

LIVESTOCK

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

UNITED STATES GOVERNMENT

Memorandum

~~688-12-130~~ 203

FILE
6880203 (3)

DATE: November 29, 1976

PD-44C-186-A1

57p.

TO : SEE DISTRIBUTION

FROM : AFR/DR, John Heard. *[Signature]*

SUBJECT: Mali Livestock Sector - Small Ruminants Amendment
Project No.: 688-12-130-203

Attached for your files is the final authorized version of the project paper for the subject project amendment. The approval memorandum is bound into the document after the annexes. Please destroy the earlier project papers as some revisions were made.

DISTRIBUTION

- AFR/DR: JWithers
- AFR/DR: SKlein
- AFR/DR: LClyburn
- AFR/DR: WLeake
- AFR/DR: ECross
- AA/AFR: SSScott
- AA/AFR: HNorth
- AFR/SFWA: DShear
- AFR/SFWA: HGray
- AFR/SFWA: LHillson
- AFR/DP: CWard
- AFR/DP: EDonoghue
- AFR/DP: JGovan
- AFR/DP: WTate
- AFR/GC: STisa
- PPC/DPRE: RBobel (6 copies)
- TA/AG: DMerrill ✓
- TA/RD: CBlankstein
- AFR/DR: AGayoso



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

AGENCY FOR INTERNATIONAL DEVELOPMENT
PROJECT PAPER FACESHEET
 TO BE COMPLETED BY ORIGINATING OFFICE

1. TRANSACTION CODE
 ORIGINAL CHANGE
 ADD DELETE

2. COUNTRY/REGIONAL ENTITY/GRAantee
 MALI

3. DOCUMENT REVISION NUMBER
 1

4. PROJECT NUMBER
 688-12-130-203

5. BUREAU
 A. SYMBOL: AFR B. CODE: 1

6. ESTIMATED FY OF PROJECT COMPLETION
 FY 7 | 9

7. PROJECT TITLE - SHORT (STAY WITHIN BRACKETS)
 MALI LIVESTOCK SECTOR-SMALL RUMINANTS

8. ESTIMATED FY OF AUTHORIZATION/OBLIGATION
 A. INITIAL MO. YR. 10 | 76 B. FINAL FY 7 | 9

PP
 DOCUMENT
 CODE 3
FILE

9. SECONDARY TECHNICAL CODES (MAXIMUM SIX CODES OF THREE POSITIONS EACH)
 078 | 080 | 095

10. ESTIMATED TOTAL COST (\$000 OR EQUIVALENT, \$1 = 450)

A. PROGRAM FINANCING	FIRST YEAR			ALL YEARS		
	B. FX	C. L/C	D. TOTAL	E. FX	F. L/C	G. TOTAL
AID APPROPRIATED TOTAL	129	75	204	223	170	393
(GRANT)	(129)	(75)	()	(223)	(170)	(393)
(LOAN)	()	()	()	()	()	()
OTHER 1.						
U.S. 2.						
HOST GOVERNMENT		64	64		157	157
OTHER DONOR(S)						
TOTALS	129	139	268	223	327	550

11. ESTIMATED COSTS/AID APPROPRIATED FUNDS (\$000)

A. APPRO- PRIATION (ALPHA CODE)	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE	FY 77		FY 78		FY 79		ALL YEARS	
			D. GRANT	E. LOAN	F. GRANT	G. LOAN	H. GRANT	I. LOAN	J. GRANT	K. LOAN
EN	192	052	204		149		40		393	
TOTALS			204		149		40		393	

12. ESTIMATED EXPENDITURES 160 | 150 | 83

13. PROJECT PURPOSE(S) (STAY WITHIN BRACKETS) CHECK IF DIFFERENT FROM PID/PRP

To assist the GOM in a comprehensive enumeration and analysis of the development options with regard to small ruminant production and marketing.

14. WERE CHANGES MADE IN THE PID/PRP FACESHEET DATA NOT INCLUDED ABOVE? IF YES, ATTACH CHANGED PID AND/OR PRP FACESHEET.
 Yes No

15. ORIGINATING OFFICE CLEARANCE

SIGNATURE: Ronald D. Levin

TITLE: CDO/Bamako

DATE SIGNED: MO. DAY YR. 07 | 15 | 76

16. DATE RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION

SMALL RUMINANTS STUDY

Table of Contents

	<u>Page No.</u>
I. <u>SUMMARY & RECOMMENDATIONS</u>	<u>1 - 111</u>
II. <u>PROJECT BACKGROUND & DETAILED DESCRIPTION</u>	
A. Background	1
B. Detailed Description	5
Phase I	6
Phase II	7
A. Technical Analysis	8
B. Economic Analysis	12
C. Social Factor Analysis	15
D. Analysis of Infrastructures and Resource Support of the Malian Government	17
Phase III	19
C. Inputs	21
III. <u>PROJECT ANALYSIS</u>	
A. Technical Analysis	22
B. Financial Analysis and Plan	25
C. Social Analysis	26
D. Economic Analysis	28
IV. <u>IMPLEMENTATION ARRANGEMENTS</u>	
A. Analysis of Recipient and AID Administrative Arrangements	31
B. Implementation Plan	33

	<u>Page No.</u>
C. Evaluation Arrangements for the Project	34
D. Conditions, Covenants and Negotiating Status.	35
 <u>Annexes</u>	
A. Summary Cost Estimate & Financial Plan	36
B. U.S. Source Funding by Project Year	37
GOM Source Funding by Project Year	
C. Vehicle Detail	38
D. Per Diem Detail	40
E. Logical Framework	41
F. U.S. Consultant Schedule	46
G. GOM Staff Schedule	47
H. CPI Narrative	48
I. Project Performance Network	49
J. AID/W Approval Cable	50
K. GOM Request	

SMALL RUMINANTS STUDY

I. SUMMARY AND RECOMMENDATIONS

The Small Ruminants Study is herein presented as a discrete activity which will be undertaken as a sub-project of the Mali Livestock Sector Grant (Project 688-12-130-203). The Livestock Sector Grant was obligated in June 1975. The Livestock Sector Grant (Mali II) and the Livestock Development Project (Mali I) together constitute a significant commitment by AID to addressing the needs of Mali's livestock sector. The Government of Mali, in conjunction with the CDO, is in the process of completing the Annual Work Plans and the Request for Proposals (RFPs) for the Livestock Sector Grant. At this point, these projects and documents are silent on the issue of the role of small ruminants in the sector. This study addresses the issue and renders more complete AID's comprehensive assistance to the livestock sector in Mali. The major output of this study, the provision to the Government of Mali of a number of viable projects and options in the small ruminant sub-sector, is consonant with the Government of Mali and AID objectives to exploit more rationally and render more productive Mali's livestock resources over the long term.

Description of Project

The Small Ruminants Study will be a comprehensive analysis of factors relating to sheep and goat production in Mali. The project is to be implemented in three phases and will have a maximum duration of 27 months. Phase I (NTE three months) will consist of the collection, collation and analysis of all materials known to exist which relate to small ruminant

production and marketing in Mali. An important element of phase I is the identification of critical gaps in the information which will be accumulated during this phase followed by the formulation of a methodology and work plan to collect and process this missing data through intensive field study in Mali Phase II of the project.

Phase II (NTE 18 months) is the detailed field work which includes technical, economic, social, environmental, and Government of Mali human resource analyses of small ruminant production in Mali. From the data collected in Phase I and the analyses of this phase, a comprehensive synthesis will be prepared which will contain recommendations and options to the Government of Mali on future small ruminant production and marketing initiatives in the context of total livestock sector programming.

Phase III (NTE 12 months) will include, in sub-phase A, three months of effort to synthesize all possible program opportunities into a shelf of projects, for consideration by the Government of Mali, which are designed to increase small ruminant production in a manner that will optimize economic returns to this livestock subsector, particularly the producers, on a sustained basis and in a manner consistent with existing ecological, technical and social considerations.

Due to very limited experience in fostering improved production, processing and marketing in the small ruminant subsector in the Sahelian and sub-saharan regions, provision has been made in subphase B (NTE 12 months) to pilot test on a modest basis some of the innovative techniques that will be required for such a pioneer effort. These pilot tests will be designed to assess the suitability of the techniques and technology to

Malian conditions, to refine cost-benefit ratios, and to ascertain most effective means to obtain sociological acceptance.

Evaluation and analysis will be reported on these pilot projects. Thus, the end of project status conditions will be achieved upon submission to the Government of Mali of a comprehensive list of potential projects in the small ruminant sector in sufficient detail to be considered for financing by foreign donors as well as the Government of Mali.

The study will be implemented under the overall direction of OMBEVI (the Malian Livestock and Meat Marketing Board), in cooperation with the Livestock Service, both branches of the Ministry of Rural Development. The Animal Health Study will be coordinated with the Central Veterinary Laboratory.

The study will be grant-funded to the amount of \$395,000 over three years. Project inputs will consist of 24 man-months of U.S. technical personnel (animal husbandryman, statistician, economist, and sociologist) and 710 man-months of Malian personnel (livestock, veterinary, research, economic and planning specialists). Other inputs will include funds for vehicles and maintenance, travel expenses for researchers and laboratory supplies.

SMALL RUMINANT STUDY

II. PROJECT BACKGROUND AND DETAILED DESCRIPTION

A. Background

The Republic of Mali, by any economic or social standard of measurement is an overwhelmingly agricultural economy. The agricultural sector provides a large share of the foreign exchange earnings for the country. In recent years, up to ninety-four percent of total export earnings derived directly from the sales of food, fiber and animal products. The Agricultural sector employs most of the national labor force. Over 90 percent of the employment is land based. The per capita gross domestic product is estimated at about US \$70.00, ranking Mali among the very poorest countries in the world.

