PD-AA6-100

632-0215

UNCLASSIFIED

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LESOTHO

LAND CONSERVATION AND RANGE DEVELOPMENT

(632-0215)

UNCLASSIFIED

ACTION MEMORANDUM FOR THE ASSISTANT ADMINISTRATOR FOR AFRICA

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

SUBJECT: Lesotho - Land Conservation and Range Development Project (632-0215)

Problem: Your signature is requested for the attached Action Memorandum to the Administrator recommending a $12,000,000 grant from the Section 103, Agriculture, Rural Development and Nutrition appropriation, to the Government of Lesotho (GOL) for the Land Conservation and Range Development Project (632-0215). It is planned that a total of $2,090,000 will be obligated in FY 1980.

Discussion: The goal of the Lesotho Land Conservation and Range Development Project is to increase both the productivity and incomes of the rural poor engaged in crop and livestock production. The purpose of the project is to assist the GOL to conserve and develop national farm land and rangeland resources through the design and implementation of conservation measures and land management practices, and by strengthening the institutional capability of the Ministry of Agriculture (MOA). The GOL's Third Development Plan (1980/81 - 1984/85) has given the highest priority to the Agricultural Sector, and has emphasized investment in soil and water conservation activities. Assistance to the agricultural sector is the cornerstone of A.I.D.'s 1982 Country Development Strategy Statement, wherein one of the three strategic elements is the development of the physical infrastructure for rural production and conservation of land based natural resources.

Since this project exceeds the $10,000,000 level which the Assistant Administrator is authorized to approve, and extends for a period of seven-years, it is being submitted to the Administrator for authorization in accordance with Handbook 3, Chapter 8.

Recommendation: That you sign the attached Action Memorandum for the Administrator recommending authorization of the project.

Attachments:

Action Memorandum for the Administrator
Project Authorization

Clearances:

DAA/AFR, W.H.North
AAA/AFR/DR, J.W.Koehring (JWK)
AFR/DR, N.Cohen (JWK for)
AFR/SA, M.Dagata (draft)
AFR/SA, D.Fredrick (draft)
AFR/DR/SAP, W.Wolff
AAA/AFR/DP, R.Stacy (draft)
AFR/DP, J.Hicks (draft)
AFR/DR/EMR, W.Waffle (draft)
GC/AFR, N.Frame
AFR/DR/ARD, H.Jones (draft)
AFR/DR/ARD, B.Whittle (draft)
AFR/DR, R.Haftorson (draft)
COM/ALI, P.Pagan (draft)
AFR/DR/SDP, J.Hester (draft)
PPC/PDPR/PDI, L.Hamilton (draft)

Drafted by:AFR/DR/SA:TPutscher:fn:8/20/80:X28818

ACTING
ACTION MEMORANDUM FOR THE/ADMINISTRATOR

22 AUG 1980

THRU: ES

THRU: AA/PPC, Alexander Shakow

FROM: AA/AFR, Goler T. Butcher

SUBJECT: Project Authorization - Lesotho Land Conservation and Range Development (632-0215)

Problem: Your approval is required for a grant of $1[illegible],000,000 from the Section 103, Agriculture, Rural Development, and Nutrition appropriation, to the Government of Lesotho (GOL) for the Lesotho Land Conservation and Range Development Project (632-0215). It is planned that a total of $2,090,000 will be obligated in FY 1980.

Discussion: The goal of Lesotho Land Conservation and Range Development Project is to increase both the productivity and incomes of the rural poor engaged in crop and livestock production. The purpose of the project is to strengthen the capability of the Ministry of Agriculture to plan and implement programs which will increase the productivity of Lesotho's crop and rangeland, while conserving the land base through land development and appropriate conservation and land management practices.

Agriculture has been given the highest priority during the GOL's five-year plan (1980/81 - 1984/85) with a major emphasis on investment in soil and water conservation.

Assistance to the agricultural sector is the cornerstone of A.I.D.'s 1982 Country Development Strategy Statement, wherein one of the three strategic elements is the development, and improved management, of the physical infrastructure for rural production and conservation of land-based natural resources.

AID assistance to the GOL in conservation programs began with the Thaba Bosui Rural Development Project (632-0031) carried out from 1973 to 1979, and continues with the ongoing Land and Water Resource Development Project (632-0048), which began in 1975 and will be completed in 1982. The Land Conservation and Range Development Project is seen as a logical outgrowth of these earlier projects. The principal achievements of the two projects are the establishment of an institutional framework to conduct conservation programs, and the development of guidelines, procedures, and practices on which an expanded conservation effort can be based. Operationally, the projects provided valuable experience in conservation planning, engineering design and building of conservation structures, and participation of farmers in planning and applying conservation practices. External evaluations were conducted on both projects in April 1980, and the conclusions were important considerations in the design of this project. Special consideration was placed on the recommendation resulting from the evaluations that the conservation cropping system, introduced under the Thaba Bosiu Project, be modified and operationally expanded through on-farm planning

in order to achieve the objective of increased agricultural production and income. The institutional capability established, technical and managerial experience developed, and implementation methodology tested in the Thaba Bosiu and Land and water Resource Development Project form the foundation for the conservation activities of this project. By the end of the project, it is expected that (1) the MOA Conservation Division will be fully staffed, and the Range Management Division will be 75 percent staffed, by trained Basotho personnel, (2) cooperation and coordination among divisions, particularly at the technical level, within the MOA will be significantly strengthened and institutionalized, (3) a system of developing and implementing cropping and conservation plans with farmer involvement will be established, and (4) technical procedures for development and management of rangelands will be prepared and demonstrated.

The project beneficiaries will be the approximately 14,000 rural farmers and their famililies who participate in on-farm conservation programs and grazing associations. In addition, it is estimated that 50,000 additional individuals will be exposed to these concepts through village meetings. All the people of Lesotho will benefit from the preservation of soil, water and land resources, the improved capacity to feed themselves through increased agricultural production, and the enhancement of rural life.

The project extends over a period of seven years. Although AIDTO Cicular A24 (AID Handbook 3, Appendex 3C) states that a project should normally not exceed six years, a seven year project is justified in this situation because of the long-range nature of conservation and rangeland management activities, as well as the necessity to train key personnel in order to strengthen the Ministry of Agriculture. A more detailed justification for a seven-year life-of-project is set forth in Annex VII of the Project Paper. Of the $12,000,000 life-of-project funding, $9.1 million will finance foreign exchange costs, and $2.9 million will finance local project costs. The following table illustrates the specific areas in which A.I.D. funding is required:

	($000)	
	FY 1980	Life-Of-Project
Technical Assistance	$ 1,931.8	$ 5,416.0
Training		2,761.5
Construction	158.2	1,034.6
Commodities		1,371.1
Budget Support		1,072.2
Other		344.6
Total	$ 2,090.0	$ 12,000.0

The GOL will contribute $4,211,000 to this project, or 26 percent of the total project costs. The host country cost-sharing requirement of Section 110(a) of the Foreign Assistance Act of 1961, as amended ("Act"), is thereby satisfied. The GOL's contribution will cover personnel support costs, commodities, such as fuel and maintenance, and the cost of the labor-intensive construction of the

conservation structures. Significantly, this is the first A.I.D. supported project in Lesotho wherein the Government of Lesotho has contributed more than 25 percent of project costs. This emphasizes their commitment to making maximum use of their limited land base and, to the extent possible, to limiting land deterioration.

The project has been thoroughly analyzed concerning its socio-economic feasibility, and the analysis concludes that public acceptance of the project activities is expected to be high, as the beneficiaries will be directly involved in the planning, as well as the implementation, of activities. The project consists of two components: land conservation and range development. The land conservation component involves the preparation and implementation of on-farm plans by MOA planning teams, who will develop, explain, and demonstrate appropriate conservation techniques and improved crop and livestock production practices to project beneficiaries. Follow-up contacts will reinforce and/or correct any techniques or production practices to assure there is full understanding and effective implementation. Similarly, the staff of the range management component will work directly with farmers to help them organize Grazing Associations and to apply sound management practices to both rangeland and livestock production. The anticipated strengthening of the agriculture sector will gradually enable an increasing number of farmers to support themselves through increased production and higher incomes. In addition, it is expected that this project will help enhance Lesotho's ability and capacity to increase agricultural production for both on-farm consumption and marketable surpluses.

In order to achieve its purpose, the project will have trained approximately 16 persons at the degree level in the U.S., 20 persons at the diploma or certificate level in Africa, and about 150 persons in short-term technical subjects. Approximately 2,440 on-farm cropping and conservation plans will have been carried out on 6,100 hectares. Overall, conservation plans will have been prepared for 50,000 hectares, and an additional 150,000 hectares will have had soil surveys and mapping. About 64,000 hectares will have been protected by various conservation measures, partly with 7,800 person months of temporary employment generated by labor intensive construction opportunities. A range management area will have been selected, established, and developed based on sound management and operation principles for use of rangeland and related natural resources. Development and improvement of rangeland will have been facilitated by review, analysis and recommendations for modifications of policies and regulations affecting rangeland use. Inputs required to achieve the outputs include technical assistance, particpant and in-country training, commodities, budgetary support, construction of facilities, and other costs as described in Section II B of the Project Paper.

The project review and analyses determined that the project is technically sound and ready for implementation. A detailed financial analysis has determined that the project's cost estimates appear reasonably firm for all aspects of the project except for the construction of conservation structures, all of which have not yet been identified. To assure that Section 611(a) of the Act is satisfied, we have added a condition precedent to obligation for each year succeeding the initial obligation, which requires that the cooperating country will present to A.I.D.,

in form and substance satisfactory to A.I.D., reasonable cost estimates for the conservation construction activities to be performed during that year.

The Initial Environmental Examination (IEE) indicates that the project will have no significant adverse impact on the environment. The project will have a positive affect on land use, water quality, and cultural and socio-economic aspects, and I have, therefore, signed the negative determination, as no future environmental analyses are necessary (See Attachment A).

In addition to the condition precedent discussed, there will be one other condition precedent to disbursement, which is set forth in the Project Authorization. There are five covenants, which are described in Section IV-F of the Project Paper and the Project Authorization.

The following waivers are required:

1. Procurement source/origin waiver from A.I.D. Geographic Code 941 (Selected Free World) to Geographic Code 935 (Special Free World) for the procurement of equipment, materials, and commodities estimated to cost $671,000, and construction materials and commodities estimated to cost $590,000.

2. Procurement source/origin waiver from A.I.D. Geographic Code 000 (United States) to Geographic Code 935 (Special Free World) for the procurement of eleven vehicles and spare parts estimated to cost $167,500. The justification for each waiver is described in Annex VII of the Project Paper.

The GOL Agency reponsible for implementing this project will be the Conservation and Range Management Divisions of the Ministry of Agriculture. The activities of the Ministry will be supported by a U.S. Technical Services contract team funded under this project.

The Project Review meeting was held on August 6, 1980, and there were no unresolved issues. An informational ECPR was held on August 12, 1980, and approval of the Project was recommended.

A Congressional Notification was submitted on August 8, 1980, and the notification period expired on August 23, 1980. The responsible AID officer in the field will be the USAID/Lesotho Mission Director, or his designee, and the AID/W backstop officer will be Mr. Thomas G. Putscher, AFR/DR/SA.

There are presently no human rights issues in Lesotho.

Recommendation: That you sign the attached Project Authorization, thereby authorizing the Grant and the requested waivers.

Attachments:

IEE
Project Authorization
Project Paper

Clearances

GC/N.Holmes PEC
PPC/PDPR:S.Klein 8/25/80
DAA/AFR:W.H.North
GC/AFR:E.Dragon EAD

Drafted by:AFR/DR/SA:TPutscher:fn:8/21/80:X28818

ATTACHMENT TO THE ACTION MEMORANDUM FOR THE ADMINISTRATOR

PID Submission Date:	3/28/79
PID Approval Date:	4/17/79
PP Submission Date:	7/22/80
PP Final Review Meeting Date	8/12/80

UNITED STATES INTERNATIONAL DEVELOPMENT COOPERATION AGENCY
AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D.C. 20523

PROJECT AUTHORIZATION

Name of Country: Lesotho

Name of Project: Land Conservation and Range Development

Number of Project: 632-0215

1. Pursuant to Section 103 of the Foreign Assistance Act of 1961, as amended (the "Act"), I hereby authorize the Land Conservation and Range Development Project for Lesotho ("Cooperating Country") involving planned obligations of not to exceed $12,000,000 in grant funds over a six-year period from date of authorization, subject to the availability of funds in accordance with the AID OYB/allotment process, to help in financing foreign exchange and local currency costs for the project. In accordance with AIDTO Circular A-24 (AID Handbook 3, Appendix 3C) and AID Handbook 3, Chapter 8, I further authorize a seven year life of project extending from FY 1980 through FY 1986.

2. The project consists of the provision of technical assistance, training, commodities, construction and budgetary support in order to help conserve and develop national farm land and rangeland resources by strengthening the Conservation and Range Management Divisions of the Ministry of Agriculture, the development and implementation of cropping and conservation plans with farmer involvement, and the preparation and demonstration of technical procedures for the development and management of the rangelands.

3. The Project Agreement, which may be negotiated and executed by the officer to whom such authority is delegated in accordance with AID regulations and Delegations of Authority, shall be subject to the following essential terms and covenants and major conditions, together with such other terms and conditions as AID may deem appropriate.

4.A. Source and Origin of Goods and Services

Except as AID may otherwise agree in writing, and except as provided in paragraph D. below, goods and services, except for ocean shipping, financed by AID under the project shall have their source and origin in the Cooperating Country or in countries included in AID Geographic Code 941. Ocean shipping financed by AID

under the project shall, except as AID may otherwise agree in writing, be financed only on flag vessels of the United States.

B. Conditions Precedent

(1) Prior to the obligation of funds for each year succeeding the initial obligation, the Cooperating Country will present to AID, in form and substance satisfactory to AID, reasonable cost estimates for the conservation construction to be performed during that year.

(2) Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement to finance each building construction activity, the Cooperating Country shall furnish in form and substance satisfactory to AID:

(a) evidence that a site adequate for the project purpose has been allocated for the particular activity; and

(b) relevant plans, specifications, schedules, and cost estimates.

C. Covenants

(1) The Cooperating Country shall covenant to provide qualified personnel to undertake project-financed training in accordance with the training schedule included as part of the amplified project description in the Project Agreement.

(2) The Cooperating Country shall covenant to provide on a timely basis all personnel required for implementation of the project.

(3) The Cooperating Country shall covenant to provide the recurrent budget support for the project in the amounts and by the dates specified in the amplified project description in the Project Agreement.

(4) The Cooperating Country shall covenant that all vehicles purchased with project funds will be used for the sole purpose of the Technical Assistance Team and their counterparts or for other appropriate related activities.

(5) The Cooperating Country shall covenant that prior to commencing development of the second range management area, it will undertake, in cooperation with AID, a review of the appropriateness of existing range land and livestock management policies and regulations.

D. Waivers

Based upon the justification contained in Annex VII of the Project Paper I hereby:

(1) Approve a source/origin waiver from AID Geographic Code 941 (Selected Free World) to Code 935 (Special Free World) to permit the procurement of equipment, materials, and commodities at an approximate cost of $671,000 and construction materials and commodities at an approximate cost of $590,000;

(2) Approve a source/origin waiver from AID Geographic Code 000 (U.S.) to Code 935 (Special Free World) to permit the procurement of eleven vehicles and spare parts at an approximate cost of $167,500;

(3) Certify that special circumstances exist to waive, and do hereby waive, the requirements of Section 636(i) of the Act; and

(4) Certify that exclusion of procurement from Free World Countries, other than the Cooperating Country and countries included in Code 941, would seriously impede attainment of U.S. foreign policy objectives and objectives of the foreign assistance program.

Date: August 28, 1980

Joseph C. Wheeler
Administrator (Acting)

Clearances:
GC:NLHolmes — date 8/4/80
AA/AFR:GTButcher — date 8/7/80
AA/PPC:AShakow — date 8/25/80

GC/AFR:NFrame:ckg:8/15/80:x23808

Project Paper

Land Conservation and Range Development

(632-0215)

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT PAPER FACESHEET

1. TRANSACTION CODE: A (A = ADD, C = CHANGE, D = DELETE)

PP

2. DOCUMENT CODE: 3

3. COUNTRY/ENTITY: LESOTHO

4. DOCUMENT REVISION NUMBER:

5. PROJECT NUMBER (7 digits): 632-0215

6. BUREAU/OFFICE: A. SYMBOL: AFR; B. CODE: 06

7. PROJECT TITLE (Maximum 40 characters): Land Conservation and Range Development

8. ESTIMATED FY OF PROJECT COMPLETION: FY 87

9. ESTIMATED DATE OF OBLIGATION: A. INITIAL FY 80; B. QUARTER 4 (Enter 1, 2, 3, or 4); C. FINAL FY 85

10. ESTIMATED COSTS ($000 OR EQUIVALENT $1 -)

A. FUNDING SOURCE	FIRST FY 81 B. FX	C. L/C	D. TOTAL	LIFE OF PROJECT E. FX	F. L/C	G. TOTAL
AID APPROPRIATED TOTAL	2,353.6	244.0	2,597.6	9,077.2	2,922.8	12,000.0
(GRANT)	(2,353.6)	(244.0)	(2,597.6)	(9,077.2)	(2,922.8)	(12,000.0)
(LOAN)	( )	( )	( )	( )	( )	( )
OTHER U.S. 1.						
OTHER U.S. 2.						
HOST	-	248.0	248.0	179.6	4,031.4	4,211.0
OTHER DONOR(S)						
TOTALS	2,353.6	492.0	2,845.6	9,256.8	6,954.2	16,211.0

11. PROPOSED BUDGET APPROPRIATED FUNDS ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE C. GRANT	D. LOAN	E. 1ST FY 80 F. GRANT	G. LOAN	H. 2ND FY 81 I. GRANT	J. LOAN	K. 3RD FY 82 L. GRANT	M. LOAN
(1) ARDN	210	090		2,090		2,250		2,200	
(2)									
(3)									
(4)									
TOTALS				2,090		2,250		2,200	

A. APPROPRIATION	N. 4TH FY 83 O. GRANT	P. LOAN	Q. 5TH FY 84 R. GRANT	S. LOAN	LIFE OF PROJECT T. GRANT	U. LOAN
(1) ARDN	2,200		2,200		12,000	
(2)						
(3)						
(4)						
TOTALS	2,200		2,200		12,000	

12. IN-DEPTH EVALUATION SCHEDULED: MM YY 10 83

13. DATA CHANGE INDICATOR. WERE CHANGES MADE IN THE PID FACESHEET DATA, BLOCKS 12, 13, 14, OR 15 OR IN PRP FACESHEET DATA, BLOCK 12? IF YES, ATTACH CHANGED PID FACESHEET.

2 (1 = NO, 2 = YES)

14. ORIGINATING OFFICE CLEARANCE

SIGNATURE: Kenneth H. Sherper

Kenneth H. Sherper

TITLE: Acting Director, USAID/Lesotho

DATE SIGNED: MM 07 DD 02 YY 80

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

AID 1330-4 (3-76)

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT IDENTIFICATION DOCUMENT FACESHEET

To Be Completed By Originating Office

1. TRANSACTION CODE: [A] A Add; C Change; D Delete

PID

2. DOCUMENT CODE: 1

3. COUNTRY/ENTITY: LESOTHO

4. DOCUMENT REVISION NUMBER: N/A

5. PROJECT NUMBER (7 digits): 632-0204

6. BUREAU/OFFICE: A. Symbol: AFR; B. Code: 06

7. PROJECT TITLE (maximum 40 characters): ACCELERATED LAND PROTECTION

8. PROPOSED NEXT DOCUMENT: A. [3] 2 - PRP, 3 - PP; B. DATE MM YY: 10 79

9. ESTIMATED FY OF AUTHORIZATION/OBLIGATION: a. INITIAL FY 80; b. FINAL FY 83

10. ESTIMATED COSTS ($000 or equivalent, $1 =)

FUNDING SOURCE	Life of Project
a. AID Appropriated	5525
b. OTHER U.S. 1	
b. OTHER U.S. 2	
c. Host Country	1342
d. Other Donor(s)	
TOTAL	6867

11. PROPOSED BUDGET AID APPROPRIATED FUNDS ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE C. Grant	PRIMARY TECH. CODE D. Loan	E. FIRST FY F. Grant	E. FIRST FY G. Loan	LIFE OF PROJECT H. Grant	LIFE OF PROJECT I. Loan
(1) ESF	210	966		1500		5525	
(2)							
(3)							
(4)							
			TOTAL	1500		5525	

12. SECONDARY TECHNICAL CODES (maximum six codes of three positions each): 091 | 093

13. SPECIAL CONCERNS CODES (maximum six codes of four positions each): PR | I | ENV | LAB | PART

14. SECONDARY PURPOSE CODE: 260

15. PROJECT GOAL (maximum 240 characters)

To increase the income, productivity, and economic security of the rural poor engaged in livestock and crop production.

16. PROJECT PURPOSE (maximum 480 characters)

1. To improve and expand the protection of the steadily declining land base in rural areas.
2. To generate seasonal employment in rural areas.

17. PLANNING RESOURCE REQUIREMENTS (staff/funds) (1) AID - Design Officer, Economist, Engineer; (2) CONTRACT - Rural Sociologist ($3,000); (3) GOL - Conservationists.

18. ORIGINATING OFFICE CLEARANCE

Signature: Frank W. Campbell

Title: Acting Mission Director

Date Signed MM DD YY: 03 20 79

19. Date Document Received in AID/W, or for AID/W Documents, Date of Distribution MM DD YY

AID 1330-2 (3-78)

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT IDENTIFICATION DOCUMENT FACESHEET

To Be Completed By Originating Office

1 TRANSACTION CODE: [A] A Add; C Change; D Delete

PID

2 DOCUMENT CODE: 1

3 COUNTRY/ENTITY: LESOTHO

4 DOCUMENT REVISION NUMBER:

5 PROJECT NUMBER (7 digits): 632-0208

6 BUREAU/OFFICE: A Symbol: AFR; B Code: 06

7 PROJECT TITLE (maximum 40 characters): Grazing Lands Management

8 PROPOSED NEXT DOCUMENT: A [PP] 2 PHP 3 PP; B DATE MM YY: 08 79

9 ESTIMATED FY OF AUTHORIZATION/OBLIGATION: a INITIAL FY 80; b FINAL FY 84

10 ESTIMATED COSTS ($000 or equivalent, $1 =)

FUNDING SOURCE	Life of Project
a AID Appropriated	4500
b OTHER U.S. 1	
b OTHER U.S. 2	
c Host Country	300
d Other Donor(s)	500
TOTAL	5300

11 PROPOSED BUDGET AID APPROPRIATED FUNDS ($000)

A APPROPRIATION	B PRIMARY PURPOSE CODE	PRIMARY TECH CODE C Grant	D Loan	E FIRST FY F Grant	G Loan	LIFE OF PROJECT H Grant	I Loan
(1) ESF	210	095		1652		4500	
(2)							
(3)							
(4)							
			TOTAL	1652		4500	

12 SECONDARY TECHNICAL CODES (maximum six codes of three positions each): 066 | 078

13 SPECIAL CONCERNS CODES (maximum six codes of four positions each): BR | ENV

14. SECONDARY PURPOSE CODE:

15 PROJECT GOAL (maximum 240 characters)

To increase the income, productivity, and economic security of the rural poor engaged in livestock and crop production.

16 PROJECT PURPOSE (maximum 480 characters)

To reestablish and preserve the productivity of Lesotho's grazing lands.

17 PLANNING RESOURCE REQUIREMENTS (staff/funds) (1) AID - Design Officer, (2) CONTRACT: Range Management Specialist, Animal Production Specialist, Rural Sociologist, Ag. Economist. ($60,000)

18 ORIGINATING OFFICE CLEARANCE

Signature: Frank W. Campbell

Frank W. Campbell

Title: Acting Director

Date Signed: MM DD YY 03 07 79

19 Date Document Received in AID/W, or for AID/W Documents, Date of Distribution: MM DD YY

AID 1330-2 (3-76)

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(632-0215)

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X. Initial Environmental Examination
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I. SUMMARY AND RECOMMENDATIONS

A. RECOMMENDATIONS

Authorization of a grant of $12,000,000 for the Land Conservation and Range Development Project subject to the following waivers and approvals: 1/

1. Approval to deviate from the policy stated in A.I.D. Handbook 3, Appendix 3C (AIDTO Circular A-24), which limits the life of a project to six years to allow a seven year life of project.

2. Procurement source and origin waiver from A.I.D. Geographic Code 941 (Selected Free World) to Geographic Code 935 (Special Free World) for the procurement of equipment, materials and commodities.

3. Procurement source and origin waiver from A.I.D. Geographic Code 941 (Selected Free World) to Geographic Code 935 (Special Free World) for the procurement of construction materials and commodities.

4. Procurement source and origin waiver from A.I.D. Geographic Code 000 (United States) to Geographic Code 935 (Special Free World) for the procurement of eleven vehicles and spare parts.

B. PROJECT DESCRIPTION

The Land Conservation and Range Development Project is directed towards the goal of increasing productivity and income of rural poor engaged in crop and livestock production. The purpose of the project is to conserve and develop national farm land and rangeland resources by carrying out appropriate conservation measures, land use and cropping plans, land management practices, and strengthening the institutional capability of the MOA to implement these activities. The project will expand the current program of implementing conservation measures, develop technical procedures for management and improvement of rangelands, and initiate a program of preparing and implementing on-farm cropping and conservation plans with farmer participation.

In order to achieve its purpose, the project will have trained approximately 16 persons at degree level in the U.S., 20 persons at diploma or certificate level in Africa, and about 150 persons in short-term technical subjects. Approximately 2,440 on-farm cropping and conservation plans will have been carried out on 6,100 hectares. Overall conservation plans will have been prepared for 50,000 hectares and an additional 150,000 hectares will have had soil surveys

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1/ See Annex VII for justification.

and mapping. About 64,000 hectares will have been protected by various conservation measures, partly with 7,800 person months of temporary employment generated by labor intensive construction opportunities. A range management area will have been selected, established, and developed based on sound management and operation principles for use of rangelands and related resources. Development and improvement of rangelands will have been facilitated by review, analysis and recommendations for modification of policies and regulations affecting range use and operations. Inputs required to achieve the outputs include technical assistance, participant and in-country training, commodities, budgetary support, construction of facilities, and other costs as described in Section II B.

The project will be implemented by the Conservation Division and Range Management Divisions of the Ministry of Agriculture. These divisions will have the cooperation and assistance of the Livestock, Crops, Research and Extension Divisions in carrying out activities under the project. Implementation will be closely coordinated with the A.I.D. supported Farming Systems Research Project and proposed Agricultural Planning Project, as well as other donor programs.

C. SUMMARY FINDINGS

The analyses undertaken in this Project Paper found the design to be technically, economically, socially and financially feasible, and environmentally sound, and concluded that the project is ready for implementation.

The approach and methodology for carrying out conservation measures has been successfully demonstrated under the Thaba Bosiu Project and Land and Water Resources Development Project. These procedures will continue to be used and expanded. In addition, a major effort to combine use of improved agronomic and livestock production practices with improved conservation practices will be made through introduction of on-farm planning. The project will also integrate rangeland development and land conservation, recognizing the close relationship between vegetative cover on the grazing lands in the mountainous areas and protection of the cropland in the lowlands from erosion.

The project will help to strengthen the institutional capability of both the Conservation Division and Range Management Division to continue the programs introduced under the project. The technology and operational approach proposed are the most viable among several alternatives considered.

The economic aspects of the project have been examined and the project represents the most realistic alternative to accomplish its goals and purpose, considering the ability of the Government of Lesotho to meet its financial obligations during and after the life of this project. The Government of Lesotho is firmly committed to

the project and has stated its willingness to fully support the project in terms of personnel and budget.

II. PROJECT BACKGROUND AND DETAILED DESCRIPTION

A. BACKGROUND

1. General

The Kingdom of Lesotho is a small mountainous country of approximately 30,350 square kilometers completely surrounded by the Republic of South Africa. The 1979 population of about 1.3 million is growing at the rate of 2.2 percent annually. Nearly 200,000 Basotho are temporary residents of South Africa where they have attractive wage employment, primarily in the mining sector.

According to United Nations classification, Lesotho is among the world's 30 relatively least-developed countries. Per capita GNP in 1978 has been estimated at $235 and per capita GDP for the same year was approximately $115. The large difference between GNP and GDP reflects the large remittances by Basotho employed in South Africa.

There are three principal ecological zones - the western lowlands with an elevation 1,400 to 1,800 meters, the foothills at 1,800 to 2,100 meters, and the mountain zone at 2,100 to 3,500 meters. Precipitation varies considerably being affected markedly by elevations. Periods of drought occur, on average, once every five years. Severe rains are also common and contribute to serious erosion. Snow occurs regularly at the higher elevations and occassionally in the lowlands. Hail is common in many areas and is one cause of crop loss. Untimely frosts also contribute to crop losses periodically in some locations.

2. Agricultural Sector

Approximately 94 percent of the population reside in lowland villages or remote and isolated villages in the mountainous regions. An estimated 85 percent have access to some arable land. Although agriculture plays the predominant role in Lesotho's domestic economy, approximately 60 percent of family income is derived from off-farm wages, principally from employment in South Africa. There is a strong desire among rural people to earn a cash income outside the farm, even if it competes with domestic subsistence responsibilities. The rural Basotho understand that the cash returns from most agricultural activities (especially field crop production) are substantially lower than off-farm employment. The preference for non-agricultural activities is due to lack of profit incentives and greater risks involved in investing incremental expenditures of energy and resources into agriculture, while high return alternative employment opportunities exist.

The agricultural sector is comprised of approximately 187,000 households with an average size holding of about 2 hectares (5 acres). Agriculture is typified by subsistence farming based on food grains and livestock. Principal crops include maize, sorghum and wheat. Beans, peas and some wheat are grown as cash crops. Livestock consists primarily of cattle, sheep and goats. Traditionally, sheep and goats have been raised for income, while cattle have been held for wealth and their socio-cultural importance.

About 70 percent of agricultural production is for on-farm consumption and the balance for market. Live animals and animal products (wool and mohair) make up about 70 percent of Lesotho's exports, while foodstuffs (mostly wheat) provide about 6 percent. The production of foodstuffs accounts for about one-half of domestic consumption with the remainder made up of imports and donations. The share of GDP contributed by agricultural production in 1978/79 is about 30 percent. While the contribution to GDP from livestock returns has remained relatively constant, crop production returns have decreased as a result of stagnant or, in some cases, declining production.

A unique feature of Lesotho's rural population is the relative equality of income distribution. The Second Development Plan (1975/76 - 1979/80) stated that the lowest 20 percent of the rural population receive 16 percent of total income and the upper 20 percent receive 26 percent. Essentially, these income distribution estimates indicate that rural inhabitants are generally uniformly poor. The estimated total income per rural household is $215, with approximately $100 from agriculture and $115 from off-farm employment. Assuming a conservative rural household size of 4.5 persons, rural per capita income is $48.

