

I. PROJECT IDENTIFICATION

1. PROJECT TITLE  
**THABA BOSIU RURAL DEVELOPMENT PROJECT**

2. PROJECT NO. (M.O. 1025-1)  
**690-11-120-031**

3. RECIPIENT (specify)  
 COUNTRY **Lesotho**  
 REGIONAL  INTERREGIONAL

4. LIFE OF PROJECT  
 BEGINS FY **73**  
 ENDS FY **78**

5. SUBMISSION  
 ORIGINAL \_\_\_\_\_ DATE \_\_\_\_\_  
 REV. NO. \_\_\_\_\_ DATE \_\_\_\_\_  
 CONTR./PASA NO. \_\_\_\_\_

APPENDIX ATTACHED  
 YES **66p**  NO

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

A. FUNDING BY FISCAL YEAR	B. TOTAL \$	C. PERSONNEL		D. PARTICIPANTS		E. COMMODITIES \$	F. OTHER COSTS \$	G. PASA/CONTR.		H. LOCAL EXCHANGE CURRENCY RATE: \$ US (U.S. OWNED)			
		(1) \$	(2) MM	(1) \$	(2) MM			(1) \$	(2) MM	(1) U.S. GRANT LOAN	(2) COOP COUNTRY		
											(A) JOINT	(B) BUDEE	
1. PRIOR THRU ACTUAL FY													
2. OPN FY 73	1,056	205	68	35	84	300	516						
3. BUDGET FY 74	481	120	40	38	84	-	323						
4. BUDGET +1 FY 75	479	126	40	39	84	-	314						
5. BUDGET +2 FY 76	473	127	40	18	24	-	328						
6. BUDGET +3 FY 77	311	62	18	-	-	-	249						
7. ALL SUBQ. FY													
8. GRAND TOTAL	2,800	640	206	130	276	300	1,730						

9. OTHER DONOR CONTRIBUTIONS

(A) NAME OF DONOR	(B) KIND OF GOODS/SERVICES	(C) AMOUNT
IBRD/IDA	Personnel, Training, Commodities, Credit and Local Costs	\$5,600,000

III. ORIGINATING OFFICE CLEARANCE

1. DRAFTER <i>W Johnson / E Siira / F Scordato</i>	TITLE AFR/DS--AFR/ESA	DATE 11/6/72
2. CLEARANCE OFFICER <i>Jerry Knoll</i>	TITLE Director, AFR/ESA	DATE 11/6/72

IV. PROJECT AUTHORIZATION

1. CONDITIONS OF APPROVAL

1. Negotiation of an IBRD/IDA agreement with the GOL substantially in the form contemplated by this PROP.
2. Waiver of certain AID source and origin procurement requirements and/or approval of certain procedures as outlined in the attached continuation sheet. The signature of the Administrator of this Project Authorization, among other things, certifies that exclusion of procurement of the nature outlined herein would seriously impede the attainment of U.S. foreign policy objectives and the objectives of the Foreign

2. CLEARANCES

BUR/OFF.	SIGNATURE	DATE	BUR/OFF	SIGNATURE	DATE
AFR/DP	<i>E. Hogan</i>	11/11/72			
AA/AFR	<i>S.C. Adams, Jr.</i>	12/1/72	AA/PPC	<i>P. Birnbaum</i>	12/1/72

3. APPROVAL AAS OR OFFICE DIRECTORS SIGNATURE _____ DATE _____	4. APPROVAL AID (See M.O. 1025.1 VI C) SIGNATURE <i>Thurman Williams</i> DATE <i>11/28/72</i>
TITLE _____	ADMINISTRATOR, AGENCY FOR INTERNATIONAL DEVELOPMENT

12/8/72

Continuation Sheet  
Thaba Bosiu Rural Development PROP

Section IV.1 Conditions of Approval cont'd

Assistance Program and that waiver of AID regulations requiring such exclusion serves the best interests of the United States.

The following waivers are requested for the dollars and local currency costs indicated:

(a) A procurement source and origin waiver from Geographic Code 000 (U.S.) to Geographic Code 935 (Lesotho and South Africa):

(i) for equipment, commodities, and local services, at an estimated value of \$965,000 representing local cost procurement requirements to perform the conservation works under the project.

(ii) for equipment and commodities and construction services at an estimated value of \$170,000 for the construction of houses, office space, and garage space.

(iii) for services valuing at approximately \$145,000 to perform major repairs of heavy equipment.

(b) A waiver of AID Regulation 7 thus removing restrictions on the employment of third country nationals on the construction contracts financed by AID.

In addition, the following approvals are requested:

(a) Approval of the use of normal established Government of Lesotho procedures for the competitive selection of construction firms for building the houses and other structures financed by AID.

(b) Approval of the use of AID financed local currency (approximately \$450,000) to pay salaries of local citizens, who will staff the quasi-governmental agency empowered to manage the project.

See Section VIII of PROP for discussion and justification.

Clearances: (for source/origin waiver and other approvals of procurement procedures)

AFR/GC:MKitay (draft) m. 5/7  
COM/CS/TS:TLooper (draft)  
SER/PROC/CSD:JASewell (draft)  
SER/ENGR:TCELLiott (draft)  
State:AF/S:JLinehan (draft)  
GC:AGardiner AK 2/9

AGENCY FOR INTERNATIONAL DEVELOPMENT  
 CERTIFICATION AND RECORD OF WAIVER<sup>1/</sup>

Waiver Control No.  
**AFR-W-73-005**  
 Symbol or Code-Fiscal Yr.-Seq.No.

(This certification does not convey any waiver authority beyond that provided in applicable directives)

**PART A**

DOCUMENT TITLE (Subject of Waiver Request) <b>Source Origin Procurement/Services Contractor Source</b>			PROJECT, LOAN, GRANT, OR CONTRACT NO. <b>690-11-120-031</b>	
WAIVER EFFECTIVE DATE <b>January 1, 1973</b>	WAIVER TERMINATION DATE <b>December 31, 1978</b>	COUNTRY <b>Lesotho</b>	ORGN. CODE <b>633</b>	DOLLAR AMT OF WAIVER <b>\$1,280,000</b>

**PART B**

CHECK BOX	PROCUREMENT WAIVERS <sup>1/</sup>	MONITORING OFFICE <sup>2/</sup>	CHECK BOX	PROCUREMENT & OTHER WAIVERS <sup>1/</sup>	MONITORING OFFICE <sup>2/</sup>
<b>GENERAL</b>					
<input checked="" type="checkbox"/>	Commodity Source/Origin	PROC/IRD	<input type="checkbox"/>	Payment and Reimbursement (AID Reg. 1)	C/FRD
<input type="checkbox"/>	Componentry Rules	PROC/IRD	<input type="checkbox"/>	Price Provisions (AID Reg. 1)	C/FRD
<input checked="" type="checkbox"/>	Service Contracting Source	PROC/IRD	<input type="checkbox"/>	Rights and Responsibilities of Banks (AID Reg. 1)	C/FRD
<input type="checkbox"/>	Monthly Summary of Minimum Value Transactions	PROC/IRD	<input type="checkbox"/>	Waiver Determination and Finding (FPR & AIDPR)	PROC/CSD
<input type="checkbox"/>	Proprietary Procurement	PROC/IRD	<input type="checkbox"/>	Deviation (FPR and AIDPR)	PROC/CSD
<input type="checkbox"/>	Standard Commodity Financing Procedure	PROC/IRD	<input type="checkbox"/>	Foreign Asst Act, Sec. 636(b)	GC
<input type="checkbox"/>	Special Provision of Commodity Procurement Instructions	PROC/IRD	<input type="checkbox"/>	Other FAA Sections (specify) _____	GC
<input type="checkbox"/>	Barter transactions	PROC/IRD	<input type="checkbox"/>	Executive Orders and AID Directives on Security	AG/SEC
<input type="checkbox"/>	Special Development Activity Authority	PROC/SB	<input type="checkbox"/>	Employees <input type="checkbox"/> Contractors	
<input type="checkbox"/>	Marking Requirements (AID Reg. 1)	PROC/SB	<input type="checkbox"/>	PASAs	
<input type="checkbox"/>	Special supplier-importer Relationship (AID Reg. 1)	PROC/SB	<input checked="" type="checkbox"/>	Other Directives M.O. 1412.1.2	GC
<input type="checkbox"/>	Emergency Procurement (AID Reg. 1)	PROC/SB	<input type="checkbox"/>	Multiple Provisions	Each office responsible for each provision cited
<input type="checkbox"/>	Special Situations (AID Reg. 1)	PROC/SB			

**PART C** The Provisions of (specify the directive): \_\_\_\_\_ Section: \_\_\_\_\_ Para: \_\_\_\_\_ are being waived as follows: **M.O. 1412.1, 1412.1.2 and 1414.1.1**

- To permit contracting locally for the construction of nine houses and a workshop/office in Lesotho up to a value of \$170,000 and permit use of third country national supervisory and other personnel.
- To permit procurement of goods and services not of local origin from Geographic Code 935 countries up to a value of \$1,110,000.

References:

**THABA BOSIU RURAL DEVELOPMENT PROP**

(Continue on Reverse if necessary)

**PART D**

I certify that the waiver described above is approved by me pursuant to the cited provisions of the directive indicated above, and that I am authorized to take the action described above and in the attached documents by virtue of authority delegated to me by (specify the directive containing your delegation of authority) \_\_\_\_\_ and I am distributing this certification as follows: Signed original to the following official file (indicate by office symbol) \_\_\_\_\_, and signed copy to the Monitoring office indicated above.

NAME AND TITLE	SIGNATURE <i>Marvin J. ...</i>	DATE <b>Dec 8, 1972</b>
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<sup>1/</sup> The term "waiver" as used throughout this form shall be interpreted to include exceptions to AID Directives System.

<sup>2/</sup> The monitoring office is sometimes but not always a clearing or concurring office. All clearances, concurrences, and approvals of waivers are to be in accordance with the directive authorizing the waivers.

NON CAPITAL PROJECT PAPER (PROP)

THABA BOSIU RURAL DEVELOPMENT

LESOTHO

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Thaba Bosiu Rural Development Project  
Non Capital Project Paper (PROP)

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(2)

Appendix 1            Project Agreement, Draft of proposed Project Agreement between AID and the GOL which will be used as a basis for negotiations with the GOL. It more clearly delineates AID's part of the project and AID's responsibilities in implementing it as well as specific GOL commitments in support of AID's inputs.

Appendix 2            Project Implementation Plan

Appendix 3            Map of Project Location

Appendix 4            Project Organization Chart

THABA BOSIU RURAL DEVELOPMENT PROJECT

INTRODUCTION

This is a joint IBRD/AID project; planned together, designed in close collaboration, negotiated simultaneously with the Lesotho Government (GOL), and fully integrated in its implementation. Nevertheless, its design permits AID to finance a separate, identifiable, complementary component of the project, with its own inputs and measurable outputs and verifiable objectives. It further enables AID to provide its inputs for the most part through normal AID procedures. In those instances, under local costs financing, where modification of AID procedures is essential to the successful implementation of the project, waiving of certain procurement source and origin rules is provided for herein.

This PROP covers AID's part of this joint project to assist the Government of Lesotho's rural development program by increasing agricultural productivity and farmer income while reducing soil erosion in the Thaba Bosiu area near Maseru. The project is designed to increase crop and animal production in this 300,000 acre (60,000 acres semi-intensive farming) dry farming river catchment area. While increasing production represents the major economic justification of the project, such production cannot be increased or sustained without taking prompt and effective conservation measures to check the excessive rates of soil erosion now occurring. AID's inputs to the project are designed to address this problem and by helping to control erosion, will provide a suitable environment for increasing agriculture production and rural income.

Being a jointly designed, integrated project with the IBRD having the major donor role, the basic document describing the project and being used for negotiations with the GOL is the IBRD/IDA project appraisal report which contains the details of the various elements of the full project. This PROP thus, for the most part, is an adaption of relevant sections of this report edited and supplemented to meet AID project approval needs. (See Table of Contents for more specific references to sections of IBRD project report).

**PROJECT DESIGN SUMMARY**  
**LOGICAL FRAME WORK**

Life of Project \_\_\_\_\_  
From FY to FY \_\_\_\_\_  
Total U.S. Funding \_\_\_\_\_  
Date of Preparation \_\_\_\_\_

**Project Title: THABA BOSIU RURAL DEVELOPMENT PROJECT**

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<u>Program or Sector Goal:</u>	<u>Measurement of Goal Achievement:</u>	<u>Verification can be made through both evaluation studies and by the projects research component.</u>	<u>Assumptions for achieving goal targets:</u>
<p>The Broad objective to which this project contributes:</p>	<ol style="list-style-type: none"> <li>1. Rural incomes and standards of living are improved.</li> <li>2. GOL policies which provide means to manage cropland and grassland in a fashion consisted with sound soil conservation practices are developed, tested and implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. There is increased rural purchasing power.</li> <li>2. There are improved and expanded schools, health services, marketing systems, credit services and information services.</li> <li>3. There is a substantial increase in integrated (crops with live-stock) farming under sound technical management in the cash economy.</li> <li>4. Soil conservation practices are effective and reductions in the rates of erosion can be measured.</li> </ol>	<ol style="list-style-type: none"> <li>1. The GOL will provide continuity to the Agriculture sector.</li> <li>2. Political stability will continue within the GOL and in its relation to its neighbors.</li> <li>3. The GOL will have resources to increase its recurrent expenditure to the Agricultural sector.</li> <li>4. The GOL, the chiefs and the rural citizens will be responsive to recommended modifications of cropping and grazing practices essential to effective and successful conservation efforts.</li> </ol>
<u>Project Purpose (AID portion only)</u>	<u>Conditions that will indicate purpose has been achieved: end of Project status.</u>	<u>Verification is possible by means of:</u>	<u>Assumptions for achieving purpose:</u>
<p>As part of larger effort undertaken by the IDA.</p>	<ol style="list-style-type: none"> <li>1. 5000 or more acres of the project area will be operated in the integrated farming system with soil erosion control and proper land use as the basic component.</li> <li>2. Effective conservation practices will be accepted over the arable land in the project area (60,000+ acres)</li> <li>3. Rural access roads will be constructed and the GOL will have the expertise to maintain them.</li> <li>4. In coordination with the Ministry of Agriculture, an effective soil conservation organization and manpower capability will be developed.</li> </ol>	<ol style="list-style-type: none"> <li>1. Direct observation.</li> <li>2. National statistical data.</li> <li>3. Internal project records.</li> <li>4. By use of the project evaluation and research units.</li> </ol>	<ol style="list-style-type: none"> <li>1. The rate of inflation will not increase. (The project design allows for 5% per year accumulative on project costs)</li> <li>2. Domestic and South Africa markets will absorb increased productivity from the area without appreciable changes in prices.</li> <li>3. South Africa will not alter its subsidy patterns so as to preclude the project from realization of its more profitable potentials (beans, wheat).</li> <li>4. Farmers economic production incentives will remain relatively unchanged.</li> <li>5. Project implementation and schedules will be properly planned and accomplished on time</li> </ol>
<ol style="list-style-type: none"> <li>1. To apply soil conservation measures and improve farm roads within the Thaba Bosiu project area and to demonstrate how such measures will increase crop production and farm income.</li> <li>2. Concurrently develop GOL organizational and manpower capability to implement soil conservation and improved land use programs.</li> </ol>	<p>For total project success the following indicators are valid:</p> <ol style="list-style-type: none"> <li>1. The value of increased farm product sales (beans, wheat, maize, sorghum, milk and other commodities) increase to \$1.5M annually by the last year of the project (see Section VII A. Economic benefits and justification of attached IDA paper for figures)</li> <li>2. The internal rate of return will be 11 to 14 per cent beginning the last year of the project (see section VII B rate of return analysis)</li> </ol>		

### Outputs

1. Land is being utilized in accordance with appropriate technical constraints such as slope, soil type, vegetative cover, livestock damage.
2. There will be an expansion of trained manpower in conservation and related fields.
3. Information derived from agronomic and socio-economic research will be used by the project to minimize or eliminate both technical and social constraints.
4. Soil erosion reduced and held at manageable levels, while gullies are stabilized and protected.
5. Woodlots will be established and protected.
6. Conservation and rural access roads will be constructed.
7. Livestock will be managed in a manner consistent with proper soil conservation practices.

