastern O.R.D. Rural Development Project
Budget Summary
(U.S. Dollars in Thousands)

	FY 75	FY 76	FY 77	FY 75-77	FY 78	FY 79	Total Project
Total Project Funding							
Administrative and Infra-structural Support							
Personnel Cost	$ 227	$ 482	$522	$ 1231	$ 563	$ 445	$ 2239
Construction Cost	245	10	15	270	-0-	-0-	270
Special Funds	105	185	180	470	165	-0-	635
Commodities and Equipment	217	9	9	235	2	-0-	237
Subtotal	794	686	726	2206	730	445	3381
Program Operations - Extensive and Intensive							
Commodities and Equipment	166	16	11	193	7	-0-	200
Training	54	65	51	170	-0-	-0-	170
Revolving Funds	100	240	380	720	170	50	940
Subtotal	320	321	442	1083	177	50	1310
Total Program	$ 1114	$ 1007	$ 1168	$ 3289	$ 907	$ 495	$ 4691
Funding Components 1/							
AID Contribution							
U.S. Costs	$ 222	$ 268	$ 264	$ 754	$ 260	$ 200	$ 1214
Foreign Exchange Cost	170	-0-	-0-	170	-0-	-0-	170
Local Costs	340	72	72	484	9	-0-	493
Funds	195	410	535	1140	245	50	1435
Total Aid Contribution	927	750	871	2548	514	250	3312
Peace Corps Contribution	60	90	90	240	90	-0-	330
Host Country Contribution	127	167	207	501	303	245	1049
Total Project	$ 1114	$ 1007	$ 1168	$ 3289	$ 907	$ 495	$ 4691

1/ UNDP/FAO Planning a project in the Eastern O.R.D. estimated at $860,000 over five years.

105

110

Eastern O.R.D. Rural Development Project
Project Budget
Administrative and Infrastructural Support

	Total Project Costs (U.S. Dollars in Thousands)						
	Three Funding Requirements						Total Project
	FY'75	FY'76	FY'77	FY 75-77	FY 78	FY'79	
Personnel Costs							
Host Country							
(Estimated ORD Personnel Costs)	$ 117	$ 152	$ 182	$ 451	$ 213	$ 245	$ 909
Peace Corps							
4 Extension/Agronomist	20	40	40	100	40	-0-	140
1 General Agriculture	10	10	10	30	10	-0-	40
1 Irrigation Specialist	10	10	10	30	10	-0-	40
1 Hydrologist	10	10	10	30	10	-0-	40
2 Women's Program Specialist	10	20	20	50	20	-0-	70
UNDP/FAO Personnel 1/							
6 Experts	1/	1/	1/	-	1/	1/	1/
5 Associate Experts							
U.S. Personnel - AID Contract							
1 Production Economist							
1 Agr Economist (Marketing)							
1 Livestock & Range Management	50	240	250	540	260	200	1000
1 Credit & Coop Specialist							
Subtotal	$ 227	$ 482	$ 522	$ 1231	$ 563	$ 445	$ 2239

1/ UNDP/FAO positions are subject to subsequent review in light of AID inputs. Estimated UNDP project costs over five years is $860,000.

	FY'75	FY'76	FY'77	FY 75-77	FY 78	FY'79	Total Project
Construction							
4 AID Contractor Houses	$ 110	$ -0-	$ -0-	$ 110	$ -0-	$ -0-	$ 110
Admin Building - 14 offices	95	-0-	-0-	95	-0-	-0-	95
Dormitory at Matourkn	35	-0-	-0-	35	-0-	-0-	35
Village Grain Storage Facilities	5	10	15	30	-0-	-0-	30
Subtotal	245	10	15	270	-0-	-0-	270
Special Funds							
Agricultural Commodity							
Purchases (Revolving)	75	60	50	185	-0-	-0-	185
Operational Fund-Aid Financed	-0-	90	85	175	75	-0-	250
Operational Fund-Host Country Finance	10	15	25	50	90	-0-	140
Village Ox-Cart Pool (Revolving)	20	20	20	60	-0-	-0-	60
Subtotal	105	185	180	470	165	-0-	635
Commodities & Equipment							
Well Rehabilitation							
1 - 3 Ton Truck	14	-0-	-0-	14	-0-	-0-	14
2 - Pumps with Engines	1	-0-	-0-	1	-0-	-0-	1
Various Hand Tool and Supplies	1	1	1	3	1	-0-	4
Road Brigade							
2 - Graders	60	-0-	-0-	60	-0-	-0-	60
Various Tools and Supplies	5	1	1	7	1	-0-	8
Central Repair Shop							
Various Tools & Supplies & Equipment	10	5	5	20	-0-	-0-	20
ORD Central Equipment							
4 - Pick up truck for AID Contractors	24	-0-	-0-	24	-0-	-0-	24
1 - 100 KVA Generator	30	-0-	-0-	30	-0-	-0-	30
Various Office Equipment	7	2	2	11	-0-	-0-	11
Radio Communication Network with Spares	65	-0-	-0-	65	-0-	-0-	65
Subtotal	217	9	9	235	2	-0-	237
Total Administrative and Infrastructual Support	$ 794	$ 686	$ 726	$ 2206	$ 730	$ 445	$ 3381

Eastern ORD Rural Develop
Project Budget
Program Operations - Extensive and Intensive

	Total Project Cost (U.S. Dollars in Thousands) Three Funding Requirements						
	FY'75	FY'76	FY'77	FY 75-77	FY 78	FY'79	Total Projec
Commodities & Equipment							
Marketing							
1 - 7 Ton Truck (@ 18,000)	$ 18	$ -0-	$ -0-	$ 18	$ -0-	$ -0-	$ 18
5 - 3 Ton Truck (@ 14,000)	70	-0-	-0-	70	-0-	-0-	70
6 - Pick-Up Trucks (@ 6,000)	36	-0-	-0-	36	-0-	-0-	36
600 - Tines (@ 10)	6	-0-	-0-	6	-0-	-0-	6
Farm Equipment Workshop							
Tool, Supplies & Equipment	10	5	-0-	15	-0-	-0-	15
Encadreurs							
8 - Brickmaking Machines (@ 500)	4	-0-	-0-	4	-0-	-0-	4
88 - Mobilettes (@ 270)	10	7	7	24	7	-0-	31
Livestock							
1 - Portable Feed Grinder, Mounted	6	-0-	-0-	6	-0-	-0-	6
Seed Demonstration							
Fertilizer, seed, tools & equipment for village test demonstration sites	4	4	4	12	-0-	-0-	12
Veterinary Services							
4 - Refrigerators	2	-0-	-0-	2	-0-	-0-	2
Subtotal	166	16	11	193	7	-0-	200

108

113

	FY'75	FY'76	FY'77	FY 75-77	FY '78	FY'79	Total Project
Training							
ORD Director (6 weeks in USA)	3	-0-	-0-	3	-0-	-0-	3
Sub Sector Chiefs - 14 (Short Term, Third Country Training in Africa)	15	15	15	45	-0-	-0-	45
Counter-parts - 4 (2 Year Training in USA)	14	28	14	56	-0-	-0-	56
Road Maintenance Brigade - 3 (Annual Training at Road Maintenance Center, Togo)	12	12	12	36	-0-	-0-	36
Womens Program - 2 (Annual Third Country Training in Africa)	10	10	10	30	-0-	-0-	36
Subtotal	$ 54	$ 65	$ 51	$ 170	$ -0-	$ -0-	$ 170
Revolving Fund							
Intensive Zones							
Medium-Term (Oxen)	30	90	135	255	100	50	405
Short-Term (Seed, Fertilizer and cotton spray)	15	40	70	125	70	-0-	195
Short-Term (Steers)	2/	2/	2/	N/A	-	-	-
Extensive Zones							
Medium-Term (Oxen)	35	70	100	205	Not Projected		205
Short-Term (Seed, fertilizer and cotton spray)	20	40	75	135	Not Projected		135
Short-Term (Steers)	2/	2/	2/	N/A	-	-	N/A
Subtotal	100	240	380	720	170	50	940
Total Program Operations - Extensive & Intensive	$ 320	$ 321	$ 442	1083	177	50	1310

2/ Funding for short-term credit for steers can be financed from the semi-annual rollover from the short term credit for seed fertilizer and cotton spray.

109

114

LOGICAL FRAMEWORK

EASTERN ORD - UPPER VOLTA

GOAL STATEMENT	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
1. To assist in the overall development of the rural sector in Upper Volta by supporting the GOUV ORD program	1. Increase in overall agricultural and livestock production on the national level 2. Established rural health and education services 3. Measurable increases nationally in rural per capita income	1. National statistics	I. GOUV will continue to support the ORD to the best of its budgetary capacity

ANNEX A.