3. Land as a Resource Base

Although the domestic economy is heavily dependent upon the agricultural sector, the vital land base, which is the nation's primary productive natural resource, is limited in both quantity and quality. Only 13 percent or 370,000 hectares (900,000 acres) of the total land area is arable. This is only one-third of a hectare (three-fourths of an acre) per capita. Arable land occurs in the lowlands along the western and southern borders and in isolated mountain valleys, which are the most densely populated areas. The foothills and mountains represent about 17 percent and 70 percent of the total land area respectively. An estimated 75 percent of the land area is used for grazing.

Land is distributed relatively equitably in accordance with the traditional land tenure system, with an average of 2 hectares (5 acres) per family. The variation in farm size that does exist is largely correlated with family size. Approximately 25 percent of farm families have 1 hectare (2.5 acres) or less and 10 percent have 4 hectares (10 acres) or more. Farm sizes are often too small to adequately support the crop and livestock production requirements of the typical farm family. Therefore, these families often rely upon communal grazing land and share-cropping arrangements. It is estimated that 25 percent of cultivation is under some form of share-cropping arrangement.

Stagnant agricultural production is due, in part, to the deteriorating land base. The climate is such that if the grassland and cropland is not properly managed, there will be excessive soil erosion. This has been the situation for a number of years as can be seen by the large number of gullies. The worse erosion, however, is sheet and rill erosion from both cropland and grassland. This is caused by lack of sufficient cover on the grassland and poor farming practices on the cropland which greatly reduces the plant cover, as well as the amount of residue returned to the soil. Overgrazing is the major cause of erosion on both the grassland and the cropland.

Some of the soils in the lowlands, which constitute most of the nation's arable land, have physical and chemical characteristics which make them highly susceptible to water erosion. The Engineering Section of the Conservation Division has indicated that many of the arable lands have field soil loss in excess of 40 metric tons per hectare annually. It is estimated that 4 percent of the arable land has been lost to gullies. Soil erosion was noted as a potential problem in Lesotho as early as 1902, however, conservation programs were not initiated until 1935. Conservation projects from 1935 to 1950 focused on terracing in the arable lowlands, protecting mountainous uplands with grass buffer strips, constructing earthen dams, and planting trees. Although these efforts continued until 1970, between 1950 and 1966 (National Independence), the conservation program was directed at gully erosion control and tree planting. These early conservation activities did check the rapid rate of extensive erosion evident in the 1930's and reduce top soil loss, while encouraging farmers to adopt contour farming, which is still widely used. However, many of the structures were not maintained, engineering was often inadequate, terraces were breached causing more gullies, grass strips and terraces were overgrazed, and management of conservation programs deteriorated. The result has been a continuing and accelerating soil erosion problem.

Serious and massive erosion is not confined only to the arable lands, but much of the three-quarters of the total land area primarily used for grazing land has severe erosion problems. The principal cause of degradation of the rangeland has been overgrazing and improper livestock distribution. There has been excessive overstocking and uncontrolled grazing, as evidenced by use of 1,835,000 hectares (4,500,000 acres) to support more than one million large animal grazing units, which exceeds recommended carrying capacity for well-managed rangeland in Lesotho by 160 percent. The extensive nationwide overstocking has not only caused vast sheet erosion from loss of vegetative cover and gully erosion along overused cattle trails, but it has caused a decline in the quality and productivity of livestock. This has been manifested in lower quality wool and mohair products, Lesotho's major exports, and low birth rates for all types of livestock. Cattle have developed such undesirable characteristics as poor conformation, slow growth and stunted size at maturity. The importance of these factors becomes apparent when it is realized that 50 percent of all farm households own some grazing stock, and that half the total value of agricultural production is derived from the livestock subsector.

Stabilization of the deteriorating condition of the agricultural land resources is an important national objective. Rehabilitation of widespread seriously eroded land and protection of land susceptible to erosion will require effective grazing land management and expansion of soil conservation programs, and must be viewed as a long-term effort. The ultimate impact will be a marked improvement of the well-being of rural people who depend upon agriculture for their livelihood and a strengthened overall national economy.

4. Project Development

Lesotho's Third Development Plan (1980/81 - 1984/85) has given the highest priority to the agricultural sector and has emphasized investment in soil and water conservation activities. Assistance to the agricultural sector is the cornerstone of A.I.D.'s 1980 Country Development Strategy Statement (CDSS) and one of the three essential elements of that strategy is development of the "physical infrastructure for rural production and conservation of land based natural resources aligned with associated institutional and programmatic development".

A.I.D. assistance to the Government of Lesotho (GOL) in conservation programs began with the Thaba Bosiu Rural Development Project (632-0031) carried out from 1973 to 1979, and continues with

the ongoing Land and Water Resource Development Project (632-0048), which began in 1975 and will be completed in 1982. This Land Conservation and Range Development Project is seen as a logical outgrowth of these earlier projects. The principal achievements of the two projects are the establishment of an institutional framework to conduct conservation programs and the development of guidelines, procedures and practices on which an expanded conservation effort can be based. Operationally, the projects provided valuable experience in conservation planning, engineering design and building of conservation structures, and participation of farmers in planning and application of conservation practices. External evaluations were conducted on both projects in April 1980, and the conclusions were important considerations in the design of this project. Special consideration was placed on the recommendation resulting from the evaluations that the conservation cropping system introduced under the Thaba Bosiu Project be modified and operationally expanded through on-farm planning in order to achieve the objective of increased agricultural production and income. The institutional capability established, technical and managerial experience developed, and implementation methodology tested in the Thaba Bosiu and Land and Water Resource Development projects form the foundation for the conservation activities of this project.

The project will receive the benefit of other A.I.D. complementary projects in the agricultural sector. It includes the Farming Systems Research Project (632-0065) which has agronomic, range, livestock, extension, farm management, and socio-cultural applied research dimensions that directly relate to various aspects of this project. Specifically, it is anticipated that the Farming Systems Research Project will provide recommendations for improved cultural practices that can be incorporated into on-farm plans and rangeland development. The Lesotho Agricultural Sector Analysis Project (632-0064) has provided basic analyses of conservation programs, labor intensive activities, land tenure patterns, and other important elements of the agricultural sector, which provided substantial background information for design of this project and will be extremely valuable during implementation. The Agricultural Planning Project (632-0218) currently under design is expected to influence sectorial policies that will have a bearing on several project activities.

Another proposed activity related to this project is the Mountain Livestock Centres Development Project. The project aims to create four Mountain Development Centres, each of which will serve three existing Livestock Improvement Centres. The control of the project will be exercised by the Livestock Division, but will be closely coordinated with the Range Management Division.

The main components of the project are (1) improved livestock production and veterinary services, (2) improved marketing and livestock procurement services, (3) intensified range management and grazing control, and (4) crop production with emphasis on pastures and fodder production. The project does not include a conservation component and will not directly overlap with the range management component of the A.I.D.-supported project; however, the activities are complementary.

In March 1979, two related Project Identification Documents projects were submitted by USAID/Lesotho - Accelerated Land Protection (632-0204) and Grazing Lands Management (632-0208). Following reviews by AID/Washington and consultation with the GOL, it was determined that the two projects should be combined. This project is the product of that consolidation and reflects the recognition of the interdependent relationship between conservation activities and range development.

In summary, the approach to development of this project is consistent with GOL development priorities, USAID/Lesotho development strategy, preeminent development requirements within the agricultural sector, and focuses on the vital needs of the Basotho rural population. In addition, it has drawn on the extensive experience and knowledge from completed and ongoing A.I.D.-supported projects and other related programs.

B. DETAILED PROJECT DESCRIPTION

The seven year Land Conservation and Range Development Project is expected to require approximately 16.2 million dollars of which A.I.D. will provide 12 million dollars and the Government of Lesotho 4.2 million dollars.

1. Goal

The project goal is to increase productivity and income of rural poor engaged in crop and livestock production. The goal will have been achieved if income of cooperating farmers has been increased by 12 percent within three years after participating in an on-farm planning program or range development program. Attainment of the goal can be verified by production and income data from the Ministry of Agriculture (MOA) Conservation or Range Management Division, and through project evaluations.

2. Purpose

The project purpose is to conserve and develop national cropland and rangeland resources by carrying out appropriate conservation measures, crop and land use planning, land management practices, and strengthening the institutional capability of the MOA to implement these activities.

By the end of the project, it is expected that (1) the MOA Conservation Division will be fully staffed and the Range Management Division will be 75 percent staffed by trained Basotho personnel, (2) cooperation and coordination among divisions, particularly at the technical level, within the MOA will be significantly strengthened and institutionalized, (3) a system of developing and implementing cropping and conservation plans with farmer involvement will be established, and (4) technical procedures for development and management of rangelands will be prepared and demonstrated.

The Land Conservation and Range Development Project is a comprehensive and integrated approach toward achieving the project purpose. Efforts to control soil erosion on arable land must be complemented by development and management of rangelands if the project is to be successful.

3. Outputs

This project will produce the following outputs to achieve the project purpose.

a. Trained Basotho Staff

There will be increased numbers of Basotho trained and assigned to the Conservation and Range Management Divisions and complementary positions elsewhere in the MOA, which will strengthen the institutional capability to plan, implement and manage expanded field conservation and range development programs. By the end of the project, the following training will have been completed.

	Number Trained		
Type of Training	Range	Conservation	Total
Long-Term U.S.			
Master Degree (2 yr.)	4	3	7
Bachelor Degree (4 yr.)	6	3	9
Long-Term Africa			
Diploma (3 yr.)	3	3	6
Certificate (2 yr.	7	7	14
Short-Term - U.S. (2 mo.)	12	10	22
In-Country - Lesotho (2 mo.)	50	50	100
Study Tours	20	16	36

Upon completion of training, long-term trainees will be assigned to positions that are assisted by advisory expatriate personnel to enable the returned trainees to gain on-the-job experience and knowledge from the expatriates to the maximum extent possible. All training, including informal on-the-job, will strongly emphasize the experience of practical field operations and training-by-doing concepts.

b. On-Farm Plans

An organized system of conducting comprehensive on-farm planning that integrates land use, cropping and conservation needs will be developed and introduced. By the end of the project, 20 Planning Teams will have been organized and they will have carried out 2,400 on-farm plans that will cover 6,100 hectares.

c. Conservation Plans

The program of conservation planning initiated under earlier A.I.D.-supported projects is to be continued and expanded. By the end of the project, an additional 150,000 hectares will have had soil surveys and mapping - two-thirds of the area will be rangeland and one-third cropland, and 25 additional area conservation plans will have been prepared covering 50,000 hectares.

d. Conservation Measures

The building of conservation structures is to be continued and expanded. By the end of the project, an additional 4,000 hectares will be protected by terraces and 60,000 hectares by diversions, waterways and other structures.

e. Employment Generation

Cash payment for intensive construction of conservation structures has been tested and deemed successful. By the end of the project, 100 Basotho each year will have been employed on a temporary basis for a total of 7,800 person months of work on labor intensive construction activities to support building and maintaining conservation structures.

f. Range Management Area

A rangeland area will be selected, established, and developed based on sound management and operation principles for use of rangelands and related resources. By the end of the project, the rangeland area will be selected and functioning and on the area: (1) a Grazing Association will be organized, (2) a range reconnaissance survey completed, (3) a grazing management plan developed and implemented, (4) an animal health program established and implemented, and (5) a marketing program developed and operating for Grazing As-

sociation members. Based upon experience and information acquired from the first range management area, a second range management area will be selected and preliminary plans implemented by the end of the project.

g. Rangeland and Livestock Management Policies

By the end of the third year of the project, a report will be prepared providing an analysis of rangeland and livestock management policies and regulations, such as those affecting land use and controlled grazing, with specific proposals and recommendations for policy changes or for new policies or regulations. Prior to commencing development of the second range management area, relevant policies and regulations will be the subject of a joint review by the GOL and USAID/Lesotho.

4. Inputs

The planned inputs required to attain the outputs include technical assistance, training, commodities, construction and other costs. The estimated total cost for the project is about $16.2 million of which A.I.D. is planning to provide $12.0 million and GOL $4.2 million.

a. A.I.D. Inputs

(1) Technical Assistance

The project will provide a total of 36 person years of U.S. long-term technical assistance and about 19 person months of short-term consultancies. The nine long-term technicians are as follows:

	Person Years
Senior Range Management Specialist - Team Coordinator	6.0
Range Management Specialist - Planning/Inventory	5.0
Range Management Specialist - Range Development	4.0
Range Management Specialist - Field Operations	5.0
Range Policy and Regulations Analyst	2.0
Agricultural Engineer - Conservation	3.0
Conservation Soil Scientist	3.0
Conservation Agronomist/Planner	4.0
Conservation Information Specialist	4.0
	36.0

A detailed job description for each of the technical assistance team members is in Annex IV. The specific discipline requirements of the short-term consultants will be determined as project implementation progresses; however, it is expected there will a short-term requirement for an Agricultural Economist, Rural Sociologist, Soils Cartographer, Range Taxonomist, Agroclimatologist, and others. Additionally, provisions have been made to employ an Administrative Assistant and Secretary to assist in procurement of commodities, maintain project accounts, coordinate training programs, and provide other administrative support services for the technical assistance team.

(2) Training

The project will provide 14 person years of long-term academic training for MS degrees and 36 person years for BS degrees. Areas of technical specialization include range management, conservation, engineering, agronomy, soils and other related areas. Provisions are also made for BS degree participants to attend pre-university short courses to strengthen any specific area of academic weakness prior to commencing university studies. It is expected academic trainees will receive field experience in the U.S. between academic years. A total of 46 person years of long-term training in Africa will include 6 participants in 3 year diploma programs and 14 participants in 2 year certificate programs.

The project includes 44 person months of U.S. short-term technical training. Most of the short-term courses will be for approximately two months and will be USDA, Soil Conservation Service, or other scheduled technical courses. There are provisions in the project to conduct four short-term technical courses in Lesotho with U.S. instructors. These courses have the advantage of training about 25 participants at one time. Funds are also included for up to 36 short study tours or observation visits to other countries, particularly in Africa, to study special technical problems, observe related programs, attend relevant meetings and conferences, or other project-related purposes.

(3) Commodities

Vehicles to be procured under the project include 4 four-wheel drive pickups for the Range Management Division, 5 two-wheel drive pickups for the Conservation Division, and one sedan for each of the Divisions. Vehicles will be used for official transportation of expatriate personnel, Basotho counterparts, and other official project related business.

Tractors, agricultural implements and tools will be provided to the Conservation Division as replacement equipment necessary for construction and maintenance of conservation structures. An illustrative list of the equipment is included in Annex V A.

The Range Division will be provided with seeding equipment and supplies, seed harvest and processing equipment, survey equipment and supplies, communications equipment and other range supplies. In addition, there are funds for maps, mapping, remote sensing and fencing of the Range Management Area.

Provisions are made for procurement of limited amounts of spare parts, office furnishings, training equipment and supplies, office equipment and supplies, and books and publications for both Divisions.

See Annex VII for proposed waivers related to some of the commodities described above.

(4) Construction

Funds will be provided for construction of up to six senior houses in Maseru and one at the Range Management Area site for the technical assistance personnel. At least two technicians will be housed in previously constructed A.I.D. project houses. An office building with about 21 office spaces for the Range Management and Conservation Divisions will be constructed in Maseru. At the Range Management Area, construction will include one junior house, one warehouse/office, one wool/mohair shed, and one corral/crush pen. Identical construction (exclusive of the senior house) is planned for the second Range Management Area site commencing the third year of the project.

(5) Budgetary Support

The project will provide funds, on the basis of declining amounts annually, for cash payment to temporary laborers employed under the labor intensive construction program engaged in building conservation structures. It will include funds to pay supervisors of both the labor intensive and Food-for-Work programs. Funds for salaries of additional new positions as a result of the project will also be funded on a declining annual basis.

b. GOL Inputs

(1) Construction

The GOL will provide land for construction under the project. It will also provide extension to the sites for utility services (electricity, water, sewer), access roads, storm drainage, and driveway facilities where appropriate for all construction. Costs of installation of office telephone systems, building maintenance and utilities will be funded by the GOL.

(2) Commodities

Furnishing of senior technician houses by the GOL will include all basic furnishings except refrigerators and heaters. Vehicle maintenance and fuel will also be provided at increasing increments as shown on the GOL Expenditure Schedule, Annex V C. Horses and mules will be provided to the Range Management Division.

(3) Personnel

Technical and administrative support staff will be funded by the GOL in increasing annual amounts as indicated in Annex V C.

(4) Labor Intensive Construction

The GOL will provide funds for wages of laborers and supervisors for the labor intensive construction program, and supervisors for the Food-for-Work program in increasing amounts as the A.I.D. contribution phases down. It will also fund the campsite costs for the labor intensive program.

(5) Training

Salaries for long-term and short-term trainees will be provided by the GOL. Support will also be provided for participants in study tours and observation visits. In addition to salaries for trainees in the in-country courses, the GOL will provide training facilities, transportation and other related costs.

5. Important Assumptions

(1) It is assumed that the GOL will retain the high priority accorded soil and water conservation and range management. This assumption will be evidenced by timely and adequate budget

allocation by the GOL and assignment of appropriately trained staff to the Range Management and Conservation Divisions when required for successful implementation of the project.

(2) It is assumed that adequate numbers of qualified candidates for both degree and non-degree training will be available.

(3) Effective implementation of the 1979 Land Act will be carried out.

III. PROJECT ANALYSES

A. TECHNICAL ANALYSIS

Recent conservation programs have attempted to incorporate lessons learned during implementation of earlier conservation activities. There has been special concern for maintenance of conservation structures and for involvement of farmers in conservation related decision-making through village level Conservation Committees, as initiated in the Thaba Bosiu Project. The Land and Water Resource Development project has emphasized strengthening management and technical capability of the Conservation Division by providing technical assistance and training. Other area-based projects with soil conservation components also contain elements to help improve maintenance of conservation structures.

There have been no significant programs to protect the 75 percent of Lesotho's mountainous land considered rangeland. This land originally had a dense cover of highly productive native grasses and some forbs and shrubs. The excessive grazing and trampling of vegetation by livestock has been a major cause of both loss of rangeland grazing area and of increased erosion in the lowlands. The downward trend in range condition and productivity can result in extensive animal starvation and greatly reduced crop production, especially in times of drought, if it continues.

The technical importance of emphasizing water conservation, especially in the uplands, should not be underestimated. Reducing water runoff will serve to protect both rangelands and croplands from severe soil erosion, while at the same time increasing the availability of this valuable resource for production of field crops and range grasses. It is a renewable resource that is replenished in the normal hydrologic cycle and increased water absorption through use of basic water harvesting practices will greatly improve productivity of crops and rangeland vegetation.

The above described linkage between mountainous rangeland deterioration and lowland erosion is clear. The Land Conservation and Range Development Project will attempt to address these problems in a more comprehensive manner than has been previously undertaken. A special effort will be made to strengthen the professional and technical linkages among the Conservation, Range Management, Crops, Livestock, Extension, Research and Planning Divisions in the MOA. This effort will include direct collaboration between Conservation, Range Management, Crops and Extension Divisions in developing and implementing the on-farm plan component. The Research Division will

recommend improved practices for crop production and rangeland development.

An essential aspect of effective programs to stabilize the land resource base is to strengthen the institutions implementing the programs. A.I.D. has been assisting the Conservation Division since 1973 and it continues to need external aid. The Range Management Division was established in 1979 and had previously been a section within the Livestock and Conservation Division, now also separated into independent divisions. Although the Range Management Division has not received any significant external assistance since it was established, it did receive limited aid when it was a section. The project will assist both divisions with training, technical assistance, construction, commodities and limited budgetary support as outlined in Section II B, Detailed Project Description.

1. Conservation Program

The center piece of the conservation activities in this project will follow the successful program methodology developed under the Thaba Bosiu project and continued under the Land and Water Resources Development Project, but will expand the approach to include integrated on-farm plans which will involve trained conservationists developing land use and cropping plans with farmers. The on-farm plans will include conservation of water as well as soil, and will emphasize good management and improved production practices for both livestock and crops as they are inextricably linked.

The specific details of on-farm planning will be prepared by the Conservation, Range Management and Crop Divisions with the assistance of the expatriate technical assistance team, particularly the Conservation Agronomist and Information Specialist. It is expected the plans will be for a five year period and the number of participants will vary from 3 to 4 farmers up to entire villages. The plan will be based on the goals of cooperating farmers and will include a detailed description of recommended practices, schedule for carrying them out, and resources required to effectively implement the plan. More specifically, the plan will include (a) conservation measures and production practices such as cropping and rotation systems, soil preparation methods, cultivation schedules, input use (especially seed and fertilizer), planting practices (e.g. planting dates, plant population, spacing, planting depth, etc.); (b) livestock grazing management including use of crop residues; (c) structural water and soil conservation construction, including maintenance requirements (e.g. terraces, grassed

waterways, gabions, water diversions, silt traps, fences, etc.); and (d) vegetative cover for uplands and dongas (gullies), including grass seeding and tree planting.

An essential component of the on-farm plan is careful delineation of responsibilities. The plan should state all major activities to be carried out, when they are to be executed, and who is responsible for each task. It is imperative that each party know and understand his/her role in plan implementation. This does not only apply to cooperating farmers, but also to planners and technicians from various divisions who must make routine visits and provide follow up assistance. These commitments by all concerned are required if successful implementation of on-farm plans is to be achieved.

Information about the area undertaking the on-farm plan is essential for effective planning and for improving plans after some implementation experience is gained. Basic physical data required includes crop and range area, cropping history, field size and shape, soil and topographical conditions and precipitation. Important socioeconomic data includes total production of each crop, yields per hectare, on-farm consumption of crops and livestock, quantities traded or sold off-farm, cash and credit expenditures for inputs, labor used in production of crops and livestock, marketing income, labor requirements and constraints, and farm decision-making. This is an illustrative list of data requirements and some of it can be collected over one to two years concurrently with project implementation while other information will be assembled during early development of the plan.

It is proposed that initial on-farm plans be prepared in areas where conservation structures are in place or will soon be completed and overall construction plans have been finalized, such as Thaba Bosiu. Most of these areas already have established village Conservation Committees (144 committees were organized under earlier A.I.D.-supported projects) that are familiar with conservation programs. However, farmers are not familiar with comprehensive on-farm planning. As the program expands into new geographic areas, it will be necessary to involve villages in pitsos and encourage formation of Conservation Committees which will be responsible for promotion of on-farm planning and the liaison between the village and the Planning Team described below. The pitsos and informal approaches to village leaders should be organized by representatives of the Conservation Division, who will also serve as the principal spokespersons, but will have the backstopping of Basotho staff from other technical divisions and the

expatriate team members that assisted in development of the on-farm plans. These series of meetings are essential to explain the details of the program, obtain views and suggestions from the participants, assure full understanding by the people involved, and identify specific individuals or groups that are willing to participate in the on-farm planning program. Cooperating farmers must consent and agree to assist in development and implementation of the on-farm plans.

The on-farm plans generally will be developed by a conservationist and an extension agent who will form the Planning Team, although the team composition could consist of other technicians with broad experience. They will have the technical backstopping of both Basotho and expatriate range specialists, agronomists, soil scientists, or engineers as dictated by the specific situation. The Planning Teams will receive on-the-job intensive training from the expatriate Agronomist, Information Specialist and Range Management Specialist, who will assist in actual preparation of the plans during the early stages of the project, and after the Planning Teams have become more experienced, simply review the plans. Training of the Planning Team will be supplemented by more than 20 Technical Guides prepared by the Conservation Division under the Land and Water Resources Development Project. These guides relate to safe land use, cropping guidelines for different ecological zones, engineering uses of soils, range management, stocking rates, soils surveying, design and construction of conservation structures, and several other technical practices. The expatriate technical assistance team will assist in preparation of additional materials related to such matters as on-farm planning, water conservation practices, cultivation practices, and vegetative cover for rangelands. These technical materials will be available for distribution through the extension service, as well as the conservation program. It is believed that the Conservation Division will have no difficulty in maintaining and continuing to upgrade available technology. The biggest challenge is that of transferring that knowledge to small farmers.

By the end of the project, there will be 20 trained and fully effective Planning Teams which will be able to average two on-farm plans per week. Because comprehensive farm planning is being introduced for the first time, progress is expected to start slowly, but accelerate as the effort continues and benefits to farmers are demonstrated. At the end of the project, it

is anticipated 2,440 farm plans will have been carried out covering an area of 6,100 hectares.

On-farm planning is expected to be implemented as follows:

Project Year	Planning Teams	On-Farm Plans	Area (ha.)
1	1	40	100
2	4	160	400
3	8	320	800
4	12	480	1,200
5	16	640	1,600
6	20	800	2,000
Total	20	2,440	6,100

The implementation of on-farm plans will be supported by a number of ongoing activities of the Conservation Division which were initiated under other AID funded projects. This project will continue to support these activities so that they can be expanded to meet the requirements planned under the project.

The Land and Water Resource Development Program provided support for conducting soil surveys on over 200,000 hectares and this project will continue this type of assistance with a target of an additional 150,000 hectares of surveyed land during the project life. Approximately two-thirds of the area surveyed will be rangeland and one-third cropland. It is also expected that 25 additional area conservation plans will be prepared covering 50,000 hectares, which will determine basic conservation measures required for the selected areas.

The program to design and construct conservation structures began under the Thaba Bosiu Project will be continued and expanded. In locations where area conservation plans have been completed and where on-farm plans have been prepared, it is planned to protect 4,000 hectares with terraces and an additional 60,000 hectares with diversions, waterways and other structures. The building of conservation structures is expected to continue with a minimum of support from the project since it has been a major thrust of the earlier projects. The construction program will be supported by funds to purchase a limited amount of replacement equipment originally purchased with funds from the Thaba Bosiu Project and the expatriate technical assistance, especially the Conservation Planner and Engineer, would provide advisory services when required. The Conservation Division has an efficient and capable workshop established

under previous AID supported projects. The mechanics are experienced and the shop adequately equipped to maintain the replacement light and heavy equipment planned for acquisition under this project.

Arrangements for routine maintenance of conservation structures will be a part of on-farm planning. It will be the responsibility of land users to provide labor and the Conservation Division to provide technical services and supervision as appropriate. The Food-for-Work Program has provided food-aid for some of the hand labor activities used in building conservation structures, and it is expected this program will continue. In addition, the project will provide a limited amount of funds for cash payment for labor intensive work and payment to supervisors for both the labor intensive programs and Food-for-Work activities. The labor will be utilized in complementary tasks to machine construction. Specific construction tasks that are cost and time effective for machine or labor intensive work have been identified through research by the Labor-Intensive Construction unit attached to the Ministry of Works.

2. Range Development Program

The recently established Range Management Division is prepared to initiate a range development program, but does not have adequate trained technical personnel and other resources to begin a program without external assistance. This project will provide the means to implement such a program.

It is unrealistic for the Division to commence nationwide programs with its present limited staff and resources. The project provides for the establishment of one Range Management Area initially and the beginning of a second area the third year of the project. It is anticipated that the information collected and experience gained will be valuable assets as the program expands to other areas. It should be emphasized that these are not pilot demonstration areas, but fully integrated and comprehensive range development programs areas.

The expatriate technical assistance team will provide important guidance in implementing the range development component of this project and strengthening the operational capability of the Range Management Division. The Range Planning/Inventory and Field Operations Specialists will assist in selection of the Range Management Area, conducting the range inventory and survey, and establishing a grazing management plan. The Range Policy and Regulations Analyst must work closely with the Ministry of Interior and other government organizations in addition to the MOA, in order to work effectively on policy level matters concerning

rangelands and certain aspects of the 1979 Land Act. Therefore, his position description and functional responsibilities and relationships will be discussed with relevant government officers prior to recruitment.

The initial step in selection of a Range Management Area will be to solicit the cooperation and assistance of the relevant chiefs and people living in the area that has been identified. This would require preliminary contacts with chiefs and other village leaders to explain what the objective of the program is, why the specific area was tentatively chosen, what benefits are expected, how inhabitants of the area should participate, and the details of how the program would operate. The criteria for selection of the Range Management Area includes the following:

a. Representative of principal type of rangeland ecological zone in Lesotho.

b. Area administrated by strong chief(s) willing to support and participate in range management program.

c. Range management program acceptable to people in proposed area.

d. Area accessible to range managers and livestock owners.

e. Area of optimal size for effective management unit. (Grazing for approximately 600 animal units all year-round.) The exact size will also be determined by range carrying capacity, topography, accessibility, and population.

f. Appropriate arrangements for livestock control.

Following selection of the Range Management Area, the MOA with agreement from the area chief(s) will apply to the Ministry of Interior to have the area designated as a "Select Agricultural Area" under provisions of the 1979 Land Act. Such designation will permit implementation of grazing control measures.

An early requirement shortly after selection of the area is organization of a Grazing Association. The Grazing Association will play an important role in management of the area by the livestock owners and it will provide the vehicle for successful development of the rangeland area. It will become the key mechanism for participation and decision-making by herders. Some of the steps required to establish the Grazing Association include:

a. Establishment of membership criteria by chief(s), livestock owners, and Range Management Division officers.

b. Selection of members.

c. Selection of management committee for Association membership.

d. Preparation, approval and application of regulations, policies, procedures, and by-laws for operation and management of Association.

The regulations, policies and procedures are essential guidelines for effective management and operation of the Grazing Association and, therefore, the Range Management Area. Some of the important aspects that should be considered include:

a. Procedures for establishment and enforcement of stocking rates.

b. Procedures for establishment and enforcement of collection of grazing fees.

c. Policies and procedures for use and expenditures of grazing fees.

d. Rules for election, responsibilities, and authority of Association Management Committee.

e. Regulations for establishment and enforcement of kinds and quality of stock (including breeding males) permitted to graze.

f. Regulations for establishment and enforcement of number and kind of animal units permitted by each member.

g. Procedures for establishment and implementation of grazing management plans.

h. Procedures for establishment and enforcement of identifying, marking or branding of Grazing Association stock.

i. Procedures for establishment and enforcement of handling livestock that trespass.

j. Establish and implement procedures for marketing livestock and livestock products from Grazing Association.

k. Rules to govern eligibility of new members and termination of membership.

Prior to developing a grazing management plan, it will be necessary to conduct a range reconnaissance survey and inventory. It does not require a sophisticated and detailed study of the Range Management Area. Principal aspects of the survey include:

a. Obtain remote sensing images and aerial photographs at scale of 1:20,000.

b. Map ecological units of similar vegetation soils and land form. Delineate various ecological units on aerial photos with legends and describe with key to each legend type.

c. Estimate seasonal forage production by ecological unit.

d. Estimate seasonal nutritive value of major forages in each ecological unit.

e. Locate present and potential livestock water points.

The productive results from selecting a Range Management Area, organizing a Grazing Association, establishing operational regulations and policies, and conducting a reconnaissance survey and inventory will be seen following the implementation of a grazing management plan. Some of the important factors to consider in developing a grazing plan include:

a. Establishment of seasonal grazing units (limited geographic area for grazing).

b. Development of procedures to determine number of animal units to be assigned a grazing unit, how long they should graze the unit, when they are to be removed, and where they will next be assigned.

c. Determination of (flexible) stocking rates for each grazing unit.

d. Control of grazing animals (by grazing unit fences or herders) and utilizing area as planned.

e. Establishment of range livestock facilities including water points, portable scales at weight points, and construction of corrals/crush pens and wool/mohair handling sheds.

f. Collection and analysis of baseline data necessary to assess development of Range Management Area. Data required includes: (1) seasonal vegetation production in each ecological unit determined annually, (2) vegetation composition and frequency determined annually for each ecological unit, (3) livestock weights determined seasonally, (4) wool/mohair weights determined at shearing/clipping time, (5) assessment of livestock performance as related to forage production on a seasonal basis, (6) analysis and evaluation of range trend, (7) livestock production data such as kind and class of stock on each grazing unit, calving/lambing/kidding percentages, weaning percentages, birth weights, weaning weights, death losses and causes, etc.