### Objectively Verifiable Indicators

1. On the integrated farming areas and to a lesser degree in the entire project, farmers will be employing on schedule as shown in IDA appraisal report annex III appropriate agronomic and land use practices to reduce and control soil erosion.
2. Participants will be trained as shown in the PROPaud attached IDA appraisal paper. Forty-three project staff and 12,000 farmers will receive in-service training.
3. There will be observable improvements in pastures and in the high mountain ranges allied with the project area. The integrated farming areas will be adopting consolidated farming systems employing required fencing of livestock and appropriate crop rotation.
4. Conservation works will be protected and maintained by the farmers as shown in the IDA appraisal report annex III.
5. Forestry planting will be protected and maintained by the local farmers as shown in the IDA appraisal report annex III.
6. Rural road construction will be carried out on schedule as shown in the IDA appraisal report annex III.
7. Livestock will be managed by the owners and herdsman to reduce or avoid damage to conservation works.

### Verification is possible by means of:

1. National statistical data.
2. Data from project evaluations.
3. Data from project research component.
4. Direct observation.
5. Appraisals made by GOL officials, project committees, etc.
6. Consultancy or AID/W surveys or studies considered desirable.

### Assumptions

1. GOL will continue priority support for the project, especially in the critical manpower area.
2. Local chiefs and farmers will support the project and accept minimum modifications of traditional crop and husbandry practices essential to successful erosion control.
3. Local chiefs and farmers will respect and willingly protect conservation works and tree planting as present legislation provides.
4. As a result of improved land management and other project inputs, rural income increases will be sufficient to compete favorably with alternate labor opportunities.
5. All components of this Project are interdependent and will be properly phased and will be accomplished on schedule.

### INPUTS

1. U.S. Inputs \$2,800,000
  - a) Technical Services (\$58,000)
    1. Senior Conservation Planning Officer (6 years)
    2. Conservation Engineer (6 years)
    3. Mechanical Supervisor (5 years)

The above staff will provide, to carryout operations beyond the life of this project, on the job training to GOL personnel. In addition, they will make available information and train participating farmers.

- b) Consultancies \$80,000 provided for up to 10 TDY Technical specialists to assist implementation during the life of project)

Local Costs \$1,730,000

Local Salaries	- 449,000
Housing	- 170,000
Operations	- 1,067,000
Seedlings	- 38,000
	<u>1,730,000</u>

### Objectively Verifiable Indicators

Implementation targets, amounts and time frame are provided in Annex 2.

### Verification is possible by means of:

1. AID budget support is provided.
2. Direct observation
3. Project implementation schedules are followed.
4. Project evaluations.

### Assumptions

1. Recruitment and timely arrival of properly qualified and well motivated specialists will be accomplished.
2. Equipment to be provided will arrive on schedule.
3. Qualified counterparts and participant candidates will be provided and available.
4. Other components of the project will be implemented on schedule especially construction of housing, offices and machinery sheds.
5. Training facilities will be available for staff training and for farmers.

— Inputs (Cont'd) —

d) Commodities \$300,000

Includes heavy equipment such as crawler tractors, scrapers, graders, etc. and small equipment such as surveying, soil analysis, and field operations. Itemized listing attach IDA loan paper annex XVI.

e) Participants \$132,000  
Participant training will be at African and United States colleges or Universities in agronomy, range management, agricultural economics or general agriculture.

II. Project Related, U.S. Provided

Technical Services Inputs

- a. OPEX support to Ministry of Agriculture, cooperatives and marketing as follows: Project \_\_\_\_\_
1. Chief of Division (4 yrs)
  2. Soil Survey Specialist (4 yrs)
- b. OPEX support to the GOL for contract research with UBLS involving:
1. Pasture/management: Project \_\_\_\_\_  
research worker.
  2. Rural Sociologist: Project \_\_\_\_\_  
research worker.

III. Project Assistance From Other

Donors

- a. IDA loan provided technical services and financing. (See attached IDA loan paper)
- b. UNDP Assistance
1. Roads Engineer (will report to Senior Conservation Planning Technician)
  2. Access to agronomic and fertilizer research staff.
  3. Land Use Planner (Planning unit of the GOL)
  4. Access to other FAO/UNDP staff on Leribe Project and others.
- c. Assistance from Anglo-American technical staff in Forestry.

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THABA BOSIU RURAL DEVELOPMENT PROJECT

SUMMARY AND CONCLUSIONS

- i. This report describes a project for provision of farm inputs, mainly seed, fertilizer and cultivation services, to about 12,000 peasant farmers on 60,000 acres of presently poorly cultivated land; the credit to acquire these inputs; marketing facilities; better roads; and vital soil conservation. It would improve production of maize, sorghum, wheat and beans.
- ii. Lesotho is a small, recently independent African country, largely mountainous, and entirely surrounded by the Republic of South Africa, with which its economic ties are naturally close. Many of its men work in the mines, fields and factories of South Africa and their remittances contribute substantially to the Lesotho economy.
- iii. Government gives highest priority to agriculture, which provides a livelihood for 85% of the people and accounts for 70% of GDP. Lesotho farming is mainly for subsistence and only about one-third of farm production, mostly animal products, is sold. Traditional land use and cultural habits inhibit change. The immediate objective, therefore, is to control erosion and improve crop production and rural living within the existing social system, and thus move from subsistence to cash cropping for import substitution and export. A longer term objective is to transform land use custom so that integrated farming, combining rotational cropping with improved livestock production, can be introduced. Unless these fundamental changes in land use are made and integrated farming is adopted, erosion control and crop improvement would have little lasting value.
- iv. Production would be increased by timely provision of improved inputs on credit, and technical agricultural guidance on their use. Farmer demand for inputs is expected to be keen; but acceptance of essential conditions, especially proper cultivation and maintenance of soil conservation works, may not occur so readily. Effective institutions are at present lacking. A credit and marketing organization would need to be created for the project, and staff would need to be trained for almost all project activities. Initial production increase is therefore likely to be slow.
- v. Rainfall, averaging about 600-700 mm in the project area, is uncertain, varies greatly from year to year and nearly all occurs in October-March, with a January peak. Cultivation timing is therefore most important. For this reason, and because of migration of able-bodied males, ox power and tractor power are used extensively and the project includes supply and more efficient use of these.
- vi. Farmers in the project area grow mainly subsistence crops, using family labor for weeding and harvesting. From an average 5-acre holding, in place of subsistence with annual cash of about US\$20-25, project farmers

would have, in addition to more assured subsistence, about US\$55-70 annual cash, with the prospect of integrated farming with annual net income exceeding US\$150 from the same land.

vii. The project would be administered by an autonomous Project Unit within Government, under the control of a policy-making Project Committee, comprising representatives of ministries and departments concerned. Involvement of farming community leaders would be ensured through a Liaison Committee, comprising elected representatives of farmers and chiefs. The project would be funded through the Government budget. USAID would finance soil conservation costs under a parallel grant; crop purchases would be financed by commercial banks.

viii. Project costs are estimated at US\$9.8 M equivalent, of which about US\$5.4 M (56%) would be the foreign exchange component. IDA would contribute 57% of project costs (equivalent to 39% foreign exchange costs and 19% local costs); USAID 29%; Government about 6%; commercial banks 5%; and farmers 3%. The proposed IDA credit to Government would be US\$5.6 M.

ix. Procurement of vehicles, farm tractors, equipment and fertilizer (US\$0.9 M) would be by international competitive bidding, in accordance with Bank/IDA guidelines. Imports for the project would be duty free. Roads (US\$0.6 M) would be in small sections, and buildings (US\$0.6 M) few in number and widely scattered. They would be insufficient in value to attract international competitive bidding and would be subject to Government local tender. Seed and dairy cattle would be bought from nearby South Africa. USAID would procure the soil conservation equipment it financed.

x. The project would produce an annual additional 4,600 tons of maize and 3,100 tons of sorghum, the basic Lesotho foodgrains, of which about 150,000 tons are consumed annually, of which about 25,000 tons are imported. It would also produce 7,000 tons of wheat and 4,100 tons of beans, both for export. It would thus help Lesotho achieve self-sufficiency in food and increase export earnings. The value of incremental annual project production would build up over six years to about US\$1.5 M.

xi. Soil and climate severely limit the potential for Lesotho agriculture and project crops are not of high value. Since this would be the first project of its kind in Lesotho, project overheads and training are a high proportion of total costs; but replication could follow success and future projects of a similar or more advanced nature would have higher returns, not only because overheads would be spread over a larger operation but also because results could be expected to improve as the project moves into and extends integrated farming. The estimated annual rate of return to the economy of Lesotho is 11%, based on the most probable assumptions. A 10% rise or fall in prices or yields would result in estimated rates of return of 14% and 8% respectively. The rate of return on integrated farming would be within the range 15-20%, and the ultimate goal is to extend it throughout Lesotho; but without the initial stimulus which the project would give, integrated farming is unlikely to be widely accepted.

(9)

xii. Although adverse factors have been taken into account, the project would be subject to many uncertainties that cannot be easily quantified. Success depends, for example, on overcoming resistance to change in a traditional society, which would affect the willingness of farmers to accept new techniques, including enclosure and livestock limitation, and to maintain soil conservation works against insidious erosion. Farmers in the project area show willingness to accept change and enthusiasm for the project, while Government offers fervent support and has publicized the project extensively. The chances of success are therefore considered good. The project is extremely important to Lesotho, which has few alternatives for economic development.

xiii. The project is suitable for an IDA credit of US\$5.6 M equivalent, subject to appropriate assurances.

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APPRAISAL OF THE

THABA BOSIU RURAL DEVELOPMENT PROJECT

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## LESOTHO

### THABA BOSIU RURAL DEVELOPMENT PROJECT

#### I. INTRODUCTION

1.01 Lesotho's Five-Year Development Plan 1970/71-74/75 gives highest priority to increased productivity of agriculture (on which the country is heavily dependent), including soil conservation and control of livestock to arrest long-recognized and persistent soil erosion. Objectives are to transform traditional subsistence farming to cash cropping, for import substitution and export, with emphasis on self-sufficiency in maize and sorghum <sup>1/</sup>; and in the longer term, to integrate rotational cropping with improved livestock production, restore soil fertility, and achieve and maintain a still higher level of production.

1.02 Traditional land use and social custom stand in the way of this longer-term objective. In the interim, Government seeks to improve crop production and rural living without major changes in the social system.

1.03 Following the success of the IDA-financed Lilongwe Development Project in Malawi, visited by Lesotho Government officials and farmers, and with help from the Bank's Permanent Mission in East Africa, Government prepared a comprehensive project for rural development of about 300,000 acres (ac) near Maseru, the capital (see Map). Selected partly because replication could follow success, the project would be the first Bank Group financed agricultural project in Lesotho. USAID is keen to help Lesotho with its soil conservation problems and is willing to participate with grant finance.

1.04 This appraisal report is based on the resulting November 1971 credit application and the findings of a mission to Lesotho in March 1972, comprising Messrs. Nelson, Myllyluoma and Schul (IDA); Henderson (consultant agriculturist) and Vilakazi (consultant sociologist). The mission was advised on soil conservation by Mr. S. Fuchs of a concurrent USAID mission to Lesotho and by Mr. R. Benham (Agricultural Development Service) from Lilongwe.

#### II. BACKGROUND

##### A. General

2.01 Lesotho is a small (30,300 km<sup>2</sup>), largely mountainous country, entirely surrounded by the Republic of South Africa. It has been independent since 1966.

2.02 Population is around 1.1 M, growing at 2-2.5% per year. About half the men of working age earn their living on short-term contracts in South Africa, and their remittances (approximately US\$13 M per year) are important

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<sup>1/</sup> Sorghum vulgare: a coarse grain, also known as millet.

to the Lesotho economy. GNP totals about US\$80 M and per capita average annual income is about US\$80.

2.03 . Lesotho's natural resources are agricultural land (much of it badly eroded), natural pasture (largely overgrazed), water and people. The Malibamatsu project, which the Bank is studying, would export water to South Africa. Attractive scenery and a pleasant climate provide tourist potential. Manufacturing is still only about 2% of GDP.

2.04 Lesotho has close economic ties with South Africa and, together with Botswana and Swaziland, belongs to the South African Customs Union, using South African currency and receiving part of South African customs revenue. Most goods move freely among the four countries. Though controls are permitted on agricultural products regulated by marketing boards, they have not so far been imposed in Lesotho, except for a livestock export quota.

2.05 Lesotho's average annual external trade deficit from 1966 to 1969 was US\$28 M. The British Government was financing more than half Lesotho's budget at Independence and has since continued to help with bilateral, mainly grant, aid averaging about US\$5.5 M annually.

B. Agriculture

2.06 Agriculture provides the principal livelihood for about 85% of the people and accounts for about 70% of GDP. Though the Lesotho farmer is increasingly conscious of cash income, only about one-third of farm production (mostly animal products) is sold. Farming is generally primitive, and yields are low. During 1967/69, annual agricultural exports averaged about US\$4 M and were about 75% of total exports; agricultural imports, mainly maize meal and wheat flour, averaged about US\$7 M, or 20% of total imports.

2.07 Lesotho, with a warm temperate climate, has three ecological zones; Lowlands at 5-6,000 ft, about 27% of the total, mostly in the west; Foothills 6-9,000 ft about 16%; and Mountains, rising to 11,000 ft on the eastern border, about 58%. Only about 15% of the total is suitable for cultivation. Average annual rainfall varies locally between 560 and 900 mm; annual variation is great, and drought occurs about one year in five. Rain falls most often in heavy showers, nearly all in summer (October-May), with a January peak.

2.08 Maize grows on 45% and sorghum on 30% of the cultivated area. Of low monetary value, they are the principal food crops. Wheat (10%) is grown in the Mountains as a summer crop, and in the Foothills and Lowlands as a winter crop. Beans and peas (8%) are increasingly valuable exports. Rainfall permits only one crop per field to be grown each year.

2.09 Sharecropping is widespread, for a number of reasons. The most common is that a landholder lacks plowing power; so he contracts with oxen or tractor owners to plow for a share of his crop or use of some of his land. This latter practice usually results in poor preparation of the farmer's own land, but at little risk or cost to him.

2.10 Livestock production is extremely important; in 1967/69, wool and mohair were 44% and live cattle and sheep 36% of total exports. The country is almost free of animal disease. Livestock graze mountain pastures in summer, and lowland pastures and crop residues in winter. Livestock population is estimated at 3.2 M, of which 1.6 M sheep, 0.9 M goats, 0.5 M cattle and 0.2 M horses and donkeys. This is much more than the grazing resources can comfortably carry under present systems. Government is anxious to improve this situation, but is severely hampered by traditional land tenure and social restraints.

2.11 Five-Year Plan investment in agriculture is estimated at US\$8.2 M (23% of the total), more than half for irrigation. However, irrigation is possible on less than 3% of the arable land, while improvements to dryland farming are urgent and can be immediately implemented, with wide impact.

### C. Soil Conservation

2.12 Soil erosion has been a major problem of Lesotho agriculture for at least a century, and the rainfall pattern and traditional cropping have led to erosion on a spectacular scale. As steep Foothill and Mountain land is pressed into cropping through population growth, it is exposed to serious erosion risk. More than half a million acres have been protected since 1932/33 with terraces and grass buffer strips. While helpful, they need major improvement to be fully effective. The fundamental causes of erosion (faulty cropping practices and overgrazing) cannot be effectively removed unless traditional practices are changed. The technical answers are well known; the sociological answers are harder to find; but if erosion continues unchecked, little land will remain suitable for cultivation within three generations.