PURPOSE	END OF PROJECT STATUS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
1. To upgrade the quality of rural life in the Fada ORD primarily by progressively increasing food supplies and surpluses which can be marketed outside the ORD, climatic vagaries notwithstanding	1. Measurable increases in yields of millet, sorghum, rice and peanuts in areas reached by "encadrement"	1. Crop yields	1. The ORD grain, peanuts purchasing program will be of sufficient size to maintain a better price for the producer but not so high a price as to drive out merchants
	2. Increased marketing of surpluses at higher average seasonal price	2. Local prices	2. Fada ORD will not suffer from population pressure in foreseeable future. Land will not be a limiting factor
	3. Revolving BND credit in ORD will be self-financing	3. Ministry statistics, BND records	3. Water resources development and management will help alleviate water shortages
	4. Increased livestock production. Disposable surplus up from approximately 11% to 19%	4. Livestock statistics	4. ORD and OFNACER will cooperate in grain price stabilization and marketing efforts
	5. Increased per capita disposable income from approximately $32 per capita to $264 per year	5. Base line survey, as measured against later special study	5. OFNACER will provide some funding for the purchase of grain and storage when required

OUTPUTS	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
1. Establishment of 4 intensive "encadrement" centers at high possibility locations as determined by soil, access, presence of extension effort, marketing potential, and receptivity to change	1. "Encadrement" of 750-1000 farm families per intensive area	1. a) Inspection, census information b) Special reports of sub-sector chief	1. Rainfall patterns will return to more nearly normal levels
2. Improved technical, programatic, and management capacity of the ORD in general, and particularly at the village level. Alteration of organization to respond to new programs	2. a) Placement of 10 "encadreurs" in each intensive center b) Improved communications between Fada and various areas of ORD c) Installation and staffing of new organization	2. a) Inspection b) Verification of ORD organization and staffing	2. There will continue to be a ready market for surplus agricultural and livestock production of the Fada ORD
3. Increased food supplies, both from crop and livestock production	3. Decreased reliance on external sources of food, both commercial and donated		3. Rural schools will continue to exist as a program. Additional program will be designed to expand numbers of young farmers
4. Higher levels of marketable surpluses and disposable income among small farmers	4. a) Greater sales of crops and livestock production b) Farmer income levels (in 4 centers average annual income of "encadred" farmer increased approximately eightfold	4. a) Inspection/census b) ORD reports, statistics	4. Increased income will be partly spent to upgrade local diet

OUTPUTS	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
5. More extensive acceptance of improved agricultural practices especially in intensive saturation villages	5. Number of farmers using animal traction, collecting fertilizer, using new seed, cultivating vegetables, raising improved breeds of animals, etc. (750-1000 farm families per center)	5. ORD reports	5. Work animals with machinery will double area that can be farmed by a small family (2-3 workers)
6. Significant increase in use of low-lying fertile areas ("bas fonds") through use of improved water control techniques and use of existing dam storage for small irrigation	6. Approximately 940 hectares of "bas fond" land under cultivation a) Successful demonstration of double cropping potential in "Bas Fonds"	6. ORD reports	6. Plowing with oxen (or donkeys) increases yields by: a) improving soil/water relations b) use of manure
7. Greater consistency of supply of well water through well rehabilitation and construction of new hand drawn wells	7. Completion of 120 new and reconstructed wells	7. ORD reports	7. Fertilizer at current world prices is not profitable with existing crop varieties and commodity prices
8. More active entrance into rural life or farming by graduates of rural schools	8.a) Increase in percentage of graduates of rural schools who enter agriculture b) Use of credit and other incentives offered in intensive centers	8.a) Rurel school statistics b) ORD reports	8. Use of fertilizer at prices subsidized by the cotton program would be profitable if a supply is available for the ORD (The ORD currently provides no cotton for the international marke

OUTPUTS	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
9. Improved village access in farm-to-market roads	9. a) Increase in number and kms of improved roads b) Road repair brigade established under ORD c) Number of merchants from outside (trucks)	9. a) ORD reports b) ORD road team statistics c) ORD reports	9. Byproducts from agricultural processing, especially low grade cotton seed, will be available at a low price for animal feeding
10. The population of the ORD will begin to improve their diets	10. a) Voltaic home agents trained and in each center b) Acceptance of vegetable production/consumption, greater protein intake	10. a) ORD manpower report b) Nutritional survey	10. Agreements can be reached with the nomadic Peulh on use rights of pastures
11. Greater role and participation for women in the productive programs in the village	11. a) Number of women attending agricultural school b) Number of women attending agricultural meetings (1000 women/center)	11. a) ORD reports b) Reports of sub-sector chief c) Reports of PC volunteers	11. The ORD can intervene in the marketing of peanuts, sesame, sheanuts and cotton with benefits to producers and with income generated for ORD operation
12. Improved range management in selected locations around intensive zones	12. a) Number of pastures put into reserves b) Agreement between farmers and herders on pasture use	12. a) ORD reports b) Reports of sub-sector chief c) Reports of PC volunteers	12. Seed multiplication center financed by a separate AID project and under the central direction of DSA, will be established in the Eastern Ord

OUTPUTS	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
13. Substantial increase in the number of trained "encadreurs" for Fada ORD a) Completion of new dormitory at Matourkou for students	13. a) 25 new "encadreurs" trained for ORD each year. Ratio of "encadreurs" to "encadred" farmers in intensive areas is expected to be 1/100 b) Overall increase in number of "encadreurs" from 28 to 113	13. a) ORD reports b) Reports from Matourkou Training Center	13. IRAT will be able to provide localized adaptive varietal testing in the ORD
14. Increase farmer income through suppression of fraudulent oversized "tines" used by merchants to cheat farmers (standard measure is a 20-liter container called a "tine")	14. Manufacture and distribution throughout the ORD of 600 standard "tines." Increased farmer return of 16-20% on grain that is commercialized	14. a) ORD reports b) Special survey	14. The Africa Development Bank will study the upgrading of selected agricultural secondary roads in the ORD
15. Reduced storage loss through better and wider use of "gamma-grain" (insecticide)	15. Reduced storage loss from 20% to 10%	15. ORD reports	
16. Increased resources available to the ORD through the purchase, transport and sale of peanuts and other cash crops	16. Increased ORD financing of operations through returns earned by ORD on peanut and other crop transactions	16. a) ORD reports b) ORD budget	
17. Increased communication facilities within ORD	17. Radio communication stations in 14 sub-sectors, the ORD, the hospital and in any of the intensive centers which are not already sub-sectors	17. ORD reports	

115

A.G.

OUTPUTS	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
18. Improvement in the level of technical management through retraining agricultural agents	18. Number of courses, seminars, training programs offered	18. ORD reports	
19. Greater mobility of "encadreurs," livestock vets, and home agents in ORD	19. Provision of each "encadreur," livestock vet, and home agent with a mobylette	19. ORD reports	
20. Greater transport resources of ORD, allowing greater distribution of inputs and purchase of produce	20. Number and type of trucks provided by program: 1 7-ton truck, 6 3-ton trucks, 6 small pickups	20. ORD reports	
21. Community development in each of 4 intensive centers through self-help efforts	21. 4 schools/village meeting places constructed, 2 dispensaries constructed, 120 wells constructed, 20 village associations organized	21. ORD reports	
22. Creation of demonstration farms in each of the 4 intensive centers	22. Variety tests, livestock, tree nursery, "bas fonds," etc.	22. ORD reports	
23. Completion of farm machinery workshops to make and repair farm equipment	23. One workshop equipped and operating in each of 3 Circles (Fada, Diapaga, Bogande)	23. ORD reports	
24. Introduction of improved livestock breeds and practices	24. Trained encadreurs a) In livestock, and speaking Peuhl and Gourmanche	24. ORD reports	

116

OUTPUTS	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
24. (Continued)	b) Multiplication of sires: Azawak bulls, Maradi goats, Sheep	24. OND reports	
	c) Feed supplement		
	d) Vaccinations and vet services delivered in all intensive areas		
	e) Vehicular support from OND		
25. Improved technical, management and operational capacity of OND in Fada	25. a) Construction of OND headquarters, offices	25. OND reports	
	b) Staff of experts		
	c) Electrification		
	d) Radio contact		
26. Introduction of reforestation	26. Small seedling nurseries at each of demonstration farms plus additional seedling nurseries in centers in zones identified as needing reforestation (Diabo, Piela)	26. OND reports	

117

INPUTS	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
1. Personnel a) U.S.-financed b) Peace Corps c) Local d) UNDP	See Budget	Audit	1. GOUV will be able to allocate additional resources to the budget of the ORD 2. The ORD will be able to recruit successfully new personnel, particularly "encadreurs" 3. Peace Corps, UNDP, AID will be able to recruit required personnel to serve in Fada ORD
2. Technical package			
3. Commodities			
4. Credit program			4. ORD will be legally established and be eligible for agricultural credit through BND
5. Training			
6. Construction of housing and offices			
(See Annex B for detailed analysis of inputs)			5. Improved seed varieties can be developed, distributed and accepted in ORD. No crop variety "package" already available
7. Other donors' inputs (See ~~Section~~ PART II, A. 6)			

A.B.

PROGRAM ELEMENTS
INPUTS/OUTPUTS

The following series of charts outlines in detail the totality of the ORD program as it will evolve during the four-year project implementation period. The various activities are grouped in four sections for presentation purposes.

Program A ORD-wide extensive program elements. For the entirety of the ORD.

Program B Program elements for all encadrered areas, including the intensive zones.

Program C Intensive zone program with special saturation inputs. Program elements include A and B above.

Program D Development of central small urban and administrative centers including other donor and GCUV program.

When the series of program activities is compared with the project budget, it can be seen that AID funding is not required for many of the inputs. Some of the activities are already being undertaken (and financed) by the ORD and only require a qualitative improvement through training or more staffing.

Other elements will be eligible for financing through other donor financing. The ORD, with the assistance of its expatriate staff, will prepare appropriate requests for the other donor programs.

These program summaries are intended as preliminary frameworks for the preparation of work plans for the various program segments. It is realized that due to manpower/administrative deficiencies during the early phases of the project, some components of the program will undoubtedly slip or receive insufficient attention. Nevertheless, they do provide a series of programatic goals for the new organization.

