PROJECT PAPER

LESOTHO AGRICULTURAL PRODUCTION

AND

INSTITUTIONAL SUPPORT PROJECT

(632-0221)

October, 1984

ISSUES MTG: 11/2/84 FCPR: 11/8/84

0.0 EXECUTIVE SUMMARY AND RECOMMENDATIONS

0.1 Grantee

The Grantee for the Project will be the Kingdom of Lesotho.

Implementing Agency

The primary implementing agency will be the Ministry of Agriculture.

0.2 Recommendations and Sources and Uses of Funds

Authorization of a grant in the amount of $26,100,000 over a six year period commencing July, 1985, to the Government of Lesotho for the Lesotho Agricultural Production and Institutional Support Project. The GOL contribution to the project will amount to US$4,500,000 (14.2 percent of total project costs) in Maloti equivalents.

The table detailing the sources and uses of funds is presented on the last page of this summary.

0.3 Purpose of Project

To provide direct production and marketing assistance to small farmers and to strengthen GOL institutional capabilities in agriculture research and extension education for contributing to small farmer production.

0.4 Background of Project

The LAPIS Project is the result of a series of studies and analyses in the agriculture sector undertaken by AID, GOL and other donors dating back to 1974. The two principal documents from which the Project has evolved are: (1) a 1982 USAID Internal Assessment entitled "A Proposed USAID Approach for Agriculture Development in Lesotho; and (2) Report No. 10 of the Lesotho Agriculture Sector Analysis Project entitled "Toward the Year 2000: Strategies of Lesotho's Agriculture."

Since development and approval of the LAPIS PID in 1982, USAID and GOL have been engaged in continuing dialogue at both policy and operational levels on the content, approach and final design of the Project.

0.5 Description of Project

This Project will assist the GOL to expand the commercial horticultural and livestock production of small farmers while continuing to strengthen the institutional capacity of the Ministry of Agriculture to facilitate, coordinate and foster agricultural development in Lesotho. Technical assistance, training and commodity support will be provided to the Ministry of Agriculture's Crops, Research, Range Management and Livestock Divisions and the Lesotho Agricultural College (LAC) so that they may more adequately meet the needs of expanding production and long-term development.

The Project addresses the urgent need to increase rural income, production and employment by generating higher income, labor intensive agricultural enterprises and by assisting the Government of Lesotho to increase its capacity to respond to the changing economic and demographic situation. High value products will be emphasized using labor intensive methods for the domestic and, ultimately, the export markets. The particular products to be encouraged will be those adapted to the economic, social and physical conditions of the country, largely livestock and livestock products in the mountains and horticultural products in the lowlands and foothills. Substantial increases in agricultural income per acre and labor use per acre per season are projected. Increased output will first substitute for imports and later may generate export earnings which can be used to import those foods for which Lesotho lacks the resources to economically produce.

A total of 78 person years of technical assistance will be provided as follows: Production Initiatives - 30 person years; Agricultural Research - 20 person years; and Agricultural Education - 18 person years. An additional 10 person years is provided for the overall administration of the Project.

Long-term training for 33 participants for a total of 75 person years will be supported as follows: Production Initiatives - 6 person years; Agricultural Research - 47 person years; and Agricultural Education - 22 person years. The re-training of over 500 Ministry of Agriculture field staff is another major activity of the Project. Likewise the Project will provide short courses for over 500 Master Farmers.

Other inputs such as commodities ($2,038,000), minor construction ($357,000), and some logistical support are included in the PP.

0.6 Summary findings

The Design Team has examined the technical, financial, and economic implications of the Project's activities and has found all of the activities are technically, financially and economically sound.

The technical analyses demonstrate that the approaches chosen are inherently sound for each of the components and sufficient technical assistance, commodities and training are provided to enable Project objectives to be reached. (See Annex 10.71)

The financial analysis reveals that proposed activities will be financially sound and that the GOL has sufficient personnel and financial resources required to meet its contribution to this Project (see Annex 10.72).

The economic viability of the Project was analyzed in three ways. The present value of a stream of benefits needed to justify the investment in the institution-building components, Research and Education, was estimated. The economic internal rates of return (IRR) of each of the production activities, as well as of the entire Project, were calculated. The latter shows an IRR of 14%. Finally, a cost-effectiveness analysis of key elements of the Project was undertaken. Based on these analyses, we find the Project economically sound.

3

0.7 Project Issue

The funding level proposed for this Project, together with ongoing projects, will fully mortgage the AAPL levels for Lesotho for the period 1985 - 1989. Is this appropriate?

This result is consistent with our approved CDSS strategy which is to focus our assistance program on two key sectors, agriculture and education, during the planning period 1985-88, and to have only two new USAID funded project starts during this decade, 1980-1989. The education sector project was approved and the Project Grant Agreement signed in July 1984. The LAPIS Project is proposed for a FY 1985 start with implementation to occur during the period 1985-1990. In preparation for these two new projects, the Mission has been reducing its ongoing project pipeline and liquidating its mortgages as rapidly as feasible. Currently, the mortgages for all ongoing projects but one will be liquidated in FY 1985. During the period 1986-1989, incremental funding requirements for the two new projects will be within our AAPLs.

The value of the four current USAID agriculture projects is $29.9 million. The new LAPIS Project, with funding of $26.1 million represents a reduction from the overall level of AID assistance to agriculture during the period 1980-1985.

0.8. Consideration of Small, Disadvantaged and Women-Owned Firms

Given the size and complexity of LAPIS, this is not a suitable project for set aside or other arrangement for small and disadvantaged businesses or those targetted for special consideration under the Grey Amendment. The Project, instead, will solicit the widest possible interest from potential bidders interested in the Project. It is anticipated that small and disadvantaged business, including women owned firms, will have an opportunity to participate with some of the interested organizations responding to the RFP.

0.9 Waivers and Approval

Waivers and Approvals Required

1. Waiver of the 25 percent cost sharing requirement contained in Section 110 (a) of the Foreign Assistance Act.

2. Procurement source and origin waiver from AID Geographic Code 941 (Selected Free World) to Geographic Code 935 (Special Free World) for procurement of commodities estimated to cost $2 million.

3. Procurement source and origin waiver from AID Geographic Code 000 (United States) to Geographic Code 935 (Special Free World) for fertilizer anticipated to cost approximately $83,000 over the six year life of the project.

4. Approval of AA/AFR to invite applications for a Cooperative Agreement from a single entity, namely; CARE for development of fruit and fuelwood nurseries, and CUNA/WOCCU for assisting agriculture credit unions, both of which are U.S. Private Voluntary Organizations. (Handbook 13, Chapter 1 B 2 e(3))

4

0.10 Major Conditions Precedent

The conditions precedent to disbursement in this Project are detailed in the Draft Project Authorization.

(A) The LAPIS Coordinating Group and a Project Management Committee will be formally established prior to the first disbursement of funds for the Project. These are very important coordinating bodies essential for successful Project implementation.

(B) The GOL will formally establish a Production Coordinating Unit under the supervision of the Director of Technical Services and appoint a senior Mosotho Agriculturist as the Director of Field Services before disbursement of the grant for the Production Initiatives Component (PIC).

(C) The GOL will furnish, in writing, an agreement that all Basotho who are provided long-term training under the Project will return to work directly in the Project's activities for a period of not less than two years for every year of training provided, unless AID other agrees in writing..

Covenants

The following covenants will also be included in the Draft Project Authorization.

1. The Cooperating Country shall develop a plan, mutually agreeable with AID, to include the use of the competitive process, as appropriate, for the identification and final selection of candidates for long-term training under the Project to assure securing the most qualified persons.

2. The Cooperating Country shall provide on a timely basis all personnel required for implementation of the Project.

3. The Cooperating Country shall assure that all vehicles and equipment procured for the Project will be used exclusively for the Project and that usage shall be carefully monitored and controlled under a plan to be agreed upon with AID.

4. The Cooperating Country shall provide the required Government of Lesotho contribution for the local currency costs of the Project in a timely manner as indicated in the budget table in the Amplified Project Description.

5. The Cooperating Country will undertake to provide the recurrent costs for the continuation of the activities of the Project after the Project Assistance Completion Date.

6. The Ministry of Agriculture shall develop, by June, 1986, a plan for joint staff appointment arrangements for personnel assigned to the Research Division and the Lesotho Agricultural College.

7. The Cooperating Country shall develop, by June, 1986, a plan to allow for the transfer of student course credits between the Lesotho National Teacher Training College (NTTC) and the Lesotho Agricultural

College (LAC) in order to encourage (a) LAC students, who so desire, to pursue careers at primary and secondary levels as agriculture teachers; and (b) NTTC students, who so desire, to do likewise.

8. The Cooperating Country shall continue to accord priority to the accomplishment of research analyses, and studies, which are essential to the development of improved long-term policies in agriculture. Specifically the Cooperating Country shall: (a) undertake a study or studies to determine the export potential of selected agriculture crops and livestock products: (b) develop analyses which determine the structure of livestock and crop markets and the determinants of livestock products and crop prices; and (c) develop a plan for providing yearly crop production forecasts to be accomplished jointly by the Bureau of Statistics and the Ministry of Agriculture.

9. The Cooperating Country covenants that the Ministry of Agriculture shall: (a) develop a plan for implementing a livestock culling program as empowered by the Range Management and Grazing Control Regulations of 1980 to reduce total livestock numbers to carrying capacity by the year 2000; (b) develop a plan for the implementation of the Land Act of 1979 which will provide for the establishment of (1) Selected Agricultural Areas; (2) Agricultural Leasing Regulations; and (3) Land Committees; all of which are essential to the development of viable Range Management Associations (RMA); and (c) develop, by June, 1986, a plan for implementing grazing management legislation to establish livestock grazing fees.

0.11 GOL Contributors

Mr. S. J. Kao, Permanent Secretary, Ministry of Agriculture
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Project Design Team

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AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT DATA SHEET

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

DOCUMENT CODE: 3

2. COUNTRY/ENTITY: Lesotho

3. PROJECT NUMBER: 632-0221

4. BUREAU/OFFICE: Africa — 06

5. PROJECT TITLE (maximum 40 characters): Ag. Production and Institutional Support

6. PROJECT ASSISTANCE COMPLETION DATE (PACD): MM 12 DD 31 YY 90

7. ESTIMATED DATE OF OBLIGATION (Under 'B.' below, enter 1, 2, 3, or 4)
A. Initial FY 85 B. Quarter 2 C. Final FY 91

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

A. FUNDING SOURCE	FIRST FY B. FX	C. L/C	D. Total	LIFE OF PROJECT E. FX	F. L/C	G. Total
AID Appropriated Total	1,250	200	1,450	17,600	8,500	26,100
(Grant)	(1,250)	(200)	(1,450)	(17,600)	(8,500)	(26,100)
(Loan)	( )	( )	( )	( )	( )	( )
Other U.S. 1.						
Other U.S. 2.						
Host Country	0	0	0	0	4,500	4,500
Other Donor(s) (CARE/LCCUL)	0	0	0	0	1,000	1,000
TOTALS	1,250	200	1,450	17,600	14,000	31,600

9. SCHEDULE OF AID FUNDING ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE 1. Grant	2. Loan	D. OBLIGATIONS TO DATE 1. Grant	2. Loan	E. AMOUNT APPROVED THIS ACTION 1. Grant	2. Loan	F. LIFE OF PROJECT 1. Grant	2. Loan
(1) ARDN	140	070		0	0	1,450	0	26,100	0
(2)									
(3)									
(4)									
TOTALS				0	0	1,450	0	26,100	0

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each): 067 | 080 | 050 | 012 | 247 | 635

11. SECONDARY PURPOSE CODE: 180

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

A. Code	BS	R/AG	LAB	COOP	PVOU		
B. Amount	$8.2	$6.8	$5.0	$0.5	$2.5		

13. PROJECT PURPOSE (maximum 480 characters)

Increase small holder agricultural production emphasizing higher income and levels of employment.

14. SCHEDULED EVALUATIONS
Interim MM 05 YY 87 — MM 05 YY 89 — Final MM 03 YY 91

15. SOURCE/ORIGIN OF GOODS AND SERVICES
[X] 000 [ ] 941 [X] Local [X] Other (Specify) 899

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

USAID/L Controller's review and approval of the methods of implementation.

Tony L. Cully 10/18/84
Tony L. Cully

17. APPROVED BY
Signature:
Title:
Date Signed: MM DD YY

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

INSTRUCTIONS

The approved Project Data Sheet summarizes basic data on the project and must provide reliable data for entry into the Country Program Data Bank (CPDB). As a general rule blocks 1 thru 16 are to be completed by the originating office or bureau. It is the responsibility of the reviewing bureau to assume that whenever the original Project Data Sheet is revised, the Project Data Sheet conforms to the revision.