### D. Sociology and Land Tenure

2.13 The principal Basotho institutions are the nation, clan, village and family. The family is the most important group, especially the extended family, which includes brothers and sisters and their wives and children, and the village, with its strong social sanctions, is a natural unit of cooperation.

2.14 All Basotho are entitled to lands for cultivation, though in practice some are landless because no cultivable land is available. Sizes of holdings vary greatly; where population pressure is low, they may be as large as 15 ac per household; the average is believed to be less than 5 ac. Entitlement is a right of use, not of ownership, and land may not be traded nor bequeathed. Use is exclusive to the individual only until his crops have been harvested; his holding then becomes public grazing until the next crop is planted; but the holder may not be deprived of land rights during his lifetime, without good reason. The system admirably suited traditional society when land was plentiful. It is inadequate for the present population and quite unsuited to modern agriculture.

2.15 Apart from their economic value, livestock are exchanged in marriage transactions and used for sacrificial purposes, still important in Basotho life. Under present land use, no owner has incentive to reduce his own livestock, because he cannot control the numbers that others may graze on his land; nor is it normally possible for him to preserve cover on his soil by restricting grazing on it.

E. Banking and Agricultural Credit

2.16 Lesotho has no central bank. Two foreign commercial banks have branches, and the Post Office Savings Bank is popular for small savings.

2.17 Land cannot be pledged, so banks make few loans for agriculture. A few small specialized institutions lend to farmers, mostly short-term for inputs such as seed and fertilizer; but their funds are limited and they lack experienced staff. The most important is the Co-op Lesotho Ltd (CLL) 1/, formed in 1963 after disastrous earlier experience with cooperative lending for agriculture. Its assets total about US\$190,000. It began by making inputs available to individuals and cooperatives on credit. Following poor experience with individual repayments, it now lends almost exclusively to member cooperatives and farmers' associations and its recent repayment record is good. In 1970/71 it ventured into marketing, at Government request, with unfortunate results because crop purchase prices set by Government were too high and CLL was left with large unsold stocks.

2.18 Credit has high priority for Lesotho rural development and Government created the Lesotho National Development and Savings Bank (LDB) as the channel for development financing. The manager is expected in late 1972 but it will be some time before LDB is ready to engage in agricultural lending.

III. PROJECT AREA

A. General

Location

3.01 The project area is about 300,000 ac, comprising most of the Little Caledon Watershed and the Barea Plateau (see Map). Most of it is less than a day's drive from Maseru. Altitude is between 5,000 and 6,500 ft, except on the mountainous eastern boundary (nearly 10,000 ft).

Climate, Topography and Soils

3.02 Climate is typical for Lesotho Lowlands and Foothills, rain averaging about 600-700 mm. Lowlands are in-

1/ Formerly the Finance and Marketing Cooperative Union of Lesotho (FMCUL).

terspersed with steep-sided plateaux and deep valleys; Foothills are gently undulating to steep. Annual area cultivated is estimated at 80-110,000 ac, depending on climate. Only about 75,000 ac are really suitable for permanent cropping; the rest is more suitable for grazing, with very occasional cropping.

Soils vary greatly and many are erodible, needing special protection. Little original natural vegetation and almost no trees remain. Poor annual grasses are dominant in grazing, though better grasses intrude on cropped land after harvest.

3.03 The Little Caledon and several small streams flow perennially; many others are seasonal. Groundwater is available at about 40 meters and there are 29 boreholes in the area. Drinking water is no problem.

#### Communications and Services

3.04 The project area is linked to Maseru by a paved road, and a major secondary road runs through part of it. The rest is served by poor roads and tracks only usable by 4-wheel drive vehicles or animal traffic. There are five light aircraft strips in or near the project area. Roma and Mazenot have postal and telephone services. Roma, main campus of the University of Botswana, Lesotho and Swaziland (UBLS), has a hospital and there are nine field clinics in the area.

#### The Farmers

3.05 Farmers in the project area grow mainly subsistence crops, using ox or tractor power, and employing family labor for weeding and harvesting. Many rely on their extended family groups for labor and cultivation power.

#### B. Production, Extension and Marketing

3.06 Average yields, in a normal year, are low: estimated at 400 lb/ac for maize and sorghum; 500 lb/ac wheat; and 200 lb/ac beans. A short season and erratic rainfall demand timely cultivation, and the use of ox or tractor-drawn plows is normal, with very little hand cultivation. Relatively few farmers own their own oxen, fewer still their own tractors. Oxen are weak at plowing time after poor winter grazing, and tractor owners take care of their own land first. Most cultivation thus tends to be late and poorly done. Though tractors are increasing (60 in the project area), efficiency is generally poor, due to lack of training, inadequate servicing, lack of capital and delayed payment (usually not until after harvest).

3.07 Near Maseru, a few farmers keep dairy cows in fenced enclosures, to supply up to a total of 50 gallons of milk a day to the capital. This will form the basis for the UNDP milk processing and collection scheme, which would also market project milk production. Elsewhere in the project area there is serious overstocking and overgrazing (see paras 2.10 and 2.15).

3.08 The extension service has six officers at certificate level in the project area. Though well trained and enthusiastic, their efforts are circumscribed by lack of credit funds, transport, and an overall extension policy. They are also far too few (about 1:3,000 farmers, compared with about 1:500-1,000 achieved in Kenya, for example).

3.09 Project area grain is marketed through 22 traders, handling an estimated 65,000 bags annually. CLL has no facilities in the area but it purchased about 15,000 bags in 1971, loaded directly onto trucks. There are two maize/sorghum mills, each with a total annual capacity of about 40,000 bags.

3.10 Population density is about 200/sq mi in the Lowlands, 100/sq mi in the Foothills. Nearly all cultivation is nonmanual and around 150 man-days would suffice to work the average holding, readily available from the extended family.

IV. THE PROJECT

A. General Description

4.01 The project comprises: the timely provision to about 12,000 peasant farmers, of improved seed, fertilizer and cultivation services; the credit to acquire them; technical agricultural guidance in their use; marketing for the resultant crop; road development; and soil conservation. Over six years, including about a year of planning and preparation, it would improve maize, sorghum, wheat and bean production on about 60,000 ac of land which is poorly cultivated at present; and extend dairy farming through the supply of 400 good grade cows to selected farms. Towards the end of the project period, integrated farming would be introduced, aimed at higher levels of permanent-agriculture, including improved production of livestock. The project would be administered by an autonomous Project Unit within Government.

B. Detailed Features

4.02

Seasonal Inputs

4.03 The fundamental feature of the project and basic origin of its material benefit, substantially improving crop yields from their present very depressed level, is the supply of seed, fertilizer, pesticides and, where required, cultivation services as a "package" on seasonal credit, each package being designed in units of one acre for the particular crop and location. The incremental cost of supplying these inputs is included in project costs.

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- (d) Mechanical Training. Conservation officers would be required to organize and operate conservation training for tractor and grader operators and for maintenance staff.

### E. Soil Conservation Benefits

20. Soil conservation is essential to sustained agricultural production in Lesotho. Between 1950 and 1960, according to the 1960 agricultural census, the total number of bags of maize, sorghum, wheat, beans, peas and sunflower produced annually declined from 3,573,000 to 2,737,000. These declines, confirmed by long-term observation, are largely attributable to rapid depletion of the land base by erosion. Figures for the 1970's vary widely and are not quoted for this reason. Many observers have stated that the Lesotho problem of field soil loss, through both sheet and gully erosion, is more serious than any other in Africa, or possibly in the world.
21. The estimated cost of the proposed soil conservation and rural roads program, based on project calculations, is R 16.4/ac. Assuming a 25-year life for the structural measures, terraces, dams, etc., the annual cost equals R 1.8/ac (US\$2.27), including interest at 10% and excluding maintenance (which farmers would largely provide).
22. The project is expected to touch upon 100,000 ac of arable land (see Annex 1). Nearly all land in the project area now has field soil losses greatly in excess of 5 tons/ac, the acceptable level for long-term, continued agricultural production. On much of the project arable land field soil loss per acre may now be in excess of 100 tons, a very high and hazardous level.
23. One approach to cost/benefit analysis is to estimate the conservation benefits possible to the project by assessing the loss in productivity which is taking place due to gully and sheet erosion and relating this to conservation costs.

#### Loss of Soil

24. Gully erosion results in total loss of farm land. It would be impossible, even under very sophisticated treatments, to expect to grow cereal grains on or in gullies. Eventually, and with careful controls, some grass could be produced and harvested or grazed, and trees could be grown on side walls.
25. Based on first-hand observation by trained soil conservationists, and their examinations of aerial photographs taken over the past five years, gully erosion has substantially increased in the project area. Their analysis suggests that this might amount to an annual loss as high as 0.5% of the area per year and that a total of 7% of the overall area in the project is already lost to gullies. Probably about 0.25% of the total project land area (250 ac) would be annually lost to new gullies or extensions or widening of existing ones if no controls were employed.

Tractors and Machinery

4.04 . One hundred 60 HP tractors, plows and cultivator/planters would be imported and made available on five-year credit, to experienced contractors and to progressive farmers or farmer associations with tractor experience and good agricultural performance. They would complete a training course (or otherwise satisfy project staff of their competence) and undertake to: employ project-trained or tested drivers; follow project-approved standards; have regular maintenance carried out; give project farming priority; and work for cash (provided by project credit), not for share of crop or use of land.

Dairy Stock

4.05 High quality Friesian and Brown Swiss dairy cows would be imported from South Africa (para 4.22) and made available on five-year credit, to farmers participating in the integrated farming program who had built simple sheds to receive them, and had successfully completed a dairying course.

Extension Service

4.06 Except for a few individuals, project farmers would form farmers' associations of between 20 and 100 members to pool resources and obtain credit, backed by the joint liability of their members. The extension service would include the equivalent of one agricultural extension agent for about 250 farmers, or one to 6-8 farmers' associations in Year 2, rising to 1:350 farmers, or 1:8-12 farmers' associations by Year 6. This is not a high intensity, but techniques would be standardized and few, and channelling through associations would greatly help. The high literacy rate of Lesotho farmers and their wives should ensure greater effectiveness of the extension service than in some other countries. Farmers would be advised on proper selection and use of seed and fertilizer, cultivation techniques and timing for crops and proper control and production methods for all their livestock. The service would also coordinate with project marketing, credit and soil conservation to inform farmers of these activities.

Training and Research

4.07 Additional staff, buildings and equipment would be provided for the Matelas Farmer Training Center, which would serve the training and demonstration needs of project extension, credit and marketing services. It would also train farmers in crop and livestock production and simple budgeting; farmers' association secretaries and chairmen in simple administration and bookkeeping; and hold seminars for government officials, traditional chiefs, and others. The Government tractor school in Maseru would be provided with additional staff and equipment and the project tractor instructor would operate from there. During negotiations assurances would be obtained that the necessary facilities of the Maseru tractor school would be made available to the Project Unit for these purposes.

4.08 Project research would depend heavily on the existing Government Maseru Research Station, and the substation in the project area, which would be strengthened by the addition of land, housing, simple laboratories and farm buildings. Staff would comprise a research officer, under an existing UNDP Program, and a field research officer, assisted by research staff from Government, the UNDP Leribe Project, about 40 mi north of the project area, and UBLS. They would work under a unified program, but with special attention to the project.

Credit and Marketing Services

4.09 Government is proceeding cautiously with provision of credit services and no institution is yet ready to provide them to the project (para 2.18); nor has Government yet decided on its produce marketing policies. CLL, a cooperative union backed by Government (paras 2.17 and 3.09), buys produce from its members but has neither staff nor facilities to market project crops. It is important that project input supply, credit and marketing be coordinated under the firm control of the Project Manager. During the initial period, therefore, the Project Unit would: buy and distribute farm inputs; provide credit; and purchase output, as agent for CLL. Before negotiations, Government would inform IDA of its proposals for national produce marketing.

4.10 Farmers are reluctant to produce crop surpluses that they have to sell at poor prices to traders who are not very interested in produce dealing, and unwilling to expand their facilities. The project would therefore provide five principal markets and six subsidiary ones, which would also serve as the channel for distribution of inputs and repayment of credit, and be the focus for extension work. They would be equipped with simple buildings to accommodate expected project production in their location, and subsidiary housing. Assurances would be sought at negotiations that Government would see that adequate land was provided free for these markets.

4.11 Marketing staff would be hired and trained by the Project Unit and their net cost is included until covered by market revenue. Marketing staff and facilities would be taken over by CLL at an appropriate time.

Roads

4.12 About 90 km of all-weather gravelled main roads, and 100 km of dry-weather ungravelled subsidiary access roads would be constructed or improved (see Map). A UNDP Roads Engineer (already with Government) would supervise and control road work. Assisted by the Public Works Department and consultants, he would design roads and plan construction, to be completed over two to three years. Labor is available, and would be used extensively for road work, though it would be insufficient and uneconomic for major earthmoving, which would be mechanized and carried out mainly by subcontractors, using their own equipment. During negotiations assurances would be obtained that the Ministry of Works would satisfactorily maintain project roads.

### Soil Conservation

4.13 Soil conservation and farm road construction would be carried out by three USAID-recruited senior staff and the UNDP Roads Engineer, assisted by 24 man-months of USAID consultancy and the Ministry of Agriculture Soil Conservation Division. Soil conservation works would be preceded by aerial photography and preparation of a coordinated agricultural and soil conservation plan for each area. They would comprise approximately 1,680 km of diversion terraces; 600 drainage structures; repair to, or reconstruction of, 4,800 km of terraces; 400 km of 12-ft farm access roads, with associated protective fencing, grass and tree planting. Before implementation of soil conservation works in any area, agreement would be obtained from farmers' associations, chiefs and Government that maintenance and protection of such works, as specified by project staff, would be provided. Suitable assurances to this effect would be obtained at negotiations. It would be a condition of effectiveness that an agreement satisfactory to IDA had been signed by Government and USAID for the financing of soil conservation works in the project area.

### Integrated Farming

4.14 These measures would lead to higher sustained production and better soil conservation; but such systems need changes in traditional land use that can not be easily or quickly brought about. Farmers would need full rights over their cropping and contiguous grazing land to enable them to change their cropping systems and keep improved stock in correct numbers. Assurances would be sought during negotiations that no funds would be made available for integrated farming until plans for its implementation, including grazing control and stock limitation, had been agreed with IDA; and that Government would implement existing legislation in support of this part of the project. Parts of the project area have larger than average farms (15-20 ac) and relatively few livestock and about 5,000 ac would be selected to introduce integrated farming in about Year 4 or 5, based on studies and research in Years 2 and 3. The program would comprise: mapping and measuring of farm holdings; more intensive use of inputs; improved livestock production, with fencing and sheds; and a cropping plan to include fodder, grassland and crop rotations.

### Project Administration

4.15 Project headquarters would be at Maseru, where an office building, store and most staff housing would be constructed on Government land.