The post-drought cattle population of the country is estimated at about 4.0 million head. The small ruminant population is considered to be about 9.2 million head. It is certain that the domestic cattle population was reduced rather substantially as a consequence of the recent drought years. Losses through direct mortality, premature sales and outward migration of cattle to more favorable locations in the coastal African countries have been variously estimated at up to 20 percent of the national herd existent in 1970. The precise effects of the drought years on the sheep and goat populations are much less well known or quantifiable.^{1/}

The Government of Mali has invested and will continue to invest considerable amounts of money and other available resources in the development of the livestock sub-sector. Considerable emphasis has been

^{1/} Governmental emphasis in the past has been on statistical analysis of the cattle population of the country. For a general discussion of the livestock sector see pages 1-11 of the Mali Livestock Sector Grant PP.

placed on improving cattle production and marketing. AID involvement in this effort already includes two major grant projects totaling US\$ 10.5 million. Another grant project - Mali Land Use Potentials Inventory - has reached the Project Paper stage. If it is approved, it will assist the Malian Government to make the best use of its land resources and provide a guide for other development projects.

It is the major contention of this project paper that the small ruminant population of Mali has been generally neglected as a developable resource. This is an untenable situation for the country as the sheep and goat population forms a large segment of the total animal population and has such a profound effect on the total utilization of available feed resource of the country. If Mali is to realize the optimal economic and social benefits derivable from its natural resource base, planning must take cognizance of the existence and development potential of the small ruminant population and thus production must be integrated in a manner to complement production in the entire livestock sector. This includes both specific attention to negative effects of small ruminant production such as the reduction of forage production for all livestock and increased desertification which results from uncontrolled grazing of small ruminants as well as the positive beneficial effect from the development of a package of practices to increase their profitable production without undesirable environmental effects.

Although little consideration has been given to promoting the development potential of sheep and goats in the past, small ruminants have been important to the total economy. Isolated pieces of information are illustrative of this fact. Slaughter data in Bamako indicate that the

tonnage of mutton and goat meat available for domestic consumption is increasing at a faster rate than the tonnage of beef, with goat meat tonnage being about three times that of mutton. Government long-term strategy calls for encouragement of this trend as a means toward permitting further expansion of the export beef trade with the coastal countries. Furthermore, there are indications of increasing interest in export of small ruminant products - chiefly meat and hides - both to the southern coastal markets and to the North African countries.

Small ruminants also contribute greatly to the well-being of the rural populace. With little capital investment and a bare modicum of technical skills, a rural smallholder family can realize a substantial return on the production of sheep and goats. Given the rapid generational turnover of the small ruminants, moreover, a sustained income flow can be established and maintained in a relatively short period of time. Furthermore, since these animals produce a multiplicity of products for the smallholder (meat, milk, hides, wool "or hair" and slaughter by-products), are generally more able to withstand environmental stress than cattle, exist largely as scavengers, and can be herded and maintained by women and small children, they are very attractive additions to farm operations. This seems to be particularly true at the level of the poorest rural families.

Given the importance of these animals to the economy, it would have been desirable to move into projects that involved direct improvement in the production techniques currently employed for small ruminants. Unfortunately, this is not possible. The paucity of information reliable enough to support and justify viable projects is the chief constraint on direct action programs for sheep and goat production. Many questions

require answers. Who are the sheep and goat raisers? How many producers are there? What is their economic level? What is their regional distribution? What are the methods and systems for raising these animals? How do these systems interact with systems for production of large ruminants and/or with sedentary cropping enterprises? What are the relative values of small ruminant products? What are the technical and economic constraints on the present production systems? What is the technological potential for increasing production? What are the market potentials for small ruminant products? What are the producer motivations for including sheep and goat enterprises in their total farming system? What can be done to improve this motivation? These questions are essentially unanswerable given the present state of knowledge about small ruminants in Mali. Obviously, there have been already some attempts to begin to answer these questions through estimation of local circumstances and extrapolation from common experience in similar parts of the world but detailed and sustained study of the Malian small ruminant resource is lacking. The removal of this data and information constraint is a principal element in this project.

The central Project Purpose is to provide comprehensive enumeration and analysis of the development options open to the Government of Mali with regard to small ruminant production and marketing. This analysis will be based on a detailed review of all existing materials -both within Mali, and in similar climatic regions outside the country - and on such data as will be collected from additional and necessary field studies in Mali during the course of the project. The Project Goal is to increase the ability of the Malian Government to formulate and execute small ruminant production and marketing projects that optimize economic returns to the livestock sub-sector

on a sustained basis subject to existing ecological, technical, and social constraints.

B. Detailed Description

This project originates from the expressed desire of the Malian Government to improve its understanding of and its ability to deal creatively with the large and growing small ruminant population of the country. The project has been formulated sequentially to and as a consequence of a study performed for the Government by SEDES (Société d'Etudes pour le Développement Economique et Social) in cooperation with the French Ministry of Economic Cooperation.

This project is designed to utilize much of the valuable information developed by the SEDES study but to reduce the emphasis on census type information and to increase the emphasis on the development of economically viable production projects in the small ruminant sub-sector through focusing on the collection and analysis of only the type and amount of information significant to this pressing need. The project addresses itself to analysis of the constraints on the production, marketing and profitability of sheep and goats deriving from the quality and quantity of government services to the small ruminant population, the state of health and morbidity of and veterinary services for the animals, their breeding performance, their feeding level, the current state of husbandry practices, the availability and responsiveness of marketing services, social attitudes, the economic benefits to small holders from sheep and goat production; and of the potential technology for production and economically for market absorption.

The data collection and analysis will identify, enumerate according to time phasing priority, and describe in detail the specific, feasible and economically viable production projects and policy options available for consideration by the Malian Government to foster the development of the small ruminant sub-sector. Some of the more promising action programs are designed to be tested out on a small scale, pilot basis in Phase III of the project to test their applicability and where possible to identify means to increase the applicability of the development project options to specific Malian conditions. Thus, the final output expected of the project will be a shelf of viable and adaptability tested projects for the sub-sector available for financing by foreign donors or the Malian Government.

The overall project will flow through the following series of well-defined phases:

Phase I (Maximum duration of three months)

The initial phase will consist of an intensive collaborative effort between Malian officials concerned with livestock production and marketing and the American contract technicians to complete jointly

- the collection, collation and critical analysis of all materials known to exist in Mali on small ruminant production and marketing;
- the evaluation of the existing state of the art in Mali and the identification of critical gaps in the information accumulated to this point;
- the amassing and critical evaluation of all relevant materials on small ruminant production and marketing from other countries of Africa, as well as from the other countries of the world having conditions similar to Mali, which show reasonable promise of contributing useful information to the study;

- the formulation of specific and detailed plans to collect and process missing data through intensive field study in Mali in Phase II of the project.

The output from phase I of the project will be:

1. A comprehensive statement of the findings of the initial review of materials - Malian and external - on small ruminant production and marketing;
2. A set of detailed and executable work plans for necessary field surveys and data collection in Phase II of the project.

Phase I will^{be}/completed in not more than three months from the initiation of the project in Mali.

Phase II (Maximum duration of eighteen months)

The second phase of the project will follow on and flow from the findings of Phase I. The activities and methodology involved in the field study phase of the project will have to be determined by the existing information gaps that come to light in the Phase I activity just described. Without attempting to enumerate what these information gaps will be or what is the appropriate methodology needed to ameliorate the lack of information, the output of the Phase II activities must be comprehensive statements of existing knowledge to that point in time as follows:

- A Technical Analysis of Small Ruminant Production and Marketing in Mali;
- An Economic Analysis of Small Ruminant Production and Marketing in Mali;
- An Analysis of the Social Factors Effecting Small Ruminant Production and Marketing in Mali;

- An Analysis of the Infrastructure and Resources of the Malian Government in Support of Small Ruminant Programs.

Whether the four statements would be issued as four separate reports or integrated as four categories within a single report would be an issue to be resolved in team discussions at the end of Phase II.'

The comprehensive statements will be provided from the combination of existing information compiled during Phase I of the project and the new data collected as a result of the field activities in Phase II.

A. Technical Analysis

This subject will be developed first from surveys, principally of producers, required to supplement or increase reliability of information gathered in Phase I, secondly from discussions with competent local technical personnel to analyze the data obtained in Phase I and the field survey and to identify and evaluate the constraints to production and the opportunities within current technological, social and economic conditions to increase production from this sub-sector and thirdly to identify and evaluate realistically achievable production potentials within five and within ten years based on improved production practices developed from carefully selected technical and communications research activities. Following is an example of the scope and type of information considered essential to obtain as a basis for a comprehensive statement on this output.