Block 1 - Enter the appropriate letter code in the box, if a change, indicate the Amendment Number.

Block 2 - Enter the name of the Country, Regional or other Entity.

Block 3 - Enter the Project Number assigned by the field mission or an AID/W bureau.

Block 4 - Enter the sponsoring Bureau/Office Symbol and Code. *(See Handbook 3, Appendix 5A, Table 1, Page 1 for guidance.)*

Block 5 - Enter the Project Title *(stay within brackets; limit to 40 characters).*

Block 6 - Enter the Estimated Project Assistance Completion Date. *(See AIDTO Circular A-24 dated 1/26/78, paragraph C, Page 2.)*

Block 7A. - Enter the FY for the first obligation of AID funds for the project.
Block 7B. - Enter the quarter of FY for the first AID funds obligation.
Block 7C. - Enter the FY for the last AID funds obligations.

Block 8 - Enter the amounts from the 'Summary Cost Estimates' and 'Financial Table' of the Project Data Sheet.
NOTE: The L/C column must show the estimated U.S. dollars to be used for the financing of local costs by AID on the lines corresponding to AID.

Block 9 - Enter the amounts and details from the Project Data Sheet section reflecting the estimated rate of use of AID funds.
Block 9A. - Use the Alpha Code. *(See Handbook 3, Appendix 5A, Table 2, Page 2 for guidance.)*

Blocks 9B., C1. & C2. - See Handbook 3, Appendix 5B for guidance. The total of columns 1 and 2 of F must equal the AID appropriated funds total of 8G.

Blocks 10 and 11 - See Handbook 3, Appendix 5B for guidance.

Block 12 - Enter the codes and amounts attributable to each concern for Life of Project. *(See Handbook 3, Appendix 5B, Attachment C for coding.)*

Block 13 - Enter the Project Purpose as it appears in the approved PID Facesheet, or as modified during the project development and reflected in the Project Data Sheet.

Block 14 - Enter the evaluation(s) scheduled in this section.

Block 15 - Enter the information related to the procurement taken from the appropriate section of the Project Data Sheet.

Block 16 - This block is to be used with requests for the amendment of a project.

Block 17 - This block is to be signed and dated by the Authorizing Official of the originating office. The Project Data Sheet will not be reviewed if this Data Sheet is not signed and dated. Do not initial.

Block 18 - This date is to be provided by the office or bureau responsible for the processing of the document covered by this Data Sheet.

PROJECT AUTHORIZATION

Name of Country: Lesotho

Name of Project: Lesotho Agricultural Production & Institutional Support

Number of Project: 632-0221

1. Pursuant to Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Lesotho Agricultural Production and Institutional Support Project for Lesotho (the "Cooperating Country") involving planned obligations of not to exceed Twenty-Six Million, One Hundred Thousand United States Dollars ($26,100,000) in grant funds over a six year period from the date of authorization subject to the availability of funds in accordance with the AID/OYB allotment process, to help in financing foreign exchange and local currency costs for the project. The planned life of the project is six years from the date of initial obligation.

2. The project provides assistance to the Cooperating Country in its program to extend direct production and marketing assistance to small farmers, and to strengthn GOL's institutional capabilities in agriculture research and extension education to enhance small farmer production. The project consists of three major components: (1) agricultural production support; (2) applied agricultural research; and (3) agricultural education. The project will finance long and short-term technical assistance, overseas and local training, commodity procurement and other costs.

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

4.A. Source and Origin of Commodities, Nationality of Services

Commodities financed by AID under the Project shall have their source and origin in the Cooperating Country or countries included in AID Geographic Code 941, except as AID may otherwise agree in writing. Except for ocean shipping, the suppliers of commodities or services shall have the Cooperating Country or countries in AID Geographic Code 941 as their place of nationality, except as AID may otherwise agree in writing. Ocean shipping financed by AID under the Project shall, except as AID may otherwise agree in writing, be financed only on flag vessels of the United States, or the Cooperating Country.

B. Conditions Precedent

(1) Conditions Precedent to Initial Disbursement

Prior to the first disbursement under the Grant, or to the issuance of documentation pursuant to which such disbursement will be made, the Cooperating Country will, except as the Parties may otherwise agree in writing, furnish to AID in form and substance satisfactory to AID:

(a) A statement of the name of the person or persons acting as representatives of the Cooperating Country for purposes of the Grant, and of any other representatives, together with a specimen signature of each person specified in such statement.

(b) Evidence that the LAPIS Coordinating Group and a Project Management Committee have been formally established.

(c) A written commitment that all Basotho who are provided long term training under the Project will return to work directly in the Project's activities for a period of not less than two years for every year of training unless AID otherwise agrees in writing.

(2) Additional Condition Precedent to Disbursement for the Production Initiatives Component

Prior to disbursement under the Grant for the Production Initiatives Component (PIC) of the Project, or to the issuance by AID of documentation pursuant to which such disbursement shall be made, the Cooperating Country shall, except as the Parties may otherwis agree in writing, furnish to AID in form and substance satisfacto to AID evidence that a Production Coordinating Unit under the Director of Technical Services Office has been formally established and that a senior Masotho agriculturist has been appointed as Production Coordinator.

C. The Cooperating Country shall covenant, except as AID may otherwise agree in writing:

(1) That it shall develop a plan, mutually agreeable with AID, to include the use of the competitive process, as appropriate, for the identification and final selection of candidates for long-term training under the Project to assure securing the most qualified persons.

(2) That it shall provide on a timely basis all personnel required for implementation of the Project.

(3) That it shall assure that all vehicles and equipment procured for the Project will be used exclusively for the Project and that usage shall be carefully monitored and controlled under a plan to be agreed upon with AID.

(4) That it shall provide the required Government of Lesotho contribution for the local currency costs of the Project in a timely manner as indicated in the budget table in the Amplified Project Description.

(5) That it shall undertake to provide the recurrent costs for the continuation of the activities of the Project after the Project Assistance Completion Date.

(6) That the Ministry of Agriculture shall develop, by June, 1986, a plan for joint staff appointment arrangements for personnel assigned to the Research Division and the Lesotho Agricultural College.

(7) That it shall develop, by June, 1987, a plan to allow for the transfer of student course credits between the Lesotho National Teacher Training College (NTTC) and the Lesotho Agricultural College (LAC) in order to enourage (a) LAC students, who so desire, to pursue careers at primary and secondary levels as agriculture teachers; and (b) NTTC students, who so desire, to do likewise.

(8) That it shall continue to accord priority to the accomplishment of research, analyses and studies, which are essential to the development of improved long-term policies in agriculture. Specifically the Cooperating Country shall: (a) undertake a study or studies to determine the export potential of selected agriculture crops and livestock products; (b) develop analyses which determine the structure of livestock and crop markets and the determinants of livestock products and crop prices; and (c) develop a plan for providing yearly crop production forecasts to be accomplished jointly by the Bureau of Statistics and the Ministry of Agriculture.

(9) That the Ministry of Agriculture shall: (a) develop a plan for implementing a livestock culling program, as empowered by the Range Management and Grazing Control Regulations of 1980, to reduce total livestock numbers to carrying capacity by the year 2000; (b) develop a plan for implementation of the Land Act of 1979 which will provide for establishment of Selected Agricultural Areas, (2) Agricultural Leasing Regulations, and (3) Land Committees all of which are essential to the development of viable Range Management Associations (RMA); and (c) develop, by June, 1986, a plan for implementing grazing management legislation to establish livestock grazing fees.

5. Waivers and Approvals

(a) The requirement that the Cooperating Country contribute at least 25% of the project costs, set forth in Section 110(a) of the Foreign Assistance Act of 1961, as amended, is hereby waived, as permitted by Section 124(d) of that act based upon the justification set forth in Annex 10.16 of the Project Paper.

(b) Based upon the justification set forth in Annex 10.16 of the Project Paper, a procurement source/origin waiver is approved to authorize the purchase of up to $2 million of project commodities from AID Geographic Code 899, and I hereby certify that "Exclusion of procurement from Free World countries other than the cooperating country and countries included in Code 941 would seriously impede attainment of U.S. foreign policy objectives and objectives of the foreign assistance program."

(c) Based upon the justification set forth in Annex 10.16 of the Project Paper, a procurement source and origin waiver is approved from AID Geographic Code 000 (United States) to AID Geographic Code 935 (Special Free World) for fertilizer anticipated to cost approximately $83,000 over the six year life of the Project.

(d) Approval is hereby granted to invite applications from a single entity to enter into an AID Cooperative Agreement, namely: CARE for development of fruit and fuelwood nurseries; and CUNA/WOCCU for assisting agriculture credit unions.

Approving Authority

Title

Date

TABLE OF CONTENTS

Page

0.0 SUMMARY AND RECOMMENDATIONS.....i
0.1 FACE SHEET.....vii
0.2 DRAFT PROJECT AUTHORIZATION.....viii
0.3 TABLE OF CONTENTS.....xii
0.4 GLOSSARY.....xiv
1.0 LESOTHO - THE DEVELOPMENT CHALLENGE.....1
2.0 PROJECT RATIONALE AND DESCRIPTION.....5
2.1 Project Rationale.....5
2.2 Project Description.....10
2.3 Project Components.....14
2.31 Production Initiatives.....15
2.41 Agricultural Research.....25
2.51 Agricultural Education.....30
3.0 COST ESTIMATE AND FINANCIAL PLAN.....38
4.0 IMPLEMENTATION PLAN.....44
4.1 Overall Project Management.....44
4.2 Project Contractor.....46
4.3 Pre-Implementation Phase.....49
4.4 Component Implementation.....50
4.41 Production Initiatives.....50
4.51 Research.....52
4.61 Agriculture Education.....53
5.0 MONITORING PLAN.....55
6.0 SUMMARIES OF ANALYSES.....56
6.1 Technical.....56
6.11 Production Initiatives.....56
6.12 Agricultural Research.....58
6.13 Agricultural Education.....58
6.2 Financial.....59
6.3 Social.....60
6.4 Economic.....63
6.5 Administrative.....67
6.6 Environmental.....67
6.7 Employment.....68
7.0 CONDITIONS, COVENANTS AND NEGOTIATING STATUS..... 69
8.0 EVALUATION ARRANGEMENTS.....71
9.0 WAIVERS AND APPROVALS.....77

14

CHARTS, GRAPHS AND TABLES

Page

Graph 1: Summary of Lesotho Government Finances.....2
Graph 2: Production of 4 Major Crops.....3
Graph 3: Employment in Lesotho.....5

Budget Table 1: Sources and Uses of Funds.....38
Budget Table 2: AID Obligation Schedule.....40
Budget Table 3: Methods of Implementation and Financing.....41
Budget Table 4: Summary of USAID Contributions to LAPIS.....42
Budget Table 5: Summary of GOL Contributions to LAPIS.....43

The following Budget Tables which support these tables may be found in Annex 10.6:

Budget Table 6: USAID Contribution to LAPIS, Component One
Budget Table 7: USAID Contribution to LAPIS, Component Two
Budget Table 8: USAID Contribution to LAPIS, Component Three
Budget Table 9: USAID Contribution to LAPIS, Project Administration
Budget Table 10: GOL Contribution to LAPIS, Component One
Budget Table 11: GOL Contribution to LAPIS, Component Two
Budget Table 12: GOL Contribution to LAPIS, Component Three

The Procurement Plan and Vehicle Plan may be found in Annex 10.8

The following Tables are to be found in the Financial Analysis, Annex 10.72:

Table 1: Summary of Central Government Finances
Table 2: GOL Recurrent Revenues
Table 3: GOL Recurrent Expenditures
Table 4: GOL Capital Expenditures and Net Lending
Table 5: GOL Expenditures for Agriculture
Table 6: Assumptions about the MOA Recurrent Budget
Table 7: Incremental Recurrent Costs of the LAPIS Project

GLOSSARY

CURRENCY EQUIVALENT

Currency Unit	Maloti, at par with the Rand and circulating jointly with it.
M1.00	U.S. $0.83
M1.2835	U.S. $1.00

WEIGHTS AND MEASURES

1 kilogram (kg)	-	2.2 lb
1 metric ton (mt)	-	2,204.6 lb
1 litre (l)	-	2.116 US pints
1 hectare (ha)	-	2.471 acres