### Phasing

4.16 Farmer demand for project inputs is expected to be keen; but acceptance of conditions, especially proper cultivation and maintenance of soil conservation, may not occur so readily. Without such conditions, the potential of improved seed and fertilizer would not be realized, or not long maintained, and farm income would fall short for credit repayment and generation of a worthwhile cash surplus. Effective institutions for project implementation are

lacking and the first year would be largely occupied with planning, preparation and recruitment. Staff would need to be trained to give technical guidance, tractor operator instruction and credit and marketing services. There is an acute shortage of such staff in Lesotho which can only be partly remedied by outside recruitment, and the project would only progress as fast as they could be provided. Based on appraisal estimates of staff availability and training rate, the approximate phasing of farmers and areas of land coming into the project would be:

<u>Farmers</u>	<u>Year</u>						<u>Total</u>
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	
Number	200	1,200	1,600	2,000	3,000	4,000	12,000
Cumulative	200	1,400	3,000	5,000	8,000	12,000	
%	2	12	25	50	67	100	
<u>Acres</u>							
Lowlands	-	800	2,200	3,000	6,000	6,000	18,000
Foothills	<u>250</u>	<u>750</u>	<u>2,000</u>	<u>3,000</u>	<u>6,000</u>	<u>6,000</u>	<u>18,000</u>
Total	250	1,550	4,200	6,000	12,000	12,000	36,000
Cumulative	250	1,800	6,000	12,000	24,000	36,000	
<u>Acres/farmer</u>	-	1.3	2.0	2.4	3.0	3.0	

4.17 This rate of development is a minimum objective and would be speeded up to meet farmer demand, as staffing allowed. Since appraisal, Government has planned to increase certificate and diploma level training, which should ensure adequate staff at this level by Year 2. Project farmers in Year 6 would be about 70% of all farmers in the project area, a high but achievable proportion.

Environment

4.18 The project would improve the environment through soil conservation that would restore vegetative cover to eroded land and help control soil loss and the silting of rivers and dams. Farm incomes are slender and cannot bear the loss of crop from serious pest infestation nor the cost of expensive pesticides; small amounts of inexpensive DDT would therefore be used to control pests, under close control of project staff. Less persistent and dangerous chemicals would be substituted, if found effective and economical. Dressing of seed would exclude mercurial compounds.

C. Cost Estimates

4.19 Total six-year project cost is estimated at R 7.8 M (US\$9.8 M), of which about US\$5.4 M (56%) would be foreign-exchange. Estimates are based on recent experience and appraisal findings, including those of USAID. Physical contingencies are applied to roads (20%), incremental fertilizer requirements (10%), and operating costs during development (10%). Quantities of other items are reasonably certain. Price contingencies of about 19% overall are made up from a cumulative annual 5% on foreign and local costs

and R 50,000 to compensate for the effects of parity changes of the Rand on the US\$ component of soil conservation costs. Project costs are totalled in Annex 19 with details in Annexes 6-18.

Summarized Project Cost Estimates

1973/78	--Rand (thousands)--			--US\$ (thousands)--		
	<u>Local</u>	<u>Foreign</u>	<u>Total</u>	<u>Local</u>	<u>Foreign</u>	<u>Total</u>
On-Farm Costs	177	744	921	223	937	1,160
Technical Services	496	406	902	625	512	1,137
Credit Services	250	157	407	315	198	513
Marketing Services	608	256	864	766	323	1,089
Soil Conservation	763	1,191	1,954	961	1,501	2,462
Integrated Farming	72	79	151	91	99	190
Roads	190	306	496	239	386	625
Administration	303	423	726	382	533	915
Subtotal	2,859	3,562	6,421	3,602	4,488	8,090
Contingencies						
- Physical	34	81	115	43	102	145
- Price	551	663	1,214	693	842	1,535
TOTAL PROJECT COST	<u>3,444</u>	<u>4,306</u>	<u>7,750</u>	<u>4,338</u>	<u>5,432</u>	<u>9,770</u>

D. Financing, Procurement and Disbursement

Financing

"4.20. IDA would provide US\$5.6 M or 57% of project costs, comprising the equivalent of the foreign exchange costs not financed by USAID (39% of total, 70% of foreign costs) and the balance of local costs (19% of total, 43% of local costs). (Annex 20)." USAID would provide 29% as parallel grant financing of soil conservation (except aerial survey and vehicles); Government about 6%; commercial banks 5% for produce financing; and farmers 3% through downpayments. Summarized project financing (including contingencies) would be:

	<u>Farmers</u>	<u>Banks</u>	<u>Govt.</u>	<u>USAID</u>	<u>IDA</u>	<u>Total</u>
	-----US\$ (thousands)-----					
On-Farm Costs	280	-	120	-	1,070	1,470
Staff and Operations	-	530 <sup>/1</sup>	280	1,220	3,000	5,030
Vehicles and Equipment	-	-	40	300	350	690
Buildings	-	-	70	170	650	890
Soil Conservation Works	-	-	50	1,110	520	1,690
Totals	280	530	560 <sup>/2</sup>	2,800	5,600	9,770
(Percent)	(3)	(5)	(6)	(29)	(57)	(100)

<sup>/1</sup> Incremental working capital for crop purchases.

<sup>/2</sup> Including UNDP US\$40,000.

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## Financial Implications for Government

### 4.21

By convention, the Lesotho Government receives revenue from the Customs Union based on the total value of all dutiable imported items in the Customs Union related to total estimated Lesotho imports whether or not duty is paid. Although imports by Government are duty free, the value of these imports is included in the allocation to Lesotho. This revenue corresponds to about 20% of the value of imports at the Lesotho border. On-farm and marketing costs would be fully recovered from farmers; funds generated by the project to meet other costs would be: interest from project borrowers; duties and taxes generated by goods purchased by farmers with their higher project incomes; an average 4-5% income tax on salaries of project staff; and rents from project houses. Analysis shows that Government cash flow would be positive from Year 2 until about Year 21 when IDA annual debt service would be R 150,000 (US\$189,000), and estimated annual net outflow R 100,000. By this time, project farmers should have moved on to integrated farming with appreciably higher incomes (though still less than an estimated US\$180 and would consequently generate more tax revenue from their spending. Government would also have revenue available from a development levy on income tax and the Maize Meal Fund to cover the balance. In view of the above, and having regard to the modest farm incomes, no development charge to project beneficiaries is proposed.

### Procurement

4.22 Procurement of vehicles, tractors, farm equipment and fertilizer (US\$0.9 M) would be by international competitive bidding, in accordance with Bank/IDA guidelines. The successful bidder for tractors would have, or undertake to provide, adequate servicing in Maseru or the project area. Tractor orders would be bulked each year and operators financed under the project would purchase tractors from the successful bidder. Project imports would be duty free. Roads (US\$0.6 M) would be in small sections and buildings (US\$0.6 M) few in number and widely scattered. They would not be sufficient in value to attract international competitive bidding and would be subject to Government local tender procedures, which are satisfactory. Dairy cattle (US\$60,000) would be bought, subject to project staff guidance and approval, from South Africa where they are suitable, acclimatized and plentiful. Most would be purchased by farmers directly; others by project staff, on their behalf. Seed (US\$144,000) would be purchased from South African cooperatives and seed firms, which offer good quality, keen prices and most importantly varieties acclimatized to local conditions. Seed specifications would exclude mercurial dressing. USAID would procure the soil conservation equipment it financed (US\$0.3 M). Suitable assurances as to procurement would be sought during negotiations, including assurances that draft tender documents for all contracts exceeding US\$50,000 would be submitted to IDA for approval before invitations were issued; that bid analyses and recommendations for award would be submitted to IDA for comment before award; and that project purchases would not be limited to brand names on Government's official purchase list.

### Disbursements

4.23 For imported goods, disbursements would be made against 100% of CIF value if internationally procured, or 90% of the total value if locally procured. Disbursements for other project costs would be against 90% of total expenditure on the basis of a certificate of expenditure, the documentation for which is not submitted for review, but is retained by the Borrower and available for inspection by IDA during the course of a project supervision mission. Any surplus credit amounts would be cancelled.

## V. ORGANIZATION AND MANAGEMENT

### Project Control and Operation

5.01 The project would be implemented by an autonomous Project Unit to be created within the Government. This Unit would be controlled by a Project Committee comprising the Senior Permanent Secretary, Chairman; the Permanent Secretaries for Agriculture, Finance and Works; and a senior representative each from the Planning Office and the Ministry of Interior. The Committee would decide on policy, approve budgets and recruit, with IDA's approval, senior staff. Meetings, with the Project Manager as Secretary, would be held at least quarterly.

5.02 The Project Unit would be administered by the Project Manager who would be fully responsible for project operations. Other senior staff would comprise the Financial Controller and the Heads of the three divisions: Land Planning and Soil Conservation; Extension; and Marketing/Credit (See chart Appendix 4). They would be supported by 6 professional, 15 technical and administrative, and 80 general service staff. The Bank's Agricultural Development Service in Nairobi is prepared to provide the Project Manager and Financial Controller; USAID would provide the senior Soil Conservation Staff. Assurances would be sought at negotiations that the above senior staff, satisfactory to IDA, would be appointed, and it would be a condition of effectiveness that the Project Manager had been appointed.

5.03 Involvement of the farming community would be encouraged by committees at all levels with a Project Liaison Committee in Maseru, under an elected chairman, comprising: four farmers' representatives, elected by area committees; four representatives of the Principal Chiefs; and one representative each from the Ministry of Agriculture and the Planning Office. Other members would be co-opted as required. This committee would be the forum for farmers' views and problems and would aim to meet monthly, with the Project Manager in attendance.

5.04 The Project Unit would be a developmental, not a service, organization with functions not normal to a Government department, operating at varying intensities (at first employing as many staff as the entire Ministry of Agriculture). It would need to respond quickly to changing commercial and farming conditions. It would employ specialist staff, including some

with good practical background but not necessarily with academic qualifications needed for the civil service, and would need to offer terms and conditions different from, but attractive enough to match, more permanent civil service employment. An average project allowance of 12.5% above equivalent establishment pay is provided for. During negotiations terms and conditions of employment of project staff would be agreed with IDA and assurances would be sought that they would be implemented.

5.05 For all these reasons, simple legislation would be necessary to give the Unit the required freedom of action and substitute Project Committee control for Government regulation, e.g., for staff selection, contract hiring, salary scales and project allowances, procurement and tender boards and accounting procedures. It would also enable the Unit to buy and sell crops or as an agent or on its own account, if necessary. Government is drafting such legislation and it would be submitted to IDA for consideration prior to negotiation and passed, in a form satisfactory to IDA, prior to effectiveness.

#### Staffing

5.06 Senior staff would need to have extensive administrative experience, preferably with similar rural development projects in Africa; and training would be an important part of their job. While every effort would be made to hire suitable Basotho, it is unlikely that many would have the right experience. Cost estimates are therefore based on international recruitment of key staff, with training of Basotho deputies to take over as soon as they are able.

5.07 Project extension officers would have acquired field training and experience in the Ministry of Agriculture. Government is willing to allow some, dismissed during the 1970 political upheaval, to be employed in the project. Assurances would be sought at negotiations that Government would second staff for the project, if requested by the Project Committee.

5.08 Basotho have a high rate of literacy at primary school level, and many acquire useful practical experience in South Africa. These, and secondary school leavers, are expected to be sufficient and suitable for training as credit and marketing staff, crop demonstrators and others, if they are vigorously recruited and the proposed pay scales are adopted.

#### Credit

5.09 Credit would be provided through the Project Credit Account, a revolving fund increased each year by the Treasury to meet the season's needs. Credit funds from Government and from farmers' debt service would be paid into the same account. It would be controlled by the Chief Credit and Marketing Officer, assisted by the Deputy Credit Officer, credit assistants trained at Matelas (para 4.07), and accounting staff. Government may wish to channel credit funds through LDB once it has become functional. During negotiations assurances would be sought that IDA's agreement would be obtained before this channel is chosen. The conditions under which the Project Unit would then operate on behalf of LDB would need to be stipulated in a formal agreement. Assurances that such an agreement would be submitted to IDA for prior approval would also be sought during negotiations.

5.10 LDB is empowered to seize all farm assets of delinquent borrowers and to take over and farm their lands until its debts have been serviced. However, LDB is not yet operating, and exercise of these powers might not be practicable, in view of traditional land tenure. Input credit would therefore generally be tied to farmers' associations, whose members would be jointly liable for their project debts. To be eligible, a farmer would normally have to be a member of an association approved and registered with the project; only exceptionally would an individual be accepted as creditworthy on his own. The association would assure that each farmer applicant: had asked for project credit; had rights to sufficient lands, which had been registered with the project; worked his lands regularly and well; and would himself be, or would see that a competent member of his extended family was, resident near the lands to be farmed. Furthermore, the association would agree to accept responsibility for the applicant's project debts if he were in default.

5.11 Each accepted farmer would also be registered with the Project Unit and receive a credit record card. Initially, project staff would assess each farmer's capability; but associations would take this over as they became established and accepted as reliable.

5.12 Seasonal Credit: All seasonal input credit (para 4.03) would be in 'in', with crop inputs delivered through market depots, where project staff would ensure that project, association and farmer records were consistent. Each farmer would pay in advance, 10% of input cost as his contribution, 10% as a bad debt reserve, and 10% as a crop failure reserve. The interest rate on outstanding amounts (80% of the input credit and bad debt) would be 1% per month. The crop failure reserve would be credited to a savings account at interest until it reached 100% of input value, to be drawn as the Project Committee approved. Credit schemes run by Church missions and CLL require deposits of up to 50%, so these advance payments should not prove too onerous. The bad debt reserve would be refunded to an association on full repayment of its members' credit for the season or to a paid-up individual farmer and no member of a defaulting association or a defaulting individual would receive project inputs or credit for the next season.

5.13 Farmers' credit would be collected as produce was sold. The project relies on the sanction of input/credit refusal, and on the communal spirit of associations to ensure repayment. Experience suggests that net proceeds, after debt service, could be higher than gross proceeds paid by traders, so the temptation to by-pass project depots and avoid debt repayment may not be great. Nevertheless, in view of the importance of successful credit management, and previous poor credit history in Lesotho, assurances would be sought at negotiations that Government would fully support project debt collection and ensure that delinquents were promptly prosecuted.

5.14 Medium Term Credit: Tractors and Dairy Cows. Deposits for tractor credit would be 25%, for dairy cows 50%. The annual interest rate charged on the outstanding amount would be 9%, which is lower than the 10.5% charged on the few loans made by commercial banks, but borrowers would be subject to stricter conditions and under close project control. Repayments of the tractor loans would be partially through the farmers' repayments for tractor operation which would be directly credited to the tractor owner's account; the remainder is projected to be small, and would be paid by the owner through extra-project tractor operations. Repayments of the loans for dairy cows would be from the sales of milk and yearlings. Although the Project Unit would have no direct control over these sales, the number of these loans and their concentration in the integrated farming area would limit the risks of default.

Marketing

5.15 Marketing would be controlled by the Chief Credit and Marketing Officer, assisted by a Deputy Marketing Officer, marketing assistants/crop graders trained at Matelas, and accounting staff on behalf of CLL under a formal agreement. Under this agreement, the Project Unit would work closely with CLL in deciding price and sale channels. During negotiations, assurances would be obtained that Government would permit CLL to operate on commercial lines and that in fixing prices, it would have regard to market conditions and farmers' incentives. Suitable assurances would also be sought that funds for crop purchase would be provided by commercial banks, as they are now provided for CLL, on overdraft at prime rate (currently 9% per year), subject to Government guarantee.

Building

5.16 Housing would be of standard Government design and markets would be prefabricated. Building would be supervised by the Ministry of Works and carried out by subcontractors. Assurances would be sought from Government negotiations, that adequate land for project buildings and houses would be made promptly available.

Accounts and Audit

5.17 The Project Unit would keep separate accounts in commercial form, showing the results of its different activities, e.g. credit, marketing. They would be prepared annually for audit by the Auditor-General within three months of the financial year end. Quarterly summary, and draft and audited annual, accounts would be submitted to the Project Committee and IDA. Suitable assurances would be obtained at negotiations.

5.18 Funds would be provided from the Treasury through a one-line Budget vote. USAID funds would be provided by a direct grant. The Project Unit would forecast quarterly funds required, net of inflow (e.g. from interest and loan repayments), and these would be provided in advance to a project

bank account, the Project Manager being appointed a Chief Accounting Officer for this purpose. Assurances to this effect would be sought during negotiations.