A. ORD WIDE PROGRAM

PROGRAM INPUTS	PROGRAM ELEMENTS	PROGRAM OUTPUTS
1. Purchase powder Thioral Advanced by ORD Margin for ORD for tspt/handling	1. Disseminate Poudre Rouge	1. Reduce loss of seed to fungi Improve standard yield
2. Purchase powder gammagrain Advanced by ORD Margin for ORD for tspt/handling	2. Disseminate Poudre blanc	2. Reduce storage loss from 20% to 7%.
3. Manufacture of 600 standard tines Materials Labor Handling and distribution	3. Disseminate standard tines	3. Increase income by suppression of fraudulent tines approximately 20% on sales of Cereals Rice
4. Purchase and dissemination of Ag inputs to farmer associations Line of credit ...kg DAP(cotton fert) to ORD triple super until potash delivery urea	4. Supply: fertilizer seeds machinery	4. Returns from inputs. Increased use of project technical package: fertilizer seeds culture attelee oxen donkeys

seeds Ox polycultivators donkey " Assist farmers in purchase of: oxen donkeys	Training of oxen and donkeys	
5. Transportation of inputs to village sites	5. Trucks provided in project	5. Assurance that agricultural inputs are in place prior to rains and prior to planting season.
6. Radio Information System - Prepare broadcasts in Gourmantche - Market service news collation - supply receivers	6. Expanded radio programming in Gourmantche	6. Improved marketing and technical information flows to farmers.

122

B.3

127

7. ORD to act as purchasing agent for portions of cereal, rice, peanuts, cotton and sesame crops.	7. Marketing program as outlined in Part II.B2.	7. (a) Improved producer price and less speculation by commercants. (b) Increased level of earnings for the ORD to be used in paying operating costs.
8. Road Brigade (a) Equipment (2 graders) (b) Hand tools	8. Creation of Road Maintenance capability in the ORD.	8. Improved access to population centers for distribution of inputs, introduction of technical package, and for marketing program.

B. PROGRAM FOR ALL ENCADRERED AREAS

PROGRAM INPUTS	PROGRAM ELEMENTS	PROGRAM OUTPUTS
1. Radio communication system 12 sub-sectors (coinciding with 4 sectors) 1 at ORD Headquarters 1 at Hospital (4 in intensive centers)	1. Communications equipment	1. Adequate communication with all administrative elements of ORD and with technical services: a)Improved technical services b)Improved market information: crops livestock c)Improved health delivery
2. Varietal test/demonstration program Labor, seeds, fertilizer machinery, analyses	2. Small local test and research station, hopefully under IRAT.	2. Identification of locally adapted varieties that respond to minimum soil fertility.
3. Recyclage of existing agents Crop production courses Livestock production courses Marketing training	3. Retrain agents	3. Improved Extension and Production program. Crop production increases Livestock production improvements

Credit supervision Health/nutrition		Increase in marketing receipts and farmer prices Credit program put in place Health/nutrition
4. Train new agents 5/year phase B Year 0 6 20/year phase C + Year 1 25 Matourkou E Year 2 25 Year 3 25 Year 4 25	4. New agents in field	4. Increase in number of agents in Phase B about 5/year Phase C about 20/year
5. Build new dormitory at Matourkou for 25 students.	5. Expanded training facilities at Matourkou.	5. Increased country training capacity for agriculture agents.
6. Essential Transport for ORD Personnel (a) Encadreurs (b) Subsector chefs (c) Sector chefs (d) Elevage infirmiers (e) Elevage assistants	6. Transportation allowances (paid by host country) Mobylettes (motorbikes) financed by AID.	6. Transport allowance Improved crop program delivery " livestock " " " marketing " "

125

130

7. Village credit programs Membership fees for intermediate credit Fond de roulement for intermediate credit operating Village storage program Construction of some facilities in selected locations.	7. Formation of Groupements Communitaires	7. Village credit Free villagers from dependence on merchant credit Facilitate use of production and intermediate term inputs. (technical package) Village grain storage program Return to villagers since sale of grain will not have to be made exactly at harvest.
8. Improved infrastructure thru self-help Well Rehabilitation Dam Repair Access roads School self-help Centre de dressage Housing agriculture agents Brick making machines	8. Use of village labor with ORD direction and assistance .	8. Creation of improved villages where technical package for increased agricultural production will be more readily received.

126

9. Assistance to Livestock Section Staff Vehicle Mobylettes Equipment Vaccines Drugs - Trypanocides - Internal parasites - External parasites Supplementary minerals	9. Improved veterinary service delivery	9. Reduced mortality in livestock Increase efficiency of production
10. Bas fonds and barrages Development Repair dams ORD bas fonds and irrigation scheme design service ORD technical service "wet" lands Field crops Horticulture	10. Demonstration of methods of improved use of water resources in Bas fonds and barrages.	10. Bas fonds and barrages Bas fonds: increase in rice, cow peas & crop production Barrages (decrue): increase in rice or sorghum production Irrigation: increase in rice and vegetables

127

137

C. INTENSIVE PROGRAM IN FOUR VILLAGE CENTERS

PROGRAM INPUTS

1. 2 additional sub-sector chiefs

   4 Peace Corps volunteers

   Additional Encadrers:

   10 from existing force for assignment to first two intensive zones.

   20 2nd year

   20 2nd year

   Vehicles for sector chief transport mobylettes for Encadreres

   Brick making machines for housing construction.

2. Program B items 1-11 are included in intensive zones

3. Demonstration farm

   Credit as for standard farm

   Seed of test varieties

   crops

   tree seedlings.

   vegetables

PROGRAM ELEMENTS

1. Intensive Encadrement so that a greater numbers of farmers are brought into the program in a shorter time span.

2. Program B items 1-11

3. Demonstration farm

   Crop production program

   Tests of varieties and practices

   Bas fonds

   Livestock program

PROGRAM OUTPUT

1. Farmer Encadrement by Center

	1	2	3	4
Year 1	150	150	-	-
" 2	450	450	150	150
" 3	850	850	450	450
" 4	1000	1000	850	850
" 5			1000	1000

2. Program B items 1-11

3. Establishment of Demonstration farms in each intensive zone which will operate on self-sufficent basis:

   Crops)
   Livestock) sales
   Livestock products)

128

132

Livestock

mineral supplements
drugs and vaccines
feed supplement

Bas fonds management

Labor students from ecole rurale

4. Farm machinery workshop
One to three manufacturing locations with equipment.
One/sector repairing
Equipment for craftsmen
Basic materials and prefabricated parts and spares
Training of craftsmen in BIT program at Ouaga or Bobo

5. Home Economics/Nutrition Service
4 Voltaic home agents
2 Peace Corps Volunteers

4. Farm machinery workshop

5. Home maker service
Nutrition education
Training of students

Demonstration effect
Training of students in
crop production
bas fonds management
Livestock production
Identification of
improved crop varieties
improved practices
improved livestock
new crops

4. Established farm machinery workshops in each intensive zone which can supply:
Polycultivators
Harness and Yokes
Carts
Repair farm machinery

5. Improved health, nutrition and money management
Depends on availability and supervision of agents

6. Rural education, young farmers. Credit plus inputs to permit selected youth to start farming	6. Post school program in agriculture and livestock marketing health and nutrition citizenship and cooperatives money management Demonstration farm Farming opportunity for rural youth	6. Improved production and management skills Establishment of "young farmers groups. Establishment of INCENTIVES for youth to stay and farm in ORD area.
7. Increase in Health Delivery 1 volunteer or Voltaic trained by Frères des Hommes Supply of equipment, drugs, vaccines, first aid	7. Health programs provided by existing voluntary groups.	7. Improved Health Delivery as measured by: Reduced mortality (especially of infants) Reduced morbidity of diseases Reduced loss of working time and social waste due to disease
8. Infrastructure Materials for school water storage UNDP services for design of improved rural habitat	8. Infrastructure improvement Farm schools (see item 6) Water supply for laundry self-help Improved design for rural habitat	8. Improved village habitat Better rural schooling facilities Better water supply - lower incidence of schistosomiasis

9. Forestry
   tree nursery
   self-help labor

10. A. Veterinary program
   At least 1 encadreur specialised in livestock & speaking Peulh and Gourmantché to service items 10 & 11
   B. Multiplication of sires
   Breeding stock purchase
   Azawak
   Red goats
   Sheep

   C. Feed supply
   Portable grinder mixer with motor
   Revolving fund for feed elements

9. Forestry
   Production of timber, firewood by village plantings.

10. Veterinary service delivery as in Program B plus:
   Demonstration of principles of animal selection (under item 3)
   Multiplication of improved breeds
   Provision of animal feeds and supplements:
   Pigs and poultry
   Young ruminants
   Animal husbandry service
   Forage conservation
   Forage cultivation
   Range management with controls established for animal numbers.

9. Established reforestation program with:
   Firewood for local and urban use
   Timber for construction
   Reduced soil erosion

10. Established livestock program in intensive zones which includes:
   Raised fertility of females
   Imporved quality of stock
   Reduction of neonatal and 1st year mortality
   Increased off-take by finishing.
In all, increase profitability of producing livestock and livestock products - more income to the farmers and pastoralists.
Production of more manure to increase level of soil fertility and crop yields by
   -Increased use of animal by-products more efficientl

Supply of seed cotton
mineral/vitamins
peanuts or beans
grain

D. Animal husbandry service
Special encadreur in FADA

E. Forage conservation
Carts available at village level
Hand tools for cutting forage

F. Forage cultivation
Requires further development of an economically feasible package. Suggest stylosanthes grown for forage and seed, sown in last crop of rotation. Needs fencing, cutting and hauling before it gets too flammable. Need threshing device for seeds.