It will be necessary to develop and carry out a basic animal health program on the Range Management Area in cooperation with the Livestock Division. It would include a vaccination program, nutrition assessment with feed and mineral supplement program as required.

The Grazing Association will establish a marketing program for the livestock and livestock products of its members. Volume sales should improve marketing opportunities and returns. A new abattoir is currently under construction in Lesotho and is expected to provide increased demand for cattle.

The Range Management Areas will receive priority attention from the Conservation Division in preparation of overall conservation plans and assignment of a Planning Team to develop on-farm plans. The overall conservation plan will be fully integrated and prepared concurrently with the grazing management plan. In addition, construction of conservation structures by the Conservation Division in the Range Management Areas will be given high priority.

The project will guide and assist in all aspects of development of the Range Management Area. The expatriate Field Operations Range Management Specialist and Mosotho counterpart will reside near the Range Management Area and oversee the organization of the Grazing Association, conduct the range reconnaissance survey, and assist in preparation and implemenration of the grazing management plan. Technical backstopping will be provided by the Range Management Division and other relevant MOA technical divisions. The field operations will be supported by construction of a senior and junior house, office/warehouse, wool/mohair shed, corral/crush pen and fencing. Basic commodities for conducting the range survey and inventory, and vehicles will also be provided. The pace of development of the Range Management Area will be affected by several factors, but the key element is expected to be the level of support and cooperation accorded the effort by the chief(s) and participating livestock producers.

The project proposes beginning the development of a second Range Management Area in the third year of implementation. At that time the Mosotho Range Management Officer, who has received training and is currently on the staff of the Range Management Division, and will have been working with the expatriate at the first site, should have gained sufficient experience to lead development of the second location. The project provides the same infrastructure support for the second site as the first, except a senior house is not planned. By the end of AID support for the project, the grazing management plan should be developed for the second site, but little implementation of it will have taken place.

3. Engineering Considerations

The construction element of the project includes six senior technician houses and one office building in Maseru. In rural areas, construction is planned for one senior technician house, two junior technician houses, two office/warehouses, and two wool/mohair sheds.

The GOL has not yet designated sites for any of the construction. Field construction will not begin until the technical assistance team arrives and a Range Management Area has been selected. Cost estimates for the field office/warehouse buildings, wool/mohair sheds, and Maseru office building is based upon unit area costs established for similar type construction. Cost estimates for houses are based upon recently constructed houses that have identical plans to those proposed in the project. Allowances have been made for minor modifications or unexpected costs by including 10 percent additional funds to all construction estimates for contingencies. In addition, funds include a 1.2 percent per month inflationary factor for one year, which is the anticipated period between preparation of the Project Paper and finalization of the construction contracts. The specific cost estimates are presented in Annex V-E.

The Grant Agreement shall contain a condition precedent to disbursement of funds for construction that allocation of sites for each building be submitted and approved by A.I.D. and plans and specifications for each building be submitted and approved by A.I.D.

The cost estimates presented in Annex V-E have been determined by utilizing current contract costs and in consultation with local architects. Such personnel are in daily contact with builders and contractors and are in a position to identify and forecast building costs. The lead time between project documentation and actual construction has been considered and anticipated inflation costs have been added. Funds have also been included to cover unforseen costs and contingencies. Therefore, construction costs presented herein appear to be reasonably firm, satisfying the Section 611(a)

provisions.

B. FINANCIAL ANALYSIS AND PLAN

The cost estimates presented in this section are detailed in Annex V-A and its attachments. The costs were developed in close cooperation with the MOA. The A.I.D. contribution includes estimates for inflation (15% per year compounded for both foreign exchange and local currency costs) and contingency (10%). Estimates for the GOL contribution include a provision for inflation on the same basis as for the USAID contribution, but do not include contingency.

A summary of project financing is shown below:

Project Funding Summary
($000)

	Foreign Exchange	Local Currency	Total	Percent
A.I.D.	$9,077.2	$2,922.8	$12,000.0	74.0
GOL	179.6	4,031.4	4,211.0	26.0
Total	$9,256.8	$6,954.2	$16,211.0	100.0

The GOL contribution of $4,211,000 (detailed in Annex V-A) represents 26.0% of total project costs and, thereby, satisfies the host country contribution requirement of FAA Section 110(a). The GOL will be making significant investments in personnel support, training, commodities (fuel and maintenance items) and the labor intensive construction of conservation structures. The cost burden for this project is significant for the GOL and underlines their commitment to fully utilize their land base and limit, as much as possible, its deterioration.

The GOL is firmly committed to development of the agricultural sector as is evidenced by the allocation of approximately 24 percent of the national budget to agricultural and related programs. The share of the budget for agriculture is expected to remain relatively constant during the next five years, but will increase substantially in total amounts due to the projected increase in total revenues. The GOL Third Five Year Plan shows recurrent expenditures doubling between 1979/80 and 1980/85, with projected revenues being adequate to cover the increased costs.

The leadership and technical officers of relevant divisions of the MOA have been closely involved in development, design and review of the project and it has been determined that the GOL inputs

of personnel, commodities and other support are realistic and feasible. Within the agricultural sector, protection of the land base and development of livestock and rangeland resources has been accorded the highest priority. The GOL recognizes that agricultural land is the primary basis for economic development, food production and the principal source of employment. These goals and commitment have formed the basis for the GOL request for U.S. assistance for this project. Based on the foregoing, the contribution of the GOL to the project is firm and reasonably assured.

The A.I.D. contribution will consist of technical assistance, training, construction, commodities, budget support and evaluation. Expenditures will occur over seven years (see Annex V-D for projection of A.I.D. expenditures). Funding will be provided on a grant basis and obligated over six years (see Annex V-B for A.I.D. Obligation Schedule).

The table below outlines the source (A.I.D. and GOL) and uses of funds.

Source and Use of Funds
($000)

	A.I.D.		G.O.L.		Total	
Use:	FX	LC	FX	LC	FX	LC
1. T.A., Staff, Consultants	$3,430.0	$ 84.0	$ -	$ 937.6	$3,430.0	$1,021.6
2. Training	1,712.0	20.0	-	619.1	1,712.0	639.1
3. Construction	-	875.0	-	159.0	-	1,034.0
4. Commodities	968.5	154.0	109.1	470.7	1,077.6	624.7
5. Budget Support	-	902.0	-	295.0	-	1,197.0
6. Evaluation	160.0	-	-	-	160.0	-
7. Inflation	1,982.0	625.9	70.5	1,550.0	2,052.5	2,175.9
8. Contingency	824.7	261.9	-	-	824.7	261.9
TOTAL	$9,077.2	$2,922.8	$179.6	$4,031.4	$9,256.8	$6,954.2

Construction costs are to be financed primarily on a Fixed Amount Reimbursement basis with fixed amounts determined upon completion of design details and prior to contracting for construction. Budget Support is planned on in conjunction with GOL funding to assist in assuming the full financial impact of additional permanent personnel and temporary employees for labor intensive construction activities. Also sufficient funds have been budgeted within the project for interim and final evaluations. With amounts provided for inflation and contingencies, the cost estimates for A.I.D. financing

and the entire project are deemed adequate and firm. Due to the GOL national policy of developing employment opportunities whenever possible, the Ministry of Finance has requested that expansion of the labor intensive construction component of the project be given priority in allocation of funds resulting from any project cost savings or unused contingencies.

C. SOCIAL ANALYSIS

1. General

The people of Lesotho possess a highly uniform culture. Though they descend from different ethnic groups, they all speak Sesotho and all but few urban residents live under a hierarchy of chiefs in small nuclear villages scattered mainly in the flat western lands and the foothills.

Though agri-pastoral activities dominate rural life, the people are thoroughly familiar with technological society. Most women are literate (over 60 percent) and most men have worked in South African mines (60 percent absent from home at all times). Cash economy concepts penetrate the most remote villages through miners' wage remittances and through the trading stores in major villages. Most people know some English and the great majority are Christian (80 percent). Sixty percent of farm households are headed by women.

Primary support comes from wage remittances from South Africa. Agricultural productivity mainly contributes to subsistence and derives from small plots worked by oxen and hand labor. Crop yields are low and decreasing because of excess use of the land and often do not supply the needs of the farm families. Livestock produce marketable quantities of wool and mohair and some meat, as well as provide food for the farmers. In addition, cattle are the main source of farm traction. In addition to commercial value, cattle are held for their traditional prestige and ritual value.

Though the land is held in trust by the King for the use of the people, the rapidly growing population overcrowds the limited arable land and encroaches on vulnerable rangelands. According to tradition, every married male has a claim on land for subsistence of his family. It is allocated by his chief. About 15 percent of the young married men still await an allocation of their first field for their wives to cultivate while they go away to earn money to start a herd of cattle.

Traditionally, the Basotho have advised their chiefs in pitsos (popular assembly meetings). In modern times, volunteer associations of the people and committees formed by government provide opportunities to participate in every aspect of community life. Project technicians need to be well acquainted with the organizations which exist in the areas where they seek to work.

The familiarity of the Basotho with the outside world and their tradition of involvement are invaluable assets that should be used by development projects. The migrant labor problem and the deterioration of the crowded land make this project important to the economic well-being of Basotho farmers. Further details about the Basotho social structure are discussed in the Social Analysis Annex VI-A.

2. Beneficiaries of the Project

The primary beneficiaries are self-selected rural farmers and their families who participate in on-farm conservation programs or grazing associations. They will be included in about 120 villages in conservation farming activities and grazing associations in which range management will be introduced. An estimated 14,000 rural families will be directly helped and 50,000 additional individuals will be exposed to the concepts through pitsos and other meetings. All people in Lesotho will benefit from the preservation of soil, water and land resources, from the improved capacity to feed the people and from the enhancement of rural life.

Conservation construction and maintenance works have the capacity to employ substantial numbers of farmers for seasonal labor. Approximately 7,800 person months of employment will be used per year. Caution will be used to employ farmers only during non-farm periods. Women and those men who are unable to arrange migrant labor contracts will be sought out for these employment opportunities.

3. Planned Benefits

Benefits include the improvement in yields of crops and both yields and quality of animal products for farmers participating in the on-farm planning. Anticipated strengthening of the agricultural sector will gradually enable more Basotho men to support themselves on farms, thus strengthening family cohesion and improving rural life. This will also enchance the capacity of the nation to create more marketable surpluses and to improve the balance of trade. The project is thus consistent with national goals.

4. Social Feasibility of the Project

Public acceptance of the project activities is expected to be heightened because of the intention to involve the beneficiaries in planning, as well as implementation activities. In developing on-farm plans for conservation and cropping purposes, the Planning Team will explain the objectives of programs, solicit farmers' perceptions, and identify any limiting conditions and desired options. These findings will be considered by the Planning Teams in designing the specific activities in each area. Public contacts will be made through general publicity campaigns, advance notice by MOA staff members, extended visits by the Planning Team members in village pitsos and other meetings and through contacts with the village development officers.

The implementation phase of land conservation will involve on-farm applications by the Planning Teams who will be prepared to demonstrate, explain, and apply conservation techniques on farmers' fields. Follow up contacts will reinforce and/or correct any techniques which are applied to assure full understanding and implementation.

Similarly, range development staff will work with farmers who have organized into Grazing Associations to apply good management practices on rangelands and with livestock.

Both activities will include extensive promotional and instructional programs to inform farmers of the value of the projects so that others will be encouraged to apply the examples on their lands.

A proposed grazing fee is expected to be applied initially only in areas under the management of Grazing Associations and will be used directly for the improvement of their own rangelands. This limited use should be acceptable to participants inasmuch as it will be self-imposed, retained, and managed.

Plans for stock adjustments are controversial. Few Basotho accept the contention that the range is overstocked. They not only keep their cattle for prestige and bohali (bride price), but for plowing. One of the reasons for large holdings of cattle among small farmers is for traction.

As the region improves, the resultant improvement in the health of oxen will reduce the need of four to eight oxen for plowing. Coupled with an incentive market for young animals, this could lead to reduced stocking levels.

5. Constraints

The present land tenure law restricts farmers from fencing land or planting it in permanent cover crops. Land is generally split into three separated fields and usufruct rights terminate at the end of the crop year to allow communal grazing of crop residue. These features create a disinclination of the farmers to improve their land.

In some areas chiefs have modified these rules, and the new Land Act of 1979 provides for long-term licenses in agricultural areas. Although there may be opposition to the law by some chiefs, the law provides for the declaration of "Select Agricultural Areas" by the Ministry of Agriculture which could be surveyed for immediate registration, thus allowing the project to be implemented in the selected areas of program concentration.

The authority of the chief remains strong in some areas. Careful liaison is needed at village headman and local chief and ward chief levels. The vehicle for obtaining cooperation is the village pitso, which provides a common forum for chiefs and people. The assembly should be used before contact is made with other committees. Since the chief is employed and paid by the Ministry of Interior, close coordination between the Ministries of Agriculture and Interior is essential to successful implementation of this project. Village committees are frequently not fully organized or functioning actively. Project personnel will have to strengthen existing committees or assist in organizing appropriate new ones.

6. Prior Experiences in Related Projects

For over seventy-five years Lesotho has addressed the problem of erosion. The technical structures found in every district testify to the effort. Nonetheless, erosion remains a major problem. There is a need for educating people in the use of conservation structures in an agronomically sound way. Social surveys taken in the Thaba Bosiu Project by Steven Turner confirm that the farmers generally lack understanding as to the value and use of the installations. (Even the Sesotho name for terraces refers to the fact that they reduce the size of fields.)

John Gay's investigation of several villages in the Senqu River Project reinforces the fact that farmers lack adequate understanding of and appreciation for development projects, reinforcing the need for close pre-project liaison and careful communication by the technical personnel.

7. Potential Spread Effect

Effective dissemination of the results of this project beyond selected areas of program concentration is critical to the preservation of land resources. Farmers conferences held in January 1979 by the MOA confirm the readiness of rural people for the kind of assistance proposed in this project if they can participate in planning activities that directly affect them.

The benefits can be easily demonstrated in both conservation farming and range/livestock management because they will be applied in village locations.

Spread will occur through:

a. Increased productivity from both crop and rangelands that will provide the economic incentive for neighbors in adjacent villages to become involved.

b. Discussions in neighboring villages by the Planning Teams.

c. Project participants reporting their activities as members of Village or District Development Committees, Conservation Committees, and Grazing Associations.

d. The district agricultural staff promoting project activities.

e. Team members demonstrating their activities to villagers as they watch them working.

8. Women in Development

This project will incorporate women into intensive project activities, application of conservation farming and in the entire planning, educating and implementing phase because of their predominance in the rural community. (Sixty percent of farm households are headed by women.)

Thus approximately half of the on-farm plans will be carried out on farms headed by women. The women who participate in on-farm plans will be directly involved in both planning and implementing

these activities. Since sixty percent of the women are functionally literate there are numerous avenue for dissemination of the needed information to them. A key element in successful project implementation thus will be the support and cooperation accorded the effort by participating farmers and chiefs.

As approximately twenty-seven percent of the chiefs are women, several project activities are expected to be within their jurisdiction. It is probable that women farmers may be reached more effectively in villages where the chief is a women.

Women have traditionally been subordinate to men in Basotho society. Village assembly meetings (pitsos) were exclusively male only domains, but increasingly they are more open to women.

Women may participate from outside the chief's court (khotla). Planning teams should make sure that pitsos are open to women in the villages they use for on-farm plans or else they should see that an alternate forum for public discussion of the project, such as the village development committee, is open to women before starting a project in a given area.

Since sixty percent of the rural men are absent from the country at any given time, many of the participants in the project will be women. Therefore, that women understand the need for this project and cooperate in its implementation is highly essential. The people responsible for implementing this project much realize the imbalance between social and legal perception of women as de facto heads of households. While women are the primary agricultural laborers & daily decision makers on the majority of farms, their underprivileged status often lead to difficulties in obtaining needed extension services and agricultural training.

9. Conclusion

The implementation of the project meets a fundamental need of Lesotho. This is recognized at both the GOL and the individual farmer level. Previous technical projects have created some of the infrastructure for conservation of the land; however, this project more directly addresses the farmers' personal involvement in programs related to the land use. Involvement of the participant farmers and their chiefs will maximize the potential for project success. This analysis finds the project socially sound with the capacity to make a major contribution to the well-being of Basotho farmers.

D. ECONOMIC ANALYSIS

1. General

Agricultural production is generally stagnant and declining for some commodities in Lesotho. Food consumption exceeds domestic production by more than 50 percent. Opportunities for relatively high wage employment in South Africa have been a disincentive for improvement of low income producing agriculture, as demonstrated by 60 percent of the rural male work force being temporary residents of South Africa under employment contracts. This labor displacement leaves much of the farm work to women, who also have considerable demand on their time for other family responsibilities which often results in inadequate attention to important farm activities essential for high production. Efficient farm management is also hampered by key decision-making responsibility being retained by absentee males (refer to Social Analysis), therefore being delayed until letters are exchanged or until there are return visits home by the head of household.

Few rural people have capital investments outside their own farm. Capital is represented by livestock, houses, farm tools, and some semi-durable products in and around the home. Land ownership is precluded under present traditional tenure patterns. Although tractor and machine power is gaining in importance, oxen power dominates as the source of crop production energy. Livestock is by far the largest capital investment made by farmers with the value of the national herd in 1978 of about $125 million representing nearly $670 of capital per farm household. The large number of cattle maintained for traditional social reasons, oxen power, or other purposes contributes to overstocking and overgrazing of rangelands, and the resultant deterioration of land resources.

Farmers who participate in this project are expected to receive significant benefits from using improved managment and cultural techniques as a result of on-farm crop and conservation planning or from practicing controlled grazing. The increased productivity and associated income will result from improved productive capacity of the land base, as well as the use of improved agricultural practices. The nature of the project indicates benefits will continue at an increasing rate over the long-run, therefore, a 20 year time horizon has been used in conducting the economic analysis.

2. Methodology

The detailed procedures and data for the economic analysis are contained in Annex VI-E. The basic methodology and procedural steps used in deriving the Internal Rate of Return (IRR) are summarized below, followed by a section summarizing the findings and

conclusions. The six steps used in conducting the economic analysis were as follows:

(1) The level of self-sufficiency in selected food products is estimated.

(2) The total national value of selected agricultural products affected by the project is estimated. Changes in value are projected and then adjusted for anticipated rate of participation in project.

(3) Total project costs are estimated.

(4) The total national value of agricultural products affected by the project are adjusted by the rate of participation to determine the increased value attributed to the project.

(5) The IRR's are calculated. (Changes in livestock and crop values less project costs and adjusted for rate of participation.)

(6) The IRR's are adjusted for marketable crop and livestock values. (Changes in marketable livestock and marketed crop values less project costs and adjusted for rate of participation.)

Each of the six steps used in calculating the IRR's is elaborated on below including presentation of basic data on estimates. For further details, refer to Annex VI-E.

(1) The changes in difference between supply and demand of selected food products related to the project between Year 0 and Year 20 are estimated. The current population of 1.2 million is growing at an annual rate of 2.3 percent, which results in a projected population of 1.9 million in Year 20. Table 1 indicates that if consumption levels are at recommended rates and no major natural disasters occur, Lesotho could have a surplus of selected agricultural commodities that are influenced by the project.

Table 1: Estimated Changes in Supply and Demand of Selected Agricultural Products between Year 0 and Year 20

Product	Recommended per Capita per Day	Required Year 0	Deficit Year 0	Required Year 20	Available Year 20	Surplus Year 20
	- - -

(3) The planned total project costs by GOL and A.I.D. are estimated annually from Year 0 to Year 20. The GOL will contribute an increasing share of recurrent expenditures during the project and will pay all costs for continuing the program following the phasing out of A.I.D. assistance. Table 3 summarizes the project costs by year.

Table 3: Estimated Project Costs Contributions by GOL and A.I.D. from Year 0 to Year 20

Year	A.I.D.	GOL	Total
- - - - - - - - - - - - - -	Million Dollars	- - - - - - - - - - - - - -	
0			
1	3.53	.62	4.15
2	1.96	.69	2.65
3	2.33	.79	3.12
4	2.19	.91	3.10
5	1.49	1.01	2.50
6	-0-	1.50	1.50
7	-0-	1.60	1.60
8	-0-	1.70	1.70
9	-0-	1.80	1.80
10	-0-	1.90	1.90
11	-0-	2.00	2.00
12	-0-	2.10	2.10
13	-0-	2.20	2.20
14	-0-	2.30	2.30
15	-0-	2.40	2.40
16	-0-	2.50	2.50
17	-0-	2.60	2.60
18	-0-	2.70	2.70
19	-0-	2.80	2.80
20	-0-	2.90	2.90

(4) Table 4 indicates the estimated rate of acceptance and participation in the project. It shows that 75 percent of crop and livestock producers are expected to use the practices introduced and promoted by the project. The total national value of types of agricultural products affected by the project are then adjusted by the rate of participation in order to determine the increased value of agricultural products attributed to the project for the 20 year period.

Table 4: Estimated Rate of Participation, Total Value of Selected Agricultural Products and Value of Products Attributed to Project from Year 0 to Year 20

Year	Rate of Participation	Total National Value	Increase in Value Due to Project
	Percent	- - - Million Dollars - - - -	
0			
1	6	2.27	.14
2	7	6.78	.47
3	9	11.45	1.03
4	11	16.10	1.77
5	14	21.77	3.05
6	17	25.80	4.39
7	20	27.19	5.44
8	23	29.90	6.88
9	26	34.73	9.03
10	30	36.83	11.05
11	34	40.20	13.67
12	38	44.22	16.80
13	42	52.38	22.00
14	46	66.68	30.67
15	50	79.93	39.97
16	55	95.78	52.68
17	60	106.73	64.04
18	65	120.07	78.05
19	70	128.44	89.91
20	75	136.47	102.35

(5) The IRR's are calculated by subtracting the project costs from the increase in value of agricultural products attributed to the project for the 20 year period. The change in values have been adjusted for rate of participation. Table 5 shows the results of the calculations.

Table 5: Differences between Estimated Project Costs and Value of Agricultural Products Attributed to Project from Year 0 to Year 20, and Estimated IRR's

Year	Total Projected Costs	Increase in Value due to Project	Difference	IRR
	- - - - Million Dollars - - - - - -			Percent
0				
1	4.15	.14	- 4.01	
2	2.65	.47	- 2.18	
3	3.12	1.03	- 2.09	
4	3.10	1.77	- 1.33	(Neg.)
5	2.50	3.05	.55	(Pos.)
6	1.50	4.39	2.89	
7	1.60	5.44	3.84	
8	1.70	6.89	5.18	
9	1.80	9.03	7.23	
10	1.90	11.05	9.15	19.0
11	2.00	13.67	11.67	
12	2.10	16.80	14.70	
13	2.20	22.00	19.80	
14	2.30	30.67	29.37	
15	2.40	39.97	35.57	
16	2.50	52.68	50.18	
17	2.60	64.04	61.44	
18	2.70	78.05	75.35	
19	2.80	89.91	87.11	
20	2.90	102.35	99.45	37.1

(6) The total annual marketable value of crops and livestock estimated by adjusting the total annual value of the products. The livestock breeding herd is calculated at 10 percent of its value since it is a capital asset to be spread over six years. Table 6 shows the calculation of IRR's based on the value of marketable agricultural products attributed to the project. The change in values have been adjusted for rate of participation.

Table 6: Differences between Estimated Project Costs and Value of Marketable Agricultural Products Attributed to Project from Year 0 to Year 20, and Estimated IRR's

Year	Total Project Costs	Increase in Marketable Value Due to Project	Difference	IRR
	- - - - - - Million Dollars - - - - -			Percent
0				
1	4.15	.08	- 4.07	
2	2.65	.16	- 2.49	
3	3.12	.41	- 2.71	
4	3.10	.75	- 2.35	
5	2.50	1.37	- 1.13	(Neg.)
6	1.50	2.08	.58	(Pos.)
7	1.60	3.01	1.41	
8	1.70	4.74	3.04	
9	1.80	6.23	4.43	
10	1.90	8.57	6.67	3.7
11	2.00	11.92	9.92	
12	2.10	15.58	13.48	
13	2.20	20.74	18.54	
14	2.30	28.36	26.06	
15	2.40	36.25	33.85	
16	2.50	44.69	42.19	
17	2.60	52.45	49.85	
18	2.70	60.81	58.11	
19	2.80	67.65	64.85	
20	2.90	72.76	69.86	31.6

3. Conclusions

The project will make a significant contribution toward increased production of principal food crops and livestock products. The project IRR calculated on increased annual crop and livestock values is estimated to become positive in Year 5 of the project and is 19 percent in Year 10 and 37.1 percent in Year 20. When calculated on the annual marketable value for crops and livestock, the IRR becomes positive in Year 6 of the project and is 3.7 percent in Year 10 and 31.6 percent in Year 20.

The analysis emphasizes that benefits from this type of project are substantially greater in the long-term; therefore, the program should be continued by the GOL beyond the proposed seven years to maximize project potential established by A.I.D. supported assistance. Although a positive IRR is not shown until after the fifth year, the major contribution the project is expected to make on crop and livestock production in addition to its long-term protection and rehabilitation of the land resources, lead to the conclusion the project should be carried out.

E. ADMINISTRATIVE ANALYSIS

1. Ministry of Agriculture Organization

The Minister of Agriculture is the senior administrative officer in the Ministry of Agriculture (MOA). He has overall policy and coordination responsibilities at the cabinet level. The Minister is supported by the Permanent Secretary (PS) who has policy and coordination responsibilities at the administrative level. At present, the MOA organizational structure is divided into two major parts, one for administrative and one for technical services, each part managed by a Deputy Permanent Secretary (DPS) who has the responsibilities of supervising and coordinating activities within the divisions under their respective jurisdictions.

The principal functions of the project that relate to the administrative part of M A, concern training, personnal and accounts. The principal contact for project personnel regarding these matters will be the DPS(A) for recruitment of project staff and financial matters, while the Training Officer will assist on training matters.

Most project implementation actions will be of concern to the technical services part of MOA under the direction of the DPS(T) and composed of the following divisions:

Livestock Division	-Director of Livestock Services
Crops Division	-Chief Agricultural Officer
Conservation Division	-Chief Conservation Officer
Planning Division	-Chief Planning Officer
Research Division	-Director of Research
Extension Division	-Chief Extension Officer
Agricultural Information Division	-Chief Agricultural Information Officer
Nutrition and Home Economics Division	-Chief Nutrition and Home Economics Officer

Two other institutions - the Lesotho Agriculture College (LAC) headed by a principal, and the Basic Agricultural Services Program (BASP) headed by a Director - are under the auspices of the DPS(T). There are also two major semi-autonomous government agencies - the Livestock Marketing Corporation and Produce Marketing Corporation - that are not under the DPS(T).

2. Conservation Division

The organization of the Conservation Division is shown in the following chart. It is the most completely staffed division in the M A due to training of 23 individuals at the B.S. and M.S. level (with 8 additional staff in training) under earlier A.I.D. supported projects. Some trained Conservation Division personnel have been transferred to other positions in the MOA. The training proposed in this project will assure a continued flow of qualified technicians into the division to meet attrition losses and add trained staff for key positions in the expanded program. The principal source of new staff will be the Lesotho Agricultural College (LAC), which trains to the Certificate and Diploma levels. An A.I.D. funded OPEX technician has been recruited as Conservation Lecturer at LAC to begin teaching in August 1980, which is expected to greatly strengthen instruction of conservation in the LAC curriculum.

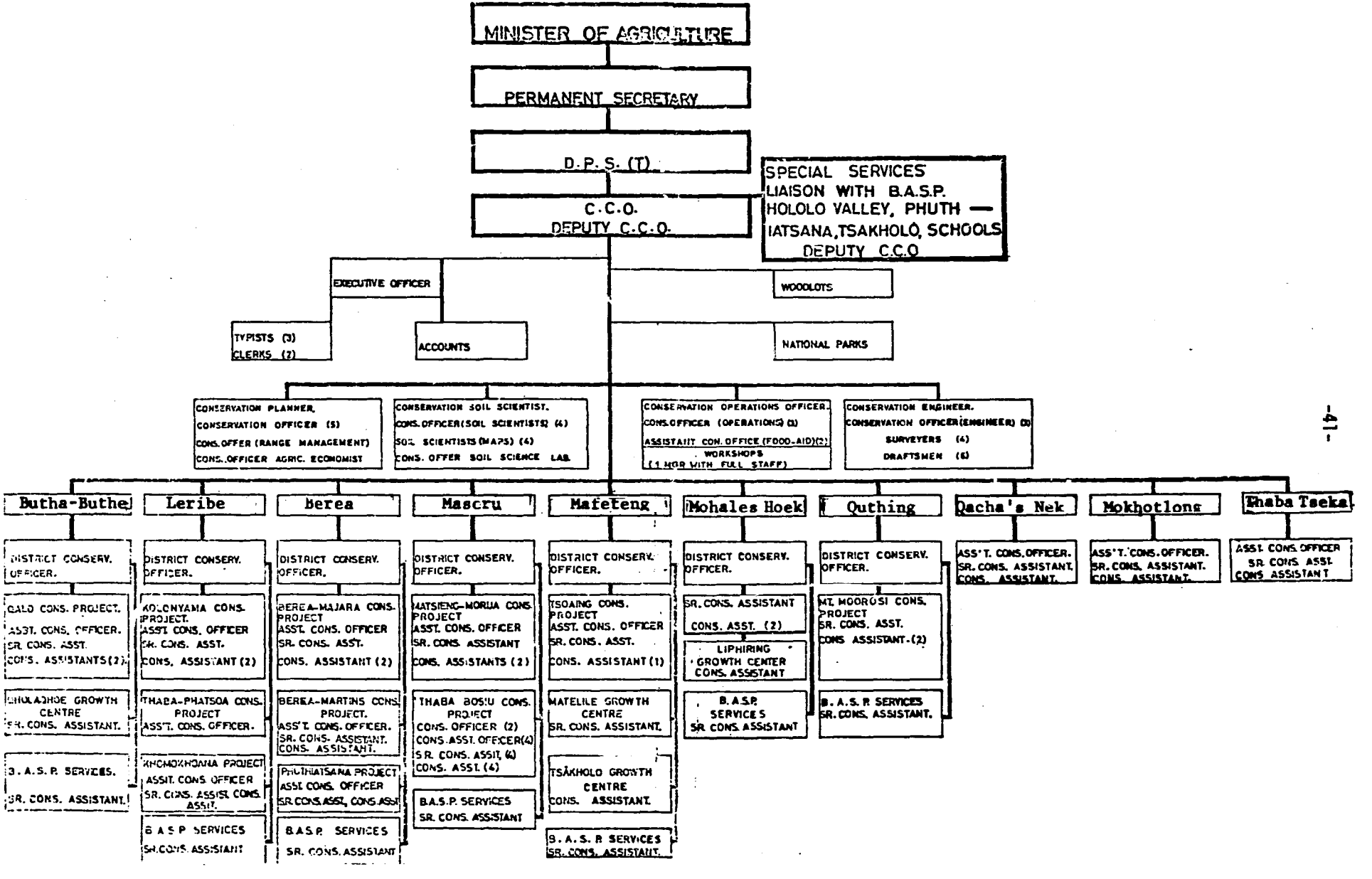
3. Range Management Division

The organization of the Range Management Division is shown in the following chart. The division was created in 1979 (previously a section in the Livestock and Conservation Division) and is currently thinly staffed. Several technicians and other personnel have been transferred to the Range Management Division from Conservation and Livestock Divisions. The major source of new staff for the division is also LAC. The Range Management Division is going to be heavily dependent upon this project to increase and upgrade its technical staff. Development of this Division will be based upon the successful model and experience of developing the Conservation Division under earlier A.I.D. supported projects.