Monitoring

5.19 The Financial Controller would be responsible for monitoring project progress, assisted by his Deputy, and would seek the cooperation of UBS in making surveys of farmer performance. He would submit annual reports through the Project Manager to the Project Committee and IDA, within three months of the year end. Suitable assurances would be sought at negotiations.

VI. PRODUCTION, MARKETING AND FARMERS' BENEFITS

A. Production and Yields

6.01 Production and yield information is scanty. This Section is based on a few past surveys, Ministry of Agriculture data and field observation.

6.02 The acreage of crops grown each year tends to fluctuate according to season, with areas left unplanted when the rains are late or poor. In the project area, about 100,000 ac are cropped most years, of which 25,000 ac are marginal, on steep slopes or land that ought to be used for grazing only.

6.03 Estimated annual yields without and with project inputs, and with the integrated farming program are:

<u>Crop Yields</u>	<u>Without Project</u> lb	<u>With Project</u> lb	<u>Integrated Farming</u> lb
Maize	400	1,600	2,400
Sorghum	400	1,600	2,400
Wheat	500	1,400	2,000
Beans	200	900	1,200

Estimates "with project" are based on trials (Annex-9, page 3), observation of yields actually obtained by progressive farmers in the field, and experience in other countries (notably Malawi) where similar inputs have been applied - having regard to different soil and climate. They are believed to be achievable by the average project farmer.

6.04 Farmers who do not directly participate would nevertheless benefit from better roads, markets, prices, and better availability of cultivation power. This benefit is estimated to occur towards the end of the project period and to amount to about 200 lb/ac of mixed cereals.

6.05 Production of wool/mohair is assumed to remain unchanged. Project dairy farmers would each produce approximately 250 gallons/year of fresh milk and sell the equivalent of one yearling calf every three years and one cull cow every five.

### B. Markets and Prices

6.06 All project sorghum, wheat and beans and half the maize would be exported, the other half being milled for local sale <sup>1/</sup>. Two-thirds of the beans would be consumed in South Africa, the rest sold on the world market. South Africa is bound by the Customs Union (see para 2.04) to accept Lesotho surpluses, so long as free circulation of farm products across its border continues. Project maize, sorghum and wheat would each be less than 1% of South Africa's production. Project beans represent less than 10% of South African bean/pea production and 70% of 1970/71 production of Small White Haricot beans, consumption of which is expected to continue increasing at about 2.5%/year. World market demand for the small excess is satisfactory.

6.07 Marketing of the kinds of crops to be grown by the project is controlled in South Africa by Marketing Boards. These fix prices for maize and wheat, and guarantee floor prices for sorghum and beans. Grain prices have increased over the past five years at average rates varying from 1 to 3.5% annually (Annex 11, Table 6). Production is expected to follow consumption trends, and producer prices to remain at their present level at current Rand values. Bean prices have been steady over the last five years but are expected to decline as Lesotho production meets South African demand with surpluses for export; however, they would still remain somewhat higher than world market prices (Annex 11, para 12). Farmers' prices per 200 lb bag, best grade, are forecast for maize at R 3.00 (US\$42/ton), sorghum R 2.70 (US\$37.5/ton), wheat R 5.20 (US\$72.2/ton) and beans R 13.0 (US\$180.5/ton).

Information on world markets for beans was obtained from South African brokers and is confirmed by the Bank's Economics Department.

### C. Farmers' Benefits

6.08 Farm budgets are based on several farm models and appropriate packages of farm inputs. In place of subsistence, with annual cash of about R 18/20, a wheat farmer (probably in the Foothills) would have, in addition to his subsistence, about R 55 annual net cash income; a maize/sorghum farmer (probably in the Lowlands) about R 45. Both would have the prospect of integrated farming with net income, from the same acreage, well above R 100. Beans are the most profitable crop; but net profit is not the

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<sup>1/</sup> Although Lesotho is a net importer of maize (para 7.01), it sells maize grain for milling in South African mills.

only criterion on which farmers base their cropping decisions, and a basic food crop would probably always be grown until more advanced integrated farming is adopted.

6.09 The budget for a wheat farmer, in a year of drought, shows that he would need the crop failure reserve to service his debts, with about R 10 to spare.

6.10 One milk cow would produce an annual net income of about R 50.

VII. ECONOMIC BENEFITS AND JUSTIFICATION

A. Economic Benefits and Costs

7.01 The project would, from year 6, increase annual cash production of maize by 4,600, sorghum by 3,100, wheat by 7,000 and beans by 4,100 tons. This compares with annual consumption of 150,000 tons maize and sorghum, of which 25,000 tons mainly meal are imported. Total annual gross value would be R 1.2 M (US\$1.5 M).

7.02 The project would reduce dependence on imports, increase exports, and help to feed a growing population. It would substantially improve the standard of living for about 12,000 farm families and lay the foundation for still further improvement. New crops, such as sunflower and seed potatoes, are likely to be grown by some farmers, but the viability of such crops and the amount that would be grown cannot be forecast.

7.03 Grain and beans are valued at the gross price, for average grades delivered nearest South African market. All values are less bags and cleaning cost.

7.04 Investment costs are included at their financial value. Allocation of senior staff costs is expected to decline as the project becomes established and staff become involved in other projects, or are phased out (Annex 24). Other project services, except credit and marketing, are likewise expected to be reduced in intensity as the project becomes established.

7.05 Family labor on project farms would work more effectively but would not increase in numbers. No farm labor cost is therefore attributed to the project.

7.06 The benefit of soil conservation is particularly difficult to evaluate. It is certain that, without it, yields would decline steadily, even from their present low levels; and yields forecast for the project would not long continue. Soil conservation is therefore vital to the project. The benefit depends on how quickly soil fertility would decline, and on the value of crops that would consequently be lost without it; and no reliable information is available on either factor. Observers with conservation and agricultural experience estimate that yields without the project, on land

badly affected by soil erosion, would fall steadily at a rate of about 5% per year from 400 lb/ac to 200 lb/ac of mixed cereals. On this basis, the annual rate of return from soil conservation alone would be about 10%.

B. Rate of Return and Sensitivity

7.07 Soil and climate limit the potential for Lesotho agriculture and project crops, except for beans, are not of high value. Since this would be the first project of its kind in Lesotho, project overheads and training are a high proportion of total cost; and the scale of operations would inevitably be small to begin with; but replication could follow success and future projects of a similar or more advanced nature would have higher returns, not only because overheads would be spread over a larger operation but also because results could be expected to improve as the project moves into and extends integrated farming. The estimated rate of return to the economy of Lesotho is sensitive to price, yield and timing; on various assumptions, over a 25-year project life, it would be:

<u>Basis</u>	<u>Percent</u>
Most probable, including soil conservation	11
No separate benefit from soil conservation	6
Prices increased 10%	13
Prices decreased 10%	8
Phasing advanced one year	15
Phasing as forecast, with integrated farming extended to cover 36,000 ac by Year 13	14

Yield variation would have about the same effect as price variation.

7.08 The project would immediately improve crop yields, but the ultimate goal is to extend integrated farming throughout Lesotho. This will require fundamental changes in Lesothan agriculture which cannot be quickly made. When they are made, the benefits would be substantial. The rate of return on integrated farming alone would be within the range 15-20%; but without the initial step which the project would take, integrated farming is unlikely to be widely accepted.

Risks Involved in the Project

7.09 The rate of return is most sensitive to timing and every effort would be made to improve it, with good prospects of achieving such improvement if trained staff become available more quickly than forecast; but

the staffing constraint and present lack of institutions cannot be ignored (see paras 4.16 and 4.17).

7.10 Although adverse factors, such as weather, have been taken into account in calculating the rate of return, the project would be subject to many uncertainties that cannot easily be quantified. Success depends, for example, on overcoming resistance to change in a traditional society, which would affect the willingness of farmers to accept new techniques, including enclosure and livestock limitation, and to maintain soil conservation works against insidious erosion; on persuading tractor operators to use more efficient methods; on prompt collection of credit, in the light of past failures. But farmers in the project area show willingness to accept change and enthusiasm for the project, while Government offers fervent support and has publicized the project extensively. The chances of success are therefore good. The project is extremely important to Lesotho, which has few alternatives for economic development.

#### VIII. RECOMMENDATIONS

8.01 Before negotiations, Government would inform IDA of its proposals for national produce marketing (4.09) and would submit draft project legislation to IDA for consideration (5.05).

8.02 During negotiations, assurances would be obtained from Government that:

- (a) the necessary facilities of the tractor school in Maseru would be made available to receive additional staff and allow project tractor instructors to operate from there (para 4.07);
- (b) it would see that adequate land was provided free, or at nominal rental, for project markets (4.10), and made promptly available for project buildings and houses (5.16);
- (c) the Ministry of Works would satisfactorily maintain project roads (para 4.12);
- (d) no soil conservation works would be implemented before agreement from farmers' associations and chiefs that maintenance and protection of such works, as specified by project staff, would be provided (4.13);
- (e) plans for implementation of integrated farming, including grazing control and stock limitation, would be agreed with IDA, and no funds would be made available for it until this had been done (4.14);
- (f) Government would implement existing legislation in support of integrated farming (para 4.14);
- (g) procurement of vehicles, tractors, farm equipment and fertilizer would be by international competitive bidding following Bank/IDA

guidelines; the successful bidder for tractors would have, or undertake to provide adequate servicing in Maseru or the project area; orders for tractors would be bulked each year; roads and buildings would be constructed, and seeds purchased, following Government tender procedures; seed and dairy cattle would be bought, subject to project guidance and approval; draft tender documents for all contracts exceeding US\$50,000 would be submitted to IDA for approval before invitations were issued; bid analyses and recommendations for award would be submitted to IDA for comment before award; and project purchases would not be limited to brand names on the Government official purchase list (4.22);

- (h) senior staff, satisfactory to IDA, comprising the Project Manager, Financial Controller and three Heads of: Land Planning and Soil Conservation; Extension; and Marketing/Credit; would be appointed (5.02);
- (i) terms and conditions of employment of project staff would be agreed with IDA and implemented (5.04);
- (j) it would permit and give priority to secondment of staff for the project, if requested by the Project Committee (5.07);
- (k) IDA's approval would be detained before farmers' credit funds are channelled through LDB, and terms and conditions of an agreement between LDB and the Project Unit for the handling of this credit would be submitted to IDA for prior approval (para 5.09);
- (l) it would fully support project debt collection and ensure that delinquents were properly prosecuted (5.13);
- (m) CLL would be permitted to operate on commercial lines; that, in fixing prices, it would have regard to market conditions and farmer incentives; and that funds for crop purchase would be provided to the Project Unit by commercial banks as they are now provided for CLL (para 5.15);
- (n) the Project Unit would keep separate accounts in commercial form and prepare them annually for audit within three months of the year end; a quarterly summary, and draft and audited annual, accounts would be submitted to the Project Committee and IDA (5.17);
- (o) the Project Unit would receive funds from the Treasury through a one-line vote from the Budget; funds would be provided to a project bank account; and the Project Manager would be appointed a Chief Accounting Officer (5.18); and
- (p) the Financial Controller would regularly monitor project progress and submit annual reports through the Project Manager to the Project Committee and IDA within three months of the year end (5.19).

**8.03**      **Conditions of effectiveness would be that:**

- (a) an agreement satisfactory to IDA had been signed by Government and USAID for the financing of soil conservation works in the project area (4.13);
- (b) the Project Manager had been appointed (5.02); and
- (c) legislation for establishment of the Project Unit, satisfactory to IDA, had been passed (5.05).

LESOTHO

THABA BOSIU RURAL DEVELOPMENT PROJECT

SOIL CONSERVATION

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LESOTHO

THABU BOSIU RURAL DEVELOPMENT PROJECT

Soil Conservation

A. General

1. Soil conservation has been defined as the achievement of orderly movement of soil, at levels consistent with continued use of the land for productive purposes. Fundamentally, this is accomplished by pursuing a form of agriculture suited to the area. Basic principles involve:

- (a) performing the minimum cultivation or working of the soil consistent with efficient production of crops;
- (b) using rotation systems to assure that humus and plant nutrients are retained; and
- (c) exercising control of livestock.

2. Soil conservation may also be assisted by physical actions, such as cultivation in strips and across, not down slopes, so that surface water is held by grass or clods and allowed to slow down and penetrate; and movement of soil to form terraces or diversion ditches so that, again, surface or runoff water is collected and diverted slowly across slopes to allow penetration, with the excess water being safely conducted down grassed and protected waterways so that its amount and speed does not cut into and carry off the soil in ever widening and deepening gullies.

3. Soil conservation is high on the list of Lesotho's national priorities. Conservation of soil, water and related resources is essential if the Basotho are to continue to enjoy the natural resource base for sustained productive use. This will mean immediate construction or repair of physical works and, as speedily as they can be accepted, changes in the use of land and in grazing and farming practices.

B. Causes of Erosion in Lesotho

Climatic Conditions

4. More than 70% of Lesotho's annual rainfall occurs in the six months October-March. Rainfall occurs mostly in sharp, torrential downpours, which fail to penetrate the soil quickly or deeply and cause runoff that carries away soil. Adverse climatic conditions, including drought and

occasional hail, make farming risky and farmers reluctant to innovate and invest. This reluctance is reinforced by long-established traditions of land use.

### Soils

5. Very little information is available about soil types except in general surveys. The broad reconnaissance soil survey carried out by D.M. Carroll and C.L. Bascombe in 1966 and 1967, "Notes on the Soils of Lesotho," contains the best available information.
6. Soils in the project are varied and some, especially in the lowlands, are highly erosive. Included are: cave sandstone sediments, Molteno beds, and most difficult of all, the shales of the Beaufort series. Many soils in Lesotho have high sodium content and are unstable when wet. They act more as a slurry than a solid soil, causing physical works on them to have a high failure rate.
7. Overgrazing, improper cultivation, livestock trampling and drought have resulted in much of the topsoil eroding away. The remaining soil is low in organic matter, a dearth of which contributes to erodibility and low crop production. Thus, when soil has a reduced capacity to hold water for plant use, the full effects of added fertilizers are lost.
8. All the major crops grown in Lesotho are annual. Apart from wheat, they provide inadequate spring and early summer cover for soil protection. Removal of all residues by traditional communal grazing causes excessive erosion rates. This cycle of overgrazing and soil depleting crops grown year after year has resulted in a serious erosion problem.

### C. Previous Soil Conservation Programs

9. After the unprecedented drought of 1932-33, followed by massive erosion from the subsequent rains, a physical soil conservation program began in earnest in 1936 with a grant of E160,200 (US\$400,000) from the British Colonial Development Fund. This program resulted in substantial reduction of field soil loss; it also caused most farming in Lesotho to be carried out on the contour, which helped reduce erosion. However, it did not attempt to alter traditional grazing management and/or cropping systems and was not as effective physically as more modern works can be. It was therefore only partially successful, and erosion, though checked, was not cured and continued at an unacceptable rate.
10. As of January 1, 1967, the following works had been installed in Lesotho:

Terraces	27,891 miles
Dams	787
Buffer Strips	188,218 acres
Diversions	4,067 miles
Gullies Demarcated	5,658
Meadow Strips (Grass Runways)	1,409 miles
Reclamation Beacons	14,040 miles
Acres Protected	547,423 acres

It is also reported that large numbers of trees (4.5 million) had been planted in 1968, though little protection was apparently afforded them since few survive.

11. Part of the lack of effectiveness of the program was due to lack of involvement of rural people and improper management of structures and livestock - terraces not adequately maintained, grass strips narrowed, cropping practiced over terraces, and livestock overgrazed on gullies and terraces. More importantly, no effort was made to relate erosion control to conservation farming practices and its potential for long-term income benefits. The solution to soil conservation problems is inexorably linked with land and livestock management and with integrated cropping systems designed to protect land as well as produce income. While these concepts are difficult to deal with in Lesotho, the project would create a favorable environment for their understanding and acceptance by Government, chieftancy and rural people.