ACRONYMS

ABFOL	Anglo de Beers Forest Services (Lesotho)
ADB	African Development Bank
AIO	Agricultural Information Office
APP	Agricultural Planning Project
APS	Agricultural Policy Section
ARDN	Agriculture Rural Development and Nutrition
BASP	Basic Agricultural Services Project
BNFES	Basic and Non-Formal Education Systems Project
CDSS	Country Development Strategy Statement
CIDA	Canadian International Development Agency
COSC	Cambridge Overseas School Certificate
CPDO	Central Planning Development Officer
CPO	Chief Planning Officer
DAO	District Agricultural Officer
DFS	Director of Field Services
DPSA	Deputy Permanent Secretary for Administration
DTS	Director for Technical Services
EA	Extension Agent
EAR	Extension Agent/Retailer
EEC	European Economic Community
EDF	European Development Fund
FAO	Food and Agriculture Organization
FAR	Federal Acquisition Regulations
FFP	Food for Peace
FFW	Food for Work
FSRP	Farming Systems Research Project
FTC	Farmer Training Center
FY	Fiscal Year
GDP	Gross Domestic Product
GNP	Gross National Product
GOL	Government of Lesotho
HEA	Home Economics Assistant
IBRD	World Bank
IDM	Institute for Development Management
IEE	Initial Environmental Examination

16

IDA	International Development Association
IEMS	Institute for Extra Mural Studies
IFAD	International Fund for Agricultural Development
IMF	International Monetary Fund
IMRC	Instructional Material Research Center
IRR	Internal Rate of Return
JC	Junior School Certificate
LAC	Lesotho Agriculture College
LADB	Lesotho Agricultural Development Bank
LAPIS	Lesotho Agricultural Production and Institutional Support
LASA	Lesotho Agriculture Sector Analysis
LCCUL	Lesotho Cooperative Credit Union League
LCRD	Land Conservation and Range Development
LDC	Less Developed Country
LDTC	Lesotho Distance Teaching Center
LIPA	Lesotho Institute for Public Administration
LNDC	Lesotho National Development Corporation
LPMS	Livestock Produce Marketing Service
M	Maloti (Lesotho Currency)
MCRD	Ministry of Cooperatives and Rural Development
MOA	Ministry of Agriculture
MOE	Ministry of Education
NA	Nutrition Assistant
NCDC	National Curriculum Development Center
NOW	Nursery Operator/Wholesaler
NTTC	National Teacher Training College
NUL	National University of Lesotho
ODA	Overseas Development Agency
OPG	Operations Program Grant
PACD	Project Activity Completion Date
PCO	Production Coordination Unit
PCV	Peace Corps Volunteer
PDU	Production Development Officer
PIC	Production Initiatives Component
PIO/C	Project Implementation Order/Commodities
PL-480	Public Law 480
PMC	Project Management Committee
PP	Project Paper
PPF	Project and Policy Formulation Division (MOA)
PS	Permanent Secretary
PVO	Private Voluntary Organization
PY	Person Year
R	Rand (currency unit, used in RSA and Lesotho)
REDSO/ESA	Regional Economic Development Service Office/East & Southern Africa
RFP	Request for Proposal
RLDC	Relatively Less Developed Country
RSA	Republic of South Africa

SACU	South African Customs Union
SAMDP	South African Manpower Development Project
SER/COM	Services/Committee
SMS	Subject Matter Specialist
SPO	Senior Planning Officer
SSS	Surveys and Statistics Section
TL	Team Leader
TMF	Training and Management Fund
TOU	Technical Operations Unit
UNDP	United Nations Development Program
USAID/L	United States Agency for International Development (Lesotho)
USCC	United States Catholic Conference
WFP	World Food Program

1.0 LESOTHO - THE DEVELOPMENT CHALLENGE

Present Situation

The Kingdom of Lesotho, formerly a British Protectorate, is a constitutional monarchy, having gained its independence in 1966. It is a small, mountainous and landlocked country, an enclave situated wholly within the borders of the Republic of South Africa (RSA). It is the only country in the world which is entirely 5,000 feet or more above sea level. The population was estimated at 1,300,000 people in 1981. Slightly larger in size than the State of Maryland, Lesotho has limited arable land, about 13%. Notwithstanding, agriculture has remained the major economic activity, employing about 66.5% of the domestic labor force, while total wage employment accounts for only 6.4% of the labor force. There is considerable population pressure, overgrazing and soil erosion, especially in the relatively fertile lowlands which has led to declining agricultural output per capita and a growing percentage of landless persons per capita.

Over 90% of the population is rural. The nation's population is young, with 40% under the age of 15 and 5-6% over 65. Lesotho's population is likely to total 2.0 million by the year 2000, placing increasing pressures on food production, employment and the need for services.

The driving force of Lesotho's economy since independence has been the income generated by the Basotho working in the RSA, who constitute about 75% of the Basotho wage earners. This number is expected to decline over time because of the automation of the RSA mining sector and policies which give job preference to citizens of South Africa, including the "homeland areas". Remittances to Lesotho from these workers represent 41% of the GNP. This is four times the total value of Lesotho's merchandise exports.

Lesotho's future growth depends on its ability to expand domestic agriculture production and domestic employment opportunities. The country must shift away from dependence on wage remittances from migrant workers in the mines of South Africa to increasing self-reliance at home by expanding agriculture production and, eventually, overall exports.

Although Lesotho's land and agricultural resources are limited, they do offer a potential for development. The lowlands are relatively fertile and offer the possibilities of intensive farming.

(a) Current Status of the Lesotho Economy

One of the major features of the Lesotho economy is the large differences between GNP and GDP. In 1981/1982, for example, the GDP per capita was M 254 and the GNP M 428. The difference is accounted for by incomes from abroad which virtually comprise the remittances from the Basotho miners in the RSA. The implications of the difference reflect one of the principal characteristics of the economy, namely its great dependence on the Republic of South Africa. Migrant labor and migrant remittances are, respectively, the major sources of employment and purchasing power in

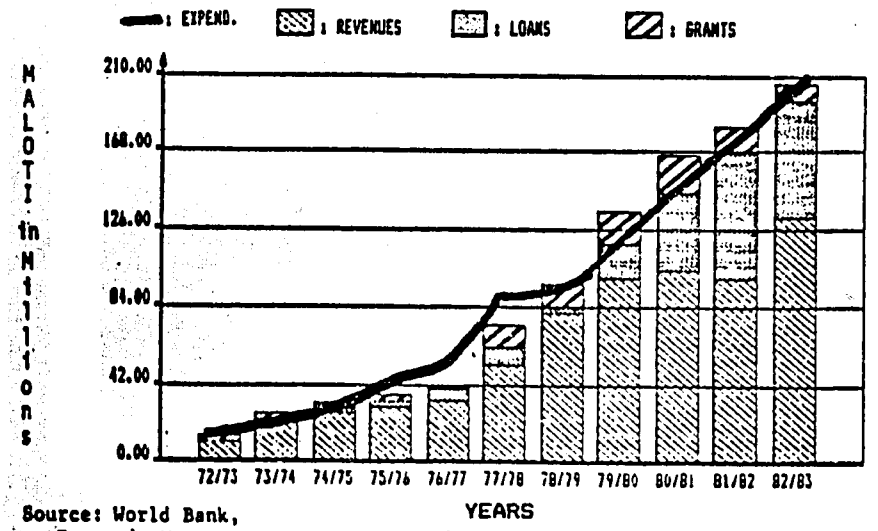
Lesotho's economy. Migrant workers earnings: (a) determine the level of investment in the domestic agriculture and livestock sector; (b) significantly influence domestic consumption and Lesotho's capacity to import; and, (c) critically affect the level of government revenues for recurrent and capital expenditures.

The next largest source of wages comes from the Agricultural Sector. Crop production provides about one-half of this income, with the remainder being derived from livestock production. About two-thirds of this income is used for household subsistence.

The distribution of income in Lesotho appears to have worsened. The majority of the population has enjoyed increasing income in recent years, mainly from the growth in remittances from migrant labor. However, the incidence of poverty has been increasing for a significant minority who do not have access to migrant earnings.

The economic picture has also been clouded by the country's financial situation which, in the last five years, has regressed due to the drought, levelling off of donor assistance and increased recurrent expenditures. Economy measures such as expenditure curtailment (including a freeze on hiring and wage increases,) improved efficiency of operations, improved tax collection procedures and new taxes including a 6% general sales tax have been instituted. Increased control over budgets and financial commitments and closer scrutiny of ongoing and proposed donor projects with respect to GOL cost implications are helping to reduce expenditure growth. But Lesotho still faces a period of budgetary deficits, balance of payments problems, rising unemployment and underemployment, stagnant growth in many sectors and reduced capital investment at a time when investments in the agriculture sector are urgently needed.

GRAPH 1: SUMMARY OF LESOTHO GOVT FINANCES



Source: World Bank, Economic Memoranda on Lesotho (Feb 22, 1979 and Oct 25, 1983)

20

Graph 1 compares the expenditures of the GOL with the revenues. It shows that since 1975, expenditures have exceeded revenues resulting in a deficit which has had to be made up by commercial borrowing.

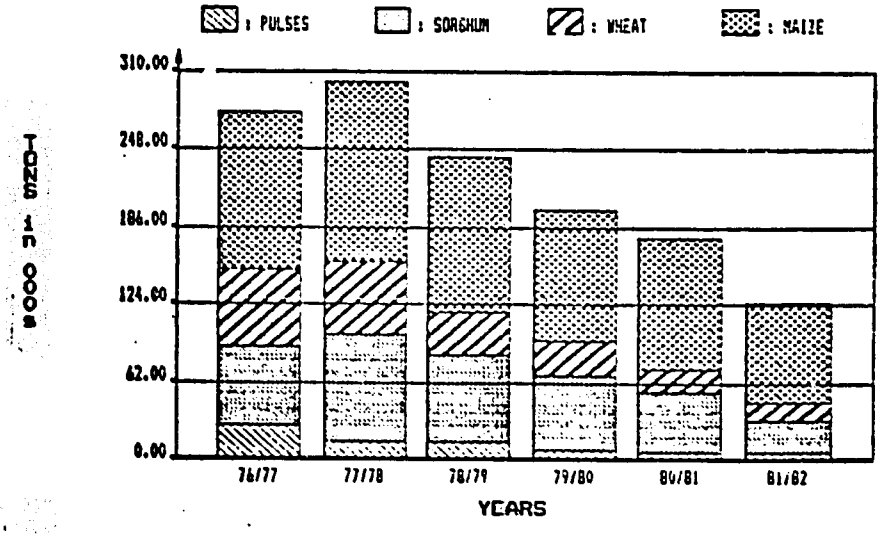
(b) Agriculture in the Lesotho Economy

Lesotho has a total of only 3 million hectares of land, most of which is mountainous. From an agro-ecological point of view, the country is usually classified into three zones: the lowlands (5-6000 feet), the foothills (6-7,500 feet) and the mountains (7,500-11,000 feet), each with different agricultural development potential. The total arable area has been estimated at 0.4 million hectares. Even these lands are subject to climatic hazards of drought and frost, increasing crop risks and affecting productivity.

Over the 1967/68 to 1974/75 period, agriculture's contribution to GDP after adjustment for inflation increased from M16.69 million to M24.54 million at 1970/71 prices, an annual compound growth rate of 5.7 percent. But after the RSA promulgated a series of increases in migrant wage rates in the mid-1970s, many additional Basotho left for employment in the RSA and Lesotho's agriculture stagnated. Between 1974/75 and 1979/80, real agricultural GDP grew at a compound rate of only 0.5 percent.

During the decade of the 70s, the area planted to crops decreased by 118,500 hectares (ha), a decline of 34 percent. As a result, total crop production fell (see Graph 2). For example, cereal production per capita has fallen from 305 kg in 1960/61 to 205 kg in 1970/71 and to 169 kg in 1980/81. The requirements have been partially met by commercial imports and food grants, but these also have decreased over the period.

GRAPH 2: PRODUCTION OF 4 MAJOR CROPS



Sources: Bureau of Statistics
Food and Nutrition Coordinating Office
Lesotho Flour Mills
Marketing Section, Ministry of Agriculture

Evidence pointing to the increasing landlessness of the rural population exists. In 1980 16.5 percent of rural households held no land. Under the primogeniture provisions of the 1979 Land Act, landlessness should increase to 38 percent, or 127,000 households by 2000. The GOL intends to offset increased landlessness by placing greater emphasis on developing agro-industry and agro-business to employ more people. Among households having land holdings, the distribution is skewed; the lowest 20 percent hold only 5.3 percent of all arable land and the highest 20 percent hold 37.5 percent of the land. This disparity is increasing over time.