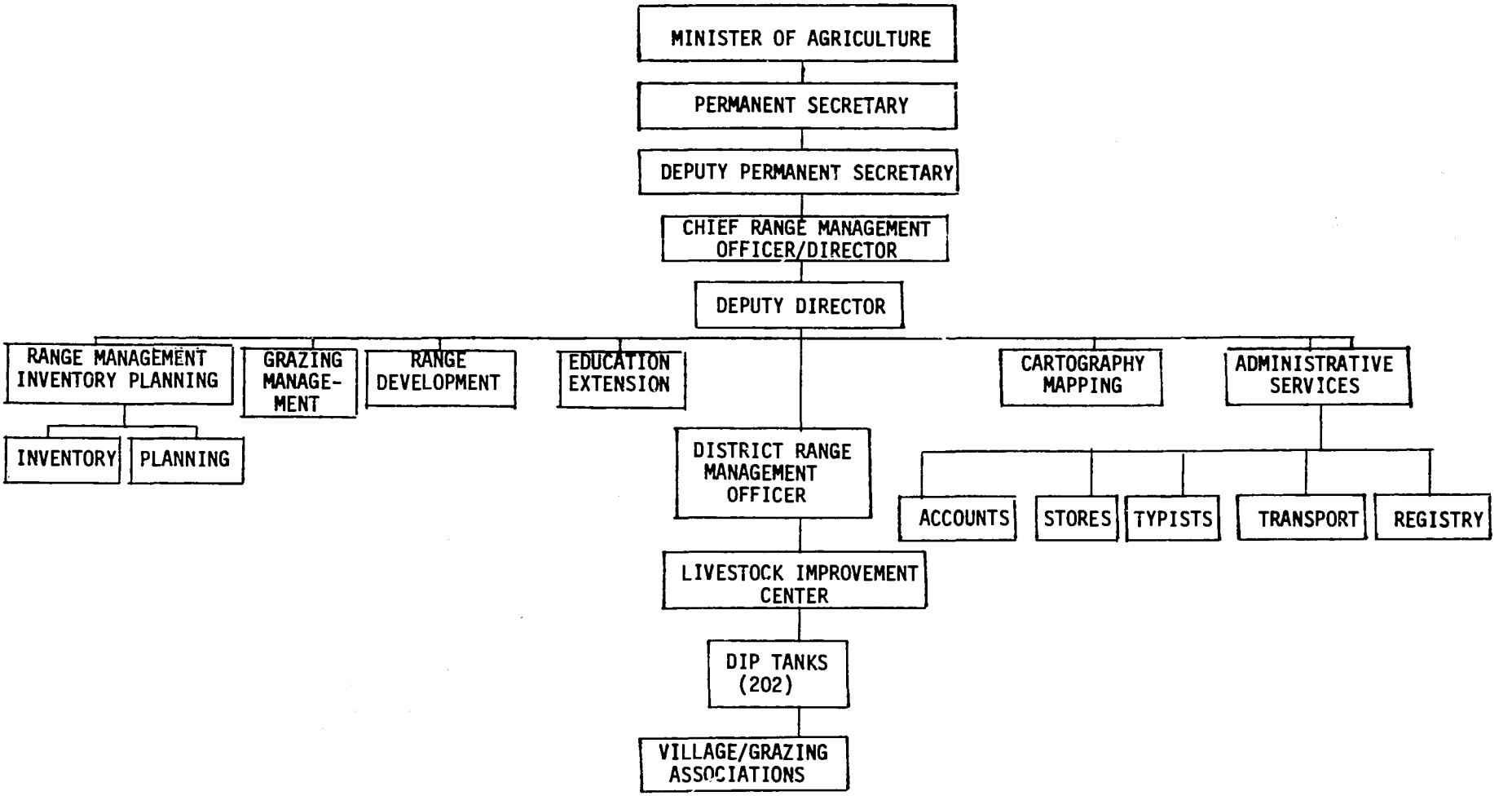
4. Capability

The organization and management of the MOA does not produce rapid decisions. As a result, delays can be expected in project actions that require administrative decisions. The technical and operational competence of the Conservation and Range Management Divisions is deemed adequate to achieve the project outputs providing the training is conducted as scheduled and expatriate technical assistance is carried out as planned. The target of strengthening the institutional capability of the two divisions is an integral part of the project and is essential for successful implementation of the project.

MINISTRY OF AGRIC. — CONSERVATION DIVISION 1 DEC. 1979



RANGE MANAGEMENT DIVISION



IV. IMPLEMENTATION ARRANGEMENTS

A. GOL PROJECT ADMINISTRATION

The Ministry of Agriculture of the GOL is responsible for execution of this project. Primary responsibility for management and implementation action resides within the Conservation Division and Range Management Divisions. A basic description of the organization of the MOA and organizational charts of the two implementing divisions is presented in an Administrative Analysis, Section III-E.

The overall management of the conservation activities in this project (i.e. on-farm plans, conservation plans, conservation structures, labor intensive construction) will be under the supervision of the Chief Conservation Officer or his designee. The technical sections of Planning, Soils, Operations and Engineering will all be directly involved in supporting project activities. The expatriate technical assistance team will support and assist project implementation. The Engineer will be assigned to the Engineering Section and will aid in design and supervision of construction of conservation structures. The Soil Scientist will be assigned to the Soils Section and will assist in conducting detailed soil surveys and soil interpretations. The Conservation Agronomist/Planner will be assigned to the Planning Section and help in development and implementation of on-farm plans with emphasis on assistance to Area Conservationists working in districts. The Conservation information specialist will help develop methodology for dissemination of on-farm cropping and conservation programs. Although the expatriates will provide an important function in the introduction and implementation of project conservation activities (refer to Job Description in Annex IV), their principal role will be that of providing advice and guidance to Basotho staff that lack experience in this type of project. The Conservation Division is adequately staffed to effectively implement the project.

The recently established Range Management Division has a smaller staff to implement the rangeland improvement activities in this project (i.e. development of Range Management Areas and changes in policies affecting range use). Overall management of these activities will be under the Chief Range Management Officer. The expatriate technical assistance team will play a more direct role in project implementation until the sufficient Basotho staff have been trained in the relevant skills and gained field experience. Three members of the expatriate team located in Maseru (all except the Range Policy Analyst), will spend a considerable amount of their time in the field assisting Basotho staff in project implementation. It is expected that Basotho will carry out most activities associated with development of the second Range Management Area.

Even though primary project implementation responsibilities and action center around the Conservation and Range Management Divisions, the participation and support by other technical divisions in the MOA is very important. The Extension Division will be involved in carrying out on-farm plans, the Crops Division in agronomic practices for on-farm plans, the Research Division in recommending appropriate cultural practices, and the Livestock Division in organizing animal health programs and suggesting range policies and regulations. The linkage between Conservation and Range Management Divisions will closely coordinate implementation of conservation measures and improvement of rangelands.

The expatriate technical assistance team will be responsible to their respective Division Chief. They will serve in an advisory role to their designated counterparts, but will become involved in carrying out substantive functions as described in their job descriptions (refer to Annex IV).

B. A.I.D. PROJECT ADMINISTRATION

USAID/Lesotho will be responsible for A.I.D. management of the activities planned under this project. The Director, USAID/Lesotho, or his designee (Project Officer) will be responsible for providing guidance and monitoring of the project. The Project Officer will serve as the primary point of contact for the GOL and expatriate team coordinator with A.I.D. The Project Officer will be responsible for assisting in identification and resolution of any problems concerning project implementation. It is anticipated that in matters concerning commodity procurement, contractual and legal affairs, the assistance of the Regional Legal Advisor, REDSO/EA or AID/Washington support staff will be solicited.

Upon signature of the Project Grant Agreeement, the necessary steps will be taken to initiate required construction contracts and services, procure commodities initially needed, and begin the identification and selection of the first group of participant trainees. Project Implementation Orders for technical services, commodities and training will be prepared by USAID/Lesotho.

A.I.D. will disburse funds for recurrent expenditures on a reimbursable cost basis. It is anticipated that funds for construction of buildings will be disbursed on a fixed amount reimbursement basis. If advances are necessary for construction or recurrent expenditures, procedures for advances will be outlined in Project Implementation Letters.

C. IMPLEMENTATION PLAN

1. Procurement Plan

The types of equipment to be purchased under this project and their estimated costs are listed in Annex V-A, Attachments 2 and 3. The equipment to be procured for the Conservation Division amounts to $485,000 and is largely for replacement of equipment required to carry out field conservation measures, while commodities for the Range Management Division of $50,000 are for grass seed production and conducting range surveys. Other specific items to be procured and their estimated costs are included in Annex V-A.

The source and origin of approximately $671,000 of the equipment, materials and commodities required is expected to be from the Republic of South Africa. A waiver for this procurement is included in Annex VII. A waiver for procurement of $590,000 of construction materials is also included in Annex VII, which is required for materials to be used in construction of houses and office space. In addition, a vehicle waiver for $167,500 is requested for the purchase of eleven project vehicles.

The Mission management office will procure the vehicles and most other commodities will be purchased through Mission issued PIO/Cs. The Ministry of Agriculture will receive, clear and issue the purchased commodities. Smaller items will be purchased off-shelf in Lesotho by the Ministry of Agriculture. Construction will be carried out using the FAR method, which the Mission has used for most of its construction activities in the past. It has been recommended that procurement of technical services be obtained through the existing SAMDP contract.

Indigenous goods from Lesotho may be purchased up to the amount of funds available for local procurement under the terms of the grant agreement authorizing local cost financing. It is expected some shelf items will be purchased that will have been imported from the Republic of South Africa, a Code 935 country. Per Handbook 1B, Chapter 18, procurement of such eligible commodities will be limited to a single unit price not to exceed $2,500 or a total amount not to exceed 10 percent of the total local costs financed by A.I.D. for the project or $10,000 whichever is higher.

At the request of the GOL, it is recommended to recruit and contract for the technical assistance personnel as individuals through the existing Southern Africa Manpower Development Project (SAMDP). The reasons for utilizing this method of obtaining technical services are (1) the types of skills required are not known to exist at one institution, (2) full institutional backstopping is not required, (3) there are some individuals presently employed through the OPEX type mechanism

of SAMDP in the Conservation Division under the Land and Water Resources Development Project that the GOL would like to retain and their employment could be continued using this project as a source of funding, and (4) use of the existing established mechanism would obviate the need for a new contract which would greatly facilitate project implementation.

As discussed in the Financial Analysis and Plan (Section III.B), all building construction is expected to be locally contracted using the fixed amount reimbursement method. USAID/Lesotho will contract for A and E services and the GOL Ministry of Works will contract for construction services according to A.I.D. Handbook 11.

The following implementation schedule includes a projected timetable for procurement of vehicles, construction, technical services and other commodities.

2. IMPLEMENTATION SCHEDULE

Month	Action	Responsible Organization
D*	PP completed and submitted	USAID/L
D + 1	PP approval	AID/W
D + 1	Pro-Ag approved and signed	GOL-USAID/L
D + 2	PIO/T for technical services issued	USAID/L
D + 3	PIO/C for commodities issued	USAID/L-REDSO/EA
D + 5	Local contracts for construction of houses and office issued	GOL-USAID/L
D + 6	6 (U.S.) LT participants selected	GOL-USAID/L
D + 6	Vehicles purchased	USAID/L
D + 9	Team Coordinator arrives	GOL-USAID/L
D + 11	Construction of 6 Maseru houses completed	GOL-USAID/L
D + 11	4 ST trainees receive training	GOL-USAID/L
D + 11	TA team arrives	GOL-USAID/L
D + 12	Range Mgt. Area selected	GOL
D + 13	6 (U.S.) LT trainees begin training	USAID/L
D + 14	Grazing Association organized	GOL
D + 15	Range Survey/Inventory completed	GOL
D + 15	On-Farm plans introduced	GOL
D + 15	US procured commodities received	GOL-USAID/L
D + 15	Office building completed	GOL-USAID/L
D + 16	Local commodities procured	GOL-USAID/L
D + 17	Rural construction completed	GOL-USAID/L
D + 17	4 (Afr) LT trainees begin training	GOL-USAID/L

*July 1980

Month	Action	Responsible Organization
D + 18	Grazing management plan completed	GOL
D + 18	6 (U.S.) LT trainees selected	GOL-USAID/L
D + 20	Interim range policy reports prepared	GOL
D + 22	In-country short course	GOL-USAID/L
D + 25	3 ST trainees receive training	GOL-USAID/L
D + 27	6 (U.S.) LT trainees begin training	USAID/L
D + 29	4 (Afr) LT trainees begin training	GOL-USAID/L
D + 33	Final range policy report prepared	GOL
D + 35	Range Policy Analyst departs	USAID/L
D + 36	In-Country short course	GOL-USAID/L
D + 38	External evaluation conducted	GOL-USAID/L
D + 39	4 (U.S.) LT trainees begin training	GOL-USAID/L
D + 40	Second Range Managemtn Area selected	GOL
D + 44	Second Grazing Assn. organized	GOL
D + 45	Second range survey completed	GOL
D + 46	4 ST trainees receive training	GOL-USAID/L
D + 47	2 TA team members depart	USAID/L
D + 49	4 (Afr) LT trainees begin training	USAID/L
D + 50	In-country short course	GOL-USAID/L
D + 53	4 (Afr) LT trainees return	GOL-USAID/L
D + 53	Second grazing mgt. plan completed	GOL
D + 56	4 ST trainees receive training	GOL-USAID/L
D + 59	3 TA team members depart	USAID/L
D + 61	6 (U.S.) LT trainees return	USAID/L
D + 65	4 (Afr) LT trainees return	GOL-USAID/L
D + 66	4 (Afr) LT trainees begin training	GOL-USAID/L
D + 68	In-country short course	GOL-USAID/L
D + 71	2 TA team members depart	USAID/L
D + 73	2 (U.S.) LT trainees return	USAID/L
D + 75	4 ST trainees receive training	GOL-USAID/L
D + 83	Team Coordinator departs	USAID/L
D + 85	Final external evaluation	GOL-USAID/L

D. EVALUATION ARRANGEMENTS

Project evaluations will provide important management feedback information on a regular basis. Both internal and external evaluations are planned to help insure that project objectives and commitments are met.

Internal evaluations are periodic statis assessments by the key implementation officers including the USAID/L Project Officer, technical assistance personnel, MOA Permanent Secretary, and relevant technical division staff. The internal reviews are scheduled intermittantly at the discretion of the Project Officer.

Two in-depth external evaluations are scheduled during the life of the project. One is planned for the end of the third project year and one at the end of the project. These evaluations may be undertaken with the assistance of A.I.D. funded consultants from outside the Agency who have appropriate qualifications. The initial evaluation will examine progress toward achieving the project purpose and outputs. The final external evaluation will determine the overall performance, effectiveness and impart in achieving both technical and institutional objectives.

E. CONDITIONS, COVENANTS AND NEGOTIATING STATUS

Conditions Precedent

1. Prior to the obligation of funds for each year succeeding the initial obligation, the Cooperating Country will present to A.I.D., in form and substance satisfactory to A.I.D., reasonable cost estimates for the conservation construction activities to be performed during that year.

2. Prior to the disbursement of funds under the Grant for each building construction acitivity, or to the issuance of any commitment documents with respect thereto, the Cooperating Country shall furnish to A.I.D., in form and substance satisfactory to A.I.D., (a) evidence that a site adequate for the project purpose has been allocated for the particular activity, and (b) final plans and specifications.

Covenants

1. The Cooperating Country agrees to provide qualified personnel to undertake project financed training in accordance with the training schedule included as part of the amplified project description in the Grant Agreement.

2. The Cooperating Country agrees to provide on a timely basis all personnel required for implementation of the project.

3. The Cooperating Country agrees to provide the recurrent budget support for the project for the amounts and by the dates specified in the amplified project description in the Grant Agreement.

4. The Cooperating Country agrees that all vehicles purchased with project funds will be used for the sole purpose of the technical assistance team and their counterparts or for other appropriate projected related activities.

5. The cooperating country agrees that prior to commencing development of the second range management area, it will undertake, in cooperation with A.I.D., a review of the appropriateness of existing rangeland and livestock management policies and regulations.

ANNEX I

USAID DISTR.(5/15)GSO
ACTION:REDSO
INFO:CONT:CHRON:RF

~~ORIGIN ONLY~~
REDSO FILE

TELEGRAM

ACTION: AID
INFO: AMB DCM ECON ADM

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14 MAY 79 22:20

R 141833Z MAY 79
FM SECSTATE WASHDC
TO RUEHMU/AMEMBASSY MASERU 3184
INFO RUVQC/AMEMBASSY NAIROBI 2458
BT
UNCLAS STATE 122462

AIDAC, NAIROBI FOR REDSO

E.O. 12065 N/A

TAGS:

SUBJECT: CONSERVATION PID REVIEW

REF: A) MASERU 0647 B) MASERU 0715

1. PROJECT COMMITTEE REVIEWED TOGETHER ON APRIL 17 ACCELERATED LAND PROTECTION (ALP) AND GRAZING LANDS MANAGEMENT (GLM) PID'S. TAKING INTO CONSIDERATION THE CRITICAL IMPORTANCE OF CONSERVATION IN PRESERVING THE LAND BASE FOR AGRICULTURE AND RELATED INDUSTRIES, THE PROJECT COMMITTEE (PC) RECOMMENDED CONSOLIDATION OF THE PROPOSED ACTIVITIES INTO A SINGLE PROJECT. THIS MESSAGE PROVIDES PID APPROVAL FOR THE CONSOLIDATED PROJECT. HOWEVER, PC RECOGNIZES THAT IMPEMENTATION REQUIREMENTS OF THE TWO ACTIVITIES WILL VARY, GIVEN DIFFERENT ELEMENTS IN MOA, AND MAY REQUIRE DIFFERENT CONTRACTORS. USAID/MASERU IS ENCOURAGED TO TAKE A FURTHER STEP IN CONSOLIDATING ITS CONSERVATION RELATED ACTIVITES BY AMENDING THE EXISTING LAND AND WATER RESOURCES PROJECT TO PROVIDE FOR INCLUSION OF THESE PROPOSED CONSERVATION ACTIVITIES AS PHASE II.

2. THE FOLLOWING POINTS RAISED BY THE PC ARE TO BE CONSIDERED IN DEVELOPING THE PROJECT PAPER FOR THE MORE

COMPREHENSIVE PROJECT.

A. THE GENERATION OF SEASONAL EMPLOYMENT IN RURAL AREAS, WHICH WAS PRESENTED AS AN ALP PURPOSE SHOULD INSTEAD BE CLASSIFIED AS A PROJECT OUTPUT.

B. THE FINAL PARAGRAPH ON PAGE 3 OF ALP SUGGESTS A DICHOTOMY BETWEEN AGRONOMIC PRACTICES AND PURE CONSERVATION PRACTICES. A SOIL CONSERVATION PROGRAM MUST BLEND

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AGRONOMIC AND ENGINEERING PRACTICES. THE BEST CONSERVATION APPROACH WOULD CONSIDER AGRONOMIC SOLUTIONS FIRST, AND THE CONSTRUCTION OF TERRACES OR OTHER ENGINEERING STRUCTURES ONLY IF THEY ARE ABSOLUTELY NECESSARY. AGRONOMIC INPUTS SHOULD INCLUDE RECOMMENDED ALTERNATIVE CROPS FOR A PARTICULAR SLOPE AND SOIL TYPE, APPROPRIATE METHOD OF SEEDING--WHETHER IN ROWS OR BROADCAST, ETC.

C. THE TECHNICAL ASSISTANCE TEAM IMPLEMENTING THE ALP TASKS SHOULD INCLUDE A SOIL CONSERVATION AGRONOMIST AND A SOIL CONSERVATION ENGINEER, EITHER ONE OF WHICH COULD BE TEAM LEADER.

D. DEGREE TRAINING SHOULD BE PRIMARILY IN SOIL CONSERVATION, EITHER AGRONOMY OR ENGINEERING--OR SOMEONE IN BOTH FIELDS. MANAGEMENT AND PLANNING OF CONSERVATION ACTIVITIES ARE PART OF THE TRAINING IN SOIL CONSERVATION.

E. THE ALP ACTIVITIES WILL START TO INSTITUTIONALIZE A LARGE SCALE INTERMITTENT LABOR PROGRAM OF CONSERVATION. WHAT PROVISION WILL BE MADE FOR MEETING RECURRENT COSTS WHEN AID CONTRIBUTION CEASES?

F. SUITABLE VEHICLES FOR ALP AND GLM MAY BE SUPPLIED WITHOUT WAIVER BY INTERNATIONAL HARVESTER CO. OF U.S.

G. IN SELECTING A SYSTEM OF CONSTRUCTION AS DISCUSSED PAGE 3, ANNEX C, ALP, SOCIOLOGIST MUST COORDINATE WITH AGRICULTURAL ENGINEER AND AGRONOMIST TO BE SURE THAT A SOCIALLY ACCEPTABLE SYSTEM OF CONSTRUCTION IS ALSO THE OPTIMAL TECHNICAL SYSTEM.

H. THE ENGINEER ON THE PP TEAM MUST HAVE A BACKGROUND IN SOIL CONSERVATION ENGINEERING. AN AGRICULTURAL ENGINEER RATHER THAN A CIVIL ENGINEER WOULD BE APPROPRIATE. THIS ENGINEER SHOULD ALSO BE ABLE TO HANDLE THE 611(A) DETERMINATION WITH PROPER INSTRUCTIONS FROM AN AID ENGINEER. THERE SHOULD ALSO BE A SOIL CONSERVATION

AGRONOMIST ON THE TEAM. SOIL CONSERVATION ENGINEER, AGRONOMIST AND ECONOMIST MIGHT BE OBTAINED FROM UTAH UNDER IQC. ADVISE IF MISSION/GOL COULD PROVIDE CONSERVATIONIST.

I. PROPOSAL FOR HEAVY DUTY EQUIPMENT SHOULD BE REVIEWED IN RELATION TO LOCAL REPAIR CAPACITY AS DEMONSTRATED WITH HEAVY EQUIPMENT ALREADY IN PLACE.

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J. CAPACITY OF MOA (INCLUDING ITS EXTENSION SERVICE) TO MAINTAIN CONSERVATION MEASURES ONCE THEY HAVE BEEN ESTABLISHED SHOULD BE EVALUATED.

K. GLM PROPOSAL DOES NOT APPEAR TO BE AS FULLY DEVELOPED AS ALP PROPOSAL. IS MOA IN FULL ACCORD WITH GLM ACTIVITIES. USAID SHOULD EXPLORE ALTERNATIVE POSSIBILITIES FOR REDUCING STOCK LEVELS.

L. GLM EOPS APPEARS OVERLY OPTIMISTIC IN TERMS OF REALISTIC EXPECTATIONS FOR CHANGE DURING LIFE OF PROJECT.

M. IEE SHOULD BE REVISED TO INCLUDE BOTH ACTIVITIES. STATEMENT ON PAGE 4 REGARDING FERTILIZERS AND PESTICIDES WHICH WILL NOT BE USED REQUIRES CLARIFICATION. WHAT WILL BE USED? VANCE

HF

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ANNEX II

In reply please quote: CPO/6/02
Your Reference:

Cable address: PLANNOFF
Telephone: 23811 Maseru

CENTRAL PLANNING AND
DEVELOPMENT OFFICE
P.O. BOX MS 630
MASERU 100
LESOTHO

1st July, 1980

Mr. Ken Sheper,
USAID, LESOTHO,
MASERU

Dear Mr. Sheper,

CONSERVATION AND RANGE MANAGEMENT PROJECT

The Government of Lesotho agrees in principal to the draft project document subject to the comments made by the Government officials. We hope your mission to Washington will be most successful.

Highest Regards.

Q. MOJI (MRS)
DIRECTOR CENTRAL PLANNING OFFICE

PROJECT DESIGN SUMMARY

LOGICAL FRAMEWORK

Project Title & Number: Land Conservation and Range Development (632-0215)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Program or Sector Goal:	Measures of Goal Achievements:		Assumptions for achieving goal targets:
Increase productivity and income of rural poor engaged in crop and livestock production.	Income of cooperating farmers increased by 12 percent within three years after participating in on-farm planning or range development program.	On-farm plan data Project evaluations.	

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Project Purpose:	Conditions that will indicate purpose has been achieved: End-of-Project status.		Assumptions for achieving purpose:
To conserve and develop national farm land and rangeland resources by carrying out appropriate conservation measures, land use plans, land management practices, and strengthening the institutional capability of the MOA to implement these activities.	1. The MOA Conservation Division will be fully staffed and the Range Management Division will be 75 percent staffed by trained Basotho personnel. 2. Cooperation and coordination among divisions within the MOA will be significantly strengthened and institutionalized. 3. A system of developing and implementing cropping and conservation plans with farmer involvement will be established. 4. Technical procedures for development and management of rangelands will be prepared and demonstrated.	MOA Statistics Project Evaluations	GOL will retain the high priority accorded soil and water conservation and range management.

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Project Outputs: 1. Trained Basotho staff. 2. On-Farm Plans 3. Conservation Plans 4. Conservation Structures. 5. Employment Generation 6. Range Management Area. 7. Rangeland and Livestock Management Policies	Magnitude of Outputs: 1. U.S. Master Degree (2 yr.) 7 U.S. Bachelor Degree (4 yr.) 9 Africa Diploma (3 yr.) 6 Africa Certificate (2 yr.) 14 U.S. Short-Term (2 mo.) 22 4 In-Country (2 mo.) 100 Study Tours 36 2. 20 Planning Teams organized 2,440 On-Farm plans implemented 6,100 ha. covered by plans 3. 25 area conservation plans prepared covering 50,000 ha. 150,000 ha. covered by soil surveys and maps. 4. 4,400 ha. protected by terraces. 60,000 ha. protected by dams, silt traps, gabions, fencing, diversions, waterways, etc. 5. 100 Basotho employed annually for 7,800 person months of labor intensive construction work. 6. Area selected, established and functioning. Grazing Association organized. Range reconnaissance survey completed. Grazing management plan developed and implemented. Animal health program established and implemented. Marketing program developed and operating. 7. Report prepared with analysis and recommendations for specific rangeland and livestock management policies. Key policies and regulations approved by GOL and directives for implementation issued.	1. Training Records Project Evaluations 2. MOA Statistics Project Evaluations 3. MOA Statistics Project Evaluations 4. MOA Statistics Project Evaluations 5. MOA Statistics Project Evaluations 6. Project Evaluations 7. Report on policies . Written implementation directives issued.	Assumptions for achieving Outputs: Adequate numbers of qualified candidates for both degree and non-degree training will be available. Effective implementation of the 1979 Land Act will be carried out.

NARRATIVE SUMMARY		OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Project Inputs:		Implementation Target (Type & Quantity)		Assumptions for providing Inputs:
A.I.D.	($1,000)			
Technical Assistance	$ 3,604.0	Project records and field observation	Routine Project Management Project Evaluations	Funds will be available.
Sr.Range Mgt.Specialist Team Leader	(6 py)			
Range Mgt. Specialist - Planning	(5 py)			
Range Mgt. Specialist - Range Development	(5 py)			
Range Mgt. Specialist - Field Operations	(5 py)			
Range Policy and Regulations Analyst	(2 py)			
Agricultural Engineer - Conservation	(3 py)			
Soil Conservation Scientist	(3 py)			
Conservation Agronomist	(4 py)			
Conservation Information Specialist	(4 py)			
Consultants	(19 pm)			
Admin. Assistant (local hire)	(3½ py)			
Secretary (local hire)	(3½ py)			
Training	$ 1,732.0			
U.S. Academic (MS)	(14 py)			
U.S. Academic (BS)	(36 py)			
Africa Diploma/Certificate	(46 py)			
U.S. Short-Term	(44 pm)			
In-Country Short-Term(4)	(200pm)			
Study Tours	(54 pm)			

NARRATIVE SUMMARY		OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Project Inputs:		Implementation Target (Type & Quantity)		Assumptions for providing inputs:
Construction	$ 887.0	Project records and field observation	Routine Project Management Project Evaluations	Funds will be available.
Senior Houses - Maseru	(6)			
Senior House - Rural	(1)			
Junior Houses - Rural	(2)			
Office Bldg. Extension - Maseru	(1)			
Warehouse/Office Bldgs. - Rural	(2)			
Wool/Mohair Sheds - Rural	(2)			
Dip Tanks	(2)			
Corrals	(2)			
Commodities	$1,110.5			
Vehicles/Spare Parts				
Conservation Field Equipment				
Range Equipment/Supplies				
Maps/Mapping				
Fencing				
Office Furnishings				
Training Materials/Equipment				
Books/Publications				
Office Equipment/Supplies				
Budget Support	$ 707.0			
Field Personnel				
Headquarter Personnel				
Labor Intensive Construction				
Evaluations	$ 180.0			

NARRATIVE SUMMARY		OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Project Inputs:		Implementation Target (Type & Quantity)		Assumptions for providing Inputs:
GOL				
Personnel	$1,249.6	Project records and field observation	Routine Project Management	Funds will be available.
Training	$ 619.1		Project Evaluations	
Construction Sites/Services	$ 159.0			
Building Maintenance/Utilities	$ 90.0			
Commodities	$ 579.8			
Labor Intensive Construction	$3,016.0			

TECHNICAL ASSISTANCE JOB DESCRIPTIONS

1. Senior Range Management Specialist - Team Coordinator
2. Range Management Specialist - Planning/Inventory
3. Range Management Specialist - Range Development
4. Range Management Specialist - Field Operations
5. Range Policy and Regulations Analyst
6. Agricultural Engineer - Conservation
7. Conservation Soil Scientist
8. Conservation Agronomist/ Planner
9. Conservation Information Specialist

Title: Senior Range Management Specialist - Team Coordinator

Duties and Responsibilities:

- Serve as counterpart and advisor to the Chief Range Management Officer of the Range Management Division

- Advise on overall program activities, administration and management of the Range Management Division and assist the Division in planning, carrying out staff evaluations, and training in areas of program concentration, rangeland resource inventories, planning and range development programs.

- Advise on integration of Range Management Division and other Divisions in MOA to address common problems concerning conservation, development, and management and use of rangelands and related resources.

- Serving as Land Conservation and Range Development Project Team Leader, provide technical and administrative guidance to expatriate personnel in matters related to contracts, assignments and other personnel matters and coordinate all activities under project.

- Overall responsibility to assure that the goals and purposes of the Land Conservation and Range Development Project in Lesotho be fully attained.

- The Team Coordinator will arrive in Lesotho four to six months ahead of other team members to arrange for construction of housing, office space, order and receive commodities and make all administrative arrangements with GOL and USAID/Maseru for other team members.