1. Categories of producers:

- a. Habitat -- urban, semi-urban, or rural
- b. Manner of life -- sedentary, transhumant, or nomad
- c. Tribal origin

2. Description of animals:

- a. By breed, strain and species -- 5 different races of sheep; 2 different races of goats; intra-species crosses between races
- b. By sex -- males, castrated males, females having produced one or more offspring, females not old enough to drop offspring
- c. Source -- birth into flock, exchange or gift, or purchase

3. Bases for flock groupings and size of flocks:

- a. Single ownership, number
- b. Multiple ownership, terms, number

4. Characteristics of the national small ruminant populations:

- a. Percent annual reproduction; i.e. percent lamb or kid crop
- b. Average age of females at birth of first offspring
- c. Percent male animals in flock
- d. Death rate (percent mortality by age by sex class and by cause)
- e. Production coefficients (time to produce marketable carcass, given weight of wool or hair, given quantity of milk, length of lactation period, etc.)
- f. Percent extraction (flock by age and sex class)
- G. Percent removals (animal and/or product)
 - (1) home consumption
 - (2) transfer (gifts, sacrifice, dowery, etc.)
 - (3) sale
- h. Value of removals (animal and/or product, last current year, including price by unit of sale)

5. Flock growth:

This is a calculated figure which can be obtained by difference between disposable animals under hypothesis of zero growth and number of animals actually disposed of.

6. Nutrition:

- a. Pasture (types and length of season of each)
- b. Hay, other harvested roughage or grains (type and quantity per day and length feeding period)
- c. Supplements, mineral/vitamin (types, quantity and length of period of use)
- d. Special feeding practices (flushing for fertility, lamb feeding, special market feeding etc, describe)

7. Animal production practices:

- a. Confined or range fed
- b. Herded or free ranged
- c. Castration, clipping tails ect. (timing, health guards, etc.)
- d. Breeding controlled or uncontrolled
- e. Lambing/kidding (any special practices)
- f. Susceptibilities to heat, humidity, prolonged rainy periods, drought, etc. (describe)
- g. Other (describe)

8. Animal Herd Health:

- a. Diseases (types, methods of control, sex and age susceptibility, factors contributing, morbidity)
- b. Insects (same as a)
- c. Internal parasites (same as a)

Injuries (same as a)

9. Animal Health, clinical data

- a. Clinical examinations
- b. Autopsies
- c. Parasitological examinations
- d. Hematological and serological examinations

(From these examinations to be carried out systematically in sampled areas, a more complete picture of the common internal and external, parasites and infectious bacterial and viral diseases will emerge.)

10. Research (to search for researched but unpublished data on the following subjects)

a. Nutrition:

- (1) Rate and cost of gain in weight or production of product by weight or quantity under various rations including confined feeding and various pasturing practices
- (2) Effect of mineral and/or vitamin supplements on 1 above (physical and economic)
- (3) Effect of improved rations on fertility and on percent of lamb or kid crop (physical and economic)
- (4) Effect of improved rations on lamb or kid survival rate (physical and economic)
- (5) Effect of improved rations on susceptibility or tolerance to diseases and pests (physical and economic)

b. Range management:

- (1) Rate of animal or product production per hectare under controlled rotational grazing vs uncontrolled grazing on native grasses

under various soil and moisture regimes each year over a span of years

(2) Same as 1 except on improved pastures

c. Health:

(1) Rate and net value of production from animals under preventive or curative treatment available in Mali for various diseases versus no treatment.

(2) Same as 1 except for insects

(3) Same as 1 except for internal parasites

(4) Availability and quality of medicinal products for ruminants

(5) Availability and quality of veterinary services

d. Research capability:

Identification and evaluation of capability and constraints in small ruminant research capability in Mali

e. Extension services:

Identification and evaluation of capability and constraints in system to provide farmers with information on improved and profitable production technology.

B. Economic Analysis

The course of actions to develop this statement would be expected to be similar to that described for the development of the Technical Analysis statement. Some of the information for this analysis would obviously flow from information obtained from the previous survey example for Technology. The economic analysis would have to address itself to six principle areas:

1. A micro-economic farm-level evaluation of the goat/sheep enterprises under various management strategies and differing agricultural systems in Mali. This would have to include an analysis of:
 - a. The structure of the enterprise at the farm level;
 - b. The cash and non-cash costs of production for conventional goat and sheep enterprises and for specialty ruminants;
 - c. The cash and non-cash returns to the farmer/herder for the same animal categories;
 - d. The contribution of the enterprise to net cash and total farm income under various current management systems for the same animal categories;
 - e. The potential contribution of the enterprise to net cash and total farm income under management practices utilizing currently available improved technology for the same animal categories;
 - f. Same as e except utilizing realistically attainable technology within five and within ten years for the same animal categories;
 - g. Comparison of net cash and total farm income from optional farm enterprises from the same resources in lieu of ruminant production.
2. An analysis of the various marketing chains from producer to consumer for the product offtakes from the flocks in the domestic market. This would have to include an analysis of the following by type of animal or product as applicable:
 - a. Types and location of domestic markets;
 - b. Prices to the producer (monthly - preferably 3 year minimum);
 - c. Retail prices (same as b);
 - d. Marketing margins (same as b);

- e. Types of slaughter facilities;
 - f. Slaughter dressing percentages;
 - g. Processing of skins and marketing;
 - h. Processing of other products and marketing;
 - i. Estimates of elasticity of domestic demand for ruminant meat and products;
 - j. Specialty markets (ethnic or religious holidays, handicraft wool rugs, specialty skins, describe products involved, estimated demand, seasonality characteristics, price characteristics, etc.)
3. A generalized analysis of the various export markets - by product;
- a. Characteristics of the marketing system;
 - b. World Export trade volume for last three years for major products;
 - c. Mali share of the export market;
 - d. Comparative advantage or disadvantage of Mali in ruminant product export market;
 - e. Estimated trend in demand (for major export products) by major importing markets;
 - f. Prices (for major export products) at given african markets (preferably 3-year minimum).
4. A generalized analysis of the transportation system as it affects both domestic and export markets for Mali.
5. A generalized analysis of the role of credit for the production and marketing system of the sub-sector:
- a. Producers (purpose, amount, source, seasonality, terms, etc.);
 - b. Marketing agents (same as a);
 - c. Processing agents (same as a).

6. An evaluation of Government policies influencing the production or marketing of goats and sheep and their products:

- a. Are there economic policies oriented to increasing production?
(Describe and evaluate influence)
- b. Same as a for increasing exports;
- c. Are there economic policies (non tax) which are constraints to production and/or marketing? (Describe and evaluate influence)
- d. Is the tax system an unusual constraint to production and/or marketing?
(Describe and evaluate influence)

C. Social Factor Analysis

The course of action to develop this statement would also be similar to that described for the development of the Technical Analysis statement as described in the first paragraph of Section A preceding. Some of the information required for the Social Factor Analysis would obviously flow from information gathered in the course of the Technical and Economic surveys. The Social Factor Analysis would have to address itself to at least five major issues.

These would include a discussion of the role of small ruminants:

1. In providing producer families with improved nutrition:
 - a. Under current management;
 - 1/ meat protein
 - 2/ milk and milk products
 - b. Under management utilizing optimum levels of current production technology.

2. In providing producer families with fibers for family use:
 - a. Under current management;
 - 1/ garments, blankets, rugs, etc.
 - 2/ family made handicraft products for market
 - b. Under management utilizing optimum levels of current production and handicraft technology.
3. In providing producer families with employment opportunities for non-adult male family members from production of small ruminants or processing of their products for home use or sale:
 - a. Under current management;
 - 1/ adult women
 - 2/ children
 - b. Under management utilizing optimum levels of current production processing and handicraft technology.
4. In providing producer families a means to accumulate and conserve wealth under current management systems:
 - a. As a protection resource for use during periods of climatic and other forms of natural distress;
 - b. As a protection resource for use during periods of family personal emergencies;
 - c. As a form that is easily accessible and with relatively constant purchase power.
5. In providing opportunity seeking, very low income families with an additional enterprise to increase family income:
 - a. Current role;

- b. Constraints to commencing enterprise operation; to expanding enterprise operation; to expanding enterprise operation to a level adequate to produce a significant marketable surplus above family consumption;
- c. Opportunities under management systems utilizing optimum levels of currently known production technology in Mali and adequate production credit.

D. Analysis of Infrastructures and Resource Support of the Malian Government.

The course of action to develop this statement would also include (1) surveys and interviews to supplement information gathered in Phase I; (2) discussions with competent local technical, trade and administrative personnel to analyze the data obtained and to identify and evaluate constraints to production and marketing and (3) discussions with the same personnel to identify and evaluate appropriate policy options which could be considered to foster the development of the small ruminant sector as well as to assure ecological protection of Mali's valuable range resources.

The analysis would have to address itself to at least six major issues would include (1) collection of information and analysis of the current status of the following items as well as (2) identification and enumeration of options to consider to foster increased benefits to the farmer/producers and to the nation from small ruminant production.

1. Production Policy

Government policy to foster increased productivity from the small ruminant sector.

2. Level of Production Technology

This issue addresses the present Government policy concerning the research (technical and communications) constraints identified under Analysis Statement A preceding and the policy options to consider to alleviate these constraints.

3. Transfer of Production Technology and Health Services

The extension organization for transfer of production technology in animal husbandry, range management and preventive health to producers and the veterinary organization to service requirements for medical treatment of small ruminants.

4. Accessibility of Production Inputs

Policies governing the licensing, ownership, taxation, health regulations, expatriation of projects, etc. related to the development of facilities for the production of supplemental feed materials, animal health products, handicraft processing equipment and materials, production credit, etc.

5. Marketing

- a. Market information
- b. Market facilities
- c. Market accessibility: roads, transport facilities, etc.
- d. Processing Industry Development:
 - 1/ Hides - leather products, shoe industry, luggage, garments, handicrafts items, etc.
 - 2/ Cheese
 - 3/ Wool and hair - garments, blankets, rugs, etc. (conventional and specialty).
- e. Market regulation:

- 1/ Licensing and Permits
- 2/ Weights and Standards
- 3/ Quality and Health Controls
- 4/ Embargoes

6. Land Use

Policy to protect national interests as well as to encourage individual investment to achieve optimum profitable productivity from valuable land resource.