Livestock's contribution to GDP increased between 1967/68 and 1974/75 from M6.6 million to M12.9 million; in real prices an increase of 10.0 percent per annum. From 1974/75 to 1979/80, however, the rate of increase fell to 2.6 percent per annum. Through the late 1970s the national herd, as measured in livestock units, increased slowly as large numbers of cattle, held for wealth in addition to income, were imported while the numbers of the more purely income oriented small ruminants declined. Concurrent with the decline in migrant labor opportunities and dry weather, at the beginning of the 1980's, cattle imports also declined to the levels prevailing prior to 1976. By 1981 exports exceeded imports for the first time since the mid-1970s. The high imports in the late 1970s were offset by declining birthrates attributed to overstocking and, consequently, poor nutrition.

The net result of shifts in herd composition, declining livestock quality, and overgrazed range, has been the deterioration of livestock-based cash incomes to farmers and a precipitous drop in exports of wool and mohair. Small stock are highly concentrated, more than one-half being held by only 4 percent of farm households. Thus cash income derived from small stock, in the absence of a strong marketing and processing industry, is unequally concentrated.

Because of the failure of the sector to meet increased food demand generated by population and income growth, food imports have increased dramatically. From 1970 to 1976 the value of food and livestock imports increased over six-fold in current Maloti and 3.5 fold in real terms. During the same period the real value of exports declined 6 percent. Consequently, the agricultural trade deficit increased from M2.5 million to M32.1 million.

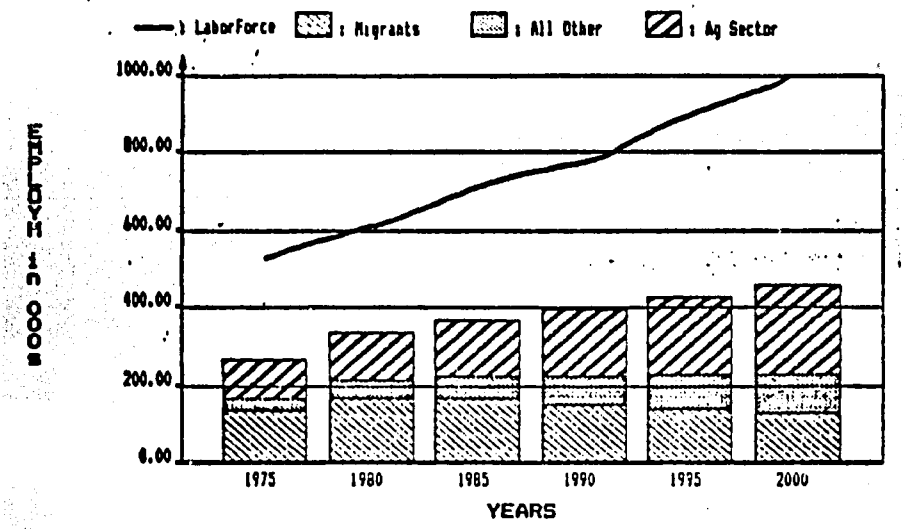
(c) Employment Problem

Next to employment in the mines of South Africa, agriculture is the second largest source of employment for Basotho workers, employing about 67% of the domestic labor force and this pattern is likely to continue.

All other employment, accounting for about 50,000 jobs at present, includes the Government which is expected to continue at current levels or decrease due to economy measures being taken by the GOL. The graph shows the trends in these three areas and projections for the next two decades. As migrant opportunities decrease and the labor force

increases, the agricultural sector must expand (as the graph shows). The chart below indicates the projected labor force increase if current trends continue. The labor force line on the graph shows how the disparity between available jobs and the growing labor force will likely continue to the year 2000.

GRAPH 3: EMPLOYMENT IN LESOTHO



Sources: Projections based on National Manpower Development Service data

YEAR	TOTAL POPULATION	LABOR FORCE	AVAILABLE JOBS
1976	1,216,800	536,000	260,400
1980	1,334,700	612,200	331.440
1990	1,694,700	781,400	395,150
2000	2,175,800	1,005,400	500,000

2.0 PROJECT RATIONALE AND DESCRIPTION

2.1 PROJECT RATIONALE

2.11 Background

The AID agriculture strategy for Lesotho results from a series of studies and analyses which began in 1974 with the Lesotho Agriculture Sector Assessment undertaken by REDSO/ESA, followed by the Lesotho Agriculture Sector Analysis Project, 1977-81, and a USAID/L internal 1982 assessment entitled "The Proposed USAID Approach for Agriculture Development". In the development of AID's agriculture strategy, the Mission also utilized reports undertaken by the MOA, Planning Division, including "Blueprint for Agriculture", and the reports of other donors such as the 1981 World Bank report on Agriculture and the World Conference on Agrarian Reform and Rural Development (WCRRD) Report, 1983.

The USAID sponsored Lesotho Agricultural Sector Analysis (LASA) Project made a major contribution in assisting the GOL to define and reconsider its long-term agricultural policies. The LASA Project assembled, in one series of reports, a summary of baseline data and other analyses which provided a clear picture of needs in the agriculture sector. In a final

volume entitled Toward the Year 2000: Strategies for Lesotho's Agriculture, the LASA Project outlined a number of policy recommendations. The issues and policy guidelines contained in this report have since been discussed, endorsed generally by the MOA, and in large part, provide direction for many of the current and proposed agricultural projects. As a result of the LASA work, there is now a very considerable body of knowledge in the Ministry of the constraints to production and a realization that improved planning and resource utilization are essential keys to improved and expanded production.

The current AID Agricultural Planning Project (APP) has continued the work initiated by the LASA Project. It has produced a policy paper, "Agricultural Development in Lesotho: Policies and Strategies," which has been approved by the GOL Cabinet. This document places particular emphasis on a participatory agricultural development strategy which is aimed at applying modern technologies and labor intensive techniques. Special attention is placed on income and employment generating production activities focused on high value fruit and vegetable crops, development of agro-industries to provide inputs and market outputs, and commercial livestock activities. In addition, the Agricultural Planning Project is preparing advice on new policy initiatives including a restructuring of the extension services and a system for establishing food reserves.

2.12 Institutional Capacity of the Ministry of Agriculture

USAID-supported technical specialists under the Agriculture Planning, Farming Systems Research and Land Conservation and Range Development Projects have provided critical and essential inputs into the MOA institution building process to lay the foundation necessary to increased production. As a result of this integrated effort in key planning and policy areas and which included training of a large number of MOA employees in key positions, the Ministry of Agriculture is now better equipped technically and professionally to deal with agricultural issues facing the nation.

During the past fifteen years the MOA has made impressive strides in building an institution equal to the challenges it faces. From an authorized staff of 125 at Independence in 1966, it has grown to over 2,000 employees organized into divisions for planning, crops, livestock, range management, conservation, research, extension and the Lesotho Agricultural College (LAC). Each of these divisions is headed by a well-trained Mosotho serving under the leadership of the Permanent Secretary (PS) and the Minister.

The field staff of the Ministry of Agriculture is organized within ten administrative districts. Each district is headed by a District Agricultural Officer (DAO), assisted by a District Extension Officer directly responsible for the supervision of Area Extension Supervisors and Extension Assistants (EAs) (the village level worker). The DAO is also the administrative head to the district based technical staff which includes Subject Matter Specialists (SMS) drawn from the Divisions of Range, Livestock, Crops, Soil Conservation, Planning and Special Projects.

2.13 Constraints to Developing the Agricultural Sector

The major constraints identified in the agricultural sector are: (a) a limited and declining land resource base; (b) need for strengthening of Agriculture Extensión and general lack of skilled manpower; (c) the low level of agricultural technology; and, (d) the critically short amount of public finance for recurrent costs. These major developmental constraints, which are closely linked and interdependent, are discussed below.

(a) Limited and declining land resource base.

Soil erosion is one of the most significant agricultural problems in Lesotho, affecting both the mountain grazing lands (75 percent of total land area) and the limited arable lands (13 percent of total land area) located primarily in the lowlands. Annual soil loss owing to sheet erosion on arable land is more than 70 MT per ha. Rangelands have been severely overgrazed because of excessive overstocking, resulting in degradation of vegetative cover and consequent widespread erosion.

(b) Need for strengthening of Agriculture Extension and general lack of skilled manpower

The MOA is currently in process of reorganizing its structure and function in order to coordinate and focus extension activities to more efficiently transfer technology to small farmers. This is to overcome the current problems of inefficient communication between research and extension programs.

In addition, essential coordinating linkages with other organizations and ministries that play a role in the agricultural sector are frequently weak or non-existent.

Compounding these institutional weaknesses are the problems of the quality of trained manpower to direct a strengthened agricultural sector and the availability of basic educational skills related to agriculture within the farmer/herder population.

(c) Low levels of agricultural technology

Inadequate and inappropriate farm technology are major contributors to stagnant production. The lack of farm tools and the absence of simple farm practices that do not require substantial capital outlay by farmers -- such as appropriate planting dates, plant population, planting depth, spacing and weeding -- are key problems resulting in yields that are among the lowest in the world.

(d) Limited public finance

Funding of local recurrent and capital costs of new development projects is extremely difficult. If growth in expenditures is not matched by increased revenues from new sources or more efficient collection from old sources, budgetary deficits may limit investment in development activities for many years.

2.14 Relation to CDSS and to USAID Projects

(a) Relation to CDSS

In accordance with the Mission's approved CDSS, approval of this Project, will concentrate assistance in two sectors: agriculture and education and human resources. The specific areas of concentration in agriculture are those deemed essential to attain improved production and increases in employment.

In order to implement this strategy, it is imperative that the MOA's institutional structure be further strengthened to mobilize, coordinate and deliver the resources necessary to increase agricultural production. The technical means to increase agricultural production must be augmented by increased investment in appropriate agricultural research. Finally, the GOL recognizes, and USAID agrees, that its agricultural education institutions must have additional support to transfer the necessary technologies and skills to MOA extension and technical staff and farmers.

The multi-component sectoral-type approach offers the framework to bring researach, extension and related technical assistance to focus on production needs. By bringing the key activities needed for increased production within one project the required interactions can be better synchronized and managed. This is both more efficient as well as easier to manage than individual projects.

(b) Relation to other projects

The Project will build upon AID's earlier investments in the agriculture sector and will continue to provide assistance in key areas: farming systems research, land conservation and range development, education for extension workers and small farmer production. These are areas where long-term commitments are essential to the formation of an institutional capacity which is responsive to the country's agricultural needs and effective in the delivery of needed goods and services.

Three of the four ongoing agriculture projects to be phased, over time, into this Project are the: Farming Systems Research (632-0065); Credit Union Development (632-0214); and Land Conservation and Range Development (632-0215) Projects. As these projects come to an orderly termination, core technical and other assistance will commence under this Project. The Agricultural Planning Project (632-0218) will remain as a closely aligned but separate activity with an extension of technical assistance to June, 1990, using internal Project savings.

The integration or phasing of the three projects into LAPIS has been carefully structured because: (a) essential institution building and foundation laying is in process under these projects; (b) institutional strengthening in these areas should proceed in the organized and orderly manner envisioned in the CDSS and the Project design; and, (c) eventual integration and coordination of ongoing projects with this Project will lead to heightened probability of success as the institutions themselves attain sufficient operational experience and internal strengthening.

In addition, a careful budgetary and operational review of all ongoing USAID/Lesotho agriculture projects has been undertaken to ensure a smooth transition and coordination with LAPIS time phased activities. Both Basotho and U.S. expatriate Project personnel have been thoroughly involved in the design of this Project and the preparation of phasing plans for ongoing activities.

Following is the phasing plan:

(1) Land Conservation and Range Development (LC&RD) Project with LAPIS Production Component: The LC&RD PACD is 4th quarter of 1987. There are three key positions included under the LAPIS Production Initiatives Component to provide continuation of range development/livestock production activities: (a) Senior Range Management Specialists; (b) Range Management Specialist; and, (c) Livestock Specialist. However, because sufficient funds exist in the current LC&RD Project, two of these TA positions, Senior Range Management Specialist and Range Management Specialist/Field Operations, will be extended to the 4th and 3rd quarters of FY 1988 respectively. At that point these positions will be picked up under LAPIS. The Livestock Specialist scheduled for arrival in 4th quarter FY 1987 under LAPIS will still remain on the phasing plan as scheduled.

(2) Current Farming Systems Research Project (FSR) with LAPIS Research Component: The FSR Project's PACD is 3rd quarter, 1986. The LAPIS Research Component team will arrive one month prior to the departure of the current FSR Project team to provide for an orderly transition of duties and responsibilities.