Qualifications:

- A minimum of a MS degree in Range Science is required.

- Extensive experience in range management education, planning, application, administration and evaluation will be essential. Experience in overseas work will be strongly desirable.

- Administrative experience related to range management programs. is necessary

Title: Range Management Specialist - Planning/Inventory

Duties and Responsibilities:

- Serve as counterpart and advisor to head of Range Inventory and Planning Section of Range Management Division.
- Advise Section Head on all aspects of Section responsibilities.
- Assist and advise in the development and coordination of activities of a National Rangeland Inventory.
- Advise and assist in the establishment of permanent rangeland monitoring sites.
- Advise on integration of Section and Range Management Division with other MOA Divisions.
- Advise Division on technical aspects of extension program for District Staff with range management responsibilities.
- Determine need for and assist in organizing short-term studies of rangelands.
- Assist in organizing and conducting in-service training for Basotho staff.
- Assist and cooperate with Team Coordinator to assure that the goals and purposes of the Land Conservation and Range Development Project are fully attained.
- Be prepared to begin assignment 4 - 6 months following the arrival of the Team Coordinator in Lesotho.

Qualifications:

- Candidates should have at minimum a BS degree in Range Science, at least 7 years of relevant range experience with emphasis on rangeland resource inventories and planning, and the capability to train RD staff in inventory techniques, survey work and management planning.
- Experience in overseas work will be desirable.

Title: Range Management Specialist - Range Development

Duties and Responsibilities:

- Serve as counterpart and advisor to the heads of the Range Management and Range Development sections of Range Management Division.

- Advise Range Management and Range Development Section Heads on all aspects of rangeland programs concerned with their areas of responsibility.

- Assist in the development of operational village grazing associations.

- Assist in organizing and conducting in-serve training activities for Basotho range field technicians and educational range meetings for Basotho villagers.

- Advise on the integration of Section and Division programs with other MOA Divisions.

- Advise Range Management Division on technical aspects of Range Extension program for district staff with range management responsibilities.

- Assist and cooperate with Team Coordinator to assure that the goals and purposes of the Land Conservation and Range Development Project be fully realized.

- Be prepared to begin assignment 4 - 6 months follwing the arrival of the Team Coordinator in Lesotho.

Qualifications:

- Minimum a BS degree in range science; at least 7 years combined experience including range management and range livestock work, and a background of rural organization and educational activities, preferably of an extension nature.

- Experience in overseas work is desirable.

Title: Range Management Specialist - Field Operations

Duties and Responsibilities:

- Serve as counterpart and advisor to Range Management Division Area Manager responsible for Range Management Area. (Note: Range Management specialist and counterpart will be located at Range Management Area site.)

- Advise Area Manager on all aspects of management of Range Management Area.

- Advise on all aspects of Grazing Association establishment, function and implementation at field level.

- Advise Range Management Area Manager on information requirements for baseline data and annual monitoring data requirements.

- Advise and assist in collection and analysis of baseline and monitoring data and information.

- Advise and assist in conducting range reconnaissance survey.

- Advise and assist in development and implementation of grazing management plan for Range Management Area.

- Advise and assist in selection of additional Range Management Areas.

- Advise and train managers of additional Range Management Areas on all aspects of organization, development, and implementation of grazing management plan.

- Assist in organizing and conducting in-service training activities for Basotho range field staff in Range Management Area, and educational meetings for Basotho leaders and villagers.

- Assist and cooperate with the Team Coordinator to assure that the goals and purposes of the Land Conservation and Range Management Project be fully realized.

- Be prepared to begin field assignment 4 - 6 months following the arrival of the Team Coordinator in Lesotho.

- Advise and assist in establishment of a basic animal health program.

Qualifications:

- Candidates should have at minimum a BS degree in Range Science or Animal Science with emphasis on range livestock; 5 - 7 years in range and range livestock management; a background of rural organization and educational activities, preferably of an extension nature, and the capability to train range field workers.

- Experience in overseas work will be desirable.

Title: Range Policy and Regulations Analyst

Duties and Responsibilities:

- Serve under the general supervision of the Permanent Secretary of the Ministry of Agriculture in providing assistance and advice to the MOA and Range Management Division in basic policies, procedures, regulations, and legal requirements needed to implement a conservation-oriented range management system.

  Consult with appropriate people in MOA and Ministry of Interior concerning policies and regulations pertaining to management, use and development of rangelands and related resources.

- Review all available reports, documents, and literature available on above subject.

- Prepare interim draft reports of analyses for review and study by appropriate MOA and MOI staff.

- Draft suggested proposals, regulations and policies for proper utilization, development, conservation, management and use of rangelands and related resources.

- Serve as policy advisor to chief Range Management Officer.

- Assist and cooperate with Team Leader to assure that the goals and purposes of the Land Conservation and Range Development Project be fully realized.

- Be prepared to begin assignment 2 months following the arrival of the Team Coordinator in Lesotho.

Qualifications:

- Candidates should have a degree in Range Management, preferably at the MS level with additional experience in legislative matters relating to land use and range management. Training in law, public administration and planning would be highly desirable.

Title: Agricultural Engineer - Conservation

Duties and Responsibilities:

- Serve as counterpart and advisor to the Basotho Conservation Engineer.

- Responsible for assisting and advising for all the engineering requirements of the soil and water conservation program which includes final design and construction, overall supervision of construction, reviews and approval of construction work.

- Prepare extension materials, engineering and conservation guides, soil survey information, as well as on-farm conservation planning, design and implementation of conservation farming on small farms.

- Supervises the survey, drafting, design and cartographic activities of the Conservation Division.

- Assist in the appraisal of the work of all personnel who work on engineering aspects; determine training needs, and provide leadership in developing and conducting in-service training experiences.

- Assist and cooperate with the Team Coordinator to assure that the goals and purposes of the Land Conservation and Range Development Project be fully realized.

- Be prepared to begin assignment 4 - 6 months following the arrival of the Team Coordinator in Lesotho.

Qualifications:

- A B.S. degree in Agricultural Engineering or its equivalent is a minimum qualification.

- Minimum of 5 years experience in land and water conservation and development including surveying, design, layout and supervision of structural conservation works for erosion control, agricultural water development control and management, hydraulics and related disciplines and experience in coordinating structural measures with other agricultural management practices.

- Experience in overseas work will be useful but not essential.

Title: Conservation Soil Scientist

Duties and Responsibilities:

- Serve as counterpart and advisor to the head of the Soil Survey Section of the Conservation Division.

- Advise and assist in the development of detailed soil surveys, cropping potential, soil erodability and fertility determinations.

- Assist conservation planners design conservation farm plans by providing on-site soils information and advice.

- Assist in the development of soil interpretations such as capability units and suitability groups in tillage agriculture, and range and woodland site indices on arable lands.

- Assist in maintaining and operating a soils laboratory.

- Maintain an active training program for Basotho staff at all levels in the soils program.

- Advise on the integration of Section and Division programs with other MOA divisions.

- Assist and cooperate with the Team Coordinator to assure that the goals and purposes of the Land Conservation and Range Development Project be fully attained.

- Be prepared to begin assignment 2 months following the arrival of the Team Coordinator in Lesotho.

Qualifications:

- A B.S. or advanced degree in soil science with considerable experience in soils mapping and conservation farm planning is necessary.

- Overseas experience is desirable, but not mandatory.

- Ability to travel extensively throughout Lesotho on foot and horseback will be required to conduct soil surveys.

Title: Conservation Agronomist/Planner

Duties and Responsibilities:

- Serve as advisor to Conservation Division staff, particularly the Conservation Planning Section and field Area Conservationists, in all technical matters relating to the agronomic aspects of on-farm conservation planning and its implementation.

- Provide technical guidance and assistance to village Conservation Committees and other land users in developing their own on-farm conservation plans.

- Develop and maintain a written technical guide that includes a list of appropriate conservation practices.

- Maintain regular liaison with the Research Division to ensure that recommendations in conservation plans are consistent with research findings.

- Maintain a system of records and reports of conservation planning activities.

- Advise and assist on the preparation of conservation plans and programs with other MOA divisions, particularly the Crops and Livestock divisions.

- Assist in organizing and conducting in-service training activities for Basotho staff in various divisions.

- Assist and cooperate with the Team Coordinator to assure that the goals and purposes of the Land Conservation and Range Development Project be fully realized.

- Be prepared to begin assignment 2 months following the arrival of the Team Coordinator in Lesotho.

Qualifications:

- A B.S. or advanced degree in agronomy with considerable experience in preparation and application of on-farm conservation plans is required.

- Overseas experience is desirable, but not essential.

Title: Conservation Information Specialist

Duties and Responsibilities:

- Will serve as advisor to Basotho specialists involved in preparation and dissemination of information regarding the Conservation Division cropping program.

- Assist field staff in promoting and obtaining farmers participation in conservation and cropping activities.

- Advise and assist in the integration of conservation programs with other MOA Divisions, particularly the Extension and Information Division

- Assist in the planning, organizing and implementing of group meetings, demonstrations, field days and other activities related to the conservation program effort.

- Assist and cooperate with the Team Leader to assure that the goals and purposes of the Land Conservation and Range Development Project be fully attained.

- Assist in organizing and conducting in-service training activities for Basotho staff in various divisions.

- Be prepared to begin assignment 2 months following the arrival of the Team Coordinator in Lesotho.

Qualifications:

- A B.S. or advanced degree in one of the fields of conservation with extensive experience or training in extension methods and information delivery is required.

- Overseas experience is desirable, but not essential.

ANNEX V - A

COST ESTIMATE

LESOTHO LAND CONSERVATION AND RANGE DEVELOPMENT

FY 1980 - FY 1987

($000)

	Foreign Exchange	Local Currency	TOTAL	%
I. GRAND TOTAL	$9,256.8	$6,954.2	$16,211.0	100.0
A. A.I.D.	9,077.2	2,922.8	12,000.0	74.0
B. GOL	179.6	4,031.4	4,211.0	26.0

	Foreign Exchange	Local Currency	TOTAL
II. A.I.D.	$ 9,077.2	$ 2,922.8	$ 12,000.0
A. Technical Assistance (see Attachment I for details of long term TA Costs)	$ 3,430.0	$ 84.0	$ 3,514.0
1. Senior Range Management Specialist (6 p/y's @ 90.0)	540.0	-	540.0
2. Range Management Specialist Planner (5 p/y's @ 90.0)	450.0	-	450.0
3. Range Management Specialist Range Development (4 p/y's @ 90.0)	360.0	-	360.0
4. Range Management Specialist Field Operations (5 p/y's @ 90.0)	450.0	-	450.0
5. Range Policy and Regulations Analyst (2 p/y's @ 90.0)	180.0	-	180.0

6. Agriculture Engineer, Conservation (3 p/y's @ 90.0)	270.0	-	270.0
7. Soil Scientist, Conservation (3 p/y's @ 90.0)	270.0	-	270.0
8. Conservation Agronomist (4 p/y's @ 90.0)	360.0	-	360.0
9. Conservation Information Specialist (4 p/y's @ 90.0)	360.0	-	360.0
10. Administrative Assistant, Local Hire (3.5 p/y's @ 16.0)	-	56.0	56.0
11. Secretary, Local Hire (3 p/y's @ 8.0)	-	28.0	28.0
12. Consultants (19 p/m @ 10.0)	190.0	-	190.0
B. Training	$ 1,712.0	$ 20.0	$ 1,732.0
1. U.S. Academic Training, B.S. 6 Range Div., 3 Conservation Div., 9 total for 4 years @ 20.0	720.0	-	720.0
2. U.S. Academic Training, M.S. 4 Range Div., 3 Conservation Div., 7 total for 2 years @ 20.0	280.0	-	280.0
3. Non-Degree, Diploma/Certificate Diploma - 3 each for 2 years for Range and Conservation Div., Certificate - 7 each for 2 years for Range and Conservation, 46 participant years total @ 8.0	368.0	-	368.0
4. Short Term U.S. 12 Range Div., 10 Conservation Div., 22 total @ 6.0	132.0	-	132.0
5. Short Term In Country, 4 courses (2 Range Div., 2 Conservation) 25 participants each course @ 40.0	140.0	20.0	160.0

6. Study Tours 20 Range Div., 16 Conservation Div., 36 total @ 2.0	72.0	-	72.0
C. Construction	$ -	$ 875.0	$ 875.0
(See Annex V E for detailed construction cost estimate. Amounts shown below include design and construction costs)			
1. Six Senior Houses, Maseru @ 50.0	-	300.0	300.0
2. One Senior House, Rural @ 75.0	-	75.0	75.0
3. Office Building Extension, Maseru @ 260.0	-	260.0	260.0
4. Two Junior Staff Houses, Rural @ 40.0	-	80.0	80.0
5. Two Warehouse/Office Units, Rural @ 40.0	-	80.0	80.0
6. Two Wool/Mohair Sheds @ 30.0		60.0	60.0
7. Two Corrals/Crush Pens @ 10.0	-	20.0	20.0
D. Commodities	$ 968.5	$ 154.0	$1,122.5
1. Four 4WD Pickups @ 15.0	60.0	-	60.0
2. Five 2WD Pickups @ 12.5	62.5	-	62.5
3. Two Sedans @ 9.0	18.0	-	18.0
4. Spare Parts at Approximately 20% of Life of Project Costs of 680.7	27.0	108.0	135.0
5. Conservation Field Equipment (See Attachment 2 to Annex V A for detailed equipment list and costs)	485.0	-	485.0
6. Range Equipment and Supplies (See Attachment 3 to Annex V A for detailed equipment list and costs)	50.0	-	50.0
7. Maps, Mapping, Remote Sensing	12.0	6.0	18.0

8. Fencing (160 Kms @ 1.0)	120.0	40.0	160.0
9. Office Furnishings, Maseru - 21 offices @ 2.0, Conference Room @ 3.0, 5 Secretaries @ 5.0	60.0	-	60.0
10. Training Materials/Equipment	15.0	-	15.0
11. Books, Publications	2.0	-	2.0
12. Office Equipment, Supplies 8 Typewriters @ 1.0, 1 Photocopier @ 12.0, 16 Calculators @ .4, 1 Memeograph @ 2.0, 4 Supply Cabinets @ .4, Expendable Supplies @ 27.0	57.0	-	57.0
E. Budget Support	$ -	$ 902.0	$ 902.0
1. Field Personnel, Approx. One Third Total GOL Additive Cost of 735.0 See GOL Personnel Section Below for Details of Positions and Costs	-	240.0	240.0
2. H.Q. Personnel, Approx. 15% Total GOL Additive Cost of 514.6. See GOL Personnel Section Below for Details of Positions and Costs	-	72.0	72.0
3. Labor Intensive Construction Approx. 75% Total GOL Additive Cost for 6.5 years (Approx. 250 days per year). Labor @ 549.0, Supervisors 200.0, Camp Costs 46.0, Total 795.0	-	590.0	590.0
F. Evaluation (2 Evaluations @ 8 p/m each @ 10.0)	$ 160.0	$ -	$ 160.0
G. Inflation 15% PA, Compounded (24% Local Currency Costs, 76% Foreign Exchange - same ratio as direct costs)	$1,982.0	$ 625.9	$ 2,607.9

H. Contingency 10%, Total Costs (24% Local Currency Costs, 76% Foreign Exchange - same ratio as direct costs)	$ 824.7	$ 261.9	$ 1,086.6
III. GOL	$ 179.6	$4,031.4	$ 4,211.0
A. Personnel	$ -	$ 937.6	$ 937.6
1. Field Personnel, Approx. Two Thirds of Total Additive Costs of 735.0. Technical Field Staff, Five Years @ Total 150.0, Field Equipment Operators, 6.5 Years @ Total 585.0	-	495.0	495.0
2. H.Q. Personnel, Approx. 85% of Total Additive Costs of 514.6 Personnel for 6.5 years: Admin. Officer @ 32.5, 4 Clerk Typists @ 114.0, 4 Drivers @ 114.0, 4 Office Assistants @ 97.6, 2 Cleaning Staff @ 39.0	-	442.6	442.6
B. Training	$ -	$ 619.1	$ 619.1
1. Student Salaries (BS) 6 Range Div., 3 Conservation Div., 9 Total for 4 Years @ 5.0	-	180.0	180.0
2. Student Salaries (MS) 4 Range Div., 3 Conservation Div., 7 Total for 2 Years @ 7.0	-	98.0	98.0
3. Non-Degree, Diploma/Certificate Diploma - 3 each for 2 Years for Range and Conservation Div., Certificate - 7 each for 2 years for Range and Conservation, 46 Participant Years Total @ 4.0	-	184.0	184.0
4. Student Salaries, Short Term U.S. 12 Range Div., 10 Conservation Div., 22 Total @ 1.2	-	26.4	26.4

	5. Student Support, In Country 4 Courses (2 Range Div., 2 Conservation) @ 14.3 per Course	-	59.2	59.2
	6. Student Support, Study Tours 20 Range Div., 16 Conservation Div. over 4 Years @ 10.0	-	40.0	40.0
	7. Student Support - In Service Training, 7 Years @ 4.5	-	31.5	31.5
C.	Construction	$ -	$ 159.0	$ 159.0
	(See Annex V E for detailed construction cost estimates. Amounts shown below include sites/services)			
	1. Six Senior Houses - Maseru @ 9.0	-	54.0	54.0
	2. One Senior House - Rural @ 19.5	-	19.5	19.5
	3. Office Building Extension - Maseru (includes telephone system)	-	40.0	40.0
	4. Two Junior Staff Houses - Rural @ 9.75	-	19.5	19.5
	5. Two Warehouse/Office Units - Rural @ 7.8	-	15.6	15.6
	6. Two Wool/Mohair Sheds @ 2.6	-	5.2	5.2
	7. Two Crush Pens/Corrals @ 1.3	-	5.2	5.2
D.	Building Maintenance, Utilities	$ -	$ 90.0	$ 90.0
	1. Office Building, Maseru 6 Years @ 14.2	-	85.2	85.2
	2. Two Junior Staff Houses, Rural 6 Years @ .4	-	2.4	2.4
	3. Two Warehouses, 6 Years @ .4	-	2.4	2.4

E. Commodities	$ 109.1	$ 470.7	$ 579.8
1. Horses, Mules	-	4.2	4.2
2. Residential Furnishings, Six Senior Houses, Maseru @ 3.9, Two Junior Houses @ 1.95, One Senior House Rural @ 2.6	-	29.9	29.9
3. Fuel and Maintenance Items, Approx. 80% of Life of Project Costs of 680.7	109.1	436.6	545.7
F. Labor Intensive Construction	$ -	$ 205.0	$ 205.0
Approx. 25% of Total Additive Costs for 6.5 Years (Approx. 250 days per year). Labor @ 549.0, Supervisors 200%, Camp Costs 46.0. Total 795.0	-	205.0	205.0
G. Inflation 15% PA Compounded	$ 70.5	$ 1,550.0	$ 1,620.5

DETAILED COST ESTIMATE

TWO-YEAR TOUR - FAMILY OF FOUR

	Item	Two Year Cost
1.	Base Salary (GS-13/5)	$ 66,600
2.	Benefits (7% Base Salary)	4,660
3.	Post Differential (10%)	6,660
4.	Round Trip Travel, Excess Baggage ($2,600 X 4)	10,400
5.	Airfreight (700 lbs. X $4 X 2) Round Trip	5,600
6.	Storage of Effects	1,580
7.	Predeparture Expenses	400
8.	Residential Quarters (nominal GOL rent)	1,500
9.	Utilities ($150 X 24)	3,600
10.	Guard Services ($75 X 24)	1,800
11	Furnishing Allowance	5,000
12.	Education Allowance (two at post)	17,600
13.	Workman's Compensation Insurance	9,000
14.	R/R Travel ($2,400 X 4)	9,600
	Sub-Total	$144,000
15.	Home Office Support Staff Costs @ 10%	14,400
16.	Overhead and Indirect Costs @ 15%	21,600
	TOTAL, Two Year Tour	$180,000
	Costs Per Person Year	$ 90,000

COMMODITY LIST

CONSERVATION DIVISION

	Item	Cost
1	Tractor 4 X 4	$25,000
3	Cat D4	105,000
8	Farm Tractors	120,000
6	Tipping Trailers	20,000
2	Flat Trailers	6,500
3	Disc Plow 2 Furrows	2,300
3	Moldboard Plow, 3 Furrow, Revisible	9,000
12	Caravans, Individual Type	60,000
3	Water Carts 500 Gallon	21,000
3	Fuel Carts 250 Gallon	9,000
1	Lubrication Rig	8,000
15	Portable Huts	6,000
	Small Tools and Miscellaneous Equipment	25,000
	Initial Spare Parts	45,000
	Other Agricultural Implements	23,200
	TOTAL	$485,000

COMMODITY LIST

RANGE MANAGEMENT DIVISION

Item	Cost
Range Seeding Equipment 25 Cyclone Type Grass Seeders	$ 2,500
Seed Harvesting Equipment	4,500
Seed Processing Fanning Mill	3,800
Sacking Equipment and Sacks	1,000
Seed Supplies	12,300
4 Pocket Stereoscopes	600
3 Y-Levels or Equivalent	1,800
Survey Equipment and Supplies	2,300
Soil Testing Equipment	4,200
Communications - 6 2-Way Radios	6,800
4 Sets Teaching Aids	6,200
Miscellaneous	4,000
TOTAL	$ 50,000

OBLIGATION SCHEDULE, A.I.D.
LESOTHO LAND CONSERVATION AND RANGE DEVELOPMENT
($000)

PROJECT INPUTS	FY 80	FY 81	FY 82	FY 83	FY 84	FY 85	TOTAL
1. Technical Assistance	1,931.8	-	900.0	825.0	1,131.0	628.2	5,416.0
2. Training	-	512.9	742.8	826.0	679.8	-	2,761.5
3. Construction	-	851.2	-	183.4	-	-	1,034.6
4. Commodities	158.2	748.3	300.6	114.6	49.4	-	1,371.1
5. Budget Support	-	137.6	256.6	251.0	202.3	224.7	1,072.2
6. Evaluation	-	-	-	-	137.5	207.1	344.6
TOTAL	$2,090.0	$2,250.0	$2,200.0	$2,200.0	$2,200.0	$1,060.0	$12,000.0

Notes: 1. Inflation and contingency distributed to each project input.

2. Budget levels consistent with FY 82 ABS submission

OBLIGATION AND EXPENDITURE SCHEDULE, GOL
LESOTHO LAND CONSERVATION AND RANGE DEVELOPMENT
FY 1981 - FY 1987 ($000)

PROJECT INPUTS	FY81	FY82	FY83	FY84	FY85	FY86	FY87	TOTAL
A. Personnel								
1. Administrative Officer	2.5	5.0	5.0	5.0	5.0	5.0	5.0	32.5
2. Four Clerk/Typists	8.4	17.6	17.6	17.6	17.6	17.6	17.6	114.0
3. Four Drivers	8.4	17.6	17.6	17.6	17.6	17.6	17.6	114.0
4. Four Office Assistants	7.6	15.0	15.0	15.0	15.0	15.0	15.0	97.6
5. Two Cleaning Staff	3.0	6.0	6.0	6.0	6.0	6.0	6.0	39.0
6. Field Personnel			30.0	30.0	30.0	30.0	30.0	150.0
7. Field Allowances	7.5	12.5	17.5	20.0	20.0	20.0	20.0	117.5
8. Field Equipment Operators	45.0	90.0	90.0	90.0	90.0	90.0	90.0	585.0
Sub-Total	$82.4	$163.7	$198.7	$201.2	$201.2	$201.2	$201.2	$1,249.6
Less USAID Personnel Budget Support	(68.0)	(114.0)	(84.0)	(46.0)	-	-	-	(312.0)
Net Sub-Total, Personnel	$14.4	$ 49.7	$114.7	$155.2	$201.2	$201.2	$201.2	$ 937.6
B. Training								
1. Student Salaries (BS)	7.5	45.0	45.0	45.0	37.5	-	-	180.0
2. Student Salaries (MS)	-	21.0	42.0	21.0	7.0	7.0	-	98.0
3. Student Salaries, Non-Degree	-	24.0	48.0	80.0	32.0	-	-	184.0
4. Student Salaries, Short Term US	6.0	6.0	4.8	4.8	4.8	-	-	26.4
5. Student Support, In Country	-	14.8	14.8	14.8	14.8	-	-	59.2
6. Student Support, Study Tours	-	10.0	10.0	10.0	10.0	-	-	40.0
7. Student Support, In-Service Training	4.5	4.5	4.5	4.5	4.5	4.5	4.5	31.5
Sub-Total, Training	$18.0	$125.3	$169.1	$180.1	$110.6	$11.5	$4.5	$ 619.1

PROJECT INPUTS	FY81	FY82	FY83	FY84	FY85	FY86	FY87	TOTAL
C. Construction (Sites/Services)								
1. Six Senior Houses - Maseru	54.0	-	-	-	-	-	-	54.0
2. One Senior House - Rural	19.5	-	-	-	-	-	-	19.5
3. Office Building Extension - Maseru	40.0	-	-	-	-	-	-	40.0
4. Two Junior Staff Houses - Rural	19.5	-	-	-	-	-	-	19.5
5. Two Warehouse/Office Units - Rural	7.8	-	7.8	-	-	-	-	15.6
6. Two Wool/Mohair Sheds	2.6	-	2.6	-	-	-	-	5.2
7. Two Crush Pens/Corrals	2.6	-	2.6	-	-	-	-	5.2
Sub-Total, Construction	$146.0	$ -	$13.0	$ -	$ -	$ -	$ -	$159.0
D. Building Maintenance, Utilities								
1. Office Building	-	14.2	14.2	14.2	14.2	14.2	14.2	85.2
2. Two Junior Houses	-	.4	.4	.4	.4	.4	.4	2.4
3. Two Warehouses	-	.4	.4	.4	.4	.4	.4	2.4
Sub-Total, Maintenance/ Utilities	-	$ 15.0	$ 15.0	$ 15.0	$ 15.0	$ 15.0	$ 15.0	$ 90.0
E. Commodities								
1. Horses, Mules	-	2.1	-	2.1	-	-	-	4.2
2. Residential Furnishings	28.6	-	1.3	-	-	-	-	29.9
3. Fuel and Maintenance Items	26.0	59.8	70.2	80.6	93.6	100.1	115.4	545.7
Sub-Total Commodities	$ 54.6	$ 61.9	$ 71.5	$ 82.7	$ 93.6	$100.1	$115.4	$ 579.8
F. Labor Intensive Construction	$ 15.0	$ 20.0	$ 25.0	$ 30.0	$ 35.0	$ 40.0	$ 40.0	$ 205.0
TOTAL	$248.0	$271.9	$408.3	$463.0	$455.4	$367.8	$376.1	$2,590.5
G. Inflation, 15% PA Compounded	$ -	$ 40.8	$131.6	$241.1	$341.1	$372.0	$493.9	$1,620.5
TOTAL WITH INFLATION	$248.0	$312.7	$539.9	$704.1	$796.5	$739.8	$ 870.0	$4,211.0

EXPENDITURE SCHEDULE, USAID

LESOTHO LAND CONSERVATION AND RANGE DEVELOPMENT

FY 1981 - FY 1987 ($000)

PROJECT INPUTS	FY 81	FY 82	FY 83	FY 84	FY 85	FY 86	FY 87	TOTAL
A. Technical Assistance								
1. Senior Range Mgmt.Specialist	67.5	90.0	90.0	90.0	90.0	90.0	22.5	540.0
2. Range Mgmt.Spec. Planner	67.5	90.0	90.0	90.0	90.0	22.5	-	450.0
3. Range Mgmt.Spec., Range Dvel.	-	67.5	90.0	90.0	90.0	22.5	-	360.0
4. Range Mgmt.Spec., Field Operations	67.5	90.0	90.0	90.0	90.0	22.5	-	450.0
5. Range Policy, Regulations Analyst	67.5	90.0	22.5	-	-	-	-	180.0
6. Agriculture Eng., Conservation	67.5	90.0	90.0	22.5	-	-	-	270.0
7. Soil Scientist, Conservation	67.5	90.0	90.0	22.5	-	-	-	270.0
8. Conservation Agronomist	67.5	90.0	90.0	90.0	22.5	-	-	360.0
9. Conservation Information Spec.	67.5	90.0	90.0	90.0	22.5	-	-	360.0
10. Administrative Assistant (Local Hire)	8.0	16.0	16.0	16.0	-	-	-	56.0
11. Secretary (Local Hire)	4.0	8.0	8.0	8.0	-	-	-	28.0
12. Consultants	50.0	50.0	30.0	30.0	30.0	-	-	190.0
Sub-Total, Technical Assistance	$602.0	$861.5	$796.5	$639.0	$435.0	$157.5	$22.5	$3,514.0

	FY 81	FY 82	FY 83	FY 84	FY 85	FY 86	FY 87	TOTAL
B. Training								
1. Academic (BS)	30.0	180.0	180.0	180.0	150.0	-	-	720.0
2. Academic (MS)	-	60.0	120.0	60.0	20.0	20.0	-	280.0
3. Non-Degree, Diploma/Certificate	-	48.0	96.0	160.0	64.0	-	-	368.0
4. Short Term - U.S.	30.0	30.0	24.0	24.0	24.0	-	-	132.0
5. Short Term - In Country	-	40.0	40.0	40.0	40.0	-	-	160.0
6. Study Tours	-	16.0	16.0	16.0	16.0	8.0	-	72.0
Sub-Total, Training	$ 60.0	$374.0	$476.0	$480.0	$314.0	$28.0	$ -	$1,732.0
C. Construction								
1. Six Senior Houses - Maseru	300.0	-	-	-	-	-	-	300.0
2. One Senior House - Rural	75.0	-	-	-	-	-	-	75.0
3. Office Building Extension - Maseru	260.0	-	-	-	-	-	-	260.0
4. Two Junior Staff Houses - Rural	40.0	-	40.0	-	-	-	-	80.0
5. Two Warehouse/Office Units - Rural	40.0	-	40.0	-	-	-	-	80.0
6. Two Wool/Mohair Sheds	30.0	-	30.0	-	-	-	-	60.0
7. Two Corrals/Crush Pens	10.0	-	10.0	-	-	-	-	20.0
Sub-Total, Construction	$755.0	$ -	$120.0	$ -	$ -	$ -	$ -	$ 875.0

	FY 81	FY 82	FY 83	FY 84	FY 85	FY 86	FY 87	TOTAL
D. Commodities								
1. Four 4WD Pickups	60.0	-	-	-	-	-	-	60.0
2. Five 2WD Pickups	12.5	37.5	12.5	-	-	-	-	62.5
3. Two Sedans	18.0	-	-	-	-	-	-	18.0
4. Spare Parts	15.0	20.0	25.0	30.0	25.0	20.0	-	135.0
5. Conservation Field Equipment	485.0	-	-	-	-	-	-	485.0
6. Range Equipment/Supplies	35.0	-	15.0	-	-	-	-	50.0
7. Maps/Mapping/Remote Sensing	9.0	9.0	-	-	-	-	-	18.0
8. Fencing	80.0	-	80.0	-	-	-	-	160.0
9. Office Furnishings	60.0	-	-	-	-	-	-	60.0
10. Training Materials/Equipment	15.0	-	-	-	-	-	-	15.0
11. Books/Publications	2.0	-	-	-	-	-	-	2.0
12. Office Equipment/Supplies	25.0	20.0	4.0	4.0	4.0	-	-	57.0
Sub-Total, Commodities	$ 816.5	$ 86.5	$ 136.5	$ 34.0	$ 29.0	$ 20.0	$ -	$1,122.5
E. Budget Support								
1. Field Personnel	60.0	90.0	60.0	30.0	-	-	-	240.0
2. H.Q. Personnel	8.0	24.0	24.0	16.0	-	-	-	72.0
3. Labor Intensive Construction	60.0	130.0	120.0	110.0	70.0	60.0	40.0	590.0
Sub-Total, Budget Support	$ 128.0	$ 244.0	$ 204.0	$ 156.0	$ 70.0	$ 60.0	$ 40.0	$ 902.0
F. Evaluation	-	-	-	80.0	-	-	80.0	160.0
TOTAL	$2,361.5	$1,566.0	$1,733.0	$1,389.0	$848.0	$265.5	$142.5	$8,305.5

	FY 81	FY 82	FY 83	FY 84	FY 85	FY 86	FY 87	TOTAL
G. Inflation, 15% PA Compounded	$ -	$ 234.9	$ 558.8	$ 723.4	$ 635.1	$268.5	$187.2	$ 2,607.9
H. Contingency, 10% All Costs	$ 231.4	$ 180.1	$ 229.2	$ 211.2	$ 148.3	$ 53.4	$ 33.0	$ 1,086.6
TOTAL WITH INFLATION AND CONTINGENCY	$2,597.6	$1,981.0	$2,521.0	$2,323.6	$1,631.4	$587.4	$362.7	$12,000.0

CONSTRUCTION COST ESTIMATES

The following construction cost estimates have been developed and prepared by the senior USAID/Lesotho Engineer and are considered to be reasonably firm estimates in satisfaction of FAA Section 611 (a) requirements.