E. Increased use of bush resources by transforming fertility to the cultivated land

F. Use of more legumes in rotations and producing forage for feeding and more intensive recycling manure.

11. Range management and Pasture Improvement
    - Inventory of pasture (FAC Program)
    - Study of Peulh/Gourmantche' pasture use rights and agreement on a course of action for range management
    - ORD rural engineers to survey water needs.
    - Dam construction and/or excavation of ponds
    - Marking of cattle trails
    - Survey program of improvement of range land

B. Establishment of feed lots where appropriate.
    - Assistance in building feed lots and water supply
    - Assistance in getting feed carts to collect arable by-products

11. Special Peulh program at Kouri
    - Range land/water development for sedentary Peulh
    - Range land/trek route/water development for nomadic Peulh

B. Construction of small bush feed lots where availability of young feeders and market possibilities indicate.

11. Establishment of new options and incentives for sedentarized pastoralists:
    - Increase fertility of cows
    - Decrease mortality of calv
    - Improved growing of cattle on extensive pastures
    - Earlier off take by feedin of cattle in feed lots in the dry season

B. Maximum gains in the market place by seeking to market groups of cattle regularly at a market that will pay a premium for quality
    - Producing manure for use on cropland

supply of cotton seed

supply of mineral/vitamins

Assistance in group livestock marketing by truck to Ouaga or Puytenga or by rail to abidjan

D. DEVELOPMENTS FOR URBAN AND ADMINISTRATIVE CENTER

PROGRAM INPUTS	PROGRAM ELEMENTS	PROGRAM OUTPUTS
1. Improvement of Administrative Center at FADA N'Gourma	1. Various inputs from Donors a)UNDP Project b)AID inputs in offices and housing. c)Improved FADA N'Gourma Nangela Rd (FED) d)Improved Dams and Wells. P. C. well and dam program. e)Improved medical services. Freres des Hommes f)Expanded rural education facilities.	1. Animation of FADA N'Gourma. Greater attraction of Voltaics and Expatriates to live and work there.
A. Improved water supply (wells and dam maintenance) Rural Engineering Services for design Self-help and P.C. for construction assistance.	A. Better and more reliable water supply for FADA N'Gourma for Human and Livestock consumption and for laundering.	A. Improved urban health, reduction in water borne parasitic diseases.

B. Construction of primary roads and improvement of secondary roads. FED FY 1975 Fada - Koupela USAID R&R 1974 Fada - Bogande	B. Greater access by road. Financed by Sahel R&R or other donors. Improved maintenance by road brigade.	B. Improved administrative linkages to other ORD offices, sub-sectors, etc.
C. Increased planting of truck crops and fruit trees Dams or wells in A above to provide irrigation. Horticultural and marketing assistance from ORD to provide technical assistance and seeds.	C. Production of truck crops and fruit for local market using irrigation.	
D. Rabies control Urban innoculation program thru ORD	D. Innoculation of dogs against rabies	D. Reduction of Rabies incidence.
E. Abattoir Improvement and Sanitation Genie rurale survey needs for maintenance Credit from revolving fund to be repaid from slaughter tax.	E. Maintenance of abattoir	E. Improved quantity and quality of meat supply in Fada N'Gourma.

136

D.17

F. Improved Campement (Guest facilities)	F. Better sleeping and eating facilities.	F. More attractive accommodations for increased flow of technical personnel, officials, etc., who will be transiting Fada N'Gourma as a result of new program.
G. For ORD staff housing area Plans by UNDP Rural Habitat (i) Improved housing from local materials with minimum of imported fittings. (ii) Piped water supply sealed well, pump, storage, pipe system. (iii) Electric power supply Generator set Lines for distribution	G. At least for the area with housing for ORD staff. (i) Improved housing(AID-UNDP) (ii) Piped sanitary water supply (AID-UNDP). (iii) Electric power supply(AID)	G. Placement of Technical Assistance Personnel in FADA N'GOURMA
H. ORD office buildings and storage facilities.	H. Construction of office building for ORD offices Increased storage through IBRD Rural Development Loan.	H. Improved working conditions/ facilities for expanded ORD staff. Both local and expatriate.

137

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D.G.

ANNEX C.

SUMMARY OF TEAM FIELD TRIP

MONDAY, 4/15/74

Team left Ouagadougou 3:00 pm and traveled 230 km to Fada N'Gourma (Fada). Travel time 4 hours.

TUESDAY, 4/16/74

Met with Julien Thiombiano (Director of ORD) and his Deputy Director, Firmin Oali for 3 hours in morning. During this time the ORD's structure, staffing, and programs were discussed. Next, various members of the team, accompanied by Thiombiano and Oali, met and interviewed merchants in the market and Jean Idani, (Fada Chef de Service des Eaux et Forets). In the afternoon the team, accompanied by Thiombiano and two Peace Corps volunteers, visited Komadougou, 9 km north of Fada. Komadougou has a rural school for girls, the only animatrice feminine in the ORD, and is one of the UNDP - selected villages for village farm extension based on the Matourkou model. In Komadougou, the team also visited a "bas-fonds amenagement" project for rice and discussed farm problems, crop prices, storage, etc. with villagers. On way back to Fada, the team stopped in Boudangou where a rural mobile health unit from the Fada Hospital was conducting a clinic. That evening, the team and Thiombiano met the Commandant of the Fada Circle and discussed the organizational structure of the Circle as well as development activities in the area.

14

WEDNESDAY, 4/17/74

Team, accompanies by the agricultural agent for area, visitdd 3 villages to the west of Fada: Kemboari, Panpangou I, and Diapangou (Diapangou being the fartheet from Fada, 20 km). Visited bas-fonds projects in Kemboari and Panpangou and discussed farm problems with farmers there and in Diapangou. Also met and discussed farm and development problems with the Chief of the Canton of Diapangou. Back in Fada, various team members met with Dr. Leonard, the Chief Medical Officer of the Fada ORD, and the Fada Chief of the Livestock Service. Early in the afternoon the team left Fada for Bogande, making brief stops in Nayouri, Sekouantou, and Bilanga. Team discussed farm and water problems in Nayouri and Sekouantou and visited an underutilized reservoir in Bilanga. Team was accompanied on trip to Bogande by Mr. Sanon, Chef de Secteur (ag agent supervisor) of Fada I. Team experienced first-hand the seriously deteriorated condition of the Bogande-Fada road. (Distance 130 km, travel time (with brief stops) 5 hrs. 15 minutes.) Team also saw collapsed bridge 8 km to north of Bilanga at Sirba River, which makes vehicular travel impossible except when river bed is dry. The evening was spent discussing local problems with the Peace Corps volunteer posted in Bogande.

THURSDAY, 4/18/74

Team members spent the morning meeting and discussing local development problems with the Commandant de Cercle of Bogande,

the ORD Chef de Sous-Secteur (Mr. Norbert), local merchants, farmers, ag agents, etc. Team members also visited the reservoir and dam in Bogande, and surveyed local water situation. Late morning, the team, accompanied by Norbert, left Bogande and had the opportunity to observe a self-help earthen dam being repaired in Kongaye on the way to Piela. In Piela, the team consulted with the local agriculture agent, visited a local blacksmith (trained in Ouaga) who is making donkey plows. The team was very impressed by a farmer who cultivates with bulls in Noali, 5 km west of Piela. It was estimated that this farmer had nearly 30 tons of grain in storage. Next, the team visited and interviewed the Peuhl Chief of the Canton of Piela, who lives in Kouri, 12 km south of Piela. Team discussed farm and livestock problems of sedentarized Peuhls in Kouri (where Peuhls have been farming for 60 years). In this village, as in virtually every village visited on the trip, villagers raised the problem of the lack of water for human consumption. After the visit in Kouri, where the Peuhl Chief presented a gift of 4 chickens, the team returned to Fada.

FRIDAY, 4/19/74

Team, accompanied by Thombiano, left Fada and traveled 100 km east to Nassougou, an area with very fertile soils. There, the team met with the village chief and several villagers to discuss farm and community needs. The chief asked for wells,

a dispensary, agriculture agents, and keeping the road open. (The last 31 km of the road to Nassougou splits off the Fada-Niamey road and is destroyed each rainy season. This past year, the road was graded for the first time in several years.) In Nassougou, as elsewhere, the villagers indicated a willing readiness to participate in self-help ventures and a need for "the means" of expanding agricultural production. The chief said that if the team could provide cement and a mold, the villagers would work around the clock digging a new well in 4 days. The team left Nassougou mid-morning with a sheep (gift from the chief) and visited next a Peuhl camp 10 km west of Nassougou. This was a temporary Peuhl settlement of non-cultivating nomadic herders who will move north when the rains come. Next, the team returned to the Fada-Niamey road and continued eastward to Matiakoali (100 km east of Fada). There, a sub-group of the team sampled grain and the local market and also met the chief of the canton of Matiakoali, who, along with villagers, discussed the village's needs for farming and livestock (Matiakoali has a vaccination park and the area has a large concentration of animals). The chief very clearly placed first priority on construction of a dam and stock watering reservoir in Matiakoali, At the same time, he indicated that the village was anxious to receive any assistance the team could provide. As he put it, the village was like a blind person waiting for someone to show the way. When the team indicated

that there was only so much money available and that dam construction would probably not be a part of the short term project, ~~Referring to the ORD~~ the chief responded that a skinny elephant is still a big animal.

After leaving Matiakoali, the team visited Kentchari, where the chief of the sub-sector and agricultural agent met for a brief time with the team. Next the team made brief visits at two large dams in Boudieri and Tapoa before arriving in Diapaga. In Diapaga, the team first discussed local problems with the Commandant de Cercle of Diapaga. Throughout the day, Thiombiano was an integral member of the team, acting as a source of information, a seeker of information, and a useful contact.

SATURDAY, 4/20/74

Team accompanied (throughout day) by Thiombiano, revisited the Tapoa dam and irrigation project with local agriculture agents and farmers. Whereas the potential for irrigation is being seriously underutilized, and the project has fallen into mismanagement, the team was impressed with early efforts of the project. It was felt, however, that future economic use of the potential requires an additional technical and management input. After returning to Diapaga, team visited market to interview local merchants, to determine grain prices, and to collect millet and sorghum seed varieties as it did throughout the trip.

In the p.m., team left Diapaga to visit Logoubou, a village behind the "Chain" (a rocky ridge which runs north to south along the Diapaga-Arly road). In Logoubou, the team discussed farm and water problems of the area. Team returned to Arly to spend the night.