D. Project Implementation

12. Implementation of project conservation will involve a heavy component of new construction of terraces, drop structures, grassed waterways, etc. as well as repair and maintenance of existing facilities. The project would work with farmer groups to emphasize that maintenance of these structures, and their protection from damage due to livestock grazing or improper cultivation are essential to their effectiveness.

13. As areas are selected for treatment, the conservation staff would first analyze soil, design the diversion terrace system, waterways and drop structures and then initiate construction. Grass seeding and tree plantings would be carried out as needed.

14. An overall agricultural development and soil conservation plan would be produced for each main market area as developed, with two being built in Year 2 and one each in Years 3 and 4. The plan would show the position of roads, soil conservation works, market places and tree planting areas. It would also detail and explain the associated farming developments such as supply and amount of seeds and fertilizer and dates required, the cultivation program and tractors required and the numbers and location of participating farmers.

15. The plan would be formulated by staff of all project departments to cover all aspects of project development, including soil conservation, and would be under the control of the project manager. Soil conservation aspects would be particularly important in the Integrated Farming Program by which, hopefully, many of the present farming practices would be changed to improve, not only the farmer's situation, but also permanent land use and erosion status of the area.

16. Within the project area, a variety of practices and treatments would be employed. These include, but may not be limited to:

- .) Rural Roads. 250 miles of 12-foot-wide rural access roads, in general allied to construction of diversion terraces;
- (b) Diversion Terraces. 1,040 miles of grass-covered diversion terraces, designed to lead off excess water above gully heads or to provide protection for existing terraces on sloping fields by diverting runoff to waterways;
- (c) Drop Structures. 600 rock structures to allow excess runoff from diversion terraces to be delivered to a waterway or to a stabilized gully where it can be handled in a controlled fashion;
- (d) Terraces. 3,000 miles of existing, or new, terraces and grass stripped cover to be repaired, regraded or constructed as required;
- (e) Multi-Purpose Dams. 20 earth dams on natural waterways to provide for floodwater retardation, garden irrigation, stock water supply, village water, and fish farming;
- (f) Grassed Waterways. 150 miles of natural or constructed waterways or outlets to be shaped with appropriate grass or other structure; these would be mostly eroded gullies, some down to bedrock, with steep bare sides, a costly and time-consuming but key part of the reclamation process;
- (g) Integrated Farming. An integrated farming area of about 5,000 acres, with particular care in soil analysis and land use planning; advice would also be given to farmers on treatment of terraces, waterways, grazing areas and improved farming practices. A close liaison would be maintained with the research section, training and extension staff, to achieve an integrated project drive to ensure this program's success;
- (h) Fencing. 15 miles of fencing to protect especially hazardous highly critical installations, e.g., to protect a stabilized waterway and drop structure leading runoff into a stabilized gully where grazing and trampling by cattle could easily result in serious and costly damage to the system until vegetative cover is assured;

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- (i) Tree Planting. 1.5 M trees to be planted to assist in erosion control and, when mature, to be used as firewood and as construction material: seedling or rooted cuttings to be grown by contract, costing about R0.02 each at the nurseries, and to be planted and watered by local people or farmers' associations, or possibly by the Food for Work Program.

Aerial Photography

17. A new set of aerial maps would be produced at a scale of 1:20,000 which can be enlarged to provide 1:5,000 planning maps. These maps would be needed to assist in preparation of overall area plans for major roads, farm access roads, physical layouts for soil conservation works, soil survey and classification, land use programs and land tenure registration.

Relationship to Project

18. Soil conservation techniques, both mechanical and structural, as well as those related to farming practices and management, are an integral part of the project. Conservation staff would be involved in extension, research and particularly in the integrated farming program, where the principal goal is to reduce soil losses to acceptable levels, suitable for long-term resource protection (about 5 tons/ac/year) while simultaneously increasing the total agricultural productivity of the land.

Training

19. The training responsibilities of the conservation component would rest with the Project Manager advised by the Soil Conservation Division and would be part of the overall project program:

- (a) General. The conservation component of the project would provide: "on the job" training to counterpart officers; USAID external training grants (48 months during life of project); and a substantial training impact on the regular Lesotho Soil Conservation service staff (the project's conservation component would be larger than the Ministry's regular programs).
- (b) Field Extension Staff. Conservation officers would be required to prepare materials for and participate in training courses for extension staff, tractor drivers, tractor owners, and credit/marketing staff.
- (c) Farmer Training. Conservation officers would be required to prepare materials for and participate in training for farmers, such training aids/materials to be designed to encourage farmers to utilize conservation practices appropriate to their situation.

26. Sheet erosion is much less obvious than gully erosion, but accounts for a much greater percentage of the field soil loss (and consequent loss of production and income). It occurs on sloping land through soil removal by run-off from rains. There may be little or no apparent change in appearance of the land, but soil and nutrient losses continue over time, and such erosion eventually results in exposure of the base materials, either rock or unproductive subsoils, as well as a steady decline in crop yields in the interim.

27. While no valid data exist in Lesotho, a study of the 1960 agricultural census indicated that, as erosion increased to "severe", 1/ yields decreased, over 10 years as follow:

Maize	24%
Sorghum	28%
Wheat	12%

This study indicates that yields progressively decline as topsoil washes away and farming is carried on with decreasingly nutritive subsoil. It is also important to note that the study was not continued over time. If it had been, it could be expected, based on research in other countries, that losses would have continued with increasing severity.

28. Professional observers, with conservation and agricultural experience, are of the opinion that if no controls were employed, not less than 40% of the project area, or 40,000 ac, would be seriously and continuously affected by erosion-induced productivity loss. The remaining 60% would also suffer loss, but of a lesser degree. Based on the impact of only the conservation component on production, the following illustrates the possible effect on this 40,000 ac with productivity declining by 5% per year from 2 bags/ac to 1 bag/ac:

1. <u>Present Situation (annual)</u>	
Land affected .....	40,000 ac
Initial production level (mixed cereals) .....	2 bags/ac
(No fertilizer, credit, etc.)	
Value at R 6.00 per bag average	R 480,000
2. <u>Situation in 14 Years With No Controls (annual)</u>	
Land affected .....	40,000 ac
Production level (estimated) ..	1 bag/ac
(No fertilizer, credit, etc.)	
Value at R 6.00 per bag average	R 240,000

1/ While no specific criteria are provided to define "severe erosion", it is understood to be on fields subject to general soil depletion due to sheet erosion.

On this basis the total value lost would be R 6/ac (R 240,000 on 40,000 ac) against estimated soil conservation expenditure, to save this value, of R 1.8/ac or a cost/benefit ratio, due to conservation/rural roads only, of about 0.3.

29. A direct comparison between results from land with and without physical soil conservation can be made but it needs large areas of land, much of it allowed to erode, as a control; so it has rarely been done and would, in any case, be subject to wide margins of error.

30. To separate the benefits of project soil conservation from the benefits of the project as a whole would be extremely difficult and of doubtful validity, because interactions take place between the various factors affecting crop production efficiency. The project would improve production through use of fertilizers, better seed, more effective cultivations, better farming practices, terracing, training and extension services. Some of these factors are totally unrelated to soil conservation measures, others are directly affected by them and some are in between.

31. Direct comparisons with and without soil conservation, and with other variables mostly equal, have been made, especially in the USA, but results are specific to the soil conserved and farming practice applied. They indicate probable trends, but not magnitudes, that might be expected.

32. It is known that inputs of fertilizer, seed and better cultivation would raise yields immediately in Lesotho. It is also known that without soil conservation and related farming practices, yields will decline to some point slightly above the postulated minimum of 1 bag/ac of mixed cereals. At what rate, and along which shape of productivity curve the decline would take place, can only be a matter of speculation. Some areas, especially in the Lowlands, will decline rapidly without soil conservation measures; others will decline less slowly, though inevitably, until they reach the poorer condition; and the rate of decline will vary over time.

33. The table below illustrates the effect of, but cannot be used to quantify, soil erosion on the 36,000 ac selected for crop development, on the assumption that it would cause production to fall from 8 to 4 bags/ac over 20 years:

Land affected.....	36,000 ac
Production per acre with inputs.....	8 bags
Value at R 6/bag .....	R 48/ac
Annual cost of inputs per acre .....	R 14
Net annual profit .....	R 34/ac
Production per acre in twenty years ...	4 bags
Value at R 6/bag .....	R 24/ac
Annual cost of inputs per acre .....	R 14
Net annual profit .....	R 10/ac
Annual value saved by soil conservation	R 24/ac
 Total .....	 R 864,000 per year

F. Personnel To Implement Project Soil Conservation

34. A Senior Soil Conservation Officer and Land Planner, a Soil Conservation Engineer and a Field Plant Operator would be employed full time within the Project Soil Conservation Division and would be provided by USAID, which would also provide 24 man-months of specialist consultancy services to assist with forestry, grassland management, soils and conservation economics. Part-time services, on request, would be provided by Ministry of Agriculture personnel from the Conservation Division, in which UNDP aid would provide a Forester and a Junior Level Land Use Planner while USAID would provide a Senior Conservation Officer and a Soils Specialist, the former to head the Ministry of Agriculture Conservation Division and provide essential linkages with the project and other ongoing activities.

35. The technical/administrative skills indicated in the following paragraphs would be required from staff to implement the conservation phases of the project.

Soil Conservation Officer

36. The Soil Conservation Officer should be an experienced soil conservationist strong in planning and administration. A rainfed farming background would be helpful.

37. Under the direction of the Project Manager, he would be responsible for the overall soil conservation component of the project. He would coordinate the activities within this discipline. Public relations, including working with high-level Government officials, are an important aspect of the position. He would be expected to provide guidance in the development of policy, procedures, technical material, training aids, broad goals, scheduling, etc. He would have overall responsibility for soil surveys, equipment management, conservation planning, installation of conservation practices and road engineering.

Agricultural Engineer

38. The Agricultural Engineer must have broad experience in conservation engineering, including survey, design, and calculation of watershed runoff. With the help of a soil scientist, he would assess soils to be used in construction. He must be able to initiate, supervise and direct all the work on terraces, diversions, roads, waterways, dams, etc. He would be expected to develop technical material pertaining to structural measures, as well as participate in training demonstrations, etc. He must be able to work with high-level Government officials, technicians, and farmers. He would assist the Soil Conservation Officer in getting the structural measures shown on conservation plan maps. It may be possible to develop 300-500 acres of land for irrigation; knowledge of land leveling, irrigation water management, and related practices would therefore be useful. A background involving rainfed farming would be helpful. The position would involve staff supervision.

Mechanical Superintendent

39. The Mechanical Superintendent would be responsible for the operation and maintenance of all vehicles and equipment used in soil conservation and construction of field access roads. He would give training in operation and maintenance of all types of equipment used in the soil conservation program. His job would be to keep equipment running so that work could be completed on schedule in an orderly manner. Experience in all phases of operation and maintenance of farm machinery and earth-moving equipment, with carryalls, would be important for this job. He would be in charge of any project equipment facilities.

Other Skills

40. Four other very important skills would be needed to implement the conservation effort. These skills would also be needed more broadly by the Lesotho Ministry of Agriculture Conservation Division. It is planned that FAO, through UNDP, would provide skills in forestry and land use planning to this Division, and that such skills could be utilized on the project as required. It is proposed that the project include provision to link with the Conservation Division by providing the following additional resources either through negotiation with other donors such as USAID, or by consultancies if necessary. Such additional services to the project would be:

(a) Soil Scientist

The Soil Scientist would provide appropriate soil maps and land use capability analysis for the project and for regular Government conservation activities. He would assist with interpretations involving suitability for crops, fertilizer needs, suitability for structures and roads, etc. When technical materials are developed, soil interpretations and descriptions would be provided. He would be responsible for soils maps included in conservation plans. He would be responsible for training of technicians in the techniques of developing soils information and the use of such information.

(b) Soil Conservationist (also possibly Chief, Ministry of Agriculture, Conservation Division)

The Soil Conservationist would require experience and skill in identification of appropriate conservation practices and measures as they relate to the most effective and economical manner to conserve soil and water, consistent with increased productivity. He must also be skillful in working with groups of farmers and officials to assist them as they develop such improved conservation practices and/or plans. He would be expected to develop technical material, practice guidelines and training aids, as well as participate in training technicians in conservation farming as it applies in Lesotho. He would be responsible for having conservation plans prepared, including maps, job sheets, and other needed material. He would work closely with other technical staff in assisting in the coordination of soil conservation within the entire project and in its relationship to the broader phases of Lesotho's plans and planning for conservation. He

would be responsible for the tree planting program of the project and make arrangements to have the kinds and amount of trees and other vegetative material available as needed for afforestation and stabilization work. The ability to work with high-level Government officials, prominent citizens, technicians and small farmers would be required. Supervision of intermediate level staff would be required.

(c) Consultancies

Additional provision would be made for short-term consultancies (4 months maximum per year) to provide additional technical skills as needed. These are expected to be in disciplines such as forestry, grass-land management, conservation economics and others as appropriate.

(d) Other Staff

(i) Three technical officers would be required for the project as follows:

	<u>Number</u>
Senior Technical Officer for Conservation	1
Technical Officer, Layout	1
Technical Officer, Plant	1

(ii) Other requirements would include:

<u>Position</u>	<u>Maximum Number Required</u>
Technical Assistants	8
Draftsman	1
Artisan	1
Heavy Equipment Operators	5
Light Equipment Operators	6
Mechanics	3
Drivers	4
Secretary/Chief Clerk	1
Labor/Watchman	10
Clerk/Storeman	<u>4</u>
 Total	 <u>43</u>

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THABA BOSIU RURAL DEVELOPMENT PROJECT

Cost of Soil Conservation  
(Rands)

<u>Staff</u>	<u>Unit Cost</u>	<u>Year</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>TOTAL</u>
<u>Expatriate</u>									
Senior Planning & Soil Conservation Officer	20,000		20,000 (1)	21,100 (1)	21,850	22,500	23,350	24,100	123,000
Conservation Engineer	18,000		9,000 (½)	18,500 (1)	17,100	19,700	20,300	5,400	92,000
Mechanical Superintendent	15,000		7,500 (½)	15,350 (1)	15,700	16,050	16,400	4,000	75,000
Sub-total			36,500	54,950	56,650	58,350	60,050	33,500	300,000
<u>Local</u>									
Senior Technical Officer (Conservation)	2,590		2,590 (1)	2,660 (1)	2,770 (1)	2,670 (1)	2,960 (1)	3,030 (1)	16,750
Technical Officer (Layout)	1,850	B4	925 (½)	1,920 (1)	1,990 (1)	2,070 (1)	2,140 (1)	2,210 (1)	11,255
Plant	1,650	B4	825 (½)	1,920 (1)	1,990 (1)	2,070 (1)	2,140 (1)	2,210 (1)	11,255
Technical Assistants & Artisan	860	C2	4,730 (5½)	9,000 (10)	9,180 (11)	9,960 (11)	10,140 (12)	10,920 (12)	54,550
Plant Operators for heavy equipment	860	C2	2,560 (3)	4,500 (5)	4,710 (5)	4,950 (5)	5,220 (6)	5,460 (6)	27,450
Plant Operators for light equipment	690	C3	2,070 (3)	4,380 (6)	4,680 (6)	5,100 (6)	5,400 (6)	5,730 (6)	27,330
Mechanics	690	C3	1,380 (2)	2,190 (3)	2,340 (3)	2,550 (3)	2,700 (3)	2,850 (3)	14,010
Drivers	520	C3	2,080 (4)	2,200 (4)	2,350 (4)	2,560 (4)	2,710 (4)	2,920 (4)	14,850
Secretary & Clerk & Storemen	520	C3	1,560 (3)	2,750 (5)	2,940 (5)	3,180 (5)	3,420 (5)	3,660 (5)	17,510
Laborers	240		2,400 (10)	2,400 (10)	2,400 (10)	2,400 (10)	2,400 (10)	2,400 (10)	14,400
Sub-total			21,240	33,040	35,600	37,540	39,560	41,410	207,370
TOTAL			57,740	88,990	92,330	95,890	99,610	74,910	509,370
Staff On-Costs (40%)			23,100	35,560	36,930	38,360	39,840	29,960	203,750
TOTAL STAFF			80,840	124,450	129,260	134,250	139,450	104,870	713,120
<u>Consultancies</u>			56,250	-	-	-	-	-	56,250
<u>Training</u>			22,500	22,500	22,500	22,500	-	-	90,000
TOTAL STAFF, CONSULTANCY & TRAINING			159,590	146,950	151,760	156,750	139,450	104,870	859,370

July 3, 1972

EXPENDITURE  
TRAIN SOUTH RURAL DEVELOPMENT PROJECT

Cost of Soil Conservation  
(Cont.)