A. Summary of Costs

	AID	GOL
1. Six senior houses - Maseru	$300,000	$54,000
2. One office building - Maseru	260,000	40,000
3. One senior house - rural	75,000	19,500
4. Two junior houses - rural	80,000	19,500
5. Two warehouse/offices - rural	80,000	15,600
6. Two wool/mohair sheds - rural	60,000	5,200
7. Two dip tanks	12,000	2,600
8. Two corrals	20,000	2,600
Total for all Construction	$887,000	$159,000

B. Detailed Construction Cost Estimates

	AID	GOL
1. Six senior 3-bedroom project houses in Maseru at $45,000 per house	$270,000	
Extension of utility services (sewer, water, electricity), paved access roads, storm drainage, driveway at approximately 20 percent		54,000
Architect - Engineer Design	22,000	
Architect - Engineer Supervision and Inspection	8,000	
Sub-Total	$300,000	$54,000

2. One ofice building in Maseru.
Note: As appropriate, construct either as extension to Thaba Basiu Office Building or as a separate building with connecting passageways as required. Approximate space requirements follow:

- 8 offices at 14 X 14 ft.	1,568 sf.
- 13 offices at 10 X 10 ft.	1,300 sf.
- 5 secretarial offices at 120 sf.	600 sf.
1 conference room at 15 X 25 ft.	375 sf.
- 2 storage rooms at 10 X 6 ft.	120 sf.
- 1 library/reference room at 12 X 15 ft.	180 sf.
- 2 janitorial closets at 50 sf.	100 sf.
- 2 latrine facilities at 90 sf.	180 sf.
- 2 tea rooms at 50 sf.	100 sf.
- reception/switchboard area at 10 X 12 ft.	120 sf.
- hallways	340 sf.
Total Area	4,883 sf.

	AID	GOL
Construction cost at approximately $40 per sq. ft.	$200,000	
Extension of utility services (sewer, water, electricity), paved access road at approximately 20 percent		$40,000
Architect - Engineer Design	37,000	
Architect - Engineer Supervision and Inspection	23,000	
Sub-Total	$260,000	$40,000

3. One senior 3-bedroom house in rural area at $65,000 $ 65,000

Extension of utility services (public sewer or septic tank with leaching tile drain field, public water or well with pump and elevated storage tank, electricity or small generator with fuel storage), storm drainage, access road, driveway at approximately 20 percent		19,500
Architect - Engineer Design	7,500	
Architect - Engineer Supervision and Inspection	2,500	
Sub-Total	$75,000	$19,500

		AID	GOL
4.	Two junior technicians 2-bedroom houses in rural area at $35,000 per house	$70,000	
	Extension of utility services (public sewer or septic rank with leaching tile drain field, public water or well with pump and elevated storage tank, electricity as available), access road, storm drainage, driveway at 19,500		19,500
	Architect - Engineer Design	7,000	
	Architect - Engineer Supervision and Inspection	3,000	
	Sub-Total	$80,000	$19,500

5.	Two field warehouse/office buildings in rural areas			
	- 3 offices at 170 sf.	510 sf.		
	- 1 warehouse at 400 sf.	350 sf.		
	- 1 latrine facility at 70 sf.	70 sf.		
	- 1 janitorial closet at 30 sf.	30 sf.		
	- 1 storage room at 50 sf.	50 sf.		
	- 1 hallway at 50 sf.	50 sf.		
	Total Area	1,060 sf.		
	Construction cost at $33 per sq. ft. = $35,000 per building x 2 buildings		$70,000	
	Utilities (public sewer or septic tank with leaching tile drain field, public water well with pump and elevated storage tank, electricity as available), storm drainage, access road, at $7800 per site			15,600
	Architect - Engineer Design		6,000	
	Architect - Engineer Supervision and Inspection		4,000	
	Sub-Total		$80,000	$15,600

	AID	GOL
6. Two Wool/Mohair sheds in rural areas with each shed 30 X 40 ft. = 1200 sq. ft. at $20 per sq. ft. = $24,000 per shed	$ 48,000	
Utilities services (public sewer or septic tank with leaching tile drain field public water or well with pump and elevated storage tank, electricity as available), storm drainage, access road, at $2600 per site		5,200
Architect - Engineer Design	7,000	
Architect - Engineer Supervision and Inspection	5,000	
Sub-Total	$60,000	$5,200
7. Two Corrals/Crush Pens. Cost of construction estimated at $12,600 per corral	$20,000	$5,200
Total for all Construction	$875,000	$159,000

The GOL contribution for providing utility service to the construction sites in rural areas will be limited to a reasonable amount. If electricity generators or water line holes or other such capital investments are required as a result of proposed rural construction in this project, a cost-sharing arrangement using project contingencies to assist with the cost of capital items to install these services shall be negotiated.

COSTING OF OUTPUTS/INPUTS

LESOTHO LAND CONSERVATION AND RANGE DEVELOPMENT

($000)

	PROJECT OUTPUTS 1/							
	# 1	# 2	# 3	# 4	# 5	# 6	# 7	Total
A. A.I.D. Inputs								
1. Technical Assistance	541.6	1,624.8	541.6	270.8	-	1,624.8	812.4	5,416.0
2. Training	2,761.5	-	-	-	-	-	-	2,761.5
3. Construction	103.5	206.9	103.5	51.7	51.7	362.0	155.3	1,034.6
4. Commodities	68.6	137.1	68.6	411.3	137.1	479.9	68.5	1,371.1
5. Budget Support	-	159.7	53.2	159.7	486.7	212.9	-	1,072.2
6. Evaluation	49.2	49.2	49.3	49.3	49.2	49.2	49.2	344.6
Sub-Total	$3,524.4	$2,177.7	$816.2	$ 942.8	$ 724.7	$2,728.8	$1,085.4	$12,000.0
B. GOL Inputs								
1. Personnel	83.6	83.6	83.7	836.3	83.6	418.2	83.6	1,672.6
2. Training	890.1	-	-	-	-	-	-	890.1
3. Construction	16.3	32.7	16.3	8.2	8.1	57.2	24.5	163.3
4. Building Maint./Utilities	-	22.4	22.4	22.4	22.5	37.4	22.4	149.5
5. Commodities	-	195.0	48.8	390.0	-	292.5	48.8	975.1
6. Labor Intensive Construction	-	-	-	224.5	135.9	-	-	360.4
Sub-Total	$ 990.0	$ 333.7	$171.2	$ 1,481.4	$ 250.1	$ 805.3	$ 179.3	$ 4,211.0
TOTAL	$4,514.4	$2,511.4	$987.4	$ 2,424.2	$ 974.8	$3,534.1	$1,264.7	$16,211.0

1/ Outputs:
- # 1 Trained Basotho Staff
- # 2 On Farm Plans
- # 3 Conservation Plans
- # 4 Conservation Structures
- # 5 Employment Generation
- # 6 Range Management Area
- # 7 Rangeland and Livestock Management Policies

SOCIAL ANALYSIS

This section treats seven social factors which could affect the operation of this project, viz.;

I. Land Tenure
II. The Role of the Chief
III. Village Lines of Communication
IV. Migrant Labor
V. Labor Intensive Options
VI. Types of Rural Households
VII. The Role of Women

I. Land Tenure

A. The present land tenure system dates to the formation of this country. It was predicated on the intention to prevent alien exploiters from capturing the remaining land heritage of the Basotho, as they had the lands beyond the Caledon. By the policy all land belongs to the Nation and is held in trust by the King. The administration of land is handled by the headmen and chiefs in the name of the King. Every adult married male claims a right to use that amount of land needed to support his family. The land is normally divided into three parcels reflecting different soil types or other conditions. The recipient of land gains only unsufruct rights. If he fails to cultivate for three seasons, he loses his claim to the land. No fencing is permitted because all crop land reverts after harvest to common grazing rights of the community's animals, just as do the ranges of the village. The claimant to the land has no legal title, but it persists in his use as long as he resides in the village and obeys the rules applying to it.

His widow is normally allowed to continue to use the land, as is his wife if he is absent on a labor contract, though the amount may be reduced to reflect subsistence needs of the family. In fact, over 14 percent of the married males have no land assigned to them yet, and many more have one small piece of marginal land. As the population grows the chief is pressed to granting permission to build a hut and to crop lands which are vulnerable to erosion and which are remote from the community. Some evidence suggests that chiefs sometimes accept payment for favored allocations of land, though this is not traditional practice.

B. A new land tenure law has just been passed by the legislature in 1979 intended to meet the demands of the World Bank for permanence of tenure for the farmers. Under it, licenses will be granted to farmers for their fields and 90 year leases for their residence sites. The law permits improvements to be made on the land. The land may be transmitted by inheritance but may not be sold without the approval of the Government. Land allocations are to be made by a committee headed by a chief but including elected or appointed citizens, who can out vote his decision. Thirty land committees will eventually establish licenses and leases to all the land of the country. Title remains with the King. The implementa-

tion of this bill for crop and range lands will begin with negotiations between the Ministry of Agriculture and the Ministry of Interior in Selected Agricultural Areas, such as areas projected for development, with consultation and agreement with the chiefs and farmers involved. Full coverage of the rural areas will take many years to accomplish.

The bill significantly reduces the power of the chief in land allocation, his most significant remaining authority. It does not accomplish consolidation or reallocation of land, nor does it directly address questions of conservation, grazing limitations, or fragmentation, though chiefs and village committees may choose to incorporate these decisions in the process of surveying and recording licenses. Political resistance by the chiefs, administrative organizations and the costs and lack of technical staff could delay its implementation.

C. The project may well assume the principles of the law are effective in the sense that the technicians could expect the chief and his people to allow improvements, permanent grass cover on fallow fields, and even seek permission to exchange holdings in order to consolidate the land for agronomic practices. The people could be induced to make improvements if the chief assented to the principles of the law.

II. The Role of the Chief

A. The tradition of the Basotho is "the chief is chief by the people", that is, his authority is by assent. The assent is expressed through the pitso, a village meeting in which every adult male attends the khotla, or court of the chief, to deliberate public issues. The most crucial issues of the community were traditionally land, justice and warfare. The national government absorbed matters of justice and warfare long since, and, as seen above, is now addressing land. Nonetheless, the chief is still regarded as the administrative leader of the people.

B. In the 19th century, a new layer of chief's was superimposed between the village and local level and the paramountry of Moshoeshoe's sons. These major district chiefs gathered much of the real power through their access to lines of communication with government. They were mainly appointees of the Paramount Chief and were close relatives of the royal family. They normally divide into the line of Letsie, Moshoeshoe's heir to the Paramountcy, and Molapo, his younger son. Much of the political climate of contemporary Lesotho can be traced to the division of authority between the two lines; the King being of Letsie's family, and the Prime Minister of Molapo's.

C. While the authority of the chiefs is continually eroding, they remain an official part of the government. They fall within the Ministry of Interior, where they receive pay in lieu of judicial and other fees they once collected. More significantly, many chiefs exercise authority through the commitment of the people. The idea of chieftainship endures in the minds of the people. The successful operation of rural development projects depends not only on the support of the technical ministries, but on the

parallel support of the administrative line of the chiefs.

III. Village Lines of Communication

When one deals with rural farmers and herders, a plethora of organizations exist which must be recognized and relationships understood. The following outline summarizes major relationships.

A. The Chiefs and Headmen

1. Administrative - The Pitso (a popular assembly of all adult males, a long tradition of participatory government. Women may participate in discussions but from outside the khotla).

2. Land - "Village Development Committee"

   - 1/2 appointed by Minister of Interior
   - 1/2 elected by Pitso
   - Chief not a member
   - There may be one Committee over two or three villages
   - Deal with recommendation for land

3. New Rural Land Committees of Land Tenure Allocation Bill 1979

   - Relationship to Village Development Committee not known yet. Principal Chief is ex-officio chairman with one vote
   - District Administrator
   - Three persons appointed by Minister of Interior

B. Ministry of Agriculture

1. District Agriculture Committee (one in each of 10 districts).

   - Professional Ag. Staff
   - Chaired by District Ag. Coordinator

2. District Farmers' Committee

- Appointees or elected representatives of Village Farm Committees

3. Special Purpose Committees, i.e., Nutrition and Conservation

- Wide variety of origins - election, appointment, self-appointment
- Generally at village level

C. Ministry of Rural Development

1. "Village Development Committee"

- Sometimes same Committee as Chief's Land Committee
- Meant to coordinate all village development
- May organize specific committees for individual projects
- Partly elected, partly appointed

In addition to these formal village communication structures, many informal, temporary and individual relationships exist. Project participants must become intimately acquainted in the village to obtain the fullest cooperation.

IV. Migrant Labor

Migrant labor has been a fact of Basotho life since the Voortrekkers employed Africans on their farms, but it became increasingly important after the opening of the mines in South Africa. By the end of the 19th century, the Basotho were the largest single source of foreign employees in the mines. This pattern continues today, not only because of the lack of employment opportunities in Lesotho, but also because the Basotho volunteer for the most difficult assignment of sinking shafts; an object of ethnic pride. Today 60 percent of the adult male work force is absent from the villages engaged in migrant labor. These migrants contribute the largest share to the gross national product.

The contribution to national income complements their contribution to village support. It is estimated that fourteen days' labor in the mines produces as much income as a year's labor on the home farm. Therefore, while agriculture is a sub-subsistence level production, the income level of the migrant family allows many consumer luxuries, and even the purchase of much of the family food.

On the negative side, the migrant leaves his family for extended seasons while retaining authority over the wife including her farming schedule. The social adjustments become complicated by the lure of unneeded luxuries and "pleasures" of Maseru, which distract the miners from returning to take up their normal life. Many miners desert their rural families, others return home crippled or broken to add themselves as a burden to the family.

Projections indicate that the numbers of workers needed in South Africa will reduce sharply in the near future. Recent statistics indicate a reduction of about 4 percent per year last year and the current year. This thrusts 10,000 workers onto the already taxed labor opportunities of Lesotho at a time when natural increase is adding an additional 30,000 youths per year. The ability of the nation to absorb them largely depends on the agricultural sector, as there is only minor industry in the country.

Migrant labor is politically distasteful as well as being socially and economically disruptive to the nation. The dependence on remittances from the mines can be drastically affected by the political polemics of the Government, thus adding to the instability of the economy.

V. Labor Intensive Options

Two projects have demonstrated employment alternatives for small numbers of workers. One is administered in the Ministry of Works. It pays gazetted minimum wages of R2.50 per day for road and airstrip construction. Estimates indicate that the project can employ about 1,400 individuals currently and could expand if funds were available - the work is there, and the quality and costs are judged to be competitive. The major constraints are supervisory technical staff people, field foremen and funds. The evidence indicates that mining skills are not necessarily transferable to these works projects, especially for foremen; as the mines allow only very routine duties, while labor intensive works require judgemental skills. There has not been a shortage of recruits when labor intensive projects are advertised. A question emerges as to whether the workers are neglecting important farm duties when they join the crews. Project activities need to consider this problem. The Labor Intensive Construction Unit of the Ministry of Works is organized to support all government needs, but operates primarily as a service of its own Ministry.

The Food Management Unit of the Cabinet Office coordinates Food-for-Work program in rural conservation activities. Food aid from P.L. 480 and other sources is used to hire local farmers to build conservation structures. The Ministry of Rural Development and Cooperatives carries out small conservation structure construction projects with food aid, but does not have technical expertise of the Conservation Division of the Ministry of Agriculture which conducts similar activities with food aid in area based programs. They are intended to be complementary activities with the other ministry's activities, but compete for the limited conservation engineering skills available.

Most of the crews are women, because most poor rural families are headed by women (see below). They work five hours per day for five days per week for three weeks per month to earn "one food unit" which is intended to provide sustenance for a normal family for a month.

The project is able to recruit all the labor it needs, but men rarely choose this type of project as they are accustomed to work for cash. (Some experiments have been considered which combine food and wages). These projects may lack the engineering competence and supervision needed to assure the best results. The amount of work completed is also sometimes questioned. There seems to be no shortage of food aid to support this type of work in the villages.

VI. Types of Rural Households

Categoric statements about farmers in Lesotho are dangerous because social circumstances create widely divergent levels of farming efficiency.

The major classes are described here:

A. Beginning families:

These are characterized by absentee husbands who are at the mines seeking to import cattle to get a start in life. They generally have not yet received a land allocation to set up farming. The wife works for others when she is able.

B. Maturing Households:

The husband is normally still working in the mines, but he has been allocated fields and controls his wife's farming activities in absentia; telling her what to plant, when to plough and weed, and what to put on in the way of fertilizers, insecticides, etc. The women may have joined a beer/credit association in order to earn petty cash. She will be responsible for the daily care of her children and her home as well as the farm, and she may participate in food-for-work programs as well.

C. The Senior Family:

The husband has returned from the mines to take up his role in this type of family. He takes direct personal management of the family resources which his wife has learned to handle during his long years of absence. This group includes many men who have been injured or weakened in body and will so that they are not effective at farming. Among the group are a few who have resolved to use their wages to invest in their farms and who take effective control and make farming profitable.

D. Women Heads of Households:

About 30 percent of all rural families are headed by widows, divorcees or women who have been deserted by their husbands. This group

has the widest range of wealth, spread across the entire spectrum of beginning, maturing and senior households. They are frequently active in food-for-work projects and in committees in the villages. They currently have no legal right to land, which is reserved for married males, but in practice retain its use.

E. Professional Farmers:

A category of men who never went to the mines, began with sufficient holdings to make a living and persisted with some success. They often acquire implements and herds of oxen which they use to plough neighbours fields for a share of their crops as well. This category also includes men who were unable to take migrant labor contracts because of disabilities. They are frequently the poorest villagers.

VII. Role of Women

Women have traditionally been subservient to men in Basotho society, though some women have taken significant leadership roles as regents, as for example the mother of the present King. Migrant labor of men has left many women in the position of leadership in their families, though the husband still retains the authority, which he may use via the mail. Land claims have been restricted to married males, but practice has allowed the wives to retain them during temporary absences and after the men die or desert them.

In the modern sector, women are generally more educated than men. Sixty percent of rural women are functionally literate, having had four years of school, whereas most men have had little opportunity for education because of their role as herd boys during the critical school years. Fewer than half as many men as women are literate. On the other hand, 60 percent of the men obtain labor contracts each year, while very few women can do so. The women's horizon is thus more limited than the men's.

Despite their demanding role as wives, mothers and farmers, women are readily available to take on labor. More significantly they take a very active role in community projects. Many women are elected or appointed to District Farmers' Committees.

This project will need to incorporate women into intensive projects, into application of conservation farming and in the entire planning, educating and implementing phases because of their predominance in the rural community. To do so effectively, labor projects will need to be timed for the off seasons for farm work. It can contribute significantly to the incomes of the most vulnerable section of the rural community while permiting that group to gain new skills.

ECONOMIC ANALYSIS

This project will have a significant impact on production of principal crop and livestock products in Lesotho. Conservation and range improvements will be reflected in increased crop and animal yield to which estimates of market prices can be applied giving a reasonable estimate of total economic returns expected to result from the project. Project costs are estimated and spread over a 20 year period. After A.I.D. assistance to the project terminates, the GOL should be able to continue the program and reap its substantial long-term benefits.

Tables have been presented to indicate the changes that are projected with and without the project. Each table contributes to development of the final benefit table from which the IRR is derived. The purpose of each table in sequence is described below.

Table 1: Livestock Numbers and Changes Over Time Without the Project

Without the program, livestock numbers will decrease because of one overpowering reason. The nation's ranges are deteriorating rapidly due to overstocking and overgrazing.

As range feed declines so will animal numbers. Year 0 in Table 1 includes the latest estimates of animal numbers from the Bureau of Statistics (BOS) Report for 1978. Year 20 figures are estimates based on the assumption that ranges will deteriorate without a strong program in range management. The spread over time shows the direction of change over 20 years and that livestock numbers significantly decline.

Table 2: Livestock Product Price Changes Over Time

Livestock markets are much weaker than wool or mohair markets. Still some animals are sold in commercial markets and livestock owners have a feeling for the price of their stock in the market or for trading or for social traditions involving livestock. The prices in Table 2 for Year 0 are those estimated in the LASA Team Research Report No. 2, October 1978. Prices for Year 20 are conservative estimates of the influence of inflation on farm prices (3 percent per year). The price flows indicate that prices in absolute terms will increase slower in the early years than in the later years, then stabilize around Year 18. Direction of change is the important variable and there is a clear upward trend.

Table 3: Livestock Productivity Changes Over Time Without the Project

Because of deteriorating ranges, livestock will have to travel further for feed, more will die, health will decline, etc., all resulting in average weights for animals in the herd falling over the period. The figures for Year 0 are estimates from LASA Report No. 2

and are considered averages for all ages of animals in the national herds. Year 20 estimates are based on estimated declines in animal yields expected as feed conditions get worse. The productivity trend is down.

Table 4: Survival Rate to One Year of Age Changes Over Time With The Project

These figures reflect the impact of the project on two important factors - birth rates and death losses. Birth rates will go up and death losses will go down with the project due to range feed improvements and improving herd management. The percentages of young surviving to one year of age in Year 0 in Table 4 are those reported by the BOS in 1978. Estimates for Year 20 are conservative and are possible with improved range and herd management. The spread for survival rates over 20 years indicates that changes will be small in the early years, larger in the middle years and stabilized at a reasonable level in the later years.

When applying survival rates to a declining flow of breeding age females (to be explained later), the number of young animals surviving increase slightly. Since an animal unit (AU) includes the mother and her young, AUs have gone down but the number of marketable young has increased, which increases stock raisers income. Since part of the project is to improve marketing systems and reduce the marketing age of animals from the present 7 - 9 years to 2 - 3 years for market animals and 6 years for the smaller breeding herd, the results are less animals on the range, more marketed, and more income. The trends in numbers are down; the survival rates are up; and numbers of young animals are up. All these trends reflect a healthier range livestock industry and feed resource.

Table 5: Animal Productivity Changes Over Time with the Project

With the project, range conditions will improve and livestock health will improve. The project calls for more supplemental feeding during some seasons. Supplemental feed will come from permanent or rotation pastures, harvested fodder, and increased production of feed grains. These conditions, along with those described with the previous table will result in increased yields per animal. The figures for Year 0 were obtained from the BOS Report for 1978 and LASA Report No. 2, 1978 and are averages for all ages in the national herd. These figures can easily increase to those estimated for Year 20. The spread changes show an increase in yields over time with the project.

Table 6: National Herd Composition Changes Over Time with the Project

If the ranges are overstocked and deteriorating, how can the level of overstocking be estimated? This problem has been analyzed by others and reported in various places. The LASA Research Report No. 2 includes some estimates of present grazing rates and the possible carrying capacity of the national range areas. Applying average AU estimates to the number of animals in the national herds, total AUs at present are at Year 0 levels. If the carrying capacity figures are used for Year 20, then the herd composition in Year 20 can be calculated. The spread over the years indicates that the number of livestock on the ranges must be reduced to bring stocking rates in line with the carrying capacity which will stabilize the range feed supply. The spreads indicate that reductions will be small in the early years, picking up in the middle years, and stabilizing about Year 12 to 13, which reflects the urgency to reduce grazing pressure if the ranges are going to be saved and water run-off reduced. The trends are all down. The trend in the breeding female numbers were discussed in connection with Table 4. No attempt has been made to change the relative composition of the national herd over the period. The project may affect those relationships, which might also improve range conditions.

Table 7: Goat Herd Composition Changes Over Time with the Project

Another factor that affects the economic status of the national livestock herd is the sex ratio. Just increasing the number of females to males would reduce animal numbers. The composition of the goat herd for Year 0 was found in BOS reports; for Year 20 it is more nearly as it should be to maintain a good breeding herd. Of course, all excess males would be marketed and taken off the range at younger ages than at present as discussed earlier. The trends are down and stabilizing at about Year 12 reflecting the need for a vigorous program in herd management.

Table 8: Sheep Herd Composition Changes Over Time with the Project

The same basic explanation as for Table 7 applies to Table 8.

Table 9: Cattle Herd Compsotion Over Time with the Project

Table 7 discussion also applies to Table 9. In addition, it is suggested that by Year 11 or 12, most farmers will have changed from expensive ox power to less expensive small machine power for tillage, or, through cooperative organizations, to field tractor power. This trend is already underway.

Table 10: Fodder Production Changes Over Time with the Project

The national need for conservation farming and the need for supplemental livestock feed during some seasons will shift poor cropland, steep cropland, and fallow lands to permanent or rotation pastures and harvested fodder crops. The project will encourage such a trend. The hectarage, yield and value in Year 0 are estimates from the BOS and LASA reports. Those in Year 20 are reasonable estimates of potentials. The trends are all up.

Table 11: Other Small Grain Production Changes Over Time with the Project

The discussion for Table 10 applies to Table 11. Small grains include barley, oats, some pulses, etc. These grains will be used as supplemental feed for livestock and will be part of the conservation farming rotations.

Table 12: Bean Production Changes Over Time with the Project

Table 10 discussion applies to Table 12, except that because beans are a speciality food crop, only yields are shown to increase as conservation farming will impact on the crop.

Table 13: Sorghum Production Changes Over Time with the Project

Table 10 discussion applies to Table 13. Conservation farming will reduce the area used for this crop, but yields will increase as a result. Total production will increase enough to eliminate the present deficit in Lesotho.

Table 14: Maize Production Changes Over Time with the Project

Table 13 discussion applies to Table 14.

Table 15: Pea Production Changes Over Time with the Project

Table 12 discussion applies to Table 15.

Table 16: Wheat Production Changes Over Time with the Project

Table 13 discussion applies to Table 16.

Table 17: Annual Livestock Herd Value Changes Over Time with the Project

The figures in Table 17 are calculated from the appropriate tables discussed earlier.

Tables 18, 19, 20, 21, 22 and 23:

Table 17 discussion applies to Tables 18, 19, 20, 21, 22 and 23.

Table 24: Livestock National Discounted Value without the Project

The percentage of herd value marketed each year plus number of nonmarketed animals discounted at 10 percent result in the annual possible "income". The previous tables were used as sources.

Tables 25, 26 and 27:

Table 24 discussion applies to Tables 25, 26 and 27. The IRR calculation tables are in the text of the Economic Analysis section (III. D.) of the Project Paper.

Conclusions

Correcting the misuse of range and farm lands can improve the health of the Lesotho economy, people, animals and the land. The IRR's calculated on the net national value and the net discounted value are conservative, but still favorable and competitive with many other alternative uses for capital.

Table 1: Livestock Numbers and Changes Over Time Without the Project

Year	Cattle	Sheep	Goats
	- - - - - - thousand head - - - - - - - - - -		
0	522	929	619
1	520	920	619
2	520	920	619
3	520	900	600
4	520	900	600
5	500	900	600
6	500	880	600
7	500	880	580
8	500	880	580
9	500	860	500
10	450	860	580
11	450	860	550
12	450	830	550
13	450	830	550
14	400	830	500
15	400	800	500
16	400	800	500
17	400	800	500
18	400	750	500
19	400	750	500
20	400	750	500

Table 2: Livestock Product Price Changes Over Time

Year	Livestock			Small Products	
	Cattle	Sheep	Goats	Wool	Mohair
	- - - - - - - - - - Maloti per kilogram - - - - - - - - - - -				
0 [1]	.95	.75	.75	1.00	9.00
1	.95	.75	.75	1.02	9.10
2	.96	.77	.77	1.03	9.20
3	.97	.79	.79	1.04	9.30
4	.99	.82	.82	1.06	9.50
5	1.02	.85	.85	1.08	9.90
6	1.05	.89	.89	1.10	10.30
7	1.08	.99	.92	1.13	10.70
8	1.12	.95	.95	1.16	11.10
9	1.16	.98	.98	1.19	11.50
10	1.21	1.11	1.11	1.23	12.00
11	1.27	1.14	1.14	1.27	12.50
12	1.33	1.18	1.18	1.32	13.00
13	1.39	1.22	1.22	1.39	13.50
14	1.45	1.26	1.26	1.45	14.00
15	1.50	1.30	1.30	1.52	14.50
16	1.55	1.34	1.34	1.60	15.00
17	1.60	1.38	1.38	1.68	15.50
18	1.65	1.40	1.40	1.70	16.00
19	1.70	1.40	1.40	1.75	16.00
20 [2]	1.70	1.40	1.40	1.80	16.00

[1] Based on available data in Bureau of Statistics Reports and LASA Research Reports for 1978.

[2] Projected at a 3 percent rate compounded annually.