Under the current Project which was continued for a two year period effective July 1, 1984, emphasis is being placed on conducting field trials in horticulture and tree crops, marketing of horticultural products, farm budgeting and farm management to prepare for the intensive production activities of LAPIS.

(3) The Agriculture Planning Project (APP) will continue simultaneously with LAPIS. The APP's PACD is currently 3rd quarter, FY 1987. Since budget analysis of the APP indicates that sufficient funds exist within the current project, two key TA positions, the Policy Analyst/Team Leader and the Manpower/Management Advisor, will be extended to the 3rd quarter of FY 1990.

The current APP continues to provide a solid policy/planning framework and foundation for the implementation of the new Project in key areas: (a) policy/strategy development for raising rural agricultural income and employment; (b) project formulation and evaluation capability which can be used for the planned yearly LAPIS evaluations; (c) statistics and data acquisition on crops and livestock production and food imports/exports among other key data; (d) marketing studies on crops and livestock; and (e) manpower and management development of the MOA organizational framework.

(4) Current Lesotho Credit Union League (LCCUL) Development Project with LAPIS Production Initiative Component: The LCCUL Project, carried out by

a U. S. PVO, has a 2nd quarter FY 1986 PACD. It is planned to initiate LAPIS Credit Union League activities with the arrival of the LAPIS Credit Advisor one month prior to the departure of the current LCCUL Advisor to provide for an orderly transition.

The current LCCUL Project (a 2-year effort) follows three previous years of credit development activity. The current LCCUL two-year extension focuses efforts on developing up to 25 of the 62 rural credit unions into production credit associations (PCAs). These PCAs will offer not only credit, but the rental of basic agricultural equipment and assistance with product processing and marketing. These activities will provide substantial momentum for support of LAPIS production activities.

2.15 Other Donor Activities

There are 14 other donors to the Agriculture Sector some of whom provide resources which complement the activities of this project. A complete listing of these donors, projects and funding involved is contained in Annex 10.12.

2.2 Project Description

2.21 Overview

The LAPIS Project is designed to identify and develop agricultural activities that increase agricultural production and offer financially attractive employment opportunities to small farmers. The Project, by way of its multi-component nature provides the framework for drawing together research, training, and management skills for this purpose.

The majority of Basotho farmers have small land holdings and limited resources for development. The shortage of agricultural land combined with the increasing demand for income and employment opportunities necessitates a shift of emphasis towards agricultural enterprises and practices which increase net returns to these small farmers and are more land and labor intensive. The Project will assist this group to increase their production of higher value food crops including horticulture, tree crops, and improved livestock. While traditional crops such as maize, sorghum and wheat will continue to be supported by the GOL (USAID will continue to provide research and extension assistance on food grain crops), the priority under the Production Initiatives Component of this Project will be placed on high value horticultural crops and livestock.

The Project will assist activities which are of sufficiently high value to support employment generation in input production, input supply, processing, and marketing. This is important to the growing numbers of landless who, because of their circumstances, need to be provided opportunities for participation in production related enterprise activities.

The Project integrates four main themes in its design. The three components will strengthen management linkage, provide for technology transfer and improve policy planning on a broader sector wide basis, thereby supporting immediate and long-term GOL development goals.

A. Policy Development is an essential element of the USAID strategy in agriculture. As a result of policy development efforts initiated under the USAID ongoing projects, a positive atmosphere has been created for further policy assistance under this Project. In many cases, the policy work will be an extension of work begun earlier. Areas identified for attention include: (a) Grazing Regulations and Agriculture Land Leasing Policies: With USAID assistance, the MOA, in FY 1984, completed an intensive review of existing grazing regulations and land leasing policies. This work and the recommendations resulting therefrom will provide a basis for continued development of improved policy in grazing and land use. (b) Research: Policy work under this Project will focus on the production and marketing of high value crops, pricing of agriculture commodities, appropriate technology use and marketing of farm produce and livestock. Important to the development of improved policy in these areas will be work carried out under ongoing research and land conservation and range management projects.

A major emphasis of this Project is to develop the policy and institutional framework essential to increase investment in rural based industries and the support of the more highly productive and commercialized economic activities. Also, the emphasis is to refocus agriculture policies to more directly relate to small farmer production.

(B) Technology development and transference are emphasized in each of the three components. In the Research Component, the Project will provide improved agronomic and livestock technical packages for use by small farmers. In the Education Component, improved curricula will be developed to provide technical training for extension agents and farmers. The Production Component will coordinate and focus the technical resources of the MOA and advise small farmers of the needed technology for increasing crop and livestock production. In addition, the Production Component will act as a catalyst to ensure that communication linkages are developed between research and extension. Fifty-nine percent of the Project consists of technical assistance and training and most of this will involve technology transfer.

(C) Institutional Development. The Project will focus on changing the institutional structure and thrust of the MOA by providing trained personnel to staff key activities in research and extension in a manner appropriate to increase small farmer crops and livestock production. Also, as a result of the technical assistance and training provided by the Project, the MOA should have the capacity to integrate the activities of the various technical divisions and retrain its existing staff on a periodic basis to support agriculture production systems that deliver services to the commercial and small farm producer, and to move this production through the marketing system more efficiently.

(D) Private Enterprise. Stimulating private enterprise is planned by increasing agriculture production, processing and marketing, thereby providing greater opportunity for productive enterprises in the sector. The Project will assist in developing farmer demand for inputs and marketing services which could be provided by small private firms. The Project design also provides for establishing private farmer associations, range management associations, and village based cooperatives to increase crop and livestock production. Thus, a principal emphasis in the project is in the private sector.

The project will build effective information-handling systems, strong analytic capacities and close linkages to client or user groups. This will enhance the country's ability to marshall its own human and financial resources for development, and provide individuals with opportunities to acquire the skills, resources, and services needed to increase their productivity, income, and well-being.

2.22 Project Structure

The Project's three separate, yet mutually reinforcing components were selected as the most critical areas for agricultural assistance by USAID and the GOL: (a) Agricultural Production is designed to increase support to small farmers undertaking high value agricultural production; (b) Agricultural Research is designed to provide the technical foundation for introducing new agricultural activities and to improve ongoing production; and (c) Agricultural Education is designed to improve the capability of MOA personnel to transfer technical information to Basotho farmers.

Budgetary allocations for the Project should be viewed as a flexible tool for accomplishing the objectives of the Project. The total LOP budget level for the Project is well established, but the exact requirements for any given component may vary over the life of the Project. Therefore, flexibility in moving budget line items among components is essential to ensure the most timely and effective use of Project funds and to accommodate changing circumstances and changed requirements such as in levels of technical expertise and training.

2.23 Goals of the LAPIS Project

(A) Project Goal

In conformity with the Mission's approved CDSS, the goal of the project is to increase the incomes and employment of the rural population.

(B) Project Purpose

To provide direct production and marketing assistance to small farmers and to strengthen GOL institutional capabilities in agriculture research and extension education for contributing to small farmer production.

(C) End of Project Status

At the end of the six-year life of this project, the following accomplishments will have been achieved: (a) Basotho small-holder farmers will be producing greater amounts of field and horticultural crops, small stock, and livestock; (b) Farmers will be obtaining higher yields, growing a larger percentage of high value cash crops, and marketing greater amounts of their production; (c) Increased numbers of small holder farmers will be practicing inter-cropping and double-cropping techniques; (d) Research will have designed and tested a wider range of financially viable agricultural activities to increase the value of farmers' production; (e) Commercial institutions will be providing more support to small holder agriculture, especially with regard to providing inputs and marketing outputs; and (f) Small-holder farmers will have more income to meet their basic needs and to improve the quality of their lives.

(D) Project Outputs

The following outputs will be achieved over the life of the Project:

1. Farming households are involved in intensive horticulture, cash crops, and livestock production activities, which have measurably contributed to increased employment and income.

2. A coordinating structure is operating within the Ministry of Agriculture to facilitate support to small-holder production projects.

3. The MOA Research Division is capable of addressing the constraints to small holder agriculture, testing and developing improved packages, and assisting in the dissemination of these packages to small farmers.

4. Training institutions are capable of training Ministry of Agriculture extension and technical staff, farmers, and public and private sector personnel involved in small holder agriculture including input supply and marketing operations.

5. Basotho are trained to support and maintain the objectives of this project.

(E) Project Inputs

A summary of inputs for the Project follows.

(1) USAID Contribution ($26.1 million)

(a) Technical Assistance ($12,553,450) - Long-term technical assistance is provided for the Production Initiatives (30 PY); Agricultural Research (20 PY), and Agricultural Education (18 PY) components. Including personnel required for administration (10 PY), the Project contains 78 PY of long-term technical assistance. Sixty-nine

person months of short-term technical assistance will be provided as follows: Production Initiatives - 24 PM, Agricultural Research - 20 PM, and Agricultural Education - 25 PM.

(b) Training ($2,891,900) - LAPIS provides 6 PY of long-term training for the Production Component, 47 PY for the Agricultural Research Component and 22 PY for the Agricultural Education Component. This gives a Project total of 75 PY of long-term training.

Short-term training, for both in country and external courses, is included in the above cost figures. (Details are found in the detailed component descriptions which follow.)

(c) Commodities ($2,038,000) - Vehicles, equipment, agricultural inputs, and expendables are included in each of the Components. The distribution of funds between the Components is as follows: Production Initiatives - $981,100, Agricultural Research - $527,300, Agricultural Education - $400,600, and Project Administration ($129,000).

(d) Other Costs ($2,912,600) - Included in this category are vehicle operations costs, construction, salaries, per diem and office costs.

(e) Cooperative Agreement with CUNA/WOCCU for the Lesotho Cooperative Credit Union League activity: $1,898,700

(f) Cooperative agreement with CARE for the Cooperative Nurseries (CARE): $629,200

(g) Contingencies ($2,792,814) - Funds for contingencies and the overhead charged by the successful contracting firm are included in this cost (12% of the total funding requirements of the Project).

2. GOL Contribution ($4,500,000 in Maloti equivalents)

The GOL contribution includes personnel, overseas training support, administrative support, and limited amounts of commodities. It amounts to 14.2% of the total project costs.

2.3 Detailed Project Component Descriptions

The development of high value agricultural products is complex, both in terms of technical and logistical requirements. Research is required to provide the technical foundation for introducing new products and improving existing production. Education is needed to train extension personnel to transfer the technical information to farmers. Finally, mechanisms must be in place which enable government to support the production activities of farmers. Each element is equally important and interrelated and success will depend upon addressing them in a coordinated manner. In each of the component descriptions which follow, coordination to be achieved across components will be explained.

2.31 PRODUCTION INITIATIVES COMPONENT (PIC)

This Conponent -- the leading edge of the "Project" -- is designed to increase smallholders' participation in high-value crops and livestock agriculture through provision of extension services, technical services, credit, training, and access to input and product markets. LAPIS will demonstrate the economic viability and technical feasibility of the production activities to Basotho farmers and herders. In a more fundamental sense, this means that the project will assist the Government to accelerate the transition from traditional subsistence agriculture to commercial production.

(A) Component Rationale

The MOA currently possesses sufficient numbers of personnel necessary to transfer technology to farmers (see Administrative Analysis, Annex 10.75). There are, however, problems of (1) the quality of training of many of these personnel and (2) insufficient communication and coordination among the various MOA Divisions to provide for the focusing of available personnel on improving agricultural production. The personnel training requirements will be met through the LAPIS Education Component. The second, and more immediately serious, problem is how to overcome the organizational/structural problems of the MOA to improve coordination and communication. The PIC will provide personnel resources to the MOA to facilitate focusing of its Divisional talent on production through provision of a special Production Coordinating Unit. Nine U.S. Agricultural Specialists will staff the Unit, but some of them will be physically located in other MOA Divisions (See G. 1. below.) This Unit will serve as an interim organization for funnelling MOA resources to the Districts to assist the rural production activities until the reorganization of the MOA, currently underway with assistance from the current USAID Agriculture Planning Project, is completed. It is anticipated that the reorganized structure will include this unit as a permanent organization within the Ministry.

(B) Component Sub-Goal

To increase agricultural production, income, and employment in Lesotho through assisting the establishment of labor intensive horticultural cropping systems, and livestock production, and supporting and creating a business climate for input and product marketing firm development.

(C) Component Purpose

To support activities leading to:

1. Increased production of high-value food crops, fruits and vegetables for home consumption and sale using improved technology and production systems;

2. Strengthened agricultural market structures and firms selling inputs, servicing agricultural equipment, and marketing agricultural outputs.