7. Taxation

Policy to derive income from producers, traders, processors and exports of the sub-sector to finance Government support to develop the small ruminant sub-sector and to finance general Government services.

Phase III (Maximum duration of one year)

The data and analyses from Phase I and II will be studied in Phase III, subphase A, to identify all possible program opportunities to increase the profitable development of the small ruminant sub-sector. These program opportunities of projects will be examined to identify amongst other things the specific benefits considered realizable, the potential benefactors (producers, traders, processors, consumers, foreign trade balance) and their proportionate shares, the regional location of the benefactors, the inputs, policy, and institutional conditions required for realization of the benefits, the interdependence upon other programs in the subsector, the cost-benefit ratios, the time required to implement the projects, the precedents upon which the project is considered to be successful and adaptable to Mali, the relative

priority of each project in relation to other projects in the subsector, the foreign and domestic currency cost and the time schedule of these costs. Each project will be designed as a separate program activity and will be designed with consideration of suitability for financing by foreign donors as applicable. The maximum duration of this phase is three months.

At least two or three higher priority projects amongst those designed in subphase A will be pilot tested during the critical season of their applicability in subphase B of Phase III. Due to the limited experience in government efforts to foster improved production, processing or marketing techniques in the small ruminant subsector in Mali or in other African countries with small ruminant owner management systems and environmental conditions similar to Mali, it is prudent to include an activity to pilot test on a modest basis some of the innovative techniques that will be required for such a pioneer effort. This Phase B activity is especially desired by the Government of Mali. Phase B is to be designed to pilot test the suitability of the techniques devised for Mali conditions, to identify more specifically the types and significances of constraints encountered in implementation, to quantify improvements under actual test operations, to revise cost-benefit ratios accordingly and to provide a basis for the final design of the shelf of project opportunities for consideration by the Government of Mali to increase national benefits from the small ruminant subsector. The maximum duration of this phase is nine months.

The outputs from Phase III will include:

- an evaluation and analysis report on the pilot tested proposal projects;
- a comprehensive list of potential projects in the small ruminant sector with project descriptions, estimated duration and input details including financial aspects, all of which will be in sufficient detail to be suitable for consideration for financing by foreign donors as well as the Government of Mali.

C. The Inputs

The studies and the project designs are to be carried out by personnel of the Ministry of Rural Development selected from the Livestock Services, Central Veterinary Laboratory, National Zoological Research Center and OMBEVI. The overall direction of the studies will be coordinated by OMBEVI and will be under the administrative direction of a Project Director appointed by the Minister of Rural Development. The Central Veterinary Laboratory will carry out the Animal Health Study. Chart II on page presents the time schedule and quantitative input of GOM personnel inputs.

The personnel of the Ministry of Rural Development assigned to this subsector study will be relieved of their other duties during the period of their assignment. The GOM is to provide the major personnel input (711 MM) and the use of some of its vehicles and other available facilities (laboratories, etc.). AID is to provide the per diem costs of all project personnel in the field, vehicles as indicated in the financial plan, GOM and Project vehicle operations and maintenance expense, questionnaires, cost of computer time, publication of reports and miscellaneous supplies.

AID will also supply consultant services to train and supervise the GOM staff in the methodology of research reviews and analysis, the statistical techniques of survey sampling and the techniques of economic analysis and project design to enable the GOM staff to acquire the skills to conduct capably the surveys required, the analysis of the results and the design and testing of major projects which are logically considered as being applicable to Malian conditions and capable of increasing small ruminant production and herder welfare. Twenty four man months of consultant time are envisaged. Chart I on page presents the time schedule for the consultant services of an Animal Husbandry specialist (10 MM), a statistician experienced in development of sampling farmers (5 MM) and an experienced economist/project design sociologist (9 MM). One participant is scheduled for short-term training in the U.S. in project design at a date sufficiently early in the Project development stage to be available to assist the U.S. consultants to design the survey questionnaires and to be the principal technical member of the GOM team to assist U.S. consultants during the project design phase of the study.

Resources required are specified in more detail under Table I, Summary Cost Estimate and Financial Plan by Source of Funding and Table II, U.S. and GOM Source Funding by Project Year following in Annexes A-D pages 36-40.

III. PROJECT ANALYSES

A. Technical Analysis

The two major components of the livestock sector in Mali are cattle and small ruminants. The major portion of Mali's agricultural land is utilized

in the production of these two major classes of livestock. At this stage of its development, where commercial and transport infrastructure is not well developed and where savings and investment capital in the rural area is very meager, cattle and small ruminant production present the most feasible enterprises for initial utilization of Mali's extensive land resource.

Several projects have been initiated to foster increased quantitative and qualitative cattle production. Except for the FAC funded SEDES study, little has as yet been developed to foster increased and more profitable production of small ruminants. This subsector represents an unusually attractive economic development opportunity as the production of small ruminants is pervasive throughout the country and the number of families producing small ruminants exceeds the number of rural families engaged in any other single agricultural enterprise. The Mali-Libyan Bank was established in early 1976 to support development projects, especially in the livestock sector, in the sixth Region which may be proposed by the GOM. The shelf of projects identified by the Small Ruminants Project will provide the GOM with the type of projects suitable for financing from funds secured by the Government of Mali from non U.S. donor sources.

An additional aspect is that, small ruminants have a historical reputation for having potential to damage severely or to destroy vegetation at a rate more rapid than do cattle. As population and per capita demand for meat have continued to increase, the small ruminant pressure on the land in Mali has escalated and can be expected to continue to increase. The time is therefore appropriate to focus both on the methodology to increase

profitable production of this subsector and to incorporate management systems which will reduce the trend towards vegetative deterioration, land degradation and increased desertification.

The first essential steps in developing project activities to improve the contribution of this subsector to the quality of life of the rural producers and to improve the contributions to the national economic and social welfare are (1) to increase the reliability of statistics on the number and distribution of sheep and goats; (2) to identify and quantify the production, processing and marketing constraints and then (3) upon this foundation, to design the projects required to improve opportunities to fulfill the afore-mentioned objectives.

In this process, the project is designed to enable Malian personnel to perform the services required with only modest assistance from U.S. technicians, whose functions will be principally to train and supervise. This approach of having Malian personnel perform the required components of the project is in the framework of the established policy of the Government of Mali to encourage transfer of skills to the Malian staffs rather than having foreign technicians render a one-time service with no residual skill capability developed by Malians to perform similar functions in the future. Having acquired thorough knowledge of the project characteristics and skill in project design, the Malian staff will not only have enhanced their capability for project design replicability, but will have developed a more thorough understanding of the situations to be encountered in implementing this and other projects.

As a result of this approach, the project funding requirement is

modest when both the skill acquisition and this project's activities are considered in their totality.

B. Financial Analysis and Plan

The Small Ruminant project is a nonrevenue project per se, but revenue producing projects are expected to be derived as products of this study. A specific purpose of this study is to establish more precisely the volume of animals in the subsector, the value of the annual off-take, the nature of the benefactors and the incremental increases that can be realistically expected as a result of intervention of various types in the production, processing and marketing aspects of the subsector.

The very volume, generally reported to be in excess of 10,000,000 head represents a conservative value of approximately \$80,000,000 in situ. At an off-take rate of 20% annually, a potential goal of a 15% annual increase in production of meat alone in five years would generate over \$2,000,000 annually. A combination of investments in project design studies and projects (over a five year period) which would total up to the value of two years increase in value of meat production alone (\$4,000,000), would provide a 20% return on investment over a 10 year period (at constant prices).

In regard to recurrent operating and maintenance costs, potential projects would require an increase in current budgets for their continuation. This is a particular problem for Mali, but the problem has already been addressed. A study has been conducted under the Mali Livestock Sector Project, which has provided the Government of Mali with specific options for their consideration to generate income from the anticipated increase in production in the cattle subsector to finance the expected

increase in budget allocations to the expanded cattle production projects. The recommendations are also appropriate for use, with appropriate modification, in the small ruminant subsector.

3. Financial Plan/Budget Tables

(Attached)- Annexes A-D pages 36-40

4. The Small Ruminant Project has been designed to include adequate margins for each aspect of the outlined operations to cover expected operational encumbrances even before inclusion of the contingency funding component. The nature of this project does not subject it to the range of uncertainties incumbent in production projects. Further, intentional effort was directed to reduce and hopefully to avoid the failure to fully recognize realistic financial requirements.

C. Social Analysis

The major component of this study will consist of field surveys to ascertain the statistical, technological and sociological characteristics of the subsector. Preliminary information, such as that over 55% of this nation's small ruminants are produced in the administrative region of Gao, where subsistence existence is prevalent and where alternative opportunities for employment are extremely limited, indicates that the ultimate target group is the traditional, chronic, lowest income group. To these individuals, these hardy and even scavenger foraging animals are the elementary, intermediary link between solar energy, water and minerals and their own continued opportunity for sustained life.

Circumstantial evidence indicates that these people are resourceful herdsmen to have been able to continue to survive symbiotically with their herds of sheep and goats under sahelian and sub-saharian conditions. An important aspect of the survey will be to elicit expressions from the herders, in the various areas of Mali, concerning their concepts of means to improve production and income from these animals, to identify opportunities for intervention in the subsector and to explore the potentialities for utilizing the leadership capabilities of the more successful herders to be the link to the herder communities.