Table 3: Livestock Productivity Changes Over Time Without the Project

Year	Average Weight Change				
	Cattle	Sheep	Goats	Wool	Mohair
	- - - - - - - - - kilograms per head - - - - - - - - - - -				
0	150	20	15	2.5	.9
1	150	20	15	2.5	.9
2	145	20	15	2.5	.9
3	145	18	14	2.5	.9
4	140	18	14	2.4	.9
5	140	18	14	2.4	.8
6	135	17	14	2.4	.8
7	135	17	13	2.4	.8
8	130	17	13	2.3	.8
9	130	17	13	2.3	.8
10	130	16	13	2.3	.8
11	125	16	13	2.2	.8
12	125	16	12	2.2	.8
13	125	16	12	2.2	.8
14	125	15	12	2.2	.7
15	125	15	12	2.1	.7
16	120	15	12	2.1	.7
17	120	15	12	2.1	.7
18	120	15	12	2.0	.7
19	120	15	12	2.0	.7
20	120	15	12	2.0	.7

Table 4: Survival Rate To One Year of Age Changes Over Time With The Project

Year	CATTLE			SHEEP			GOATS		
	Cows	Calves	Survival Rate	Ewes	Lambs	Survival Rate	Nannies	Kids	Survival Rate
	1,000 head		percent	1,000 head		percent	1,000 head		percent
0	236	62	26	557	206	37	370	129	35
1	234	62	26	550	205	37	365	129	35
2	232	63	27	530	206	39	360	132	37
3	229	65	28	510	207	41	350	133	38
4	222	65	29	490	212	43	332	136	41
5	213	67	31	460	215	47	314	137	44
6	201	70	35	430	220	51	294	140	48
7	190	70	37	400	224	56	274	143	52
8	172	69	40	370	229	42	254	147	58
9	154	66	43	340	232	68	234	150	44
10	138	66	48	310	235	74	214	153	71
11	120	66	55	300	236	79	200	165	78
12	115	69	60	297	238	80	191	158	80
13	112	67	60	297	238	80	191	158	80
14	112	67	60	297	238	80	191	158	80
15	112	67	60	297	238	80	191	158	80
16	112	67	60	297	238	80	191	158	80
17	112	67	60	297	238	80	191	158	80
18	112	67	60	297	238	80	191	158	80
19	112	67	60	297	238	80	191	158	80
20	112	67	60	297	238	80	191	158	80

Table 5: Animal Productivity Changes Over Time With The Project

	Average Weight Per Head				
Year	Cattle	Sheep	Goats	Wool	Mohair
	- - - - - - - - - kilograms per head - - - - - - - - - - - - -				
0	150	20	15	2.5	0.9
1	152	20	15	2.5	0.9
2	155	21	15	2.5	0.9
3	158	21	14	2.5	0.9
4	161	22	16	2.6	1.0
5	165	23	16	2.6	1.0
6	169	24	17	2.6	1.0
7	175	25	18	2.7	1.0
8	181	25	19	2.7	1.1
9	197	26	19	2.7	1.1
10	203	27	19	2.8	1.1
11	210	28	20	2.8	1.2
12	217	29	20	2.8	1.2
13	224	30	20	2.9	1.2
14	232	31	21	2.9	1.3
15	240	32	22	3.0	1.3
16	248	33	23	3.1	1.4
17	256	34	24	3.2	1.4
18	264	35	25	3.3	1.5
19	270	35	25	3.5	1.5
20	270	35	25	3.6	1.5

Table 6: National Herd Composition Changes Over Time With the Project

Year	Cattle	Sheep	Goats	Animal Units [1]
	- - - - - thousand	head - - - - - - - -		1,000 AU's
0	522	929	619	727
1	520	921	612	723
2	518	897	607	715
3	510	875	593	702
4	500	842	568	682
5	490	800	536	659
6	470	760	504	629
7	450	719	472	598
8	420	679	441	560
9	390	634	409	521
10	360	585	382	481
11	330	561	369	450
12	310	550	360	430
13	300	550	360	422
14	300	550	360	422
15	300	550	360	422
16	300	550	360	422
17	300	550	360	422
18	300	550	360	422
19	300	550	360	422
20	300	550	360	422

[1] Animal Unit: .8 AU = 1 cow and calf
.2 AU = 1 ewe or nanny and young for sheep and goats

Table 7: Goat Herd Composition Changes Over Time With the Project

Year	Total	1 Year and Over				Under 1 Year			
		Male		Female		Male		Female	
		1,000 head	%	1,000 head	%	1,000 head	%	1,000 head	%
0	619	120	20	370	60	58	9	71	11
1	612	118	19	365	60	58	9	71	12
2	607	115	19	360	59	60	10	72	12
3	593	110	19	350	59	61	10	72	12
4	568	100	18	332	58	63	11	73	13
5	536	85	16	314	58	64	12	73	14
6	504	70	14	294	58	66	13	74	15
7	472	55	12	274	58	69	14	74	16
8	441	40	9	254	58	72	16	75	17
9	409	25	6	234	57	74	18	76	19
10	382	15	4	214	56	76	20	77	20
11	369	13	4	200	54	78	21	78	21
12	360	11	3	191	53	79	22	79	22
13	360	11	3	191	53	79	22	79	22
14	360	11	3	191	53	79	22	79	22
15	360	11	3	191	53	79	22	79	22
16	360	11	3	191	53	79	22	79	22
17	360	11	3	191	53	79	22	79	22
18	360	11	3	191	53	79	22	79	22
19	360	11	3	191	53	79	22	79	22
20	360	11	3	191	53	79	22	79	22

Table 8: Sheep Herd Composition Changes Over Time With The Project

Year	Total	1 Year and Over				Under 1 Year			
		Male		Female		Male		Female	
		1,000 head	%	1,000 head	%	1,000 head	%	1,000 head	%
0	929	167	18	557	60	91	10	114	12
1	921	165	18	550	60	92	10	114	12
2	897	160	18	530	59	93	10	114	13
3	875	155	18	510	58	95	11	115	13
4	842	140	17	490	58	97	11	115	14
5	800	125	16	460	58	100	12	115	14
6	760	110	14	430	59	104	14	116	15
7	719	95	13	400	56	108	15	116	16
8	679	80	12	370	54	112	17	117	17
9	634	65	10	340	54	115	18	117	18
10	585	40	7	310	53	117	20	118	20
11	561	25	5	300	53	118	21	118	21
12	550	15	3	297	53	119	22	119	22
13	550	15	3	297	53	119	22	119	22
14	550	15	3	297	53	119	22	119	22
15	550	15	3	297	53	119	22	119	22
16	550	15	3	297	53	119	22	119	22
17	550	15	3	297	53	119	22	119	22
18	550	15	3	297	53	119	22	119	22
19	550	25	3	297	53	119	22	119	22
20	550	25	3	297	53	119	22	119	22

Table 9: Cattle Herd Composition Over Time With The Project

Year	Total	2 Years and Over				Between 1 and 2 Years				Over 1 Year			
		Male		Female		Male		Female		Male		Female	
		1,000 head	%	1,000 head	%	1,000 head	%	1,000 head	%	1,000 head	%	1,000 head	%
0	522	151	29	236	45	34	7	39	8	29	5	35	6
1	520	149	29	234	45	34	7	40	8	30	5	33	6
2	518	146	28	232	45	35	7	40	8	31	6	34	6
3	510	140	27	229	45	35	7	41	8	31	6	34	7
4	500	133	27	222	44	36	7	42	8	32	7	35	7
5	490	129	26	213	43	36	7	42	9	34	7	36	8
6	470	117	25	201	43	37	8	43	9	36	7	36	8
7	450	105	23	190	42	38	9	43	10	38	8	36	8
8	420	88	21	172	41	39	9	43	10	40	10	38	9
9	390	70	18	154	40	40	10	44	11	42	11	40	10
10	360	50	14	138	38	42	12	44	12	44	12	42	12
11	330	30	9	120	35	45	14	45	14	45	14	45	14
12	310	15	5	115	37	45	14	45	14	45	14	45	14
13	300	15	5	115	37	45	14	45	14	45	14	45	14
14	300	15	5	115	37	45	14	45	14	45	14	45	14
15	300	15	5	115	37	45	14	45	14	45	14	45	14
16	300	15	5	115	37	45	14	45	14	45	14	45	14
17	300	15	5	115	37	45	14	45	14	45	14	45	14
18	300	15	5	115	37	45	14	45	14	45	14	45	14
19	300	15	5	115	37	45	14	45	14	45	14	45	14
20	300	15	5	115	37	45	14	45	14	45	14	45	14

Table 10: Fodder Production Changes Over Time With The Project

Year	Annual Average				
	Harvested	Yield	Production	Price	Value
	1,000 Kg.	Kg./Ha.	1,000,000 Kg.	M/Kg.	M1,000,000
0	1.0	1,000	1.0	0.10	0.10
1	1.0	1,000	1.0	0.10	0.12
2	1.1	1,050	1.2	0.11	0.13
3	1.2	1,100	1.3	0.11	0.14
4	1.5	1,150	1.7	0.11	0.19
5	2.0	1,200	2.4	0.12	0.29
6	3.0	1,250	3.7	0.12	0.44
7	4.0	1,300	5.2	0.13	0.68
8	5.5	1,350	7.4	0.13	0.96
9	7.0	1,400	9.8	0.14	1.37
10	8.5	1,450	12.3	0.14	1.72
11	10.0	1,500	15.0	0.15	2.25
12	11.5	1,550	17.8	0.15	2.67
13	13.0	1,600	20.8	0.15	3.12
14	15.0	1,650	24.7	0.14	3.95
15	17.0	1,700	28.9	0.16	4.62
16	19.0	1,750	33.2	0.14	5.31
17	20.0	1,800	36.0	0.17	6.12
18	20.0	1,850	37.0	0.17	6.29
19	20.0	1,900	38.0	0.17	6.46
20	20.0	2,000	40.0	0.18	7.20

Table 11: Other Small Grain Production Changes Over Time With The Project

Year	Annual Average				
	Harvested	Yield	Production	Price	Value
	1,000 Ha.	Kg./Ha.	1,000,000 Kg.	M/Kg.	M1,000,000
0	3.0	1,000	3.0	.095	0.29
1	3.1	1,020	3.2	.098	0.31
2	3.2	1,040	3.3	.102	0.34
3	3.3	1,060	3.5	.105	0.37
4	3.4	1,080	3.9	.110	0.43
5	3.9	1,100	4.3	.115	0.49
6	4.1	1,120	4.6	.120	0.55
7	4.4	1,140	5.0	.125	0.63
8	4.7	1,160	5.5	.130	0.72
9	5.0	1,180	5.9	.133	0.78
10	5.3	1,200	6.4	.136	0.87
11	5.6	1,220	6.8	.139	0.95
12	5.9	1,240	7.3	.142	1.04
13	6.2	1,260	7.8	.146	1.14
14	6.5	1,280	8.3	.150	1.25
15	6.8	1,300	8.8	.154	1.36
16	7.1	1,320	9.4	.158	1.49
17	7.1	1,340	9.5	.162	1.54
18	7.1	1,360	9.7	.166	1.61
19	7.1	1,380	9.8	.170	1.67
20	7.1	1,400	9.9	.172	1.70

Table 12: Bean Production Changes Over Time With The Project

Year	Annual Average				
	Harvested	Yield	Production	Price	Value
	1,000 Ha.	Kg./Ha.	1,000,000 Kg.	M/Kg.	M1,000,000
0	11.1	974	10.8	.290	3.13
1	11.0	980	10.8	.300	3.24
2	11.0	990	10.9	.310	3.38
3	11.0	1,000	11.0	.320	3.52
4	11.0	1,010	11.1	.330	3.66
5	11.0	1,020	11.2	.340	3.81
6	11.0	1,030	11.3	.350	3.96
7	11.0	1,040	11.4	.360	4.10
8	11.0	1,050	11.5	.370	4.26
9	11.0	1,060	11.7	.380	4.45
10	11.0	1,070	11.8	.390	4.60
11	11.0	1,080	11.9	.400	4.76
12	11.0	1,090	12.0	.410	4.92
13	11.0	1,100	12.1	.420	5.08
14	11.0	1,120	12.3	.440	5.41
15	11.0	1,140	12.5	.450	5.63
16	11.0	1,160	12.7	.470	5.97
17	11.0	1,180	13.0	.490	6.37
18	11.0	1,200	13.2	.510	6.73
19	11.0	1,200	13.2	.524	6.92
20	11.0	1,200	13.2	.524	6.92

Table 13: Sorghum Production Changes Over Time With The Project

Year	Annual Average				
	Harvested	Yield	Production	Price	Value
	1,000 Ha.	Kg./Ha.	1,000,000 Kg.	M/Kg.	M1,000,000
0	59.3	1,446	85.7	.079	6.77
1	59.0	1,450	85.5	.080	6.84
2	58.5	1,480	86.6	.083	7.19
3	57.5	1,510	86.8	.087	7.55
4	57.0	1,540	87.8	.090	7.90
5	56.5	1,570	88.7	.093	8.25
6	56.0	1,600	89.6	.096	8.60
7	55.5	1,630	90.5	.099	8.96
8	55.0	1,660	91.3	.112	10.23
9	54.5	1,690	92.1	.115	10.59
10	54.0	1,720	92.9	.118	10.96
11	53.5	1,750	93.6	.121	11.33
12	53.0	1,780	94.3	.124	11.69
13	52.5	1,810	95.0	.127	12.07
14	52.0	1,840	95.7	.130	12.44
15	51.5	1,870	96.3	.133	12.81
16	51.0	1,900	94.9	.136	13.81
17	50.5	1,930	97.5	.139	13.55
18	50.0	1,960	98.0	.140	13.72
19	49.0	2,000	98.0	.140	13.72
20	49.0	2,000	98.0	.143	14.00

Table 14: Maize Production Changes Over Time With The Project

Year	Annual Average				
	Harvested	Yield	Production	Price	Value
	1,000 Ha.	Kg./Ha.	1,000,000 Kg.	M/Kg.	M1,000,000
0	101.7	1,407	143.1	.072	10.31
1	100.5	1,440	143.1	.074	10.59
2	100.0	1,480	148.0	.076	11.25
3	99.5	1,520	151.2	.080	12.10
4	99.0	1,560	154.4	.084	12.97
5	98.5	1,600	157.6	.090	14.18
6	98.0	1,640	160.7	.093	14.95
7	97.5	1,680	163.8	.096	15.72
8	97.0	1,720	166.8	.099	16.51
9	96.5	1,760	169.8	.102	17.32
10	96.0	1,800	172.8	.104	17.92
11	95.5	1,840	175.7	.108	18.98
12	95.0	1,880	178.6	.112	20.00
13	94.5	1,920	181.4	.116	21.04
14	94.0	1,960	184.2	.120	22.10
15	93.0	2,000	186.0	.124	23.06
16	92.0	2,050	188.6	.128	24.14
17	91.0	2,150	195.6	.130	25.43
18	90.0	2,200	198.0	.130	25.74
19	90.0	2,200	198.0	.130	24.74
20	90.0	2,200	198.0	.130	24.74

Table 15: Pea Production Changes Over Time With The Project

Year	Annual Average				
	Harvested	Yield	Production	Price	Value
	1,000 Ha.	Kg./Ha.	1,000,000 Kg.	M/Kg.	M1,000,000
0	4.3	1,018	4.4	.23	1.01
1	4.3	1,020	4.4	.23	1.01
2	4.3	1,030	4.4	.24	1.06
3	4.3	1,040	4.5	.25	1.13
4	4.3	1,060	4.6	.26	1.20
5	4.2	1,080	4.6	.27	1.24
6	4.2	1,100	4.6	.28	1.29
7	4.2	1,120	4.7	.29	1.36
8	4.2	1,140	4.8	.30	1.44
9	4.1	1,160	4.8	.31	1.49
10	4.1	1,180	4.8	.32	1.54
11	4.1	1,200	4.9	.33	1.62
12	4.1	1,200	4.9	.34	1.67
13	4.0	1,200	4.8	.35	1.68
14	4.0	1,200	4.8	.36	1.73
15	4.0	1,200	4.8	.37	1.78
16	4.0	1,200	4.8	.38	1.82
17	4.0	1,200	4.8	.39	1.87
18	4.0	1,200	4.8	.40	1.92
19	4.0	1,200	4.8	.41	1.97
20	4.0	1,200	4.8	.42	2.00

Table 16: Wheat Production Changes Over Time With the Project

Year	Annual Average				
	Harvested	Yield	Production	Price	Value
	1,000 Ha.	Kg./Ha.	1,000,000 Kg.	M/Kg.	M1,000,000
0	42.7	1,358	57.9	.108	6.25
1	42.7	1,358	59.9	.110	6.37
2	42.7	1,370	58.5	.115	6.73
3	42.5	1,400	59.5	.120	7.14
4	42.8	1,430	60.5	.125	7.56
5	42.0	1,460	61.3	.130	7.97
6	41.7	1,490	62.1	.135	8.38
7	41.4	1,520	62.8	.140	8.79
8	41.1	1,550	63.7	.145	9.24
9	40.7	1,580	64.3	.150	9.65
10	40.3	1,610	64.9	.155	10.06
11	39.9	1,640	65.4	.160	10.46
12	39.4	1,670	65.8	.165	10.86
13	39.0	1,700	66.3	.170	11.27
14	38.5	1,750	67.4	.175	11.80
15	38.0	1,800	68.4	.180	12.31
16	38.0	1,850	70.3	.185	13.01
17	38.0	1,900	72.2	.190	13.72
18	38.0	1,950	74.1	.195	14.45
19	38.0	2,000	76.0	.195	14.82
20	38.0	2,000	76.0	.195	14.82

Table 17: Annual Livestock Herd Value Changes Over Time With the Project

Year	Cattle	Sheep	Goats	Wool	Mohair	Total
	- - - - - - - - Million Maloti - - - - - - - - - - - - - - - - - -					
0	74.4	13.9	7.0	2.3	5.0	102.6
1	75.9	13.8	6.9	2.3	5.0	103.9
2	77.1	14.5	7.0	2.3	5.0	105.9
3	78.2	14.5	7.5	2.3	5.0	107.5
4	79.7	15.2	7.5	2.3	5.4	110.1
5	82.5	15.6	7.3	2.2	5.3	112.9
6	83.4	16.2	7.6	2.2	5.2	114.6
7	85.1	16.5	7.8	2.2	5.0	116.6
8	85.1	16.6	8.0	2.1	5.4	117.2
9	89.1	16.9	7.6	2.0	5.2	120.8
10	88.4	17.5	8.1	2.0	5.0	121.0
11	88.8	17.9	8.4	2.0	5.5	122.6
12	89.5	18.8	8.5	2.0	5.6	124.4
13	93.4	20.1	8.8	2.2	5.8	130.3
14	100.9	21.5	9.5	2.3	6.6	140.8
15	108.0	22.9	10.3	2.5	6.8	150.5
16	115.3	24.3	11.1	2.7	7.6	161.0
17	122.9	25.8	11.9	3.0	7.8	171.4
18	130.7	26.9	12.6	3.1	8.6	182.9
19	137.7	26.9	12.6	3.4	8.6	190.2
20	137.7	26.9	12.6	3.6	8.6	189.4

Table 18: National Annual Herd Value Changes Over Time Without The Project

Year	Cattle	Sheep	Goats	Wool	Mohair	Total
	- - - - - - - - - - Million Maloti - - - - - - - - - - - - - - - - - -					
0	74.4	13.9	7.0	2.3	5.0	102.6
1	74.1	13.8	7.0	2.3	5.1	102.3
2	72.4	14.2	7.1	2.4	5.1	101.2
3	73.1	12.8	6.6	2.3	5.0	99.8
4	72.1	13.3	6.9	2.3	5.1	99.7
5	71.4	13.8	7.1	2.3	4.8	99.4
6	70.9	13.3	7.5	2.3	4.9	98.9
7	72.9	13.8	6.9	2.4	5.0	101.0
8	72.8	14.2	7.2	2.3	5.2	101.7
9	75.4	14.3	7.4	2.4	5.3	104.8
10	70.8	15.3	8.4	2.4	5.7	102.6
11	71.4	15.7	8.2	2.4	5.5	103.2
12	74.8	15.7	7.8	2.4	5.7	106.4
13	75.2	16.2	8.1	2.5	5.9	107.9
14	72.5	15.7	7.6	2.6	4.9	103.3
15	75.0	15.6	7.8	2.6	5.1	106.1
16	74.9	16.1	8.0	2.7	5.2	106.9
17	76.8	16.7	8.3	2.8	5.4	110.0
18	79.2	15.7	8.4	2.6	5.6	111.5
19	81.6	15.7	8.4	2.6	5.6	111.9
20	81.6	15.7	8.4	2.7	5.6	114.0

Table 19: Total Crop Value Changes With the Project

Year	Wheat	Peas	Maize	Sorghum	Beans	Other	Fodder	Total
	- - - - - - - - - - - - - -			Million Maloti			- - - - - - - - - - - -	
0	6.25	1.01	10.31	6.77	3.13	.29	.11	27.86
1	6.37	1.01	10.59	6.84	3.24	.31	.12	28.48
2	6.73	1.06	11.25	7.19	3.38	.34	.13	30.08
3	7.14	1.13	12.10	7.55	3.52	.37	.14	31.95
4	7.56	1.20	12.97	7.90	3.66	.43	.19	33.91
5	7.97	1.24	14.18	8.25	3.81	.49	.29	36.23
6	8.38	1.29	14.95	8.60	3.96	.55	.44	38.17
7	8.79	1.36	15.72	8.94	4.10	.63	.68	40.22
8	9.24	1.44	16.51	10.23	4.26	.72	.96	43.36
9	9.65	1.49	17.32	10.59	4.45	.78	1.37	45.65
10	10.06	1.54	17.92	10.96	4.60	.87	1.72	47.67
11	10.46	1.62	18.98	11.33	4.76	.95	2.25	50.35
12	10.86	1.67	20.00	11.69	4.92	1.04	2.67	52.85
13	11.27	1.68	21.04	12.07	5.08	1.14	3.12	55.40
14	11.80	1.73	22.10	12.44	5.41	1.25	3.95	58.68
15	12.31	1.78	23.06	12.81	5.63	1.36	4.62	61.57
16	13.01	1.82	24.14	13.18	5.97	1.49	5.31	65.92
17	13.72	1.87	25.43	13.55	6.37	1.54	6.12	68.60
18	14.45	1.92	25.74	13.72	6.73	1.61	6.29	70.46
19	14.82	1.97	25.74	13.72	6.92	1.67	6.46	71.30
20	14.82	2.00	25.74	14.00	6.92	1.70	7.20	72.38

Table 20: Crop Value Changes Without the Project

Year	Wheat	Peas	Maize	Sorghum	Beans	Other	Fodder	Total
	- - - - - - - - - Million Maloti- - - - - - - - - - - - - - - - - -							
0	6.37	1.01	10.31	6.77	3.13	.29	.10	27.86
1	6.33	1.01	10.51	6.81	3.24	.29	.10	28.29
2	6.57	1.05	10.72	7.02	3.35	.31	.11	29.13
3	6.80	1.09	10.92	7.31	3.46	.32	.11	30.01
4	7.03	1.13	10.12	7.50	3.57	.33	.11	30.79
5	7.26	1.17	11.32	7.70	3.68	.35	.11	31.59
6	7.48	1.21	11.52	7.90	3.78	.36	.12	32.37
7	7.70	1.25	11.72	8.10	3.89	.38	.12	33.16
8	7.91	1.29	11.92	8.30	4.00	.39	.13	33.94
9	8.12	1.33	12.12	8.50	4.11	.40	.13	34.71
10	8.32	1.37	12.32	8.70	4.22	.41	.14	35.48
11	8.53	1.41	12.52	8.90	4.32	.42	.14	36.25
12	8.72	1.45	12.72	9.10	4.43	.43	.15	37.00
13	8.91	1.49	12.92	9.30	4.54	.44	.15	37.75
14	9.10	1.53	13.13	9.50	4.76	.45	.15	38.61
15	9.28	1.57	13.32	9.70	4.87	.46	.16	39.36
16	9.46	1.61	13.52	9.90	5.08	.47	.16	40.20
17	9.64	1.65	13.72	10.10	5.30	.49	.16	41.06
18	9.81	1.69	13.92	10.30	5.51	.50	.17	41.90
19	9.97	1.73	14.12	10.50	5.67	.51	.17	42.67
20	10.13	1.77	14.32	10.70	5.67	.52	.18	43.29

Table 21: Total Livestock Benefits With and Without the Project

Year	Without Project	With Project	Difference
	- - - - - - - - Million Maloti - - - - - - - - - - - - - -		
0	102.6	102.6	-
1	102.3	103.9	1.7
2	101.2	105.9	4.7
3	99.8	107.4	7.6
4	99.7	110.1	10.4
5	99.4	112.9	13.5
6	98.9	114.6	15.7
7	101.0	116.6	15.6
8	101.7	117.2	15.5
9	104.8	120.8	16.0
10	102.6	121.1	18.5
11	103.2	122.6	19.4
12	106.4	124.4	18.0
13	107.9	130.4	22.5
14	103.3	140.8	37.5
15	106.1	150.5	44.4
16	106.9	161.0	54.1
17	110.0	171.4	61.4
18	111.5	183.0	71.5
19	111.9	190.3	78.4
20	114.0	190.3	76.3

Table 22: Crop Value Change With and Without the Project

Year	Without Project	With Project	Difference
	- - - - - - - - Million Maloti	- - - - - - - - - - - - - - - -	
0	27.84	27.86	-
1	28.29	28.48	.19
2	29.13	30.08	.95
3	30.01	31.95	1.94
4	30.79	33.91	3.12
5	31.59	36.23	4.64
6	32.37	38.17	5.80
7	33.16	40.22	7.06
8	33.84	43.46	9.42
9	34.71	45.45	10.94
10	35.48	47.67	12.10
11	36.25	50.35	14.10
12	37.08	52.85	15.85
13	37.75	55.40	17.65
14	38.61	58.68	20.07
15	39.36	61.57	22.21
16	40.20	65.92	25.72
17	41.06	68.60	27.54
18	41.90	70.46	28.56
19	42.67	71.30	28.63
20	43.29	72.38	29.09

Table 23: Crop and Livestock Value Difference Change With the Project

Year	Crops	Livestock	Total Difference
	- - - - - - - Million Maloti - - - - - - - - - - - - -		
0	-	-	-
1	.19	1.7	1.89
2	.95	4.7	5.65
3	1.94	7.6	9.54
4	3.12	10.4	13.42
5	4.64	13.5	18.14
6	5.80	15.7	21.50
7	7.06	15.4	22.66
8	9.42	15.5	24.92
9	10.94	16.0	26.94
10	12.19	18.5	30.69
11	14.10	19.4	33.50
12	15.84	18.0	33.85
13	17.65	22.4	40.15
14	20.07	37.5	57.57
15	22.21	44.4	66.61
16	25.72	54.1	79.82
17	27.54	61.4	88.95
18	28.56	71.5	100.06
19	28.63	78.4	107.03
20	29.09	76.3	105.39

Table 24: Livestock National Marketable Value With and Without the Project

Year	Without Project	With Project	Difference
	- - - - - - - - - Million Maloti - - - - - - - - - - - -		
0	16.9	16.9	-
1	16.9	17.1	.2
2	16.7	17.7	1.0
3	16.5	18.3	1.8
4	16.4	18.9	2.5
5	16.4	19.9	3.5
6	16.3	20.7	4.4
7	16.7	22.2	5.5
8	16.7	23.3	6.6
9	17.2	26.2	9.0
10	16.9	28.5	11.6
11	17.0	32.1	15.1
12	17.6	35.9	18.3
13	17.7	41.2	23.5
14	17.0	48.3	31.3
15	17.4	55.6	38.2
16	17.6	59.6	42.0
17	18.1	63.4	45.3
18	18.3	67.7	49.4
19	18.5	70.4	51.9
20	18.8	70.4	51.6

Table 25: Crop and Livestock Marketable Value Difference Changes With the Project

Year	Crops	Livestock	Totals
	- - - - - - Million Maloti - - - - - - - - - - - -		
0	-	-	-
1	.19	.2	1.10
2	.95	1.0	1.95
3	1.94	1.8	3.74
4	3.12	2.5	5.62
5	4.64	3.5	8.14
6	5.80	4.4	10.20
7	7.06	5.5	12.56
8	9.42	6.6	17.20
9	10.94	9.0	19.94
10	12.19	11.6	23.79
11	14.10	15.1	29.20
12	15.85	18.3	34.15
13	17.65	23.5	41.15
14	20.07	31.3	51.37
15	22.21	38.2	60.41
16	25.72	42.0	67.72
17	27.53	45.3	72.84
18	28.56	49.4	77.96
19	28.63	51.9	80.53
20	29.09	51.6	80.69

Table 27: Livestock Annual National Marketable Value Without the Project

Year	Value	Marketing Rate	Marketed Value	Nonmarketed Value	NMV X /10*	Total Income
	M1,000,000	percent	- - - - - - - Million Maloti - - - - - - - - - - - - - - - -			
0	102.6	7.2	7.4	95.2	9.5	16.9
1	102.3	7.2	7.4	94.9	9.5	16.9
2	101.2	7.2	7.3	93.9	9.4	16.7
3	99.8	7.2	7.2	92.6	9.3	16.5
4	99.7	7.2	7.2	92.5	9.2	16.4
5	99.4	7.2	7.2	92.2	9.2	16.4
6	98.9	7.2	7.1	91.8	9.2	16.3
7	101.0	7.2	7.3	93.7	9.4	16.7
8	101.7	7.2	7.3	94.4	9.4	16.7
9	104.8	7.2	7.5	97.3	9.7	17.2
10	102.6	7.2	7.4	95.2	9.5	16.9
11	103.2	7.2	7.4	95.8	9.6	17.0
12	106.4	7.2	7.7	98.7	9.9	17.6
13	107.9	7.2	7.7	100.1	10.0	17.7
14	103.3	7.2	7.4	95.9	9.6	17.0
15	106.1	7.2	7.6	98.5	9.8	17.4
16	106.9	7.2	7.7	99.2	9.9	17.6
17	110.0	7.2	7.9	102.1	10.2	18.1
18	111.5	7.2	8.0	103.5	10.3	18.3
19	111.9	7.2	8.1	103.8	10.4	18.5
20	114.0	7.2	8.2	105.8	10.6	18.8

* Nonmarket Value X 10 Percent

Table 26: Livestock Annual National Marketable Value With the Project

Year	Total Value	Marketing Rate	Marketed Value	Nonmarketed Value	NMV X .10 *	Total Income
	M1,000,000	percent	- - - - - - - - -	Million Maloti	- - - - - - - - - - - - - - - - - -	
0	102.6	7.2	7.4	95.2	9.5	16.9
1	103.9	7.2	7.5	96.4	9.6	17.1
2	105.9	7.5	7.9	98.0	9.8	17.7
3	107.4	7.8	8.4	99.0	9.9	18.3
4	110.1	8.0	8.8	101.3	10.1	18.9
5	112.9	8.5	9.6	103.3	10.3	19.9
6	114.6	9.0	10.3	104.3	10.4	20.7
7	116.6	10.0	11.7	104.9	10.5	22.2
8	117.2	11.0	12.9	104.3	10.4	23.3
9	120.8	13.0	15.7	105.1	10.5	26.2
10	121.1	15.0	18.2	102.9	10.3	28.5
11	122.6	18.0	22.1	100.5	10.0	32.1
12	124.4	21.0	26.1	98.3	9.8	35.9
13	130.4	24.0	31.3	99.1	9.9	41.2
14	140.8	27.0	38.0	102.8	10.3	48.3
15	150.5	30.0	45.1	105.4	10.5	55.6
16	161.0	30.0	48.3	112.7	11.3	59.6
17	171.4	30.0	51.4	120.0	12.0	63.4
18	183.0	30.0	54.9	128.1	12.8	67.7
19	190.3	30.0	57.1	133.2	13.3	70.4
20	190.4	30.0	57.1	133.3	13.3	70.4

* Nonmarketed Value X 10 Percent

WAIVERS AND APPROVALS

I. Waivers and Approvals Required

1. Approval to deviate from the policy stated in A.I.D. Handbook 3, Appendix 3C (AIDTO Circular A-24), which limits the life of a project to six years to allow a seven year life of project.

2. Procurement source and origin waiver from A.I.D. Geographic Code 941 (Selected Free World) to Geographic Code 935 (Special Free World) for the procurement of equipment, materials, and commodities estimated to cost $671,000.