SUNDAY, 4/21/74

Team (again accompanied throughout day by Thiombiano) visited the Namounou market. The Namounou market is held every Sunday and is one of the largest markets in this part of the ORD, which is a fertile agricultural area providing a surplus of millet and sorghum each year. Each week merchants from Ouagadougou (470 km) and Niamey (225 km) visit the market to buy and sell goods. Team then returned to Fada via Matiakoali. In Matiakoali, team visited potential dam sites as suggested by the chief and villagers. Before leaving Matiakoali, the chief presented team with a goat, [redacted]. Some team members remained in Matiakoali to watch circumcision dances before returning to Fada.

MONDAY, 4/22/74

Team held wrap-up discussion with Thiombiano at the ORD office before leaving for Diabo. Diabo is situated in the western part of the "Mossi band" which stretches along the western boundary of the Fada ORD. The soils there are light

148

and sandy, and animal traction primarily involves cultivating with donkeys. Team visited Maurice Cola, a French farmer who has spent 13 years in the Fada area working on various agricultural development projects. Team accompanied by Cola and the local agricultural agent visited the workshop where the donkey plows are made, a small reforestation effort (eucalyptus trees), and a chicken farm which is designed to provide the area with an improved breed of chickens. Team then returned to Ouagadougou via Koupela, where some team members visited and interviewed the Deputy Director of the ORD of Koupela.

Team arrived in Ouagadougou almost exactly one week following its departure after having traveled over 1500 km and having visited 23 villages in the Fada ORD. A list of villages and people visited follows:

VILLAGES SURVEYED BY TEAM FIELD TRIP

Fada N'Gourma	Noali
Komadougou	Kouri
Boudangou	Nassougou
Komboari	Matiakoali
Panpangou	Kantchari
Diapangou	Boudieri
Nayouri	Tapoa
Sekouantou	Diapaga
Bilanga	Logoubou

Bogande	Namounou
Kongaye	Diabo
Piela	Koupela*

*Only village visited outside of Fada ORD.

PEOPLE VISITED ON TEAM FIELD TRIP

Innumerable villagers, farmers, merchants

Julien Thiombiano, Director of ORD

Firmin Oali, Deputy Director of ORD

Sanon, Chef de Secteur (Ag agent Supervisor) for Fada I

Norbert, Chef de Sous-Secteur (Ag agent Supervisor) for Bogande

Chef de Sous-Secteur for Kantchari

Ag agents, Peace Corps volunteers

Chief of Canton of Matiakoali

Chief of Canton of Diapangou

Peuhl Chief of Canton of Piela

Chief of Nassougou

Sedentarized Peuhls

Nomadic Peuhls

Commandant de Cercle, Fada N'Gourma

Commandant de Cercle, Bogande

Commandant de Cercle, Diapaga

Chef de Service for Livestock (Fada)

Chef de Service for Water and Forestry (Fada)

Dr. Leonard, Chief Medical Officer for Fada ORD

Maurice Cola, French farmer working on ag development

Deputy Director of Koupela ORD

ANNEX D.

PEOPLE AND ORGANIZATIONS VISITED BY TEAM

A. Eastern ORD

See Annex C, Summary of Team Field Trip

B. Ouagadougou

Salia Sanon, Director of Agricultural Services (DSA)

Bayo Koussobé, Acting Deputy Director of DSA

Julien Thiombiano, Director of Eastern ORD

Félix Simaré, Chief of Extension, DSA

Joseph Kaboré, Director of Ouagadougou ORD

Désiré Mayabouty, Chief of Rural Youth Programs, DSA

F.P. Sawadogo, Director of Rural Education

Salfo Albert Balima, Economic Consellor, Voltaic Gov't.

Dr. Amidou Coulibaly, Director of Livestock and Animal Industries

Dr. Seydoux Diallo, Deputy Dir. of Livestock and Animal Industries

Idrissa Yaya, Director of Rural Hydrology and Construction

Dékrin Jules Traoré, Banque Nationale de Développement, BND

Amidou Diallo, BND

G. Soulet, BND

Marcel Poussi, Director of CVRS

Thomas D'Aguin Somé, Director of OFNACER

Soumana Traoré, Director of SAED

Marin Woba, Direction of Water and Forestry

Paul Ouédraogo, Direction of Water and Forestry

Dr. Konaté, Director of CILSS

152

Joachim Zongo, Chief of Programming, Rural Radio

Karim Konaté, Director of Publications, SAED

Owner of AIR Namounou (Trucker serving Namounou market)

Mr. Barral, Director of ORSTOM

Mr. Malcoiffe, IRAT

Mr. Poulin, IRAT

Jens Hogel, UNDP Resident Representative

Thiery Waffelaert, FED agronomist

Mr. Bidet, DSA/FAC

Gérard Philippe-Auguste, DSA/FAO

Virgilio Marchionneschi, DSA/FAO

André Pinel, FAC

Maurice Colas, French Farmer working in ag development

Ed Thomas, Peace Corps Director

John Reddy, Peace Corps Deputy Director

Peace Corps Volunteers

Tom Kelly, Director of Catholic Relief Services (CRS)

Ned Seligman, CRS earthen dam construction coordinator

CRS Director of Maternal-Child Health Care Centers

Carl Allam, OFNACER/USAID

Josephine Guissou, Sociologist and social worker

C. <u>Matourkou (Centre Agricole Polyvalent)</u>

Ugo Fraddosio, Director

Willy Peeters, Sociologist

Amos Moreno, Chief of Extension/Vulgarication

Ag agents

Ramon Imboden, BIT

BIBLIOGRAPHY

Sources for which authors are known:

Barachette, Roland, "La Croissance des Productions Végétales et Animales - l'Intérêt du Producteur et le Développement Régional," PNUD - FAO, March 1974

Bird, "Appraisal of Integrated Rural Development - Mali," February 1974

Blanc, Philippe, De l'Embouche Intensive des Zébus Africains et Malgache

Brown, Leslie H., "The Biology of Pastoral Man as a Factor in Conservation," Biological Conservation, Vol. 3, No. 2, January 1971

Byerlee, Derek, "Research on Migration in Africa: Past, Present and Future," Michigan State University, September 1972

Byerlee, D., "Research on Migration in Africa: Past, Present and Future. African Rural Employment Paper No. 2," Ag. Econ. Dept., Michigan State University, September 1972

Cartny, Michel, 2 Articles on lineage organization and family, L'Homme, 1966

Clayton, Eric, "Economic Planning in Peasant Agriculture," Wye College, University of London, 1970

Eicher, Carl; Zalla, Thomas; Kocher, James; Winch, Fred, "Employment Generation in African Agriculture," Michigan State University, July 1970

Fraddosio, Ugo, "Rapport Final de Synthèse - Centre Agricole Polyvalent de Formation de Matourkou (Phase II) and Annexes," June 1973

Giles, G. W., "Selective Mechanization - An Aid to Increased Yields," University of Kentucky, June 1973

Goddard, A.D., "Population Movements in the Sokoto Close-Settled Zone, Northern Nigeria," University of Liverpool, 1971

Goldsworthy, P.R., "Responses of Cereals to Fertilizer in Northern Nigeria: I. Sorghum," I.A.R. Ahmadu Bello University, Samaru, 1967

Heyer, Judith, "An Analysis of Peasant Farm Production Under Conditions of Uncertainty," Journal of Agricultural Economics, Vol. XXIII, No. 2, May 1972

154

Heyer, Judith, "A Linear Programming Analysis of Constraints on Peasant Farms in Kenya," Food Resource Institute Studies in Agricultural Economics, Trade, and Development X (1) 1971

Horowitz, Michael M., "Ethnic Boundary Maintenance among Pastoralists and Farmers in the Western Sudan (Niger), Perspectives on Nomadism," 1972

Horowitz, Michael M., "Herdsman and Husbandman in Niger: Values and Strategies," February 1973

Idachaba, Francis Sulemann, "The Effects of Taxes and Subsidies on Land and Labour Utilization in Nigerian Agriculture," Michigan State University, April 1973

Laurent, C. K., "Problems Facing theFertilizer Distribution Program in the Six Northern States," NISER, University of Ibadan, January 1969

Laurent, C. K., "The Use of Bullocks for Power on Farms in Northern Nigeria," Ibadan, May 1969

Lipton, Michael, "Should Reasonable Farmers Respond to Price Changes? and Mistakes by What Standard of Error?" University of Sussex

Lipton, Michael, "The Theory of the Optimizing Peasant," University of Sussex

Malcoiffe, C., "Note sur la Gestion et l'Evolution des Troupeaux Bovins des Stations (IRAT - Haute Volta) (1963-71)

Marty, "Codovel Statutes SEAE/SCET," 1970

McLeroy, Dr. George B., Konnerup, Dr. Nels, "Guidelines for Planning A.I.D. Assistance Programs in Animal Resources Development forSub-Sahara Africa," November 1969

Mordant, "Etude Zootéchnique de la Plaine du Gondo," IEMUT/BDPA, 1968

Mordant, "Le Potential Zootéchnique de la Haute Volta," SEAE/IEMUT, 1969

Moreno, Amos, "Rapport Final de l'Expert en Vulgarisation Agricole de Matourkou," April 1973

Murdock, G. P., "Africa: Its Peoples and Their Culture History," 1959

Norman, D. W., "Economic Analysis of Agricultural Production and Labour Utilization Among the Hausa in the North of Nigeria," Michigan State University, January 1973

Okurume, Godwin, "The Food Crop Economy in Nigerian Agricultural Policy," February 1969

In addition, the two Peace Corps volunteers and four Voltaic home agents which have been requested to work in animation feminine will provide a health/nutrition - education element to the project. Also, the Fada Hospital will be included in the ORD radio network, thereby providing two health information services: 1) expert advice in emergencies will be obtainable from Fada in each of the subsectors and intensive centers; 2) ambulance requests, supply requests, etc., will reach Fada much more quickly. Finally, because there is some incidence of rabies in the area, it is suggested that a rabies vaccination campaign of dogs be considered in the Fada area.