3. Increased commercial production and sale of high-quality livestock and livestock products.

(D) Component Objectives

To achieve these results, the PIC has the following objectives: (1) assist the establishment of production units using alternative organizational systems for individuals and associations; (2) develop markets which will provide incentives for farmers to increase production; (3) assist individual farmers or associations of farmers to apply for credit from the LADB or the LCCUL; and (4) assist farmers to identify sources of the proper mix of inputs required for specific crops and help them to obtain these inputs in a timely manner.

Seven key activities will be undertaken in order to achieve the project purpose. (See Summary of Outputs, page 17.)

(E) Component Inputs
The following is a summary of USAID and GOL contributions to this component:

(1) AID Contribution ($10,811,024)

(a) Technical Assistance ($4,420,700)

Position	Person Yrs.	Mos.	Location
Team Leader/Production Advisor	4	7	Production Coordinating Unit
Marketing Specialist	4	0	Production Coordinating
Horticulture Specialist 1	4	0	Crops Division
Horticulture Specialist 2	2	0	Crops Division
Irrigation Engineer/Farm Planner	2	0	Production Coordinating Unit
Sr. Range Management Specialist	3	0	Range Division
Range Management Specialist	3	0	Range Division
Livestock Management Specialist	3	0	Livestock Division
Credit Management Advisor	4	2	LCCUL Headquarters

Short-term technical assistance (24 person months) is planned to meet additional needs in irrigation, livestock breeding, livestock nutrition, livestock marketing, grain marketing and other necessary skills not included on the long-term technical assistance team.

(b) Training and Production Activity Management ($529,000) - Three persons will receive two year undergraduate-level training in Range and Animal Science.

Over the life of the project 2,000 farmers, extension workers, and others involved in production initiatives will participate in special training programs. They will be partially reimbursed for their expenses of travel and subsistence from project funds.

Project funds will be used to assist seven farmers associations to hire Basotho production managers until such time as the income of the association is sufficient to pay the manager.

(c) Commodities ($981,100) - Nineteen vehicles and sixty-one motorbikes will be purchased for use by technical assistance and GOL staff implementing this Component.

Other commodities which will be purchased include office equipment, and limited numbers of agricultural inputs which will be provided to those participating in production activities training courses.

(d) Other Costs ($3,721,900)

The PVO providing assistance to the Lesotho Cooperative Credit Union League namely, CUNA/WOCCU, under a planned cooperative agreement will be supported with a grant of $1,898,700 for technical assistance costs, budget support, operations expenses, training, and the capitalization of a loan fund.

CARE, also a PVO, will be supported under a planned cooperative agreement with a grant of $629,200 to fund a program for production and sale of tree and vegetable seedlings.

Support costs are budgeted for the Production Coordinating Unit at $812,000. This includes a locally hired design officer, an administrative officer, a secretary and travel, including per diem, and vehicle operation.

Construction of wool and mohair sheds and livestock handling facilities will cost $382,000.

(e) Contingencies ($1,158,324)

(2) GOL Contribution ($2,287,680 in Maloti equivalents)

GOL will contribute staff salaries and benefits, office and classroom space, maintenance and utilities, supplies, operating funds, and housing and furnishings. They will also construct shearing sheds and livestock handling facilities.

(F) Summary of Outputs

1. MOA has the ability to mobilize and coordinate its resources for activities and programs designed to increase production.

2. Individual farmers use improved technology and small water catchments for irrigated production of fruits, vegetables, and fodder for home consumption and the local market.

3. Seven Farmer Associations produce up to 70 hectares of fruits, vegetables, and/or fodder for sale using improved technologies.

4. Over 1,500 heads of households establish home gardens which are producing fruits and vegetables for family consumption and local sale.

5. Five nurseries produce and sell fruit trees, fuelwood trees, and vegetable seedlings which are used by Basotho farmers to establish fruit tree orchards, on-farm tree plantings, and small-scale vegetable plots.

6. Twenty-five Credit Unions provide an integrated program of credit, input supplies, technical and educational assistance, equipment rental and assistance with marketing services.

7. Associations of livestock farmers produce and market larger numbers of higher quality animals and animal products while conserving the nation's land and water resources.

(G) Component Outputs

(1) Output 1: MOA has the ability to mobilize and coordinate its resources for activities and programs designed to increase production.

LAPIS assistance to the MOA will stimulate internal MOA coordination to work across divisional boundaries to mobilize and direct MOA resources to achieve production objectives. An MOA reorganizational plan now under development, prepared with the assistance of the USAID Agricultural Planning Project, will link research and District extension activities to improve agricultural production thereby enhancing Project impact.

The Production Coordinating Unit (PCU) will help coordinate key activities of the MOA divisions by:

(a) providing leadership in those cases where the services of several divisions are brought to bear on the design or implementation of a production project;

(b) providing advice in technical areas which are needed for production activities (production, marketing, engineering, etc.); and

(c) serving as a clearing house for requests for assistance from farmers, district field staff, and entrepreneurs involved in businesses related to agriculture.

The Production Coordinating Unit will require a small number of senior administrative and technical staff. The PCU will be supervised by the Director of Technical Services (a senior Mosotho), managed by the Director of Field Services (DFS), (a senior Mosotho), and assisted by the U.S. Production Advisor/Team Leader, supplied by the Project. Two U.S. technicians will be placed within the PCU, an Irrigation Engineer and a Market Development Specialist and a Mosotho Design Officer. The Unit will be supported by a locally hired Logistics Officer and a Secretary. Other U.S. PCU technicians will be physically located in the MOA Division of Crops (2 Horticulturists), Range (2 Range Specialists) and Livestock (1 Livestock Advisor). The U.S. Credit Management Advisor will be located at the Lesotho Cooperative Credit Union League headquarters in Maseru. The expertise of these various technicians will be called upon, as required, to aid in the design, implementation and support of rural agricultural production activities (see Outputs 2 through 7 below). (For more detailed information on how the PCU will operate see Technical Analysis of the PIC, Annex 10.71 (A).)

36

It is planned to recruit former U.S. Peace Corps Volunteers to work with selected DAO's where production activities initiated under this component are numerous. These ex-volunteers will hold titles of District Production Officers. Funding for these local hires will be provided from contingency funds.

The role of the PIC Team Leader/Production Advisor is very important He/she will:

(a) identify agricultural productional activities which offer the opportunity for significantly increasing agricultural production, incomes and employment;

(b) track and report to the DFS about the progress and problems associated with agricultural production activities at the district level;

(c) coordinate the district and headquarters resources which are used to support production activities; and,

(d) assist the various DAO's to assess the training needs of district staff to support commercialized agricultural production.

(2) Output 2: Individual farmers use improved technology and small water catchments or pumping systems for irrigated production of fruits, vegetables and fodder for home consumption and the local market.

The production of fruits and vegetables has a high potential for raising income and nutrition levels in Lesotho. Currently, tons of produce which could successfully be grown in Lesotho are imported annually from RSA. Local production could significantly increase the availability of fresh produce particularly in the rural areas.

Although the production units initially will be small scale, they will provide the foundation for further development of the Horticultural Industry in Lesotho. Research, training, input supplies and marketing systems established to support these horticultural enterprises can be expanded as required. More importantly, the technical and entrepreneurial skills which will be developed among the farming population are critical for accelerating Lesotho's horticultural production.

Training, technical advice, and extension services will be provided to 150 individual farmers to assist them to construct catchment basins or pumping systems and to initiate horticultural production. It is estimated that approximately 150 hectares will be brought into production.

The following activities under this output are included. Production packages for small scale horticultural sites, including rotational cropping schedules, will be designed, tested and recommended.
Small scale water catchment and irrigation systems will be designed and tested. Soil erosion control measures will be undertaken in conjunction with the small catchment dams. These will include tree planting, building and grassing waterways, filling in dongas, and planting cover crops.

Also, twenty Extension Agents from selected areas will receive intensive training in horticulture. Each of the trained EA's will identify three farmers per annum with land resources appropriate for the construction of a catchment basin or pumping systems. The EA will inform these farmers about the assistance available for developing small scale irrigation sites. Those farmers interested in initiating horticultural schemes will have the opportunity to attend specially designed horticultural training courses at selected Farmer Training Centers (FTC). (See the Education Component description.)

(3) Output 3: Seven Farmer Associations produce up to 70 hectares of fruits, vegetables and/or fodder for sale using improved technologies.

Each of seven Farmer Associations consisting of up to ten member farmers per association will be assisted to develop 10 irrigated hectares. Thus, by the end of the LAPIS Project the Associations will be producing up to 70 hectares of horticultural crops per annum.

The PCU will assist in design, organization, training, organizing input supply, and marketing activities.

Sites suitable for irrigated horticulture will be identified. These sites will be located near rivers or impoundments and in the vicinity of the lowland urban centers.

Educational programs to assist farmers interested in establishing an association for horticultural production will be provided at selected Farmer Training Centers. These programs will assist prospective members to delineate the structure and organization of the association and to fully inform them of the responsibilities, obligations, benefits and risks involved in an association producing horticultural products.

The initial activity of the Farmers Association will involve the preparation of a project proposal. Personnel of the PCU will assist the farmers to complete this task by preparing guidelines for horticulture and livestock project proposals. Production systems will be designed utilizing the recommendations of the Research Division and the Crops Division. The design of the irrigation system will, where required, draw upon the expertise of the PCU. Likewise, marketing plans will be designed prior to the development of the horticultural sites.

Funds to assist the Associations to hire Basotho management services will be provided by the PCU where necessary in the form of a subsidy available on a declining scale for a period of not more than five years. Association members will be responsible for bearing all capital and production costs. Initially 7 Peace Corps Volunteers will be recruited to serve as advisors to the associations.

These activities will establish the basis for extending horticultural production assistance to other small-holder Farmers Associations which are interested in horticultural production. Beyond immediate economic benefits to farmers, there will be other benefits as well. "Demonstration production sites" will be created through the activities of the Project.

(4) Output 4: Over 1500 heads of household establish home gardens to produce fruits and vegetables for family consumption and local sale.

Basotho have limited access to fresh fruits and vegetables in many parts of the country. Imported produce is difficult to distribute because of the perishability of the product, difficulty of transport and the underdevelopment of marketing channels in Lesotho. This output is especially aimed at introducing rural heads of households (most of whom are women) to, and educating them about, small scale horticulture, thus improving the diet of the rural population. Fifteen hundred rural heads of households will be trained in small scale horticultural techniques. They will plant on average a 10 x 10 metre plot.

The design of home garden models will be coordinated by the PCU. Results will be incorporated into a series of Sesotho leaflets and radio programs which clearly communicate the basic, step by step, techniques to grow, store, and cook fruits and vegetables. Home gardens will be promoted primarily in the mountains and foothills where water is readily available, where diets are frequently deficient, and access to markets is restricted.

The MOA's 99 village level Nutrition Agents (NAs) will be trained to provide basic horticultural extension services. LAC will design and teach courses for this purpose. Each NA, in turn, will identify five heads-of-household annually for training in home gardening for whom a five day course will be offered at selected Farmer Training Centers. At the end of the course each village participant will receive a demonstration kit which includes sufficient seeds, fertilizers, Sesotho instructional materials and other necessary inputs to start a home garden.

At the end of the Project, these rural women will be producing the bulk of their families' fruit and vegetable requirements. As a result the families' nutrition will improve and their real incomes increase. With the widespread introduction of horticultural products and production methods, the possibilities for spontaneous spread of small horticultural production will be increased.

(5) Output 5: Five nurseries produce and sell fruit trees, fuelwood trees, and vegetable seedlings which are used by Basotho farmers to establish fruit tree orchards, on-farm tree plantings, and small scale horticultural plots.

The Basotho place a high value on fruit and fuel provided by trees. Yet tree stock, especially fruit tree stock, is available only in small quantities locally and most stock must be imported from the RSA at a cost higher than many people can afford. This output will create a supply of locally produced, affordable tree seedlings in five rural areas. Complementary to this activity, vegetable seedlings will be produced for sale to the public.

Five private, farmer led and operated, integrated fruit and multipurpose tree and vegetable seedling nurseries will be developed to: (1) promote the establishment of up to 650 hectares of fruit tree orchards; (2)

promote the establishment of 800 hectares of on-farm multipurpose tree plantings; and (3) provide rural households with up to 200,000 low cost vegetable seedlings per annum.

CARE, a Private Voluntary Organization (PVO), has expressed an interest in developing the nurseries and will hire a project coordinator in order to provide for the extra management and administration required for this activity. Each nursery will be managed by a private Nursery Operator/Wholesaler. Sales, distribution and extension services to the farmers will be provided by eleven Nursery Agents/Managers to be paid by CARE. Initially each of the five nurseries will, in addition, be assisted by a volunteer to be recruited by the U.S. Peace Corps.