Since the point of production, the herder and the land, is the point of first focus for attaining the project goal, it is anticipated that projects to be designed under this "design study project" will include production oriented projects in selected geographic areas directed at initial target groups of herder/producers where opportunities appear most conducive agronomically, infrastructurally, and sociologically for production improvement. As in the Mali Livestock Sector Project, it is anticipated that special emphasis will be focused on the design of project activities for the training of the "change agents" in effective means of communication and in the concepts of the "sociology of change" and that innovative communications programs will be developed to introduce improved production concepts as well as to spread the news of the performance of the results of these concepts when applied by the initial target groups to the larger community of ultimate target groups.

Other areas of focus in project design are required to assure that there is a flow of technology to the herder producers, such as strengthening research capability to address the field constraints identified to be most critical, strengthening the marketing channels to foster competition in the local markets, and increasing the flow by radio to farmers of information about market prices at regional markets. Grossly underdeveloped is the potential for capitalizing on the native handicraft potential of women in the herder community. Project design must focus on means to communicate consumer preferences to women's groups and to establish efficient commercial links from widespread herder communities to the commercial markets for handicraft products. Throughout the spread of the marketing system, focus will be on means to foster gradually the development of commercial agents from amongst the herder community itself. The collective result of the outputs in the three phases of this project should lead to a shelf of projects designed to provide the small ruminant herder/producers with opportunity to increase the annual market output from the herd and to increase the quality of life of their families.

D. Economic Analysis

This project per se falls in the category of having a non-marketable output and further falls into the technical assistance subgroup of that latter category, as defined in Appendix 6G (C2) of AID handbook 3, part 1. The analysis technique appropriate to this group is to determine cost estimates for alternative means of achieving the same output levels.

As elaborated in Section B "Financial Analysis and Plan" preceding, the project outputs include those specifically described in the

logical framework and the additional benefit of increased capability of the Malian Rural Development staff in project design. Even discounting the latter benefit, and accepting that the Rural Development staff in Mali does not currently have the capability to perform such a project design exercise themselves, one alternative would be to depend upon foreign specialists to perform the necessary surveys and to design the projects. The first problem would be to obtain a team of specialists capable and willing to spend months in the areas of ruminant production to obtain the information described and secondly to have the language capability to effectively communicate in the various local languages - with or without interpreters. Accepting that interpreters would be essential and available for all the language combinations with English, the issue that arises is the reduction in the quality of communications that results.

Experience has shown - as in the Earth Satellit Corp. contract for reconnaissance surveys of several project locations for the Mali Livestock Sector - that some U.S. technicians who are faced with severe climatic and/or environmental conditions and continuous change of living location tend to drastically curb the amount of time in the field and depend more heavily upon technological aids, or abbreviated statistical models to accomplish the defined objectives. The sensitivity of Malians to interviews by foreign specialists who have not established an acceptance by each community with whom they will have contact is such that reliability in information obtained under such conditions is severely impaired.

In view of the above the only feasible course of implementation is to use the Malian staff. This course of action may result, depending on the skill of the U.S. contractors interacting with the Malians, on reductions in time required to accomplish certain phases of the project. Thus, this project has been designed to be flexible to take advantage of any increased Malian personnel productivity. Any potential economy, such as the need for only two months to perform Phase I as compared to the three months as projected, would result in shortening the life of the project accordingly.

IV. IMPLEMENTATION ARRANGEMENTS

A. Analysis of Recipient and AID Administrative Arrangements

The description of the Malian administrative agencies and the GOM administrative structure for project implementation was provided in Section 2C preceding, page 21. The number of and time phasing for the various GOM personnel involved are provided in Annex G page.47

The Ministry of Rural Development has already developed a precedent in a coordinated effort involving the same agencies in the planning and preparation of the PMS/PPT for the Mali Livestock Sector project. Processing is already well underway in that project for the designation of a Project Director and for the selection and centralized housing of the administrative staff required for that project. The administrative structure and experience gained in this joint agency implementation of the Livestock Sector project will have established the precedent for the administration of the Small Ruminants Project. It is further conceivable and very desirable that the GOM might elect to use the same structure for implementation of the Small Ruminants Project.

The source of supply for the project supervisors as described in the Manpower chart on page 47 is not expected to create an administrative problem as each of these agencies has been training increasing numbers of leadership personnel through involvement in on-going projects such as the Livestock Sector Project. The supply of the field and planning staff of 21 individuals for the period of maximum manpower demand for the field survey will come largely from the Livestock Service. This number will be approximately one staff member from each of the administrative "Cercles" where ruminants are most numerous. These men know these areas and are fluent in the local languages.

A recent unpublished survey by the IBRD of manpower utilization of the Livestock Service in the field (related to the proposed IBRD project for support of a school for veterinary nurses) revealed that present staff numbers were more than adequate for the services required by livestock and small ruminant producers and that improvement in means and funds for transport for these personnel could increase their efficiency to such a degree that a reasonable number of these people could be assigned to other duties.

Both the GOM and AID consider that this fortifies their previous assumption that providing two wheeled vehicles for the staff required for the Small Ruminant project and funds for their operation will relieve other vehicles and funds which were used by these personnel to the remaining staff which will provide opportunity for sufficient increase in efficiency to meet Livestock Service field requirements.

In regards to the source of US consultants, the most desirable option would be that the consultants be provided by the prime contractor for Mali Livestock Sector Project 688-12-130-203. Whether this would be administratively feasible would depend upon whether a contractor had been selected for the cited Sector project by the time the Small Ruminants Project would come on stream. If the relative time phasing is such that a contractor for the Sector project has been selected prior to the Ruminant project coming on stream, it is proposed that sole source contractor selection be approved to permit the above option.

In the event that the Small Ruminant Project comes on stream prior to the selection of a prime contractor for the Sector project, it is proposed that the US personnel be provided through AID/W direct contracting. Such a procedure would introduce opportunity for increased economy due to elimination of the significant overhead fees of contractor agencies. In the

event that this consultant source is selected, it is proposed that one individual be assigned team leader responsibility to work with the GOM Project Director and the AID Project Manager to coordinate and integrate the US Adviser efforts in support of the Small Ruminant project operations and to coordinate this project's activities with other project activities in the Livestock sector.

In the event the latter option will be necessary, the AID/Mali responsibility will be increased to provide additional project management support to the GOM but the extent of this increase could be relatively minor if the team leader is experienced and capable in project administration. Local capability is considered adequate even for the possible alternative of a team leader strong in technical background but less than fully capable in management.

The GOM, through its coordinating agency OMBEVI, recognizes and accepts its critical role as responsible party for project management. Further, OMBEVI has already established a precedent in the Mali Livestock Development project that it expects the contractor personnel, where such is provided, US consultants and the Project Management staff to work through their structure for operations. It is clear that they not only accept their responsibility but have pride in this role and have demonstrated commendable efforts to increase their management capability.

The Project Manager and his staff will have an important and continuous monitoring role but it is largely a role of providing management advisory support with little and continually decreasing project operational support.

B. Implementation Plan

The logical framework is provided in Annex E and the PPT/

Network chart is provided in Annex I . Due to the relatively simple nature of this project and to collaborative effort in planning the project, there are no problems of significance anticipated to be encountered in negotiations and reaching agreement on details of the implementing plan.

In regards to monitoring, there is already a precedent under the Livestock Sector and Development Projects where the AID Project Manager and the Director General of OMBEVI have routinely scheduled weekly staff meetings to discuss project issues and for which an agenda is prepared several days in advance. This procedure based on routine direct contact with the GOM Project Director staff and with policy discussion and resolution with the GOM Project Coordinator for the livestock sector will apply equally to the Small Ruminants project.

The evaluation concept has already been accepted by the GOM and they have participated with great seriousness in an evaluation of the Livestock Development Project. GOM responsible participation in evaluation can be assured.

Logistic support by the GOM is greatly reduced in this project as most of this support is provided directly through the project. GOM logistic support will consist of two landrovers in addition to office space.

C. Evaluation Arrangements for the Project

Routine evaluation is planned for this project on the basis of established AID procedures already utilized and agreed to by the GOM. Baseline data on statistics and on technology already exists in published form and will be reported in Phase I of the project. The nature of the project establishes that collection of data to measure progress will be forthcoming as periodic outputs. Periodic evaluation on a basis less extensive than the

basic AID procedure for annual evaluation is planned for at the end of the Phase I and Phase II.

D. Conditions, Covenants and Negotiating Status

This project is proposed as an amendment to the Mali Livestock Sector Project 688-12-130-200. There are no conditions precedent required prior to disbursement for this project other than signature by the authorized party of the host government.