It is recommended that early in the implementation phase of the Rural Development project, A.I.D. determine what inputs it wishes to make in health programs and that a separate small team visit the project area to coordinate health planning with the donors now working there.

8. The proposed project is sufficiently complex that there will be continuing demands for "design." In fact a process of "rolling design" would probably be a positive implementation concept to follow. Accordingly, it is recommended that soon after the signing of the grant agreement a more detailed work plan and budget should be prepared. Further, it is suggested that an annual work plan and budget (which would progressively shift the burden of local and operating costs to the Government) be called for in the grant agreement.

5. The self-financing of the ORD is a long-term probability. While one can expect an increase in central budget allocations to the ORD, these will be limited due to other demands on the budget. However, over the longer run it is possible that through the marketing program, and to a lesser extent the "sale" of inputs, the ORD can generate a considerable pool of resources for operational uses. Nevertheless, our expectations for self-financing must be kept in perspective. In all likelihood, if external donor support disappears after a few years, the proposed program would continue to function, but on a more limited scale.

6. The question of additional localized adaptive trials in food grains must be resolved and tied in with the seed multiplication effort and with the international research network that is now evolving in West Africa. It is suggested that a National Field Trials Officer is needed to tie in various country activities with IRAT and the international institutions in that part of the world.

7. Whereas there are human health needs in the Fada ORD, it is not recommended that the current short-term project include a large health component because there are other existing and proposed programs which address the health needs of the area. At the same time, it is important to long-term rural development in the area that these health needs be met.

   One of the major health problems of the area is a high incidence of onchocerciasis (river blindness) in the south. The World Bank program will cover this area. The control of river blindness is important not only for humanitarian reasons, but also to enable greater agricultural and fishing exploitation of the fertile river valleys. Another disease associated with water is schistosomiasis, which is rampant in the area's reservoirs. The disease can be treated, but often returns since the people of the region often have no other alternatives for water.

   Fada N'Gourma has the only hospital in the ORD. The hospital and medical services for the ORD are directed by Freres des Hommes. The chief medical officer is Dr. Pierre Leonard. The area's health needs are addressed by two vaccination teams, rural dispensaries and maternity clinics, rural mobile health units operating out of Fada, and mother-infant health care clinics. The hospital's, dispensaries', and clinics' supplies and staff are provided by the Ministry of Health, Freres des Hommes, the Collectivities (municipal administrations), and other foreign donors (e.g., Catholic Relief Services). Dr. Leonard stated that health problems in the area do not require additional funds (Freres des Hommes has more money to put into the project and seems to regard "health" as their area of activity) but rather, there's a need for more trained personnel.

   It is recommended that for the life of this project, health inputs be restricted to the self-help construction of dispensaries in the project's centers of encadrement which do not as yet have dispensaries readily accessible.

157

subsidization exists for cotton farmers, it is unlikely that millet and sorghum farmers will have access to fertilizer at prices (subsidized) that they can afford. Therefore the Eastern ORD project has been formulated on the theory that significant production increases and income returns can be gained without dependence on chemical fertilizers. However, if fertilizers and improved seed are available at a later date they logically fit into the proposed technical package and can further accelerate the returns to small farmers.

2. The UNDP project is a key input in the functional upgrading of the ORD administrative structure. Given A.I.D. limitations in recruiting qualified French-speaking technical personnel who are willing to serve in remote areas of the Sahel, the approval and initiation of the UNDP project has been an essential assumption in formulating the A.I.D. project. At this point in time the staffing of the UNDP project is unclear. However, the UNDP Resident Representative has agreed that they will redefine their project inputs as an integral part of the A.I.D./ORD program as it is now being formulated. A.I.D. should agree to finance four technicians with the understanding that the actual positions will be dependent on the final configuration of the UNDP project.

3. The marketing/pricing questions in the Eastern ORD and in Upper Volta must be resolved in the near future. The energizing of OFNACER into a realistic and cooperative purchasing program is the most fundamental need. The GOUV is apparently aware of the incapacities of OFNACER and has assured us that action will soon be taken on the problem. In the meantime we have assumed with a reasonable degree of expectation that the ORD and OFNACER can work together at the ORD level. However, we also believe a useful, though more limited, ORD marketing program can be undertaken even if the OFNACER program reforms are delayed or not carried out.

4. The effective implementation of this project both in the medium and long term will most likely succeed or fail on the question of local staffing, training and budgeting. The GOUV has verbally assured the design team that they will be able to locate, train, and pay the salaries of the increased local staffing that has been identified. However, it is possible that further reflection will reveal budgetary limitations. Therefore it should be anticipated that the questions of staffing and budget levels will have to be further discussed during negotiations on the grant agreement. If absolutely necessary, A.I.D. should be prepared to pay some local salaries and at the same time to take whatever extraordinary steps are necessary to accelerate the development and staffing of local personnel.

15

5. Ministry of Agriculture reorganization. The results of the reorganization are as yet unclear. However, the IBRD has apparently accepted GOUV assurances that the reorganization will allow the ORDs to coordinate the activities of the technical services within the ORD programs. A close watch should be kept on the reorganization since the actualities of the new relationships between the ORDs and the technical services is of fundamental importance to the project.

6. Irrigation. There are several existing dams in the project area which were created for stock watering purposes, which could be exploited for some small holder irrigation. It was agreed with the Government that no additional dams should be constructed until there is more optimum use and repair of existing structures. It was concluded that maximum use should be made of lowland (bas fonds) areas that flood during the rainy season for rice farming and possibly a second legume crop if soil moisture permits.

7. Other donor interest in roads, forestry and health. As indicated in the project paper there will be substantial UNDP and Peace Corps involvement in the production and administrative elements of the project. Peace Corps has indicated a firm interest in attempting to recruit the positions that have been identified. In addition there are available or soon to be available funds from the IBRD, West Germans, Canadians and Africa Development Bank which could be used particularly for complementary needs in the integrated rural development program. It is clear that a multidonor approach is acceptable to the Government and continuing discussions should be held with these donors as soon as the project is approved.

8. Research and study needs. There is need for certain amount of additional research and study in the ORD. Specifically, further study is needed on the sociological factors which will affect the proposed village approach. A base line study is needed in order to establish a data base for project evaluation. Also, further localized, adaptive testing of grain varieties at more moderate fertility levels is important for a more specific determination of the varietal component of the technical package. These have been highlighted in various parts of the text of the paper; however, it is assumed that funding can be provided from alternative Sahel funds. In the case of the varietal testing, a request should be made to FAC to assist in a greater localization of the IRAT program.

Unresolved or Uncertain Issues

1. The future of fertilizer as a part of the technical package. The situation regarding both supply and delivered price of fertilizer is unclear in Upper Volta. Although a policy of fertilizer

159

OPTIONAL FORM NO. 10
JULY 1973 EDITION
GSA FPMR (41 CFR) 101-11.6

UNITED STATES GOVERNMENT

ANNEX I

Memorandum

TO : Executive Project Review Committee (Mini-EPRC)

DATE: May 17, 1974
(Revision date May 20, 1974)

FROM : Roy A. Stacy, Eastern ORD Project Design Team

SUBJECT: Eastern ORD Rural Development Project, Upper Volta - Issues and Special Conditions

During the review of the scope of work for the subject project design it was agreed that all issues, whether resolved or outstanding would be openly addressed at the conclusion of the design effort. The following issues listed in the design scope of work (STATE 068389) were assessed by the team and in most cases satisfactorily resolved:

1. Project approach. Intensive locations for saturation village approach have been selected. It was the conclusion of the team that collective village liability on credit was more likely to succeed and that the technology package would be adopted more readily in a village rather than individual farmer program.

2. Absence of land titles. It was concluded that there is sufficient permanency of land use rights through the traditional system. While additional sociological studies are proposed it appears certain that farmers will be encouraged to make improvements in land and to utilize the agricultural credit that will be made available.

3. Crop emphasis. Initial production goals will be in food grains although certain areas of the ORD are suitable for rice, cotton and peanuts. The latter will be encouraged since the ORD can accumulate considerable revenue through the processing of peanuts. Where appropriate crop rotation will be encouraged, however, this is likely to be during later stages of the project when there has been greater adoption of cultural practices.

4. Credit vs. the granting of agriculture inputs. Consistent with the practices of other donors it was decided to finance inputs through a credit program channeled through the ORD and the Banque Nationale de Developpement. Terms of credit have been recommended that will be reasonably soft and medium term. The credit program has been designed on a collective liability basis. The recommended approach has been successfully implemented in other areas of Upper Volta. Default rates have been very low when credit is made through village associations in localities where there is good administrative coverage by ORD agents.

Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan

16

	Total Project Costs (U.S. Dollars in Thousands)			
	FY 75	FY 76	FY 77	FY 75-77
Research				
Contracts with two local Voltaic firms. See p. 100 of PROP	$ 60	-	-	$ 60
Subtotal	$ 60	-	-	60
Revolving Fund				
Intensive Zones				
Medium-Term (Oxen)	$ 50	$ 150	$ 205	$ 405
Short- Term (seed, fertilizer and cotton spray)	25	60	110	195
Short-Term (Steers)	2/	2/	2/	N/A
Extensive Zones				
Medium-Term (Oxen)	35	70	100	205
Short-Term (Seed, fertilizer and cotton spray	20	40	75	135
Short-Term (steers)	2/	2/	2/	N/A
Subtotal	$ 130	$ 320	$ 490	$ 940
Total Program Operations - Extensive and Intensive	$ 417	$ 419	$ 562	$1,398

2/ Funding for short-term credit for steers can be financed from the semi-annual roll-over from the short-term credit for seed fertilizer and cotton spray.