CARE will be invited to submit a proposal to USAID/Lesotho to carry out this activity because of its 8 years experience in working with 14 villages to, under a Cooperative Agreement, establish private cooperatives for the spinning of wool and mohair. This activity will take advantage of the management and administrative skills developed in 5 of these villages for implementation of this program.

Beyond the activities undertaken by the PVO, the Production Coordinating Unit will provide MOA resources to assist the nurseries in training their staff, designing irrigation systems, and obtaining the support of the district extension personnel. In addition, the PCU will assist in the design of a marketing plan for fruit production.

The supply of tree stock and vegetable seedlings will address a demonstrated demand by Basotho farmers interested in producing fruits and vegetables. Methods will be developed through this activity for producing and distributing seedlings that can be replicated by private individuals in other parts of the country.

(6) Output 6: Twenty-five Credit Unions provide an integrated program of credit, input supplies, technical and educational assistance, equipment rental, and will assist with input supply and marketing services.

Credit, input supplies and marketing services are critically important to increased agricultural production. At the completion of the LAPIS Project, the Lesotho Cooperative Credit Union League will have created a self-sustaining system for supporting twenty-five selected rural Credit Unions to supply credit for input supplies and the purchase of equipment, and training. Assistance will also be provided for equipment rental, and marketing services.

The Credit Management Advisor attached to the PCU will assist the LCCUL to achieve the targets established for this activity. The LCCUL will be directly involved in the following during project implementation: staff and farmer training, management supervision and auditing of the individual Credit Unions, equipment procurement, coordination of input supplies for an in-kind credit program and coordination of the marketing system. Under the Advisor's guidance, LCCUL staff will upgrade 25 Credit Unions' management systems and train Basotho staff to manage them. It is planned to utilize two Peace Corps Volunteers to assist in the staff and credit union member training planned under this Output.

The 25 selected Credit Unions will be developed to maintain individual loan records, process applications, collect loans, arrange for local training, manage an equipment rental program, and coordinate with MOA district staff for technical assistance.

CUNA/WOCCU will be invited to submit a proposal to undertake this activity under a Cooperative Agreement.

The PCU will coordinate MOA resources to contribute substantially to this program through a variety of support activities which will include developing technical packages at the Research Division to extend to farmers; preparing training materials and extending these packages to farmers through the Agriculture Information Office; providing training at the LAC and Farmer Training Centers for LCCUL and Credit Unions' staffs in technical areas; and supplying trained Extension Agents to support the farmers participating in the Credit Unions' program.

With the successful completion of this activity, a key element in the commercialization of Lesotho's agriculture will be in place: rural access to short and intermediate term agriculture credit.

(7) Output 7: Associations of livestock farmers produce and market larger numbers of higher quality animals and animal products while conserving the nation's land and water resources.

Increased production and incomes in the livestock subsector, Lesotho's dominant agricultural industry, is constrained by four interlinked problems: (1) poor animal nutrition associated with overgrazing; (2) poor and deteriorating quality of animals; (3) overstocking; and (4) an inefficient marketing system. As a direct impact of these problems soil erosion and degradation is evident throughout the country.

Through its pilot Range Management Associations (RMAs), the MOA Range Division has provided a model for improving livestock production within a framework of community controlled grazing resources combined with range and herd improvement programs and more efficient marketing channels. LAPIS will continue to provide support to the existing Association (and, possibly, to one more Association which may be supported under the current LC * RD Project) and develop four more Associations. This effort will benefit approximately 2,400 livestock producers owning a combined total of 45,000 animal units mixed among cattle, sheep, and goats.

The Range Division has been the lead institution for the establishment of the original RMAs. However, during the LAPIS Project the Livestock Division will play a larger role. The PCU Range Advisor and the PCU Livestock Advisor will facilitate coordination of activities between the two Divisions to undertake the following activities: organization of Associations, training programs for livestock farmers and extension staff, range improvement schemes, breeding improvement programs, and culling and marketing efforts. Up to 8 Peace Corps Volunteers will be recruited, as necessary, to serve as technical advisors to the RMAs.

Herd improvement activities will include: assisting the Association to purchase breeding stock, advising the Association on the development of

breeding pastures, and developing with the Association, a system for recovering costs through breeding fees.

Range improvement activities will include reseeding pasture and the production of fodder crops. The Range Division will provide members of the Association training, technical advice, and assistance to obtain credit for seed, fertilizers and plowing services.

Water development activities will primarily involve water distribution schemes designed to control grazing.

Culling activities will require significant inputs of information and extension support from the PCU. Farmers will also be assisted to improve their access to marketing facilities.

The continued activities to develop Range Management Associations will improve the productivity and value of livestock of the participating farmers, establish a sustainable production system in terms of land and water resources, and set the stage for further commercialization in the livestock industry.

(H) Component Beneficiaries

The direct beneficiaries of the production component are the estimated 15,000 farming households who will receive the technical services generated by this project. These include: (1) the 150 men and women farmers who will be assisted to build catchments so that they may produce horticultural products; (2) up to 70 farmers who will be members of associations producing vegetables and fruits; (3) the 1,500 individuals who will be assisted to plant home gardens, (4) the 3,400 households who will be planting fruit trees, fuel wood and vegetable seedlings, 2,600 households planting fuelwood trees, 50 individuals who will have full-time nursery jobs; (5) the 3,000 members of the credit unions who will receive training, input supplies, credit, equipment rental services, and marketing assistance as they initiate production of high value crops and the remaining members who will ultimately receive such services; (6) the 2,400 livestock owners who will participate in Livestock and Range Management Associations; (7) the 2,000 farmers, management staff and entrepreneurs who will receive assistance from the training and management fund; and (8) the 3 Basotho who receive long-term training. Although their number cannot be quantified in detail, the individuals who will receive assistance in initiating or strengthening private sector business services to farmers in support of production activities will also benefit from the project.

Because of the nature of Basotho society, it is estimated that well over 50% of direct beneficiaries will be women heads of households. Indirect beneficiaries include: (1) other farmers who will learn from the experience of their neighbors, and (2) Lesotho's consumers who will have a locally available array of lower priced food products.

(I) Interrelationships with Other LAPIS Components

(1) Production with Research - The production activities will utilize MOA recommendations emanating from the Research Division's programs. Moreover, the PIC will provide a testing ground for these recommendations

42

and will provide insights into the problems confronted by small farmers as they apply the Research Division's recommendations.

(2) Production with Education - PIC will utilize extension workers trained at LAC and also the curricula prepared by LAC for training farmers. In return, the training programs and curricula will assist LAC staff to test and develop the LAC curriculum and teaching activities in the context of field experience.

2.41 Agricultural Research

(A) Component Sub-Goal
The sub-goal of the Research Component is to increase production, income, and employment by increasing the capabilities of the Ministry of Agriculture to develop and extend improved agricultural technologies to farmers. This component will directly assist the Research Division to produce tested, production oriented, technical packages.

(B) Component Purpose
The purpose of this component is to assist the Research Division to strengthen its Farming Systems Research program to produce and deliver a continuing flow of improved technologies for increasing the productivity of Lesotho's farmers.

The LAPIS Research Component builds upon the foundation established by the ongoing Farming Systems Research Project which was started in 1978. The current FSR Project assisted the MOA to develop long-term agriculture research policies for Lesotho which are now serving as the basis for project implementation activities. This component will place continued emphasis on directing research towards those technologies which are production-oriented, economically, socially, and technically feasible, and relevant to the circumstances of the small farmer. Furthermore, the Research Component will expand and refine the on-going FSR sub-station and on-farm field activities to assure adaptability and replicability of the technology. There will be additional support for the institutional strengthening of the still developing Research Division.

At the end of the LAPIS Project the Research Component will have achieved the following results: (a) agricultural research is focused on collaborating with farmers and extension agents in identifying and resolving farmers' problems in a manner consistent with the farmers' goals and socio-economic resource and management constraints; (b) the Research Division is conducting investigations on a wide array of new crops and cropping/livestock systems; (c) the Research Division is adequately staffed, equipped, financed and self-sustaining; (d) the MOA training, information and extension services are effectively disseminating FSR research results; and (e) farmers are realizing increased agricultural production, incomes, and employment.

(C) Component Inputs
The following is a summary of AID and GOL contributions to this component of the LAPIS Project:

(1) AID Contribution (Total $6,797,392)

(a) Technical Assistance ($3,519,800)

Position	Person Years
Team Leader/FSR Specialist	4
Agronomist	3
Horticulture Specialist	4
Pest Management/Entomology-Plant Pathology	2
Animal Science Specialist	4
Soils Specialist	3

Scopes of work for each long-term position are provided in Annex 10.11.

Twenty person months of short term technical assistance are anticipated to meet the needs in the areas of biochemistry, horticulture, animal science, plant protection, agronomy, range management, library science and agricultural engineering.

(b) Training ($1,384,500) - Twenty persons will be provided with Doctorate, Masters or Bachelors level training for a total of 47 person years of long-term training. (See Annex 10.10).

Short-term training abroad will be provided to 28 persons. Short-term, in-country training will be programmed as necessary and will require $71,800.

(c) Commodities ($527,300). A total of 19 vehicles, 7 motorcycles and 2 tractors will be purchased for this component.

Other items to be purchased include farm equipment and supplies, books, laboratory equipment, and office equipment.

(d) Other Costs ($637,500) Support is provided for vehicle operations and maintenance, computer services, limited local hire salaries and per diem, secretarial support, and crop loss guarantees (estimated $34,000 LOP) for farmers cooperating in on farm research trials.

(e) Contingencies ($728,292)

(2) GOL Contribution ($780,740 in Maloti equivalents)

The GOL will provide office space, maintenance and utilities, supplies, staff salaries and benefits to the supporting personnel, operating funds, land and physical plant, housing and furnishings.

(D) Summary of Outputs

1. Research priorities are based upon, and responding to, systematic assessment of farmers' constraints and goals.

2. Use of on-station and on-farm trials to test the validity and applicability of research results is increased.

114

3. Additional production technical/management packages recommended by research are tested and transferred to farmers.

4. Research institutionalization, FSR capacity, skills and supporting services are improved.

5. Linkages among researchers, extension workers, farmers, production input services, agriculture policy/planning personnel and other supporting institutions are improved.

6. Soils laboratory is equipped, staffed and effectively performing its role.

7. Feedback from Research Division is linked to curriculum planning and training systems.

(E) Component Activities

The Team Leader (a Farm Management Economist), assisted by other members of the long-term technical assistance team, will be responsible for advising the Research Division in developing plans, procedures, and programs that will achieve the purposes of this component. The team will operate from the Research Division headquarters in Maseru but will spend a large percentage of time at the prototype sub-stations and on farmers' fields in Siloe (lowlands), Nyakosoba (foothills), and Molumong (mountains) and subsequently expand beyond the pilot areas in these zones. Up to 10 Peace Corps Volunteers will be recruited to assist in the on-farm trials in the 3 prototype substations.

(1) Output 1: Research priorities are based upon systematic assessment of farmers' constraints and goals.

A clear understanding of the constraints of small farmers will ensure that research remains applicable, practical, and a cost effective use of scarce resources.

The Team Leader/FSR Specialist, in collaboration with the Director of Research, will be responsible for developing and maintaining research priorities applicable to the situation of small farmers. Data and findings of all pertinent internal and external research will be collected, reviewed, and analyzed throughout the implementation of this component. Data for implementation and monitoring gathered during the first FSR Project will be updated continually, using short-term TA if required. A comprehensive study will be undertaken during the last year of the LAPIS project to provide time/change comparisons.

Field visits and analyses of on-farm trials will be used to keep the priorities of research targeted to the conditions of farmers. Researchers will be expected to spend 35% of their working time in the field for this purpose.

Meetings and seminars will be used to enlist wider participation from the Research and Extension Divisions in the design, testing, analysis and review of on-farm trials.

(2) Output 2: Use of on-farm trials to test the validity and applicability of research results is increased.

45

The Research Division will make recommendations which are feasible under on-farm conditions. There must be adequate testing and application by small farmers using their own resources before recommendations are passed to the Extension service for general use.

Based upon data which identifies constraints of small farmers, researchers, in conjunction with the Team Leader/FSR Specialist, will design and conduct a minimum of 150 annual on-farm trials and 60 on-station replications.