Annex A

SMALL RUMINANTS

TABLE I

SUMMARY COST ESTIMATE AND FINANCIAL PLAN
BY SOURCE OF FUNDING

\$ 000

	<u>AID (Grant)</u>		<u>GOM</u>		<u>TOTAL</u>
	<u>FX</u>	<u>LC</u>	<u>FX</u>	<u>LC</u>	
<hr/>					
<u>Personnel</u>					
U.S. Personnel (24)	120				120
GOM Personnel (711 MM at \$200)				156	156
Participant Training (1-Project Design)	6				6
<u>Vehicles</u>					
Vehicles - AID					
2 cars or small pick-ups (French or Japanese)	12				12
31 Mobylettes (200,000MF/\$435)	13.5				13.5
Vehicles - GOM					
(Value in kind contribution)				24	24
<u>Other Costs</u>					
Per diem, GOM field personnel (17775 M/D at \$3.12)		55.4			55.4
Fuel & Maintenance (Project and GOM vehicles)		57.5			57.5
Laboratory supplies	5	5			10
Miscellaneous supplies (Questionnaires, Computer Time, Field and Research Supplies for pilot projects)	18	18			36
Local Air Fares		3			3
Part time local employees		9			9
<hr/>					
Sub-Total	174.5	147.9		180	502.4
Inflation factor 12%	21	17.6		22	60.6
Contingency 10%	17	15		18	50
<hr/>					
TOTAL	212.5	180.5		220	613
TOTAL U.S.	<u>393</u>				
<hr/>					

SMALL RUMINANTS

A. US Source Funding by Project Year

	Project Year I	Project Year II	Project Year III	TOTAL
<hr/>				
<u>Personnel</u>				
US	60	50	10	120
Participant Training	6	-	-	6
<u>Vehicles</u>				
Vehicle cost	25.5	-	-	25.5
<u>Other Costs</u>				
Per Diem	23.1	22.2	10.1	55.4
Vehicle Operating Costs	23.6	25.2	8.7	57.5
Laboratory Supplies	10.0	-	-	10.0
Miscellaneous Supplies	15.0	21.0	-	36.0
Local Air Fares	1.0	1.0	1.0	3.0
Part Time Local Employees	3.0	3.0	3.0	9.0
Sub-Total	167.2	122.4	32.8	322.4
Inflation factors 12%	20.0	14.7	3.9	38.6
Contingency 10%	16.7	12.2	3.3	32.2
TOTAL	203.9	149.3	40.0	393.2
<hr/>				

B. GOM Source Funding by Project Year

	Project Year I	Project Year II	Project Year III	TOTAL
<hr/>				
<u>Personnel</u>				
GOM - Supervisors 183 MM/\$250	18.75	18.6	9.0	45.75
Field & Planning Staff 528 MM/\$210	45.36	50.4	15.12	110.88
TOTAL	64.11	68.4	24.12	156.63
\$156.63 ÷ 711 MM = 220.29				
<hr/>				

Annex C

SMALL RUMINANTS

VEHICLE DETAIL

\$000

	USAID		GRM	TOTAL
	FX	LC	LC	
2 Vehicles (cars or pick-up \$6,000 ea)	12			12
31 Mobylettes (31 GRM staff to be assigned to the project 200,000 MF each or \$435)	13.5			13.5
Mobylettes operating expense				
- fuel 4 liters/D x 25 MD 180 MF/liter = 18,000 MF/MM x 711 MM + 460 MF/\$1			27.8	27.8
- Repairs (25% of cost over 3 years)			3.4	3.4
Vehicles (AID) Operating Expense 2 vehicles x 10 liters/D x 30 D x 180 MF/liter x 33 MM + 460 MF/\$US 1			7.8	7.8
Vehicles (GRM) Landrovers - 2 2 vehicles x 10 liters/D x 25 MD x 180 MF/liter x 33 MM + 460 MF/\$US 1			24	24
Vehicles - Repairs (25% cost over 3 years - \$50,000)			6.5	6.5
			12.0	12.0
TOTAL	25.5	57.5	24	107.0
Less 50% sale value of Mobylettes (Proposed for consideration is sale of Mobylettes to employees at half price and payment of mileage allowance for official use only to cover fuel & repairs. Assume fuel & repair cost as budgeted as equal to mileage allowance)	6.7			6.7
	18.8	57.5	24	100.3

VEHICLE DETAIL (cont'd)

	<u>PHASE I</u>	<u>PHASE II</u>		<u>PHASE III</u>	
	<u>PY 1</u>	<u>PY 1</u>	<u>PY 2</u>	<u>A</u> <u>PY 2</u>	<u>B</u> <u>PY 3</u>
2 Vehicles	12				
31 Mobylettes	13.5				
Operating Expenses					
57.500 + 711 MM = \$80.872					
80.872 x 21	1.7				
80.872 x 270		21.9			
80.872 x 252			20.4		
80.872 x 60				4.8	
80.872 x 108					8.7
Total by Phase	27.2	42.3		13.5	
Total by PY		49.1		25.2	8.7
TOTAL		\$83.0 - 25.5 (vehicles) = 57.5 (operating)			

Annex D

SMALL RUMINANTS

PER DIEM DETAIL

\$ 000

	PHASE I	PHASE II		PHASE III	
	PY 1	PY 1	PY 2	A PY 2	B PY 3
Supervisors					
21 MM x 25 days x 10% (time on per diem) x \$8/day	0.42				
54 MM x 25 days x 70% x \$8/day		7.56			
54 MM x 25 days x 70% x \$8/day			7.56		
18 MM x 25 days x 10% x \$8/day				0.36	
36 MM x 25 days x 70% x \$8/day					5.04
Field & Planning Staff					
216 MM x 25 days x 70% x \$4		15.12			
198 MM x 25 days x 70% x \$4			13.86		
42 MM x 25 days x 10% x \$4				0.42	
72 MM x 25 days x 70% x \$4					5.04
TOTAL	0.42	22.68	21.42	0.78	10.08
Total by Phase	0.42	44.1		10.86	
Total by PY	23.1		22.2		10.08

Total Per Diem 55.38

Average Per Diem 55.38 ÷ 711 MM ÷ 25 days = \$3.12

Annex E

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Project Title: SMALL RUMINANTS STUDY

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Program Goal:	Measures of Goal Achievement:		
Implementation of projects to increase the profitable production of small ruminants with due regard for protection of Mali's valuable range resources.	1. Identifiable increase in GOM and international donor resources allocated to small ruminant projects.	1. GOM and International Agency project documents	1. Funds from GOM and international donors will be available to finance the viable projects identified. 2. Projects designed and small ruminant study will be of sufficient quality to be useful. 3. Demand for sheep and goat products will continue to be no less than the level of the 1974-76 base period.
Project Purpose:	Conditions that will indicate purpose has been achieved: End of Project Status		
To develop a list of projects designed to increase small ruminant production, herder welfare and gross national product for consideration for financing by foreign donors as well as the Government of Mali.	1. Study published and available in adequate number for distribution to all potential international donors and to GOM agencies.	1. Copies of report available from GOM	That the information gathered in Phases I & II will lead to identifiable projects in the small ruminant subsector.

**PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK (cont'd)**

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Project Outputs:	Magnitude of Outputs necessary and sufficient to achieve purpose:		
1. A comprehensive statement of the survey and analysis of all published research results - Malian and external - on small ruminant production and marketing.	1. Report including summary and detail statements on status of research information on each major aspect of small ruminant production and marketing and including a complete of references on all materials in the subject and accompanied by, at the minimum, single copies of all publications available and considered of value to Mali.	1. Availability from the GOM of the individual reports described by the end of the project.	1. That the GOM will continue to maintain its interest in the small ruminant subsector. 2. That the GOM will provide the required both in quantity and quality to produce outputs of the quality expected. 3. That USAID will provide the quality of technicians required to meet the professional and training standards required to produce the quality of outputs expected.
2. A comprehensive statement on the technical aspects of small ruminant production in Mali.			
3. A comprehensive statement on the social factors effecting small ruminant production and marketing in Mali.	2. Report including characteristics of local small ruminant production, constraints, production and research opportunities, potentials for production in five and ten years.		14. That other African governments and donor agencies will make available research and program documents which have been published on the subject of small ruminants.
4. A comprehensive statement on the economic aspects of small ruminant production and marketing in Mali.	3. Report including present degree of producer profitability under various management systems, nature of the marketing system, conventional domestic and foreign demand, special market		15. That Mali farmers and merchants will voluntarily provide accurate information to field survey teams.
5. A comprehensive statement on the infrastructure and resources of the Malian Government in			

**PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK (cont'd)**

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
support of small ruminants production and marketing.	opportunities, the role of credit, and means to increase efficiency in the marketing system.		
6. An evaluation and analysis report on the pilot-tested proposed projects.	14. Report describing the present role of small ruminants to producers, the opportunity for increasing income for non adult males, and the opportunity for the poor to augment their incomes.		
7. A comprehensive list of potential projects in the small ruminant sector.	15. Report describing the specific actions and policies of the government concerning the small ruminant subsector, the nature and effect of taxes and marketing policies and opportunities to foster production through government actions.		
	16. A report describing the objectives of the projects pilot tested and the outputs expected, the work plans for the test projects, the inputs required and the implementation networks, the reactions positive and negative to the programs and analysis of the causes and		

**PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK (cont'd)**

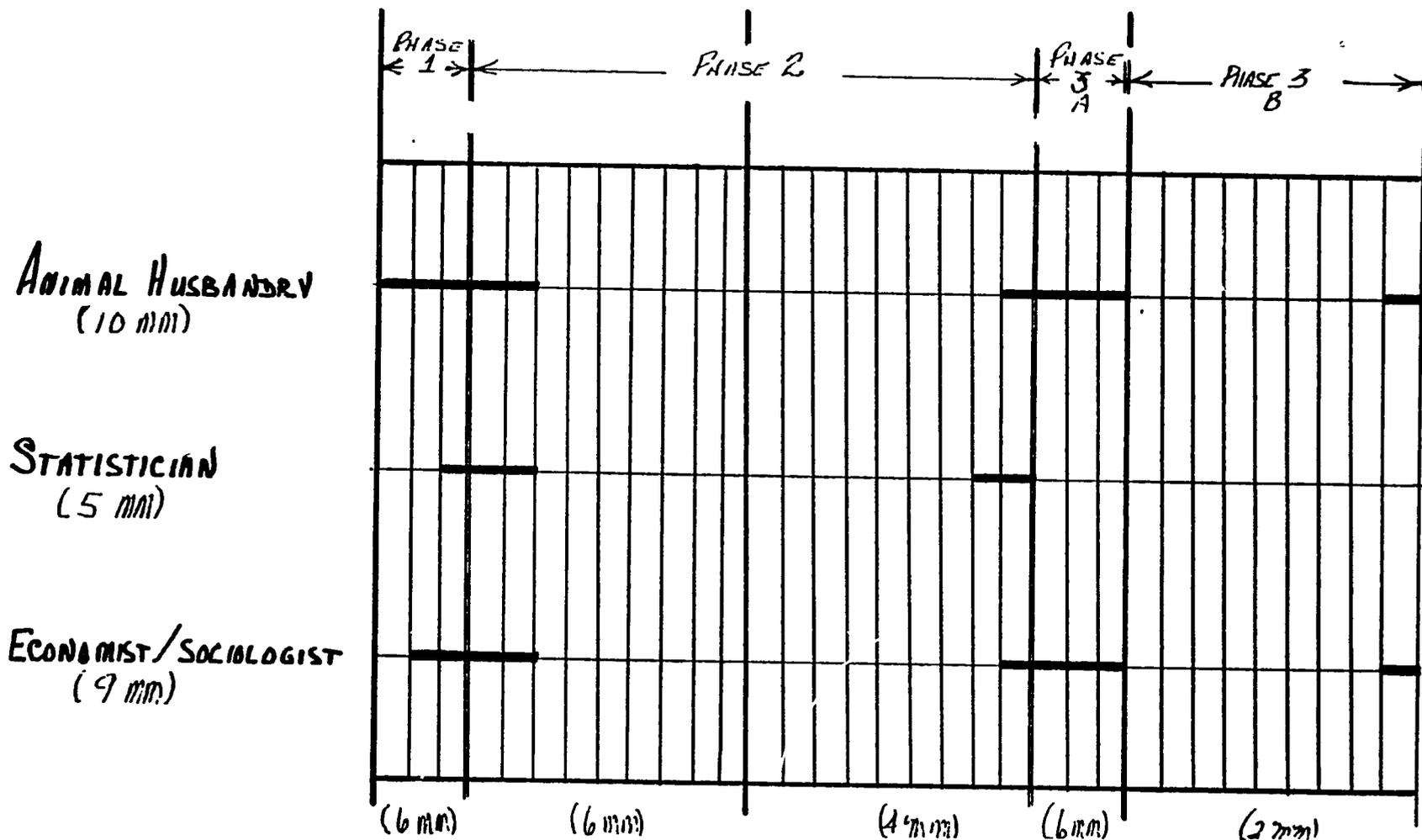
NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
	constraints and recommendations for modification to improve effectiveness of the projects.		
	17. A comprehensive list of potential projects in the small ruminant sector with project descriptions, estimated duration, and input detail in degree sufficient to be suitable for consideration by foreign donors as well as for the GOM.		
Inputs: Activities and types of Resources:	Level of Effort/Expenditure for Each Activity:		
1. Malian livestock, veterinary, research, economic and planning personnel	1. 711 man months over three years.	1. Program documentation.	1. GOM can commence some of the design and commodity support activities prior to the arrival of the American technicians.
2. American animal husbandry, statistics and economist/project design specialists.	2. 24 man months over three year period.	2. Field observation of project activities.	2. GOM will appoint an experienced and capable Project Director.
3. Participant Training.	3. 1 Malian for 6 months in Project Planning & Project	3. Program Documentation.	3. GOM agencies will provide capable personnel and will

**PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK (cont'd)**

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
	Design.		cooperatively join in the team effort required.
4. Vehicles and funds for their operation and maintenance.	14. \$83,000 in grants and \$24,000 in kind support.	14. Project Director's periodic reports.	
5. Per diem for Malian staff and local air fares.	15. \$55,500	15. Same	
6. Laboratory and miscellaneous supplies.	16. \$46,000	16. Program Documentation.	
7. Local Air Fares.	17. \$3,000	17. Project Director's periodic reports.	
8. Part time local employees.	18. \$9,000	18. Same	

ANNEX F SMALL RUMINANTS CONSULTANT SCHEDULE

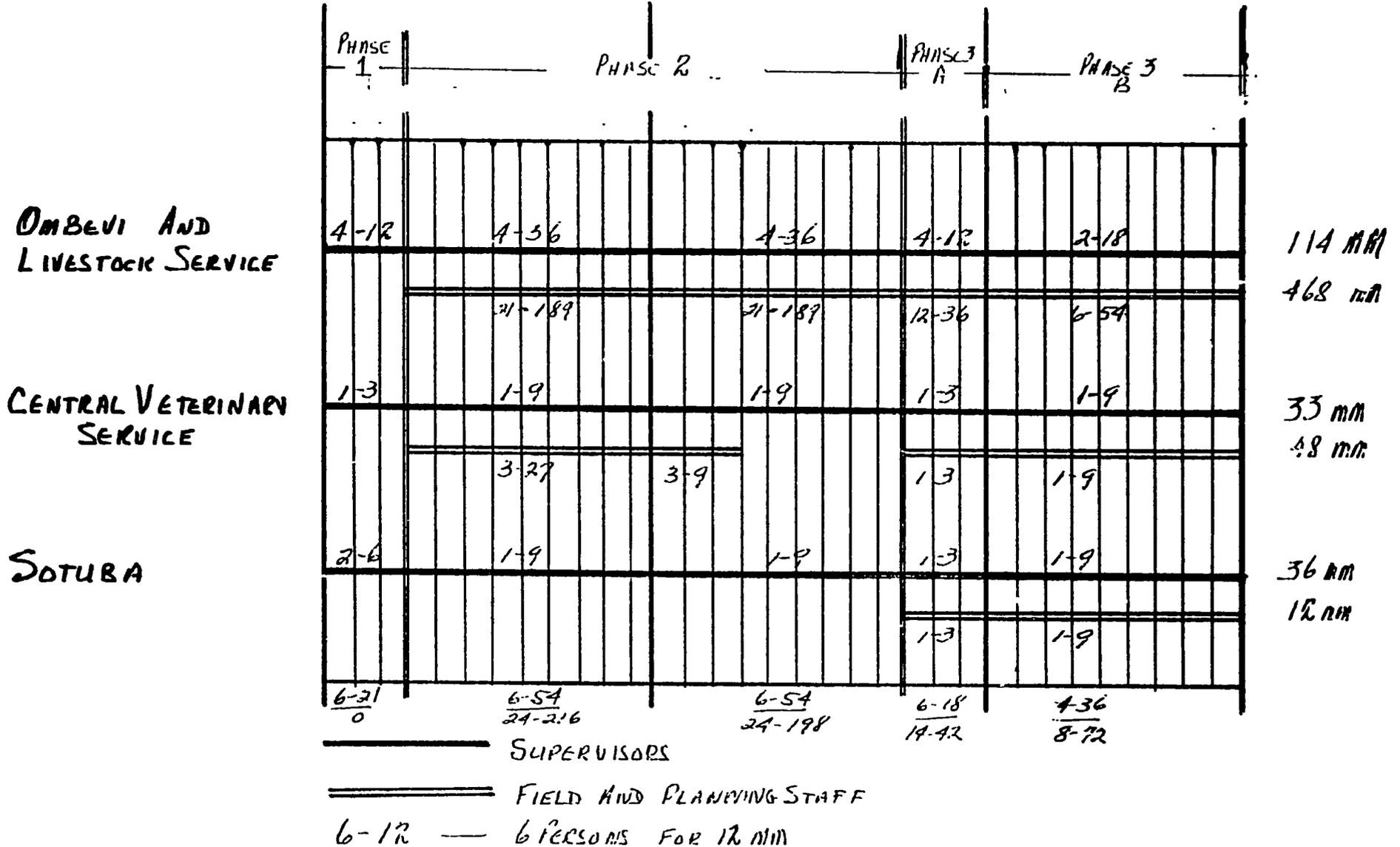
PROJECT YEAR 1 PROJECT YEAR 2 PROJECT YEAR 3