Eastern O.R.D. Rural Development Project
Project Budget
Program Operations - Extensive and Intensive

	Total Project Costs (U.S. Dollars in Thousands)			
	FY 75	FY 76	FY 77	FY 75-77
Commodities & Equipment				
Marketing				
1 - 7 Ton Truck (@ $18,000)	$ 18	$ -0-	$ -0-	$ 18
5 - 3 Ton Truck (@ $14,000)	70	-0-	-0-	70
6 - Pick-Up Trucks (@ $6,000)	36	-0-	-0-	36
600 - Tines (@ $10)	6	-0-	-0-	6
Farm Equipment Workshop				
Tool, Supplies & Equipment	10	5	-0-	15
Encadreurs				
8 - Brickmaking Machines (@ $500)	4	-0-	-0-	4
88 - Mobilettes (@ $270)	10	11	10	31
Livestock				
1 - Portable Feed Grinder, Mounted	6	-0-	-0-	6
Seed Demonstration				
Fertilizer, seed, tools and equipment for village test demonstration sites	4	4	4	12
Veterinary Services				
4 - Refrigerators	2	-0-	-0-	2
Subtotal	$ 166	$ 20	$ 14	$ 200
Training				
ORD Director (6 weeks in USA)	3	-0-	-0-	3
Sub Sector Chiefs - 14 (Short Term, Third Country Training in Africa)	15	15	15	45
Counterparts - 4 (2-year training in USA)	21	42	21	84
Road Maintenance Brigade - 3 (Annual Training at Road Maintenance Center, Togo)	12	12	12	36
Women's Program - 2 (Annual 3rd Country Trg., Africa)	10	10	10	30
Subtotal	$ 61	$ 79	$ 58	$ 198

Eastern O.R.D. Rural Development Project

	Total Project Costs (U.S. Dollars in Thousands)			
	FY 75	FY 76	FY 77	FY 75-77
Commodities & Equipment				
Well Rehabilitation				
1 - 3 Ton Truck (@ $14,000)	$ 14	$ -0-	$ -0-	$ 14
2 - Pumps w/ Engines (@ $500)	1	-0-	-0-	1
Various Hand Tool & Supplies	1	1	1	3
Road Brigade				
2 - Graders (@ $30,000)	60	-0-	-0-	60
Various Tools & Supplies	5	1	1	7
Central Repair Shop				
Various Tools, Supplies and Equipment	10	5	5	20
ORD Central Equipment				
3 - Pick up trucks for AID Contractors (@ $6,000)	18	-0-	-0-	18
1 - 100 KVA Generator	30	-0-	-0-	30
Various Office Equipment	7	2	2	11
Radio Communication Network with Spares	65	-0-	-0-	65
Subtotal	$ 211	$ 9	$ 9	$ 229
Total Administrative and Infrastructure Support	$1,006	$ 686	$ 716	$2,410

1/ UNDP/FAO positions are subject to subsequent review in light of A.I.D. inputs. Estimated UNDP project costs over five years is $860,000.

162

Eastern O.R.D. Rural Development Project
Project Budget
Administrative and Infrastructural Support

	Total Project Costs (U.S. Dollars in Thousands)			
	FY 75	FY 76	FY 77	FY 75-77
Personnel Costs				
Host Country				
(Estimated ORD Personnel Costs)	$ 117	$ 152	$ 182	$ 451
Peace Corps				
4 Extension/Agronomist	20	40	40	100
1 General Agriculture	10	10	10	30
1 Irrigation Specialist	10	10	10	30
1 Hydrologist	10	10	10	30
2 Women's Program Specialist	10	20	20	50
UNDP/FAO Personnel 1/				
6 Experts	1/	1/	1/	-
5 Associate Experts				
U.S. Personnel - AID Contract				
1 Production Economist				
1 Marketing and Credit				
1 Range Management Advisor				
1 Project Manager	240	240	240	720
Subtotal	$ 417	$ 482	$ 512	$1,411
Construction				
3 AID Contractor Houses	$ 110	$ -0-	$ -0-	$ 110
Admin Bldg. - 14 offices	95	-0-	-0-	95
Dormitory at Matourku	35	-0-	-0-	35
Village Grain Storage Facilities	5	10	15	30
Subtotal	$ 245	$ 10	$ 15	$ 270
Special Funds				
Agricultural Commodity Purchases (Revolving)	$ 75	$ 60	$ 50	$ 185
Operational Fund - AID-financed	30	90	85	205
Operational Fund - Host Country-financed	10	15	25	50
Village Ox-Cart Pool (Revolving)	20	20	20	60
Subtotal	$ 135	$ 185	$ 180	$ 500

ANNEX H

Eastern O.R.D. Rural Development Project
Budget Summary

	Total Project Cost (U.S. Dollars in Thousands)			
	FY 75	FY 76	FY 77	FY 75-77
Total Project Funding (Detail attached)				
Administrative and Infrastructural Support	$1,008	$ 686	$ 716	$2,410
Program Operations - Extensive and Intensive	417	419	562	1,398
Total Project	$1,425	$ 1,105	$ 1,278	$3,808
Financed by:				
A.I.D.				
Personnel costs	$ 240	$ 240	$ 240	$ 720
Training costs	61	79	58	198
Commodities & equipment	377	29	23	429
Other costs:				
Construction cost	245	10	15	270
Special funds	125	170	155	450
Revolving funds	130	320	490	940
Research	60	-	-	60
Total A.I.D.	$1,234	$ 848	$ 981	$3,063
Peace Corps	$ 60	$ 90	$ 90	$ 90
Host Country	$ 127	$ 167	$ 207	$ 501
Total Project[1/]	$1,421	$1,105	$1,278	$3,808

1/ Does not include UNDP/FAO input of $860,000 which will be spread over five years.

The major anticipated development is the establishment of a new station, probably in early 1975. This will increase Radio Rurale's time from 25 hours/week to 40 hours/week shortly after starting, with expansion thereafter limited only by trained personnel and program material and budget.

M. Zongo said that the best way for the Eastern ORD to participate in and capitalize on this expanding asset would be to provide a staff member to serve as a Radio Rurale "correspondent." We have recommended this in our proposed organization (See Section 3, Table 3), and the project operating and training funds should cover any extra costs. Radio Rurale can train personnel as correspondents in several weeks.

As the ORD project progresses, it may be determined that additional inputs (tape recorders, loudspeaker devices for market days, etc.) will be required. The development of localized market information (beyond material which is now broadcast such as minimum official prices, etc.) will also be available for vernacular broadcasts. Some consideration will also be given to presentation radio receivers for agricultural fair contests, 4-C (local version of 4-H) Clubs and other youth groups.

Through consultations between the ORD and Radio Rurale important themes can be stressed; e.g., the availability of credit for animal traction, the desirability of small animals and poultry (both in Gourmantche), the importance of keeping herd-boys alert, and how to settle damage claims (in Peuhl and Gourmantche).

In sum, Radio Rurale represents an important resource for development in the ORD which will cost little in terms of budget but give an important return for the time and thoughtful attention invested.

Reference: Le Service de la Radio Rurale et Son Utilisation, Ministere de l'Information, Republique de Haute-Volta, recent publication

160

the guidance of an encadreur or extension agent. Club broadcasting sessions are in vernacular and held according to pre-announced schedules. Broadcasts are discussed and a listeners' report filed with Radio Rurale to provide feedback on reactions and leads for future broadcasts.

On the present schedule, about 25 minutes per week are broadcast in Gourmantche in 3-4 minute campaign (seed/harvest protection) spots Tuesday and Thursday evenings, and a 15 minute Radio Club session. Special emphasis treatment may raise the total to an hour in some weeks. Programming is quite timely with two weeks between taping (interviews with villagers, development policy statements, etc.) to broadcasting. The program material is prepared by Radio Rurale traveling teams and local or central agency officials. According to Zongo, there is no lack of program material for their current emission capacity.

Radio Rurale current programming is two-thirds in French. The remaining third is divided equally into Mori (Mossi language), Dioula, Peuhl, and a remaining catch-all including Lobi, Dagaki, Gourmantche and Gouroussi. In all, 13 national languages are used with the allocation based on population size and political importance. M. Zongo said that the Government plans to increase vernacular broadcasting at the expense of French. The Radio Rurale vernacular broadcasting is supplemented by special Ministry of Health, Red Cross and UNESCO broadcasts.

The major foreign support to Radio Rurale is West German bilateral aid. A Mr. Zitter is the resident technical and programming adviser. The Germans are installing a 100 KW middle-wave band transmitter by August 1974, which will increase signal strength in districts away from Ouagadougou. The signal in the Eastern part of the ORD is audible but the strength of Radio Niamey's signal attracts some listeners.

RADIO BROADCASTING FOR THE EASTERN ORD

When the design team visited the ORD, a number of the Gourmantche residents were listening intently to vernacular broadcasts. Discussions with sub-sector Chiefs and encadreurs also pointed out the value of these broadcasts in their extension work.

The ORD personnel said they keyed much of their extensive program (all they have at the moment) to certain national campaign broadcasts. In particular, the general propaganda on seed protection (Thioral fungicide treatment) and harvest protection (Gammagrain insecticide treatment) was followed up by demonstration and distribution by sales at cost.

The Fada ORD has about 200,000 to 215,000 Gourmantche speakers and 30,000 Peuhl (Fufuldi) speakers. It has about 5% French speakers and the overall scholarization level is 3% of the total population. The latter classes include mostly civil servants and merchants and their children, who reside in the "urban" areas (no town in the Eastern ORD exceeds 10,000 in population). In this cultural context the importance of radio is paramount.

In the ORD, an American resident estimates that most young adults (age 20-30) who live in accessible areas own a radio and are inveterate listeners. An undetermined but large number of the more than 600 villages in the ORD have at least one radio.