	Unit Cost	Year	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	TOTAL
<u>Heavy Equipment</u>									
Track tractor 125 HP	35,100		70,800(2)						70,800
Motor grader	27,000		54,000(2)						54,000
Scraper & Cable 9 cu yd.	16,000		16,000(1)						16,000
Tractors 75 HP	3,150		21,150(6)						21,150
Diurnal Sower trailer	1,700		1,700(1)						1,700
Water Sower trailer	1,400		2,800(2)						2,800
Tipper/Dump, w/	1,600		1,600(1)						1,600
Ploughs (6 marking)	300		900(3)						900
Concrete mixers	800		2,400(3)						2,400
Misc equipment	16,000		16,000(1)						16,000
Compressor	1,500		1,500(1)						1,500
Garages (trailer house)	2,450		2,450(1)						2,450
3-yard scraper with tractors	1,500		1,500(1)						1,500
Sub-total			207,850						207,850
<u>Vehicles</u>									
L-wheel drive	3,200		12,800(4)						12,800
Cars	1,100		2,200(2)						2,200
Truck 5-ton	4,000		8,000(2)		1,400		1,100		5,500
Pick up	1,500		1,500(1)				4,000		4,000
Sub-total			25,400		1,800		5,100		32,300 <sup>a/</sup>
<u>Equipment</u>									
Survey	3,000		3,000						3,000
Soil survey	1,000		1,000						1,000
Carping	1,000		1,000						1,000
Sub-total			5,000						5,000
<u>Aerial Photography</u>									
			10,000						10,000 <sup>a/</sup>
<u>Forestry Contract (trees 1000) <sup>1/</sup></u>									
	20			6,000(300)	6,000(300)	6,000(300)	6,000(300)	6,000(300)	30,000
<u>Construction</u>									
Workshop building & office	6,000		6,000						6,000
Houses - Type A	16,000		48,000(3)						48,000
Type B	10,600		10,600(1)						10,600
Type C	4,100		8,200(2)						8,200
Type D	6,300		18,900(3)		12,600(2)				31,500
Sub-total			92,300	12,600					104,900
<b>TOTAL EQUIPMENT &amp; CONSTRUCTION</b>			<u>310,350</u>	<u>15,000</u>	<u>6,000</u>	<u>5,200</u>	<u>11,400</u>	<u>6,000</u>	<u>354,950</u>

<sup>1/</sup> Labor through Food for Work.

June 5, 1972

<sup>a/</sup> Items funded by IDA Loan

APR 11 1972

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THABA BOSIU RURAL DEVELOPMENT PROJECT

Cost of Soil Conservation (cont.)

<u>Unit Costs</u>	<u>Year</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>TOTAL</u>
<u>Earthmoving &amp; Structures</u>								
<u>Terraces &amp; Ditches</u>								
Waterways earthmoving/mile	400		18,000(45)	20,000(50)	10,000(25)	8,000(20)	4,000(10)	60,000
Intakes & stone walling/mile	400		18,000(45)	20,000(50)	10,000(25)	8,000(20)	4,000(10)	60,000
Diversion ditch, earthmoving/mile	160		41,600(260)	41,000(260)	41,600(260)	41,600(260)	-	166,400
Improving existing works	23	-	11,900(500)	17,250(750)	17,250(750)	17,250(750)	5,750(250)	(2,000)
Sub-total			89,500	98,250	78,850	74,850	13,750	355,400
<u>ES</u>								
Earthmoving	1,800		7,200(4)	7,200(4)	7,200(4)	7,200(4)	7,200(4)	36,000
Inlets & Fencing	300	-	1,200(4)	1,200(4)	1,200(4)	1,200(4)	7,200(4)	6,000
Sub-total			8,400	8,400	8,400	8,400	8,400	42,000
<u>ads</u>								
Earthmoving/miles	200		10,000(50)	10,000(50)	10,000(50)	10,000(50)	10,000(50)	50,000
Structures culverts	30,000	-	30,000(1)	30,000(1)	30,000(1)	30,000(1)	30,000(1)	150,000
Sub-total			40,000	40,000	40,000	40,000	40,000	200,000
<b>TOTAL STRUCTURES</b>			<u>137,900</u>	<u>147,250</u>	<u>127,250</u>	<u>123,250</u>	<u>62,150</u>	<u>597,400</u>
<u>Maintenance &amp; Operating Costs</u>								
1. Workshop	2,000	2,000	2,000	2,000	2,000	2,000	2,000	12,000
2. Vehicles	11,800	11,800	11,800	11,800	11,800	11,800	11,800	70,800
3. Buildings 2.5%	20	-	2,310	2,620	2,620	2,620	2,620	12,790
4. Roads/mile		-	-	1,000	2,000	3,000	4,000	10,000
<b>TOTAL MAINTENANCE/OPERATING</b>		13,800	16,110	17,420	18,420	19,420	20,420	105,590
<b>TOTAL SOIL CONSERVATION</b>			<u>513,940</u>	<u>319,160</u>	<u>322,430</u>	<u>311,520</u>	<u>793,520</u>	<u>1,954,310</u> <sup>b/</sup>

b/ This amount can be reconciled to \$2,800,000 project total shown elsewhere in PROP by applying following adjustments:

- 1) Deduct items not funded by AID (R44,000)
- 2) Add adjustment for Expatriate Staff costs which were converted at Rand rate current at time project estimates made, prior to devaluation of Rand (R2,110).
- 3) Add allowances for contingencies which not included in this table (R310,000).
- 4) Apply conversion rate of \$1.26 per Rand.

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THARA BOSIU RURAL DEVELOPMENT PROJECT

Project Cost Summary  
(Thousand Rand)

	Annex	Year/	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>Total</u>
On-farm Costs	6		6	35	104	149	270	261	825
Technical Services	7, 8								
Extension	7		78	50	61	72	90	85	436
Training	8		84	35	29	31	25	-	204
Research	10		69	39	37	41	38	-	262
Sub-total			231	124	127	144	153	123	902
Credit	13		76	51	65	60	72	83	407
Marketing	12		100	100	149	157	192	166	664
Soil Conservation	14		514	319	322	312	294	193	1,954
Integrated Farming	17								
On-farm Costs			1	3	9	20	42	21	96
Other			45	16	17	21	23	29	151
Sub-total			46	19	26	41	65	50	247
Roads	16		89	151	196	20	22	18	496
Administration	18		190	103	119	113	112	84	726
Sub-total			1,252	907	1,108	996	1,180	978	6,421
Physical Contingencies			3	7	69	11	13	12	115
Price Contingencies			58	88	177	204	313	324	1,164 <sup>1/</sup>
Soil Conservation Adjustment <sup>2/</sup>			10	10	10	10	10	10	50
Sub-Total			61	105	206	225	325	345	1,329
<b>TOTAL PROJECT COSTS</b>			<u>1,313</u>	<u>1,012</u>	<u>1,364</u>	<u>1,221</u>	<u>1,515</u>	<u>1,324</u>	<u>7,750</u>

1/ Includes rounding.

2/ Compensation for devaluation of Rand.

August 9, 1972

SECTION 11.6  
ANNEX 10  
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THABA BOSIU RURAL DEVELOPMENT PROJECT

IDA Credit Financing Schedule

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>Total</u>
	----- Thousand Rand -----						
<b>1. Total Costs</b>							
On-farm Costs	5	32	89	133	239	236	734
Vehicles & Equipment	113	33	32	39	33	19	269
Staff	204	278	310	319	347	317	1,775
Buildings	375	47	52	-	20	5	509
Maintenance & Operations	40	59	67	73	71	61	371
Roads	32	112	164	10	10	10	338
Sub-total	<u>769</u>	<u>561</u>	<u>721</u>	<u>574</u>	<u>720</u>	<u>645</u>	<u>3,993</u>
Contingencies Physical	3	7	69	10	11	12	112
Price <sup>1/2/</sup>	<u>39</u>	<u>58</u>	<u>125</u>	<u>126</u>	<u>202</u>	<u>229</u>	<u>779</u>
TOTAL	<u>811</u>	<u>626</u>	<u>915</u>	<u>710</u>	<u>933</u>	<u>889</u>	<u>4,884</u>
<b>2. IDA Financing 90%</b>	<u>730</u>	<u>563</u>	<u>824</u>	<u>639</u>	<u>840</u>	<u>800</u>	<u>4,396</u>
<b>3. IDA Financing (US\$'000)<sup>2/</sup></b>	<u>(930)</u>	<u>(720)</u>	<u>(1,050)</u>	<u>(810)</u>	<u>(1,070)</u>	<u>(1,020)</u>	<u>(5,600)</u>
<b>4. Cumulative (US\$'000)</b>	<u>(930)</u>	<u>(1,650)</u>	<u>(2,700)</u>	<u>(3,510)</u>	<u>(4,580)</u>	<u>(5,600)</u>	

<sup>1/</sup> Including physical contingencies  
<sup>2/</sup> Includes rounding.

August 3, 1972

THABA BOSIU RURAL DEVELOPMENT PROJECT

VII: FURTHER RATIONALE

A. Background to AID Involvement in Thaba Bosiu Project

With the promulgation of the U.S. policy statement on Africa in early 1970, it was decided that AID should initiate modest assistance programs in Botswana, Lesotho and Swaziland to demonstrate U.S. interest in their development and in their eventual reduced economic and political dependence on the Republic of South Africa. To this end major multi-lateral projects have been started in Botswana and Swaziland; however, no similar project has yet been undertaken in Lesotho.

Our several efforts, beginning in 1970, to define a suitable AID activity in agriculture in Lesotho were unsuccessful. In the meantime, the IBRD was exploring the possibility of financing a major rural development project in the country and in early CY 1972 we proposed to collaborate in a joint project with them. AID participation was welcomed because we would supplement scarce IDA funds and would round out the scope of the project by broadening and strengthening its conservation aspects. At the same time there were serious doubts that the GOL could muster sufficient administrative/managerial personnel resources to administer two major technical assistance undertakings rural development at this time. After appropriate consultation with the GOL, a joint IBRD/AID project appraisal mission was sent to Lesotho in March 1972 to design the Thaba Bosiu project. AID's three men on the mission concentrated on the conservation aspects of the project working together with the IBRD representatives as a team. They participated jointly in the field work and discussions with the government and in the drafting of the Project Appraisal Report. Since the completion of the Project Report in August, we have closely coordinated our discussions with the GOL and are planning joint project negotiations here in Washington. We have exchanged draft proposed project agreements to assure that the respective formally executed project documents are consistent with each other. Our style in designing and negotiating the project has been a thoroughly collaborative one.

B. Local Costs and Grant vs. Loan Financing

(Because Lesotho is part of the South African currency area, for our purposes all Rand costs are defined as "local" costs whether of Lesotho or South African origin).

Lesotho is one of the poorest countries in the world. It is small, mountainous and has few natural resources. Its economy is almost completely dependent on South Africa through trade, employment of labor, South African private investments, and membership in the South Africa Customs Union currency area. Because of the country's limited economic

prospects and its extensive dependence on South Africa, it has not received much other donor aid. It is one of the six countries of the "least developed" which the UNDP has selected for special attention and for which it is attempting to mobilize increased financial and technical aid for development on exceptional generous terms. As part of our aid policy in 1970 we recognized that if an assistance program was to be initiated in Lesotho, it could only be done by financing it on concessionary terms.

For some years Lesotho has experienced a substantial deficit in its current budget requiring an annual subvention from the U.K. Although the recurrent deficit has been substantially reduced over the past four years (from 55% in 1967-68 to 14% in 1971-72) this was accomplished chiefly by a negotiated concessionary increase in its share of customs revenues from the Customs Union with South Africa. The operating budget has been held practically level (an increase of less than 5%) over the four year period. The development budget has been financed entirely by external assistance, primarily grants from the U.K., UNDP, WFP, Republic of China and AID (Title II Food Program). While the GOL hopes to phase out British budget support in 1972-73, this can only be done by keeping a lid on budgetary expenditures since current revenues are not expected to rise significantly. The GOL declines to undertake externally assisted development projects unless it is assured that it will have the budgetary resources to meet the government's financial obligations. Without a marked improvement in its near-term economic outlook, it appears the GOL will continue to be unable to itself finance either the recurrent or capital costs of a development program.

This proposed project has a high local cost component because soil conservation activities involve a large element of direct labor and equipment operating costs. These activities include simple soil conservation works and farm access roads to be constructed by the project staff using local labor and project staff housing and other simple structures to be constructed by a local contractor. A majority of these conservation costs are expected to be "one time" investments. The salaries of local administrative staff in the soil conservation unit are also included in the project budget. A high proportion of the local costs generates local employment.

It appears the GOL will do well to meet the approximately \$500,000 of project costs allocated to it and to assume the budgetary costs of follow-on activities after IBRD and AID assistance has phased out. It is the consensus within AID and the IBRD that given the state of the GOL finances, its present and prospective credit worthiness, and the nature of the Thaba Bosiu project (with its limited 11% rate of return), the financing of practically 100% project costs on a grant basis is justified.

C. Coordination of Project Administration

The project is to be implemented by a quasi-autonomous Project Unit under the general guidance of a Lesotho Government project committee. The Project Unit will be administered by the Bank financed Project Manager who is fully responsible for project operations. AID inputs will be integrated into the project and will be under the direct control of the Project Manager.

Two AID financed OPEX personnel being provided under another project will be assigned to positions in the Conservation Unit of the Ministry of Agriculture, one of whom will administer the Conservation Unit. These two men will carry out an important liaison role between the GOL and the Project Unit, particularly in the conservation aspects of the project.

The three AID-financed project officers, who will be under the general supervision of the Project Manager, will be responsible for the conservation aspects of the project and will supervise the local soil conservation project staff. The two Conservation officers will plan and design the conservation works in coordination with other elements of the total project and will direct the employment of AID-financed equipment and local labor to construct the works. The Mechanical Superintendent will be responsible for the operations and maintenance of all the AID-financed and other vehicle and equipment used in conservation works. AID-financed participant training and on-the-project training related to conservation will also be their direct responsibility.

Thus, while the AID conservation component is an integral part of the project, it comes under the broad policy guidance of the government and general administration direction of the Project Manager. The major AID inputs are directly managed by AID-financed personnel. In addition, AID-financed personnel will in many respects act for the government in dealing with the conservation aspects of the Project.

Project implementation is planned to be accomplished in an orderly sequence coordinating the phasing of the various components of the project. The Bank and AID are the only two donors directly involved in the project. The UNDP will provide two technicians, a land use planner and a forester, for the Ministry's Conservation Unit which will work with the Project Unit. A preliminary plan providing some details of the initial phases of the project and covering the life of the project is attached as (Appendix 2). However, while the general outlines of the project have been worked out the specific implementation schedule must await the assignment of a Project Manager and other senior Project Staff.