ANNEX G SMALL RUMINANTS

GRM STAFF SCHEDULE

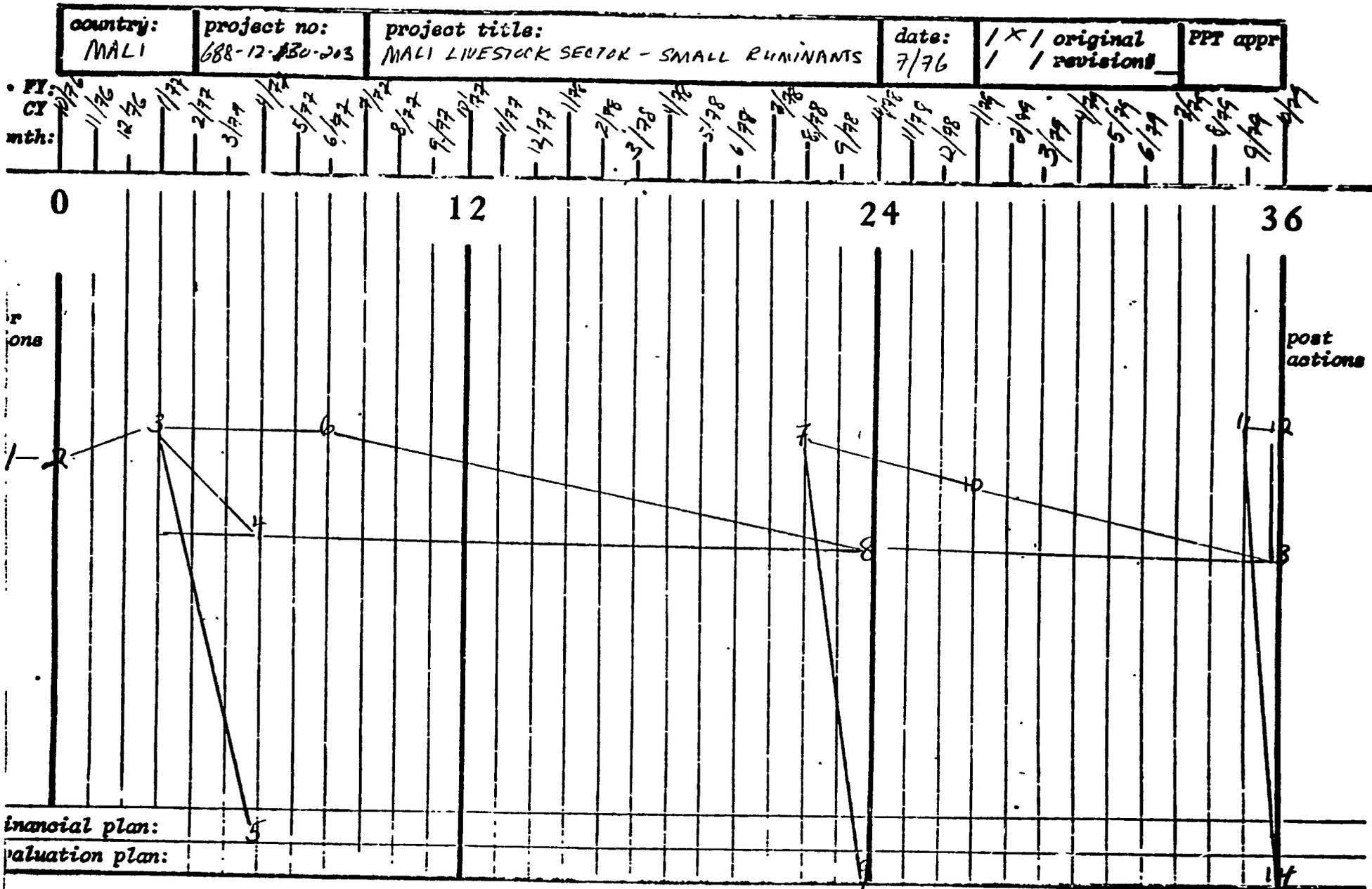
PROJECT YEAR 1 PROJECT YEAR 2 PROJECT YEAR 3



A N N E X . H .

Country:	Project No.:	Project Title:	Date:	original	approved:
MALI	688-12-130-203	MALI LIVESTOCK SECTOR - SMALL RUMINANTS	7/76	/ / revision No.	
<u>CPI NARRATIVE:</u>					
1.	PP approved	8/76	11.	Consultant services commence (3rd visit)	9/79
2.	ProAg signed & PIO/T issued	10/76	12.	Consultant services end (3rd visit)	10/79
3.	Consultant services commence (1st visit)	1/77	13.	Phase III complete (Test of proposed projects)	10/79
4.	Phase I complete (Preliminary data investigation)	4/77	14.	Final Evaluation	10/79
5.	Evaluation of Phase I	4/77			
6.	Consultant services end (1st visit)	6/77			
7.	Consultant services commence (2nd visit)	8/78			
8.	Phase II complete (Analysis of Small Ruminant Sector)	10/78			
9.	Evaluation of Phase II	10/78			
10.	Consultant services end (2nd visit - Phase 3a complete - Identification of development opportunities)	1/79			

ANNEX I.



007 26 1976

ACTION MEMORANDUM FOR THE ASSISTANT ADMINISTRATOR FOR AFRICA

FROM : AFR/DR, John L. Withers *JLW*

SUBJECT: Mali Livestock Sector Grant, Small Ruminants Study
Amendment (688-12-130-203)

Problem: To approve the subject amendment.

Discussion: The PP for the Small Ruminants Study Amendment was reviewed in the Transition Quarter by the project committee which determined that the project, as designed for \$393,000, should go forward for authorization and implementation in FY 1977. Given the absence of major issues requiring resolution, a formal executive level review (ECPR) was not deemed necessary. The recommendations for your signature below request approval for life-of-project funding and necessary Code 935 procurement.

The Small Ruminants Study is essentially a comprehensive analysis of factors relative to sheep and goat production throughout Mali. The project is to be implemented in three phases and will have a probable duration of 27 months. Phase I (approximately three months) will consist of the collection, collation and analysis of all materials known to exist which relate to small ruminant production and marketing in the country, including identification of critical gaps in information. A methodology and work plan will be formulated to collect and process missing data through intensive field study in the second phase of the project.

Phase II of the project (approximately 18 months) is the detailed field work component which includes technical, economic, social, environmental and Government of Mali human resources analyses in relation to small ruminant production. Upon conclusion, a comprehensive synthesis will be prepared containing recommendations and options to the Government of Mali on future small ruminant production and marketing initiatives in the context of total livestock sector programming.

Phase III of the study (approximately 12 months) will include, in sub-phase A, three months of effort to synthesize all possible program opportunities into a "shelf" of projects for consideration by the Government. The projects will be designed to increase small ruminant production in a manner that will optimize economic returns to the producer, on a sustained basis and in a manner consistent with sound ecological, technical and social considerations. In sub-phase B (12 months) certain pilot activities will be conducted to test innovative techniques in the area of production,

processing, and marketing in the small ruminant sub-sector. Given limited Sahelian experience, tests will be designed to assess the suitability of new techniques and technology to Malian conditions, to refine cost-benefit ratios, and to ascertain the most effective means to obtain sociological acceptance. The pilot projects will be carefully evaluated and analyzed to refine a comprehensive list of potential projects in the small ruminant sector which will be designed in sufficient detail for formal consideration for financing by foreign donors as well as the Government of Mali.

The project committee raised and resolved the following discussion points:

(a) Environmental implications: Some concern was expressed in relation to potential environmental effects of increased small ruminant production. It was, however, considered unnecessary to expand the present study to cover an environmental impact analysis since another project, Mali Land Use Inventory, will provide general information on the environment which can be related to small ruminant production factors. In the evaluation scheduled for the end of Phase II, however, potential environmental effects will be assessed prior to obligation of funds for test projects in Phase III.

(b) Project implementation agents: The agent for the GOM is the Mali Livestock Board (OMBEVI), which is also in charge of AID's \$7.0 and \$3.8 million livestock projects. It was considered that the addition of this project would not greatly strain OMBEVI's management capacity, while at the same time it would neatly complete the study of all facets of livestock production. The agent for the U.S. was left deliberately flexible. It may be appropriate, if the prime contractor of Mali Livestock II is capable and interested in providing the technical assistance required, to have him undertake the additional work of the small ruminants study. Mission administered personal service contracts with individuals may also be appropriate. It is noted, however, that if personal services contracts are not used, it will be necessary to utilize competitive procedures for contractor selection unless a waiver for sole source procurement is justified and granted in accordance with AIDPR Section 7-3.101-50.

(c) Test projects: It was strongly felt by the project committee that funds for test projects programmed for Phase III should not be obligated prior to the completion of the evaluation scheduled at the end of Phase II and until after the test projects are designed. Otherwise, there could be a problem with Section 611 (a) of the Foreign Assistance Act. The grant agreement amendment will contain such a provision.

(d) Vehicle waiver: The PP calls for the purchase of two Landrovers and 31 Mobylettes in Code 935 countries to be used to perform the survey. The Landrovers will be used in conjunction with GOM Landrovers in the same project and are the preferred vehicle for the area from the point of view of maintenance, spare parts, dependability, etc. U.S. vehicles cannot be properly used in Mali because of maintenance problems resulting from the unavailability of spare and repair parts and the absence of trained mechanics. The 31 Mobylettes are a standard type of light two-wheeled motorized vehicle common in Mali (but manufactured in Europe) with readily available maintenance and spare parts. No equivalent vehicle to the mobylette is available in the U.S.

Recommendation:

(1) That you approve the attached Small Ruminants Amendment to the Mali Livestock Sector Grant and authorize for obligation in FY 1977 the amount of \$204,000 as the first tranche of this three year project valued at \$393,000 and approve the obligations planned for FY 1978 and FY 1979 subject to the availability of funds.

APPROVED [Signature]
DISAPPROVED _____
DATE 10/27/76

(2) That you approve the procurement of 2 Landrovers and 31 Mobylettes from Code 935 countries as described and justified in paragraph (d) above, for a total cost of up to \$28,000, and certify for the reasons stated above, that in order to carry out the purposes of the Foreign Assistance Act, it is necessary to waive the requirement of Section 636(i) that motor vehicles procured for the project be manufactured in the U.S. and that exclusion of the procurement from sources requested above would seriously impede attainment of U.S. foreign policy objectives and the objectives of the Foreign Assistance Program.

APPROVED: [Signature]
DISAPPROVED _____
DATE 10/27/76

Clearances:

AFR/DR:JKelly [Signature]
AFR/SFWA:IRosenthal [Signature]
AFR/GC:STisa (draft) [Signature]
PPC/DPRE:EHogan [Signature]
AFR/DP:CWard _____
SER/COM:JShollenberger [Signature]
AFR/DR:JHeard [Signature]
DAA/AFR:WHNorth [Signature]

AFR/DR/SFWAP:JGrattan:10/8/76
[Signature]