3. Procurement source and origin waiver from A.I.D. Geographic Code 941 (Selected Free World) to Geographic Code 935 (Special Free World) for the procurement of construction materials and commodities estimated to cost $590,000.

4. Procurement source and origin waiver from A.I.D. Geographic Code 000 (United States) to Geographic Code 935 (Special Free World) for the procurement of eleven vehicles and spare parts estimated to cost $167,500.

II. Justification for Waivers and Approvals

1. Approval to deviate from the policy which limits the life of a project to five years to allow a seven year life of project.

Handbook 3, Appendix 3C notes that the length of a project should not normally exceed six years, but that a somewhat longer period may be justified, if required by the implementation plan. Project requirements as described below necessitate an extension to seven years, it not being feasible to divide the project into phases.

The nature of the type of activities to protect and rehabilitate land resources requires long-term investment and effort. Conservation measures proposed under this project require extensive planning, engineering, design, and construction efforts. Development of rangelands requires considerable time to select a Range Management Area, conduct a range inventory organize a Grazing Association and carry out a grazing management program. The length of time required to implement these series of sequential steps in order to obtain a significant project output necessitates a seven year project.

The project calls for considerable training of key personnel, as an important part of the project purpose is to strengthen the capacity of the implementing divisions of the MOA. The Range Management

Division, in particular, has severe staff limitations and training of its personnel must be staggered to allow project activities to be undertaken without disruptions. Several trainees are scheduled to return in the last year of the project. The extension to seven years will also allow several trainees to overlap with technical assistance personnel, which will result in increased benefits from their training programs.

2. Procurement source and origin waiver from A.I.D. Georgraphic Code 941 to Geographic Code 935 for procurement of equipment, materials, and commodities estimated to cost $671,000.

Under normal circumstances, many of the items planned to be purchased under this waiver could be acquired as off-shelf items. However, due to the close proximity of Maseru to major wholesale suppliers in the Republic of South Africa, most suppliers in Maseru maintain very limited inventory stocks, and they generally special order items from South Africa upon receipt of a specific order from a customer.

The equipment required includes agricultural tractors and implements, water and fuel carts, caravans and portable huts, small tools, spare parts and miscellaneous equipment for the Conservation Division that amount to $380,000. It includes seed harvesting, processing and sacking equipment, seed supplies, survey equipment and teaching aids for the Range Management Division that amounts to $36,000. Aerial maps will cost about $6,000 and fencing materials $120,000. Office furnishings are expected to cost $50,000, office equipment $57,000, and training materials $12,000. It is expected that these commodities will be purchased from the Republic of South Africa.

The agricultural implements need to be compatible with equipment presently owned by the Conservation Division in order to interchange it with the current inventory of machinery. Most of these items (refer to Annex V-A, Attachment 2) are replacement for equipment now being used. The Division has its own workshop and the mechanics are familiar with repair and maintenance of the equipment. Service and maintenance for U.S. manufactured equipment of this nature is not available in Lesotho.

Several of the items anticipated to be purchased under this waiver are not available in the U.S., such as 1:20,000 maps or grass seed that is adaptable to the local ecological zones. Other bulky items such as fencing (posts and wire) and office furnishings would be prohibitively expensive (double the base cost) if shipped from the U.S. In addition, delays in project implementation could be expected due to shipment time required from the U.S.

3. Procurement source and origin waiver from A.I.D. Geographic Code 941 to Geographic Code 935 for procurement of construction materials and commodities estimated to cost $590,000.

Construction of all buildings is expected to utilize the fixed amount reimbursement method of contracting. All construction contractors in Lesotho depend upon the Republic of South Africa as the primary source of building materials and commodities. Such materials as lumber, cement, roofing materials, reinforcement bars, window frames, plumbing fixtures, copper tubing, water pipe, electrical wires and supplies, etc. are not manufactured in Lesotho and are usually imported from South Africa.

Many of these items are manufactured in accordance with standards (e.g. size, threads, unit of measurement) different from and incompatible with those of U.S. manufacture. Similarly, electrical materials and supplies are of different specification (e.g. 220 volt, 50 cycle) than those of U.S. manufacture. It is essential for purposes of maintenance, service and repair that all construction use fixtures and materials for which replacement parts and repair facilities are readily available in Lesotho. Due to long distances, U.S. supplied commodities would also be substantially more expensive and long delivery times are likely to delay the project.

4. Procurement source and origin waiver from Geographic Code 000 to Geographic Code 935 for procurement of eleven vehicles and spare parts estimated to cost $167,500.

The project requires four 4-wheel drive pickups and five 2-wheel drive pickups for field goods transport services and two station-wagon type sedans for passenger transportation. By law, traffic moves on the left side of the road in Lesotho. A right-hand drive vehicle is essential for reasons of safety for vehicle occupants and pedestrians on the hazardous, narrow, twisting mountain roads, as well as the main thoroughfares, especially during the rainy season and accompanying dangerous conditions. Vehicles manufactured in the Republic of South Africa and sold there and in Lesotho meet the right-hand drive requirement.

Due to the very rugged and mountainous terrain, vehicles must be equipped with manual transmissions. The nature of this project dictates that the vehicles be used under the most strenuous conditions, and therefore will require manual transmissions, which can be repaired in Lesotho.. Spare parts which are peculiar to the region are readily available in Lesotho. In addition, local mechanics are familiar with the vehicles and able to carry out proper repairs and maintenance. Vehicles meeting these requirements are not available from the United States. Therefore, special circumstances exist to allow procurement of these vehicles from Geographic Code 935.

STATUTORY CHECKLIST

5C(1) - COUNTRY CHECKLIST

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

A. General Criteria for Country Eligibility

1. FAA Sec. 116. Can it be demonstrated that contemplated assistance will directly benefit the needy? If not, has the Department of State determined that this government has engaged in a consistent pattern of gross violations of internationally recognized human rights?	Project is designed to help rural poor meet their basic human needs.
2. FAA Sec. 481. Has it been determined that the government of the recipient country has failed to take adquate steps to prevent narcotics, drugs and other controlled substances (as defined by the Comprehensive Drug Abuse Prevention and Control Act of 1970) produced or processed, in whole or in part, in such country, or transported through such country, from being sold illegally within the jurisdiction of such country to U.S. Government personnel or their dependents, or from entering the U.S. unlawfully?	No such determination has been made.
3. FAA Sec. 620(b). If assistance is to a government, has the Secretary of State determined that it is not dominated or controlled by the international Communist movement?	Yes.
4. FAA Sec. 620(c). If assistance is to a government, is the government liable as debtor or unconditional guarantor on any debt to a U.S. citizen for goods or services furnished or ordered where (a) such citizen has exhausted available legal remedies and (b) debt is not denied or contested by such government?	No.
5. FAA Sec. 620(e)(1). If assistance is to a government, has it (including government agencies or subdivisions) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities benefically owned by them without taking steps to discharge its obligations towards such citizens or entities?	No.

6. FAA Sec. 620(a), 620(f), 620D; FY 80 App. Act. Sec. [511, 512, and 513] Is recipient country a Communist country?	No.
Will assistance be provided to Angola, Cambodia, Cuba, Laos or Vietnam? Will assistance be provided to Afghanistan or Mozambique without a waiver?	No.
7. FAA Sec. 620(i). Is recipient country in any way involved in (a) subversion of, or military aggression against, the United States or any country receiving U.S. assistance, or	(a) No.
(b) the planning of such subversion or aggression?	(b) No.
8. FAA Sec. 620(j). Has the country permitted, or failed to take adequate measures to prevent, the damage or destruction, by mob action, of U.S. property?	Security and protection measures appear to be adequate and reasonable.
9. FAA Sec. 620(l). If the country has failed to institute the investment guaranty program for the specific risks of expropriation, inconvertibility or confiscation, has the AID Administrator within the past year considered denying assistance to such government for this reason?	No such denial has been considered.
10. FAA Sec. 620(o); Fishermen's Protective Act of 1967, as amended, Sec. 5. If country has seized, or imposed any penalty or sanction against, any U.S. fishing activities in international waters, a) has any deduction required by the Fishermen's Protective Act been made? b) has complete denial of assistance been considered by AID Administrator?	No such actions have taken place.
11. FAA Sec. 620(q); FY 80 App. Act. Sec. [518] a) Is the government of the recipient country in default for more than six months on interest or principal of any AID loan to the country?	(a) No.
b) Is country in default exceeding one year on interest or principal on U.S. loan under program for which App. Act. appropriate funds?	(b) No.

12. FAA Sec. 620(s). If contemplated assistance is development loan or from Economic Support Fund, has the Administrator taken into account the percentage of the country's budget which is for military expenditures, the amount of foreign exchange spent on military equipment and the amount spent for the purchase of sophisticated weapons systems? (An affirmative answer may refer to the record of the annual "Taking Into Consideration" memo: "Yes, taken into account by the Administrator at time of approval of Agency OYB." This approval by the Administrator of the Operational Year Budget can be the basis for an affirmative answer during the fiscal year unless significant changes in circumstances occur.)

Assistance is not development loan or from Economic Support Fund.

13. FAA Sec. 620(t). Has the country severed diplomatic relations with the United States? If so, have they been resumed and have new bilateral assistance agreements been nogotiated and entered into since such resumption?

No.

14. FAA Sec. 620(u). What is the payment status of the country's U.N. obligations? If the country is in arrears, were such arrearages taken into account by the AID Administrator in determining the current AID Operational Year Budget?

No indication of any arrears.

15. FAA Sec. 620(A), FY 80 App. Act. Sec. [521] Has the country granted sanctuary from prosecution to any individual or group which has committed an act of international terrorism? Has the country granted sanctuary from prosecution to any individual or group which has committed a war crime?

None known.

None known.

16. FAA Sec. 666. Does the country object, on basis of race, religion, national origin or sex, to the presence of any officer or employee of the U.S. there to carry out economic development program under the FAA?

No.

17. FAA Sec. 669/670. Has the country, after August 3, 1977, delivered or received nuclear enrichment or reprocessing equipment, materials, or technology, without specified arrangements or safeguards? Has it detonated a nuclear device after August 3, 1977, although not a "nuclear-weapon State" under the nonproliferation treaty?

No knowledge of any such delivery or receipt, or any such detonations.

B. Funding Source Criteria for Country Eligibility

1. Development Assistance Country Criteria.

a. FAA Sec. 102(b), (4). Have criteria been established and taken into account to assess commitment and progress of country in effectively involving the poor in development, on such indexes as: (1) increase in agricultural productivity through small-farm labor intensive agriculture, (2) reduced infant mortality, (3) control of population growth, (4) equality of income distribution, (5) reduction of unemployment, and (6) increased literacy.	Yes.
b. FAA Sec. 104(d)(1);IDC Act of 1979. If appropriate, is this development (including Sahel) activity designed to build motivation for smaller families through modification of economic and social conditions supportive of the desire for large families in programs such as education in and out of school, nutrition, disease control, maternal and child health services, agricultural production, rural development, assistance to urban poor and through community-based development programs which give recognition to people motivated to limit the size of their families?	Not appropriate activity to build such motivation.

2. Economic Support Fund Country Criteria

a. FAA Sec. 502B. Has the country (a) engaged in a consistent pattern of gross violations of internationally recognized human rights or (b) made such significant improvements in its human rights record that furnishing such assistance is in the national interest?	Not ESF country.
b. FAA Sec. 533(b). Will assistance under the Southern Africa program be provided to Angola, Mozambique, Tanzania, or Zambia? If so, has President waived prohibition against the assistance by determining that such assistance will further U.S. foreign policy interests?	Not ESF country.
c. FAA Sec. 609. If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made?	Not ESF country.

d. FY 80 App. Act Sec. [510]. Will assistance be provided for the purpose of aiding the efforts of the government of such country to repress the legitimate rights of the population of such country contrary to the Universal Declaration of Human Rights?	Not ESF country.
e. FAA Sec. 620B, P.L. 94-329 Sec. 406. Will ESF be furnished to Argentina or Chile?	Not ESF country.

5C(2) - PROJECT CHECKLIST

Listed below are statutory criteria applicable generally to projects with FAA funds and project criteria applicable to individual funding sources: Development Assistance (with a sub-category for criteria applicable only to loans); and Economic Support Fund.

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

A. GENERAL CRITERIA FOR PROJECT

1. FY 80 App. Act Unnumbered; FAA Sec. 634A; Sec. 653(b);. (a) Describe how authorizing and appropriations Committees of Senate and House have been or will be notified concerning the project. (b) Is assistance within (Operational Year Budget) country or international organization allocation reported to Congress (or not more than $1 million over that figure)?	(a) FY 1980 Congressional Notification in July 1980. FY 1981 Congressional Presentation, Africa Programs, p. 475. (b) Yes.
2. FAA Sec. 611(a)(1). Prior to obligation in excess of $100,000, will there be (a) engineering, financial, and other plans necessary to carry out the assistance and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?	(a) Yes. (b) Yes.
3. FAA Sec. 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of the assistance?	No specific legislative action is required.

4. FAA Sec. 611(b); FY 80 App. Act. Sec. [501] If for water or water-related land resource construction, has project met the standards and criteria as per the Principles and Standards for Planning Water and Related Land Resources dated October 25, 1973?	No.
5. FAA Sec. 611(e). If project is capital assistance (e.g., construction), and all U.S. assistance for it will exceed $1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability effectively to maintain and utilize the project?	Yes.
6. FAA Sec. 209. Is project susceptible of execution as part of regional or multilateral project? If so why is project not so executed? Information and conclusion whether assistance will encourage regional development programs.	No.
7. FAA Sec. 601(a). Information and conclusions whether project will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions.	(a), (b), (c), (d), (e), (f) Not applicable.
8. FAA Sec. 601(b). Information and conclusion on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).	The project will fund U.S. source technical assistance, U.S. university training and substantial amounts of U.S. commodities.
9. FAA Sec. 612(b); Sec. 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized to meet the cost of contractual and other services.	Although Lesotho is listed by the U.N. as a "relatively least developed country" and has limited financial resources, the GOL will contribute approximately 26% of total project costs.

10. FAA Sec. 612(d). Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release?

Not an excess foreign currency country.

11. FAA Sec. 601(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?

Yes.

12. FY 80 App. Act Sec. [521.] If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity?

Project will not assist production of export commodities.

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

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

(a), (b), (c) Project will assist in organization of village level Conservation Committees and Grazing Associations that will involve rural poor in decision making and participation in local government self-help activities. Project provides for extensive labor intensive construction program.

(d) Women will participate in construction activities and will be major beneficiaries since 60% of resident farm operators are women.

(e) Not applicable.

b. FAA Sec. 103, 103A, 104, 105, 106, 107. Is assistance being made available: (include only applicable paragraph which corresponds to source of funds used. If more than one fund source is used for project, include relevant paragraph for each fund source.)

FAA Sec. /103/ for agriculture, rural development or nutrition; if so (a) extent to which activity is specifically designed to increase productivity and income of rural poor;	(a) Project is designed to improve land resource base and land use which is expected to increase productivity and income of cooperating farmers.
Sec. /103A/ if for agricultural research, full account shall be taken of the needs of small farmers, and extensive use of field testing to adapt basic research to local conditions shall be made; (b) extent to which assistance is used in coordination with programs carried out under Sec. 104 to help improve nutrition of the people of developing countries through encouragement of increased production of crops with greater nutritional value, improvement of planning, research, and education with respect to nutrition, particularly with reference to improvement and expanded use of indigenously produced foodstuffs; and the undertaking of pilot or demonstration programs explicitly addressing the problem of malnutrition of poor and vulnerable people; and (c) extent to which activity increases national food security by improving food policies and management and by strengthening national food reserves, with particular concern for the needs of the poor, through measures encouraging domestic production, building national food reserves, expanding available storage facilities, reducing post harvest food losses, and improving food distribution.	(b) Project will help improve nutrition in terms of increased production and availability of basic food crops, but will not improve nutritional quality of food intake. (c) Project will assist and encourage production of domestic food crops.
c. FAA Sec. 110(a). Will the recipient country provide at least 25% of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or has the latter cost-sharing requirement been waived for a "relatively least developed" country)?	Although Lesotho is a "relatively least developed" country, it will provide at least 25% of project costs.
d. FAA Sec. 110(b). Will grant capital assistance be disbursed for project over more than 3 years? If so, has justification satisfactory to Congress been made, and efforts for other financing, or is the recipient country "relatively least developed"?	Lesotho is a "relatively least developed" country.

e. FAA Sec. 281(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civil education and training in skills required for effective participation in governmental processes essential to self-government.	Project includes extensive training program and will substantially strengthen the MOA Conservation and Range Management Divisions.
f. FAA Sec. 122(b). Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities and self-sustaining economic growth?	Project will significantly contribute to improving the productive capacity of the land resource base.

5C(3) - STANDARD ITEM CHECKLIST

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

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

A. PROCUREMENT

1. FAA Sec. 602. Are there arrangements to permit U.S. small business to participate equitably in the furnishing of commodities and services financed?	Yes.
2. FAA Sec. 604(a). Will all procurement be from the U.S. except as otherwise determined by the President or under delegation from him?	Yes.
3. FAA Sec. 604(d). If the cooperating country discriminates against U.S. marine insurance companies, will commodities be insured in the United States against marine risk with a company or companies authorized to do a marine insurance business in the U.S.?	Does not discriminate against U.S. marine insurance companies.
4. FAA Sec. 604(e). If offshore procurement of agricultural commodity or product is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity?	Not applicable.

5. FAA Sec. 608(a). Compliance with requirement in section 901(b) of the Merchant Marine Act of 1936, as amended, that at least 50 per centum of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U.S.-flag commercial vessels to the extent that such vessels are available at fair and reasonable rates.	Project will comply.
6. FAA Sec. 621. If technical assistance is financed, to the fullest extent practicable will such assistance, goods and professional and other services from private enterprise, be furnished on a contract basis? If the facilities of other Federal agencies will be utilized, are they particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs?	Yes.
7. International Air Transport, Fair Competitive Practices Act, 1974. If air transportation of persons or property is financed on grant basis, will provision be made that U.S.-flag carriers will be utilized to the extent such service is available?	Yes.
8. FY 80 App. Act Sec. [505]. Does the contract for procurement contain a provision authorizing the termination of such contract for the convenience of the United States?	It will.
B. CONSTRUCTION	
1. FAA Sec. 601(d). If a capital (e.g. construction) project, are engineering and professional services of U.S. firms and their affiliates to be used to the maximum extent consistent with the national interest?	Yes.
2. FAA Sec. 611(c). If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable?	Yes.
3. FAA Sec. 620(k). If for construction of productive enterprise, will aggregate value of assistance to be furnished by the U.S. not exceed $100 million?	Yes.

C. OTHER RESTRICTIONS

1. FAA Sec. 122(b). If development loan, is interest rate at least 2% per annum during grace period and at least 3% per annum thereafter?	Not applicable.
2. FAA Sec. 301(d). If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights?	Not applicable.
3. FAA Sec. 620(h). Do arrangements exist to insure that United States foreign aid is not used in a manner which, contrary to the best interests of the United States, promotes or assists the foreign aid projects or activities of the Communist-bloc countries?	Yes.
4. FAA Sec. 636(i). Is financing not permitted to be used, without waiver, for purchase, sale, long term lease, exchange or guaranty of motor vehicles manufactured outside the U.S.?	Yes.
5. Will arrangements preclude use of financing:	
a. FAA Sec. 104(f). To pay for performance of abortions as a method of family planning or to, motivate or coerce persons to practice abortions; to pay for performance of involuntary sterilization as a method of family planning, or to coerce or provide financial incentive to any person to undergo sterilization?	Yes.
b. FAA Sec. 620(g). To compensate owners for expropriated nationalized property?	Yes.
c. FAA Sec. 660. To provide training or advice or provide any financial support for police, prisons, or other law enforcement forces, except for narcotics programs?	Yes.
d. FAA Sec. 662. For CIA activities?	Yes.
e. FY 80 App. Act Sec. [504]. To pay pensions, etc., for military personnel?	Yes.
f. FY 80 App. Act Sec. [506]. To pay U.N. assessments?	Yes.
g. FY 80 App. Act Sec. [507]. To carry out provisions of FAA section 209(d) (Transfer of FAA funds to multilateral organizations for lending.)	Yes.

h. FY 80 App. Act Sec. [511]. To finance the export of nuclear equipment, fuel, or technology or to train foreign nationals in nuclear fields?	Yes.
i. FY 80 App. Act Sec. [515]. To be used for publicity or propaganda purposes within U.S. not authorized by Congress?	Yes.

Section 611(e) Certification

LAND CONSERVATION AND RANGE DEVELOPMENT PROJECT

I, Kenneth H. Sherper, Acting Director, USAID/Lesotho, having taken into account, among other things, the maintenance and utilization of projects in Lesotho previously financed or assisted by the United States, commitments of the project to finance maintenance on a descending scale during the life of the project, commitments of the Government of Lesotho to absorb those maintenance costs into its recurring budget in order to provide total maintenance of items financed under this project at end of project, the likelihood of other donor support for conservation and rangeland development activities, do hereby certify that in my judgement the Government of Lesotho will have and employ both the financial and human resources necessary to maintain and utilize effectively the capital assistance provided under the project.

Kenneth H. Sherper

Kenneth H. Sherper
Acting Director
USAID/Lesotho

Date: July 2, 1980

INITIAL ENVIRONMENTAL EXAMINATION

Project Location:	Lesotho
Project Title:	Land Conservation and Range Development
Project Number:	632-0215
A.I.D. Funding:	FY 1980 $2,090,000 Length of Project $12,000,000
IEE Prepared by:	USAID, July 1980
Environmental Action Recommended:	Negative Determination

Concurrence: Kenneth H Sherper Date: July 2, 1980

Kenneth H. Sherper
Acting Director
USAID/Lesotho

Assistant Administrator's Decision:

Approved: [illegible]

Disapproved: _____

Date: 8/21/80

Clearance
AFR/DR/SDP: J. Hester [illegible] Date 8/22/80

INITIAL ENVIRONMENTAL EXAMINATION

I. Description of Project

The project purpose is to conserve and develop national farmland and rangeland resources by carrying out appropriate conservation measures, cropping and land use plans, land management practices, and strengthening the institutional capability of the Ministry of Agriculture to implement these activites.

There are four closely interrelated principal elements of the project. They are: (1) to strengthen the capacity of the Conservation and Range Management Divisions through provision of training, technical assistance, office space and commodities; (2) to prepare area conservation plans and implement protective and rehabilitative conservation measures on the area; (3) to prepare and implement on-farm cropping and land use plans with cooperating farmers; and (4) to establish, plan, survey, and carry out improvements of selected rangelands with participating livestock owners.

To achieve the project purpose, the following project outputs are planned:

1. Trained Basotho Staff

To help meet the personnel requirements of the Conservation and Range Management Divisions, the project will provide U.S. academic training for 16 persons, long-term training in Africa for 20 persons, U.S. short-term training for 22 persons, in-country training for 100 persons, and 36 study tours.

2. On-Farm Plans

An organized system of conducting comprehensive on-farm planning that integrates cropping and conservation needs will be developed and introduced. By the end of the project, 20 Planning Teams will have been organized and they will have carried out 2,440 on-farm plans that will cover 6,100 hectares.

3. Conservation Plans

The program of conservation planning initiated under earlier A.I.D.-supported projects is to be continued and expanded. By the end of the project, an additional 150,000 hectares will have had soil surveys and mapping - two-thirds of the area will be rangeland and one-third cropland - and 25 additional area conservation plans will have

been prepared covering 50,000 hectares.

4. Conservation Structures

The building of conservation structures is to be continued and expanded. By the end of the project, an additional 4,000 hectares will be protected by terraces and 60,000 hectares by diversions, waterways and other structures.

5. Employment Generation

Cash payment for intensive construction of conservation structures has been tested and deemed successful. By the end of the project, 100 Basotho each year will have been employed for a total of 7,800 person months of work on labor intensive construction activities to support building and maintaining conservation structures.

6. Range Management Area

A rangeland area will be selected, established, and developed based on sound management and operation principles for use of rangelands and related resources. By the end of the project, the rangeland area will be selected and functioning an on the area: (a) a Grazing Association will be organized, (b) a range reconnaissance survey completed, (c) a grazing management plan developed and implemented, (d) an animal health program established and implemented, and (e) a marketing program developed and operating for Grazing Association members. Based upon experience and information acquired from the first range management area, a second range management area will be selected and preliminary plans implemented by the end of the project.

7. Rangeland and Livestock Management Policies

By the end of the third year of the project, a report will be prepared providing an analysis of rangeland and livestock management policies and regulations such as those affecting land use and controlled grazing, with specific proposals and recommendations for policy changes or for new policies or regulations. Prior to commencement of development of the second range management area, relevant policies and regulations will receive formal government approval and directives will be issued for their implementation.

II. Discussion of Environmental Inpacts

A. Land Use

The influence of this project on land use is significant. Approximately three-fourths of the land area of Lesotho is classified as grazing land and 13 percent is cultivated. Although this project will not directly impact on all of this area, it will establish methods and procedures to help stabilize the rapidly deteriorating land

base and improve the productivity of both the croplands and rangelands.

The preparation of area conservation plans and implementation of conservation measures (terraces, waterways, diversions, etc.) are not new. Under previous A.I.D.-supported projects, 220,000 hectares were surveyed and mapped for soil type. This project will provide for surveying and mapping of an additional 150,000 hectares. The earlier projects provided for area conservation plans on 70,000 hectares and this project will expand similar planning to an additional 50,000 hectares. The successful implementation of conservation measures based on previous area conservation plans resulted in effective reduction in soil loss caused by water and wind erosion. This project will enable the Conservation Division to continue these land protection and rehabilitation activities that have had a beneficial impact on land resource use and conservation.

The new dimension of the conservation activities of this project is on-farm planning, which builds on the area conservation plans and carrying out measures resulting from those plans. The on-farm plan is a micro approach and will focus on individual farmers or small groups of farmers, with the objective of encouraging practices that will result in increased agricultural production. The on-farm plans will be integrated in nature and include crop and livestock production practices, grazing land management, soil and water conservation measures, and efficient use of land resources. These efforts will complement the area plans and structural program to enhance their effectiveness and the positive environmental impact of protecting the land resource base, as well as increasing agricultural production.

The development of a Range Management Area will also have a positive effect on the environment insofar as land use is concerned. It provides for controlled grazing on overstocked areas and regeneration of vegetative cover on overgrazed areas. The result will be restoration of natural soil and water erosion defenses, improved soil fertility, and long-term protection of the land resource base.

The six houses and office facilities to be constructed in Maseru will have access to existing water and electrical supply systems that are considered adequate for the small extra demand that will be placed on them. Since the Range Management Area has not yet been selected and construction sites not yet designated, the water and electrical sources are not yet known; however, it is anticipated that the rural housing will be constructed in a regional town with adequate electrical and water supplies. The USAID/Lesotho engineer will inspect and approve all sites and plans prior to construction to ensure that natural drainage patterns are maintained, traffic access is adequate and minimal land clearing is required.

B. Water Quality

As soil erosion is reduced, siltation and sedimentation rates in streams and rivers will decrease. Stream and river erosion is expected to diminish. Water sources for some villages will improve. The project will not provide any fertilizers or pesticides; therefore, the project will not affect the chemical or biological status of the water quality. Additional vegetation is expected to slow run-off and increase water holding in productive soils, which will result in increased crop and grazing land productivity.

New project facilities in Maseru will utilize the existing waste water system. Facilities in rural areas will utilize existing systems if available or will be furnished with adequate self-contained systems.

C. Atmospheric

The project activities will have no effect on air quality.

D. Natural Resources

There are no project activities that will divert or alter the use of water resources; however, reduced run-off as a result of increased vegetation and carrying out conservation measures will reduce erosion, siltation and sedimentation. Controlled grazing will result in more efficient utilization of grazing land resources. Facilities constructed under the project will utilize existing water supply systems if available.

E. Cultural

It is a cultural tradition of the Basotho to keep large numbers of livestock as a symbol of wealth and prestige. The productivity or condition of the animals is not an important consideration. The project intends to contribute to a change in this tradition by demonstrating grazing, cropping, and animal husbandry practices that will result in more productive and better-conditioned animals if fewer are kept by the livestock owner.

F. Socioeconomic

Farmers that participate in on-farm plans which involve improved farm management practices are expected to increase production and income from crop and livestock enterprises. Acceptance of basic cultural practices will improve crop production, while use of recommended rangeland management and animal husbandry practices will increase income for the livestock owner. In some cases the potential for increased income is expected to encourage farmers to remain in Lesotho to work in the agricultural sector rather than work outside the country.

G. Health

The project is expected to increase production of farmers that participate in on-farm planning, and, therefore, the quantity of food available for on-farm household consumption. Although the project does not anticipate any significant increase in animal protein consumption that might affect health status, the condition of livestock is expected to improve by increasing the overall availability of forage grasses through controlled grazing and through reversal of the trend for undesirable grass species in overgrazed areas to be dominant over the desirable climax or subclimax veld species.

H. General

The on-farm planning effort and intensive development of the Range Management Area can expect to have a beneficial impact on the results of the production programs of the Basic Agricultural Services Program (BASP) and the Mountain Livestock Centres Development Project. The project will also have a significant influence on improving coordination among programs conducted under the auspices of various technical divisions in the MOA.

III. Recommendations for Environmental Action

This project will help protect and rehabilitate the cultivatable land and rangeland of Lesotho by providing appropriate assistance to the Conservation and Range Management Divisions of the MOA. Achieving the project's goal of increasing the productivity and income of Basotho engaged in crop and livestock production is directly dependent on the introduction and implementation of programs that will stabilize and reverse the steadily deteriorating conditions of the land resource base. This project will introduce technically, economically, socially, and environmentally sound interventions to achieve this end.

The project plans to have significant positive environmental impacts, especially in land use, water quality, cultural and socioeconomic aspects. Since no significant adverse effects on the environment are anticipated, a Negative Determination is recommended.

IV. Impact Identification and Evaluation Form

Impact Areas and Sub-Areas	Impact Identification and Evaluation*
A. Land Use	
1. Changing the character of the land through:	
(a) Increasing the population	N
(b) Extracting natural resources	M
(c) Land clearing	L
(d) Changing soil character	M
2. Altering natural defenses	H
3. Foreclosing important uses	N
4. Jeopardizing man or his works	N
5. Changing land use patterns	M
B. Water Quality	
1. Physical state of water	M
2. Chemical and biological states	N
3. Ecological balance	L
C. Atmospheric	
1. Air additives	N
2. Air pollution	N
3. Noise pollution	N

* Legend for Symbols

N = No environmental impact
L = Little environmental impact
M = Moderate environmental impact
H = High environmental impact
U = Unknown environmental impact

Impact Identification and Evaluation Form

D. Natural Resources	
1. Diversion, altered use of water	L
2. Irreversible, inefficient commitments	N
E. Cultural	
1. Altering physical symbols	N
2. Dilution of cultural traditions	M
F. Socioeconomic	
1. Change in economic/employment patterns	M
2. Change in population	L
3. Changes in cultural patterns	L
G. Health	
1. Changing a natural environment	N
2. Eliminating an ecosystem element	N
H. General	
1. International impacts	N
2. Controversial impacts	N
3. Larger program impacts	L

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