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D. Discussion of AID Inputs

1. Description. Life-of-project planned inputs shown in detail on the Table in Section VI A are outlined below at a total cost of \$2,800,000.

a. Staff: Fully Funded American OPEX Staff

<u>Position</u>	<u>Man Years</u>					
	<u>FY 73</u>	<u>FY 74</u>	<u>FY 75</u>	<u>FY 76</u>	<u>FY 77</u>	<u>FY 78</u>
Sr. Planning & Conservation Officer	1/2	1	1	1	1	1
Conservation Engineer	1/2	1	1	1	1	1/4
Mechanical Superintendent	1/2	1	1	1	1	-
Consultancies (16 Man Months)	<hr/>					
Total Amount						\$640,000

b. Participants

Participant training includes: 1) two men or women for four years in a U.S. institution to secure undergraduate degrees in conservation. NOTE: No such courses are offered in Africa, 2) three men or women for three years at an appropriate African university to secure degrees in agronomy, agricultural economics, or general agriculture and, 3) six men or women for three years at the Swaziland Agricultural University and College for diploma training. Following are yearly cost estimates:

	<u>Cost (\$000)</u>						
	<u>FY 73</u>	<u>FY 74</u>	<u>FY 75</u>	<u>FY 76</u>	<u>FY 77</u>	<u>FY 78</u>	<u>Total</u>
U.S. Training (2)	-	15	16	17	18	-	66
3rd Country (3)	-	15	17	16	-	-	48
Swaziland Agr College (6)	-	5	5	6	-	-	16
Total Amount	<hr/>						\$130,000

NOTE: On-the-job training will be provided in all aspects of the project.

c. Commodities

ALL are intended to be U.S. procured and ordered in FY 73.

<u>Item</u>	<u>US\$</u> <u>Total Cost</u>
<u>Heavy Equipment</u>	
Track Tractors, 125 H.P. (2)	100,000
Motor Grader (2)	75,000
Scraper/Cable, 9 cu. yd. (1)	22,500
Tractor, 58 H.P. (6)	33,000
Diesel Bowser Trailer (1)	2,000
Water Bowser Trailer (2)	3,500
Tipper/Scraper (1)	2,500
Ploughs and Markings (3)	1,500
Concrete Mixer (3)	3,500
Minor Equipment (1)	22,500
Compressor (1)	2,000
Caravans (Trailer House) (1)	3,500
3 yd. Scraper with Tractor (10)	21,500
Small Survey and Camping Equipment	7,000
Total Commodities	\$300,000

d. Other Costs - (\$1,730,000)

i. Housing and Construction \$170,000

(Cost of construction of workshop building and office and nine houses of four different grades for the AID-financed American and local project staff.)

ii. Local Project Staff Salaries \$450,000

(Includes conservation technical officers and assistants, equipment operators and mechanics, office staff and laborers.)

iii. Seedlings \$50,000

(Cost of procuring locally 1.5 million tree seedlings required for erosion control work.)

iv. Soil Conservation Works \$1,050,000

(Cost of local contracts, local day labor, off shelf supplies and materials, FOL, and major repairs of equipment necessary to carry out projected conservation works.)

## 2. Basis for Establishing Requirements Estimates

As described in Section V, the AID inputs in conservation include the technical resources, the equipment and the capability to design, plan and place on the land the appropriate soil erosion control measures to assure that the improved cropping practices, the improved seed and the fertilizer provided within the project and financed by the Bank loan will have a proper environment to allow maximizing their effectiveness. Such conservation treatments are well known by professional conservation technicians. They will require, prior to their detailed design, the development of land use plans, from aerial photos and on site soil surveys, from which the specific designs of terraces, waterways, drop structures, small dams and similar treatments can evolve. The conservation component, working with other project technicians, will also establish appropriate crop practices for use on the land.

The cost estimates shown in the Table in Section VI B have been based on: 1) the professional judgment of soil conservation officers of AID and the IBRD; 2) a review of the costs of some previous U.K. financed conservation construction in Lesotho and 3) experience of the IBRD in similar activities on a project in Malawi. Detailed designs will become available as the project progresses. While there may be a requirement to shift some funding within the various sub-categories, the overall cost estimates are expected to be reasonably firm.

Because of the nature of the project precise detailed engineering cost studies are not possible. Equipment requirements are based on estimates of the number and type of structures to be built in the project area and calculations of the cubic feet of earth to be moved. Operating and maintenance costs are derived from unit cost estimates of equipment operating hours. It is common practice in conservation construction to estimate costs in this manner.

## 3. Implementation Procedures

All of AID's inputs into this project will be made through the usual bilateral project agreement between the Government of Lesotho and AID and will be subject to AID regulations. The Bank will have seen and concurred in the Agreement prior to signature. Project technicians will be obtained through our usual intermediary recruitment contractors with the usual PIO/T project documentation. Participants will be handled in the regular way. The equipment will all be U.S. procured. A PIO/C will be issued and bids will be invited either by the GSA or the African American Purchasing Center,

Special provisions will be contained in the Project Agreement for the administration of funds being provided by AID to cover local costs of the project. (See Draft ProAg attached as Appendix 2). While the Bank financed Project Manager, as administrator of the Project Unit will have responsibility for administering the funds, their disbursement will be controlled through our advance and reimbursement procedure which will require submission of a quarterly accounting supported by documentation available for our inspection and review. The Project Manager will be assisted in

this responsibility not only by the AID financed Conservation Officer who is responsible for the conservation component of the project, but by his finance and administration unit which includes a financial controller, accountants and monitoring and evaluation officers. The financing of annual increments through the ProAg affords an opportunity for annual AID/W reviewing of requirements and evaluating experience to date. AID will also retain the right to audit the project, as will the IDA.

#### 4. Utilization of Inputs

Equipment procured under this activity will be maintained by a maintenance/training unit within the Project. During the life of the project it will remain under the direct supervision of the AID financed project officers. The mechanical superintendent who will be responsible for the operation and maintenance of the equipment will work with and train local staff in general maintenance. Major repair capability is not being built into the Project. Such a capability is available in the local economy and repairs will be provided by local South African equipment dealers. Even though the equipment to be procured by AID for this Project is essentially all heavy duty construction equipment and the equipment to be procured by the IDA loan are largely agricultural tractors/tools or vehicles, procurement will be coordinated to the extent feasible to assure local repair capability. The IDA equipment and AID provided equipment will be procured from suppliers with nearby repair and service facilities.

The Ministry of Agriculture Conservation Division and the Ministry of Works both now operate similar types of heavy duty equipment. It is expected that the Project provided training in maintenance and in equipment operation will strengthen existing GOL capacity. While most of the equipment is expected to be utilized at a rate that will enhance its useful life, at the conclusion of the Project the GOL will have established a strengthened technical and financial capability to continue to support the use of such equipment in regular GOL conservation programs.

Since the Project will become an integral portion of the structure of the GOL, it is expected that staff trained on the conservation component of the Project will be utilized by the MOA on regular conservation programs of the GOL at such time as Thaba Bosiu conservation components are completed. Appropriated funding provisions for staff salaries and operating costs will be assumed by the GOL at such a time. Both during the life of the Project and after its completion, conservation structures such as regular or diversion terraces, fenced gullies, drop structures, waterways and small dams are expected to be maintained by the local farmers and such agreements are part of the conditions of the IDA loan agreements and the AID project agreement. As the project is designed minimum maintenance in crop extraction roads will be provided by farmers using the road. Major repairs will be performed by the GOL, by either the MOA conservation unit or MOW roads unit.

Project implementation will be accomplished in an orderly planned sequence. The initial plan (Appendix 2) includes detailed action steps

beginning with the GOL passing legislation establishing the project organization and carrying through to the end of the first year with the preparation of land use and soil capability maps. Included in the plan are: selection of initial and sequennial areas for implementation; plans for markets; procurement of seeds, fertilizer, tractors, tools, training of field staff, developing land use plans and preparing detailed designs of conservation structures. The subsequent years' plan is shown only in outline. The IBRD/IDA appraisal report shows a phased schedule of farmer participants and acres of land during the life of the Project. Specific sites for initial and subsequent field headquarters offices and warehouses will be established by the Project manager in coordination with the Project committee.

### 5. Other AID Inputs

In addition to the direct Project inputs now included in the PROP, AID plans to finance a two-man research team to carry out a continuing study of the agronomic and socio-economic aspects of project performance. This research is considered essential for project evaluation and feed back modification and for determination of prospects for transfer to other parts of Lesotho. The team consisting of a range management/agronomist and a Rural Sociologist will be provided by AID to the UELIS and be seconded to the Project. The GOL and UELIS will have a built in coordination mechanism by means of annual approval of research plans and semi-annual research reviews to be covered by a contractual arrangement. The costs of the team are expected to be shared by this project and TAB's Local Action Guidance and Implementation project. A PROP amendment will be submitted when administrative, project and funding arrangements for this activity have been completed.

Also important to the success of the Thaba Bosiu project is the strengthening of the GOL's overall capability in soil conservation. To this end AID is financing under the Southern Africa Development Personnel and Training project two positions in the Ministry of Agriculture--the Chief Conservation Officer and Soil Surveyor. They will work closely with the project personnel and provide a foundation for existing GOL staff to assume responsibility for soil conservation in the Thaba Bosiu area after project completion and for planning similar projects in other areas of Lesotho.

### E. Logical Framework Matrix - Discussion of Important Assumptions

Included among the IMPORTANT ASSUMPTIONS of the attached PROP Logical Framework Matrix, five areas of concern stand out:

#### 1. Credit, Marketing and Crop Pricing Policies of the GOL

At this time the GOL is proceeding very cautiously with provision of credit services and no government institution is yet ready to provide them to the project. The GOL has also not yet clearly defined or established its marketing and pricing policies. As a result of these

conditions, the negotiations with the GOL by the IDA will provide the following within the project area:

- a. Input supply, credit and marketing will be coordinated under the firm control of the project manager.
- b. The project unit will act as agent for Co-Op Lesotho (CCL) in performing these functions.
- c. The GOL will inform the IDA of its proposals for national produce marketing prior to project negotiations.

2. Unilateral Actions by the Republic of South Africa Which Could Limit or Restrict Produce Sales

It is clear that modest shifts in production subsidies or other central government programs in the RSA could have significant undesirable effects on sales of Lesotho agricultural products since they sell within the same common market. However, it does not seem to be a likely course of action to expect from the RSA since they would be contrary to its general policy toward relations with Lesotho. The undesirable political effect as well as the relatively small amount of produce involved (in terms of the RSA's share of the common market) should deter the RSA from such actions.

3. GOL Manpower

Manpower is a problem of serious concern for the GOL as it is with others of the "least developed" countries. The Ministry of Agriculture has very few professional or middle level technicians. Undertaking this project will restrict their ability to simultaneously provide counterpart junior officers, trainees and participants for other projects. While the IBRD/IDA Appraisal Mission Report indicates priority to this Project for staff selection and/or secondment, the AID-GOL ProAg will stress and spell out in detail the GOL's responsibility in this respect and the Bank and AID agree that a strong point be made on this issue during IDA-GOL-AID final negotiations.

4. Establishment of an Effective Institutional Base for the Thaba Bosiu Project

The IBRD/IDA Report contains conditions precedent that IDA-GOL agreements be worked out to provide the Project with the required governmental institutional capability and organizational flexibility to muster and manage resources effectively. The Project Unit, as part of the organization structure of the Ministry of Agriculture of the GOL, therefore, will have built-in institutional/operational linkage with other divisions of the Ministry as well as with other Ministries of the GOL. We can further expect, and will note in the ProAg, that staff trained by the Project, and administrative/technical skills developed can be directly absorbed into the MOA as the Project phases out and can be harnessed to assist in carrying out the on-going objectives of the project.

5. Acceptance by Farmers, Chiefs and Government of the New Soil Conservation Farming Technology

The Project Appraisal Report includes several conditions for agreement with the GOL which will provide a workable government established framework in which the Project staff can work with rural people and chiefs to adopt new systems of farming and livestock management.

It is refreshing to see that there are significant changes, both in attitude and in practice. New farming systems are now being tested, experimented with and being widely discussed in Lesotho. Group or association farming is being attempted; a few people are permitted to fence livestock pastures, and in the Roma area, a large tract is being farmed by private citizens in a consolidated fashion.

The inclusion of related social science research as an element in support of the Project is a further endeavor to address these issues of land/people/cattle relationships.

While it will be a slow and tedious development based on what is known and observed now, it is believed that the integrated farming concept, which includes proper soil conservation system farming, has a good chance of success.

THABA BOSIU RURAL DEVELOPMENT PROJECT

VIII, SOURCE AND ORIGIN PROCUREMENT

A. Identification of Waivers and Approval

The FROP face sheet and continuation lists the following request for waivers and approvals and contains the necessary certification to effect such waivers and approvals:

(a) A procurement source and origin waiver from Geographic Code 000 (U.S.) to Geographic Code 935 (Lesotho and South Africa):

(i) for equipment, commodities, and local services, at an estimated value of \$965,000 representing local cost procurement requirements to perform the conservation works under the project.

(ii) for equipment and commodities and construction services at an estimated value of \$170,000 for the construction of houses, office space, and garage space.

(iii) for services valuing at approximately \$145,000 to perform major repairs of heavy equipment.

(b) A waiver of AID Regulation 7 thus removing restrictions on the employment of third country nationals on the construction contracts financed by AID.

In addition, the following approvals are requested:

(a) Approval of the use of normal established Government of Lesotho procedures for the competitive selection of construction firms for building the houses and other structures financed by AID.

(b) Approval of the use of AID financed local currency (approximately \$450,000) to pay salaries of local citizens, who will staff the quasi-governmental agency empowered to manage the project.

B. Summary Waiver Information

- (a) Cooperating Country: Lesotho (IBRD)
- (b) Authorizing Document: FROP (proposed)
- (c) Project: Thaba Bosiu Rural Development Project
- (d) Nature of Funding: Grant
- (e) Description of Goods and Services: (see above)
- (f) Approximate Total Value: \$1,730,000
- (g) Probable Source: Lesotho and Republic of South Africa
- (h) Previous Funding: None

## C. Discussion

### 1. General Justification

Reference is made to Section VII B. of PROP which discusses the overall need and justification for local currency financing for this project. In addition the following points should be considered. The success of the project would be seriously jeopardized without approval of the requested waivers. The procurement from the U.S. of the small quantities of small equipment and materials involved would result in intolerable delays in project implementation, in addition to substantially increasing the cost of these items and creating problems of compatibility with local standards and specifications. (All heavy equipment and known small equipment requirements are being procured from the U.S.) No U.S. firms normally eligible under AID rules would be expected to bid on the small amount of construction or equipment repair work contemplated. In view of our joint, interdependent project relationship with the Bank and discussions to date with the GOL and the essential nature of our input to this project, it would be untenable for AID to require that our funds be used only for goods of U.S. origin exclusively and services of U.S. or U.S. beneficially owned or controlled firms. In fact, without freedom from the normal AID requirements outlined above, it would be practically impossible to participate in this project.

### 2. Specific Items

#### a. Housing and Workshop Building and Office (\$170,000)

- i. The GOL is not able to provide housing for our project personnel.
- ii. Financing for the construction is not available from any other source.
- iii. Local firms who would be bidding on this construction would in all probability require the services of some third country nationals to handle the technical aspects of the construction.
- iv. Includes 3 Type A houses to be reserved for use of U.S. personnel and 1 Type B, 2 Type C and 3 Type D houses for local staff. Also includes a workshop with attached office.
- v. Customary Lesotho government contracting procedures will apply.

#### b. Local Project Staff Salaries (\$450,000)

Covers the salaries of local people who will fill the various jobs included in the Project (Conservation) Staff which are not designated for U.S. technicians (see Table in Section VI A).

#### c. Seedlings (\$50,000)

Procurement of 1.5 million tree seedlings required for soil erosion control work to be grown locally.