The Programming Chief, M. Joachim Zongo, of Radio Rurale, said that there are 150,000-200,000 radios in Upper Volta and 300 Radio Clubs started out of 750 planned for the country. Twenty-nine Radio Clubs now exist in the Eastern ORD. Radio Clubs are designed for "supervised" listening under

ANNEX F

THIOMBIANO TRAINING AFRICA AND USA

Objective : Receive pratical experience and training in administering and conducting production, marketing and applied research programs, with livestock range and crops especially rice, corn, sorghum, millet, cowpeas and peanuts as well as related credit, pest control, multiplication, husbandry, etc...

African Institutions

1. West African (STRC) - Samaru (Maize, sorghum, peanuts, cowpeas) ICRISAT (India)
2. Ahmadu Bello University, Samaru, Nigeria - corn, sorghum, millet, soils, phytopathology
3. IITA - rice, cowpeas, maise AID / USDA Major Cereal Projects East African (EAAFRO) - Kenya, Tanzania (Maize, sorghum, millet)
4. WARDA (Irrigated and bas - fond rice production).
5. Bambey, Senegal - Millet, sorghum

US Institutions

6. Wash D.C. (Beltsville, Md)AID / USDA - Agricultural research center.
7. Florida University - Peanuts, horticulture, livestock, tabacco.
8. Mississipi State - Seed technology, Foresty, integrated production programs, small farmer programs.
9. Texas State A & M - Rice, sorghum, corn, cotton, beef cattle and range land improvement, soil and water conservation.
10. Purdue Univ. Developing nutritionnally improved (high protein and amino acid balance) sorghum, and corn varieties, small animal production, agricultural economics.

Best timing would be August and early September when respective crops would be approching peak of development.

At sometime it would be in order to visit the ICRISAT and ALAD (Arid Land Development Lebanon) program as well as the East African Programs but these would be probably best separate trips. The East African visit would involve contacts through EAAFRO (Kenya corn, sorghum, millet, improvement and quality crops ; Tansania - corn, sorghum, millet cowpeas, and soybeans).

ORD de l'Est - Fada N'Gourma, "Rapport Annuel 1971"

ORD de Ouagadougou, "Rapport Annuel 1972"

ORSTOM, "Etude Pédologique de Haute Volta," 1969

Recherches Françaises au Service de l'Afrique Tropicale Sèche, "Actions en Cours et Résultats Obtenus, 1973"

République Française - Secrétariat d'Etat aux Affaires Etrangères, "Synthèse des Préviaions et Proposition pour l'Approvisionnement en Viande de l'Afrique Centrale"

SAED, Etudes du Milieu pour la Mobilisation de l'Epargne Rurale, December 1972

SAED, Projet de Formation et de Modrnisation Agricole (Cercle de Leo), February 1974

SLET, La Production Animale Voltaïque - Perspectives de Développement, 1972

SEDES, "Considerations sur les Actions Menées par les Organismes Régionaux de Développement en Haute Volta," September 1973

Service d'Agriculture, "L'Agriculture au Mali: Situation Actuelle et Perspectives," 1973

Sorghum Research Committee, "Sorghum Newsletter," 1973

UNDP - FAO, Etudes en vue de la Mise en Valeur du Dallol Maouri - Niger Economie, Rome 1970

UNDP - FAO, Etudes en vue de la Mise en Valeur du Dallol Maouri - Niger Sociologie, Rome 1970

Sources of unknown origin:

"Etude du Projet de Développement de l'Elevage dans la Zone d'Elevage Sédentaire du Mali (Mali - Sud)"

"Les Groupements Villageois Pre-Coopératifs dans l'O.R.D. de la Bougouriba"

"Projet Pilote de Développement Agricole dans le Dallol Maouri - Compte Rendu des Activités," November 1973

IRAT (Upper Volta), Culture des Mils Demi-Tardifs et Tardifs," 1973

IRAT (Upper Volta), "Données Actuelles sur l'Association Agriculture - Elevage," 1969

IRAT (Upper Volta), "Fiche Téchnique Concernant la Culture du Niébé," 1973

IRAT (Upper Volta), "Fiche Téchnique - Culture et Exploitation du Brachiaria Ruziziensis," 1973

IRAT (Upper Volta), "Fiche Téchnique - Culture et Exploitation du Stylosanthes Gracilis," 1973

IRAT (Upper Volta), "Fumures Proposées à la Vulgarisation et Fumures Appliquées dans lès Experimentations," June 1973

IRAT (Upper Volta), "Note sur le Boeuf de Travail Voltaïque," 1968

IRAT (Upper Volta), "Note sur le Travail du Sol avec l'Aide de la Motoculture"

IRAT (Upper Volta), "Note sur les Varietés de Céréales Vulgarisables en Haute Volta - Sorgho, Mil, Maïs, Riz," June 1973

IRAT (Upper Volta), "Principaux Résultats Agronomiques Obtenus par l'Institut de Recherche Agronomiques Tropicales et des Cultures Vivrières en Haute Volta, 1960-1971"

IRAT (Upper Volta), "Rapport Annuel 1967 - Machinisme, Elevage et Cultures Fourragères"

IRAT (Upper Volta), "Rapport Annuel 1968 Machinisme Agricole"

IRAT (Upper Volta), "Rapport Annuel 1972 - Selections Végétales, Sorgho, Mil, Maïs"

IRAT (Niger), "Activités et Résultats des Travaux de Recherche Effectués en 1973," February 1974

Laboratory for Applications of Remote Sensing, "Remote Sensing of Agriculture, Earth Resources, and Man's Environment," Purdue University

Ministère de l'Agriculture et de l'Elevage - Direction du Développement Rural, "Rapport Annuel de l'ORD de Ouagadougou 1972," June 1973

Ministère de l'Information - Radiodiffusion Télévision Voltaïque, "Le Service de la Radio Rurale"

ORD de l'Est - Fada N'Gourma, "Plan Cadre de Développement 1972-1976"

ORD de l'Est - Fada N'Gourma, "Programme de Développement Rural de l'ORD de l'Est - Fada N'Gourma"

Aménagement Vallées des Voltas, "Programme d'Etudes et d'Experimentation," November 1973

Aménagement Vallées des Voltas, "Programme d'Infrastructures 1974/75," November 1973

Aménagement Vallées des Voltas, "Programme de Mise en Valeur 1973," November 1973

Aménagement Vallées des Voltas, "Propositions d'Actions en vue de l'Amélioration de l'Elevage," November 1973

ASECNA, "Aperçus sur le Climat de Haute Volta," 1966

CEBV, Projet Conjoint de Lutte Contre les Epizooties," July 1973

CFDT (Mali), "Descriptif de l'Opération FANA et Bilan au 30 Avril 1971," April 30, 1971

Checchi and Company, "Food Grain Production and Marketing in West Africa," March 1970

CVRS, "Rapport d'Activité du CVRS pour l'Année 1971," 1972

Direction d'Elevage et des Industries Animales, "L'Elevage dans l'O.R.D. de Fada N'Gourma," December 1973

Direction de l'Elevage et des Industries Animales, "1973 Rapport Annuel de l'Elevage et des Industries Animales dans le 5e Circonscription d'Elevage - Fada N'Gourma," March 1974

"Essor Rural," August 1973

Food and Feed Grain Institute, Kansas State University, "A Study and Plan for Regional Grain Stabilization in West Africa," December 1970

IBRD, "Economic Development of Upper Volta," 4 volumes, November 1970

IBRD, "Gusan Agricultural Development Project, N.W. State, Nigeria," 1974

IBRD, "Integrated Rural Development Project, Mali," 1974

IBRD - IDA, "Appraisal of the Livestock Development Project - Cameroon," March 1974

IBRD - IDA, "Upper Volta - Black Volta Agricultural Development Project"

Institute of International Agriculture, Agricultural Mechanization in Equatorial Africa, Michigan State University, December 1969

Pagot, J. (IEMVT) Manuel sur les Pasturages Tropicaux et les Cultures Fourragères, March 1970

Peeters, W. H. A., "Aspects Communautaires dans l'Action de Matourkou, I Rapport and II Annexes"

Queant and Rouville, Agriculteurs et Eleveurs de la Région du Gondo-Sourou, 1969

Riesman, "Concepts et Pratiques des Peuhls de la Région de Djibo," Centre d'Etudes Africaines, 1969

Robinet, A. H., "Situation et Perspectives de Développement de la Production Animale Voltaïque," March 1973

Rombaut, D., and Bremaud, O., "Developpement de l'Elevage dans le Nord de la Côte d'Ivoire," January 1972

Senechal, Jacques, Espace et Mobilité Rurale en Milieu Soudano - Sahélian. Le Changement dans l'Isolement (Gourma du Nord, Haute Volta) O.R.S.T.O.M. 1973

Simeon, M., "Aliments du Bétail en Haute Volta," SEAE, 1970

Traoré, Dr. N'Golo, "Results des Experiences d'Embouche Intensive de Zébus Peuls et Maurer au Mali"

Traoré, "L'Elevage Bovin en Haute Volta: Importance Relative du Zébu et du Taurin," DVM thesis, Lyon 1964

Van Binsberger, Hans, "Rapport Final de l'Expert en Production Animale de Matourkou," February 1973

Weitz-Hettelsater Engineers, "A Grain Stabilization Study of the Entente States and Ghana," March 1969

Winkelman, Don, "The Traditional Farmer: Maximization and Mechanization," Development Centre of the Organisation for Economic Co-operation and Development, Paris 1972

Sources prepared by organisations:

A.I.D. - TAB, "Improving Farm Production in Tropical Regions of Limited Rainfall," November 1971

A.I.D. - TAB, "Increasing Food Production with Emphasis on High Protein Crops," March 1973

Aménagement Vallées des Voltas, "Bilan des Activités 1973 Programme 1974," December 1973

Aménagement Vallées des Voltas, "Demande de Financement au Fonds d'Aide et de Coopération," December 1973