Initial research to identify varieties for general adaptability and production performance, and to develop production and management practices and mixed farming techniques will be conducted on the Central Research Station in Maseru. Data collected from the Central Research Station and sub-stations will be incorporated into prototype technical packages for further testing at the sub-stations to validate their applicability, profitability, and minimize farmer risks. The packages will then be tested on the farms under farmer management.

Short-term, in-country, in-service and on-the-job training will be provided in FSR methods and implementation to other members of the Research Division. The training will demonstrate and assess on-farm research techniques and trials and explain their applicability.

(3) Output 3: Additional production technical/management packages are tested and recommended by research, and transferred to the farmers.

Using results from on-station and on-farm trials, researchers will develop and publish 26 or more technical packages for crops and livestock which will increase yields by 50% and/or increase farm incomes by 75%, over the current small farmer practices, in areas where the Project is operating and technical packages have been disseminated.

The proven technical packages will be passed to Extension and the Agricultural Information Office (AIO) to be disseminated to farmers.

(4) Output 4: Research institutionalization, FSR Capacity, skills and supporting services are improved.

Twenty persons will be provided with long-term graduate and undergraduate degree training thereby filling essential positions in the Research Division. Short term training abroad will be available to 28 persons while continuous in-country, short term training will be provided to further strengthen research operation. In addition, FSR researchers will spend about 20% of their time assisting LAC training pre-service and in-service agriculture and extension staff. Together, these trainees will provide the human capital upon which Lesotho's agriculture research and supporting services programs will be built.

The Team Leader, in cooperation with the Director of Research, will also arrange for the purchase of supplies and equipment for the Research Library located at Research Division headquarters. The library will be provided with an estimated 500 books and a continued supply of periodicals and other materials. Similar joint efforts will be expended

collecting internal and external research findings, and updating and expanding the Research Division's knowledge/data base.

(5) Output 5: Linkages among researchers, extension workers, farmers, production inputs services, agriculture policy/planning personnel and other supporting institutions are improved.

Clear communication channels are an essential ingredient for successful research. Research findings must be explained to farmers before they can be usefully applied. Likewise, researchers must have the opportunity to listen to the feed-back from farmers to adjust and improve their efforts.

The Team Leader will coordinate team activities and, with the FSR Section Chief and Director of Research, extend researchers' participation and contacts (especially with Extension Division/Agricultural Information and the LAC), and strengthen linkages and improve data feed back from farmers. Participation of farmers, policy makers/ planners and supporting institutions and service organizations in the design, monitoring, data collection, analysis and review phases of on-station and on-farm research and technical package development and dissemination will further strengthen a research network.

(6) Output 6: Soils laboratory is equipped and staffed to process soil tests for major and minor elements.

The Soils/Soil Fertility Specialist will arrange for the equipping of the Research Division's Soil Laboratory (the only one in the country) to conduct soil fertility/deficiency tests and determine correlations between soil analyses and production response. This will enable research to address the country's serious fertility problems, provide a national service laboratory for farmers, and have direct impact on agricultural production.

(7) Output 7: Feedback from Research Division is linked to the curriculum planning and training system.

The Research and Education Component team leaders will maintain close and continuing liason to incorporate the results of research into the LAC curriculum. This will ensure that the training programs for regular LAC students and in-service extension personnel are continuously upgraded to reflect recent results ensuing from the research program.

(F) Component Implementation Responsibilities

Activities detailed above will be implemented by the Research Division, MOA. The data collection and analysis for research will be conducted by the Research Division's rural sociologists, and the Farm Management Section, as well as the Statistics and Surveys Section of the MOA Planning Division. The Team Leader/FSR Specialist will coordinate research activities to focus on identified constraints and with extension and farmers to prove and disseminate findings. The GOL will have responsibility for: hiring staff; nominating staff for training; assuring that GOL agreed upon operating expenses and other support are provided on a timely basis; and assuring that necessary local organizational, operational and related arrangements are made.

47

(G) Component Beneficiaries

Fifty percent of the farm households where research is conducted are expected to increase their yields by 50 percent and/or their farm incomes by 75 percent by the end of project.

Beneficiaries include: (1) 20 researchers and extension/production personnel receiving degree and short-term training abroad; (2) 235 production/extension personnel, 28 researchers and 16 supporting staff, as well as village chiefs and village agricultural committees who will receive in-service and on-the-job training; (3) the LAC staff and program will benefit from the joint appointment program; (4) and the MOA and non-governmental institutions will benefit through improved linkages, information feed back systems and a strengthened research capacity.

(H) Interrelationships with other LAPIS Components

(1) Research with Education - 20 percent of research staff time will be devoted to LAC to ensure that research findings are incorporated in the training programs, to teaching appropriate sections of classes, leading seminars, and conducting laboratory and field demonstrations for the LAC extension/production in-service programs and LAC students. LAC staff will allot 20 percent of their time to participation in research activities to gain a better understanding of the research process, to utilize the findings in instructional courses, and transfer the knowledge gained to pre-service students and in-service field staff. LAC students will also participate with research staff through field internship programs.

(2) Research with Production - Research will provide essential support to Production by providing technical assistance in farm budgeting, plant protection, crop and livestock recommended practices/packages, and marketing recommendations, among other services. In turn, Production will feed back to Research data emanating from the production projects which will provide current and practical data and information for research personnel.

2.51 Agricultural Education

(A) Component Sub-Goal

The sub-goal of the Agricultural Education Component is to increase agricultural production, incomes and employment in Lesotho by strengthening the capacity of the Ministry of Agriculture to provide improved agricultural education and to disseminate practical and applied agricultural information. Specifically, assistance will be given to improve the quality and relevance of academic agricultural education, in-service and pre-service training for MOA extension personnel, farmer training, and agricultural information services.

(B) Component Purpose

(1) Reinforce Lesotho's major agricultural training institution, the Lesotho Agricultural College (LAC), to enable it to provide high quality, practical and production-oriented formal education as well as short-term training for MOA field-based extension and technical staff, farmers, and other public and private sector personnel; and

(2) Strengthen the MOA's capacity to disseminate practical and applied agricultural information to its field staff and the farmers through the Agricultural Information Office.

The component purpose will have been achieved when (a) LAC diploma and certificate holders have a practical and applied education and can effectively apply and demonstrate agricultural and production skills; (b) retrained MOA extension personnel are capable of providing relevant and production-oriented training to farmers and other people directly engaged in agricultural and related production activities; and (c) farmers and the MOA field staff are receiving improved and more relevant production-oriented agricultural information.

(C) Component Inputs

The following is a summary of USAID and GOL contributions to this component of the LAPIS project:

(1) AID Contribution (Total $5,046,496)

(a) Technical Assistance ($3,059,700)

Position	Person Years
Curriculum Development Advisor/Team Leader	3
Operations/Management Advisor	2
Extension Education Advisor	4
Irrigation/Agriculture Advisor (Engineer)	4
Agronomist/Soils Specialist	3
Horticulture Specialist	2

Scopes of work for each long-term position are provided in Annex 10.11.

Twenty-five person months of short-term technical assistance are anticipated to meet project needs in the areas of training/instructional materials development, agricultural communications, staff development, library/laboratory facilities development and organization, farm management and for specialized technical training for students, as may be required.

(b) Training ($859,100) Ten LAC and Agricultural Information (AIO) personnel will be provided training at the Bachelor's or Master's degree levels, for a total of 22 person years. A list of specific training areas is provided in Annex 10.10. Of the total training budget of this component, $339,000 will be allocated to cover the costs of short-term in-country training, which will be conducted on a recurring basis over the life of project as required. These courses will be conducted for MOA field staff, master farmers, and the participants of the Production Initiatives Component.

(c) Commodities ($400,600) - Vehicles to be procured under this project component include one mini-bus for LAC at Leribe and two four-wheel drive vehicles for the Maseru campus.

Provisions are also made for the procurement of training equipment, farm equipment and supplies for LAC and two Farmer Training Centers, printing

147

and radio production equipment for the Agricultural Information Office, books and publications for the libraries of LAC at Maseru and Leribe, and a limited amount of office furnishings and reproduction equipment.

(d) Other Costs including Construction ($186,400)

Construction ($75,000) - Limited construction activities under this Project component will consist of the renovation of two FTC facilities and the refurbishing of existing classrooms at LAC to provide additional required office space.

Project funds, on a loan basis, will also be provided to students for purchase of inputs for conduct of crop or livestock production/credit programs on the LAC farms.

(e) Contingencies ($540,696)

2. GOL Contribution ($1,422,336 in Maloti equivalents)

The GOL will provide administrative support and will cover Basotho personnel salaries, overseas training allowances and local training transportation costs, and the maintenance and operation of vehicles.

(D) Summary of Component Outputs

1. Teaching, curriculum, and administration at the LAC are improved.

2. Training programs for MOA field staff, farmers and other public/private sector personnel engaged in agricultural production are improved.

3. Agricultural Information Officer capacity to develop, publish, distribute and broadcast agricultural information is increased.

4. Facilities at LAC, 2 Farmer Training Centers and the Agricultural Information Office are improved.

5. Formal communication linkages are enhanced among the MOA agricultural/information institutions and the MOA technical divisions.

(E) Component Activities

The long and short-term advisors of this project component will participate in the staff development programs of the Lesotho Agricultural College and the Agricultural Information Office, plan for and make recommendations for the revision of the LAC curriculum; improve LAC's administrative, personnel and financial operating procedures; develop, as well as conduct, practical-oriented courses for field-based extension workers; help improve the curricula and training programs for farmers at the FTCs; and collaborate in conducting training courses for the participants of the Production Initiatives Component of this Project.

(1) Output 1: Teaching, curriculum and administration at LAC are improved.

51

Seven Basotho staff will undergo long-term training at the Masters or Bachelor's degree levels. (See Annex 10.10). An in-country staff development program will include on-the-job training, annual seminars, and bi-annual refresher courses. Staff training will be provided in agronomy, extension methods, agricultural engineering, farm management, pedagogical techniques and instructional materials development. Eleven instructional manuals, covering all courses taught at LAC, will be developed and tested during the life of the project.

The Curriculum Development Advisor will make recommendations for the revision of the LAC curriculum to the LAC Curriculum Development Committee. The current membership of the Committee will be expanded to include representatives from the MOA's Research, Extension and Planning Divisions. Advisory services for the Committee will be sought from the National Teachers Training College (NTTC), Institute of Extra-Mural Studies (IEMS), the Lesotho National Development Corporation and other local institutions that provide training in agriculture-related areas and/or where LAC graduates could potentially find employment. Revisions in the curriculum will: (1) extend the diploma program from the current 2 years to 3 years; (2) increase the practical field work component of both the diploma and the certificate programs; (3) provide for demonstrating the application of extension methods to production and management skills, rather than teaching extension as a purely academic exercise; and (4) require an internship at the Research or Extension Division, or in other public and private sector institutions involved in agriculture, for obtaining a LAC diploma. A curriculum and training program will be developed jointly with the NTTC to allow transfer of credits between LAC and NTTC for diploma students interested in teaching in primary or secondary schools.

The Operations/Management Specialist, with assistance from local, knowledgeable credit specialists, will recommend management and financial operating procedures to the LAC administration to permit establishment of a production/credit program for the LAC students. A revolving fund will be established with the LCCUL to provide interest-bearing loans to enable LAC students to undertake crop/livestock production operations at the LAC campus. This program will enhance the practical production skills of LAC students and familiarize them with loan application/repayment procedures and responsibilities. Upon sale of the produce or livestock products from the students' production program, the student will repay the principal amount of the loan plus a concessional interest fee. In the event of production failure, the GOL/USAID will develop criteria for loan forgiveness.

The Operations/Management Specialist will work with the LAC Principal to improve the college's current operating procedures. A recommendation to reorganize the present administrative structure to create a Vice Principal post at Leribe and to designate a Director of Studies to serve LAC's campuses at Maseru and Leribe is now being considered. Management, administrative and personnel operating procedures and policies will be developed within a year of the arrival of the Operations/Management Specialist.

(2) Output 2: Training programs for MOA field staff, farmers and other public/private sector personnel engaged in agricultural production are improved.

The Extension Education Specialist will assist LAC to develop more practical-oriented training courses for field-based extension personnel, farmers and other public/private sector personnel involved in agriculture. Assistance from other members of the LAPIS technical assistance team, as well as from personnel in the MOA's other technical divisions will also be utilized to develop and conduct the courses. These courses will cover such areas as application of FSR production packages; plant protection; livestock nutrition; disease and parasite control; crop/livestock marketing; farm implement utilization and repairs; and farm management.

A four-week intensive remedial training course will be conducted at LAC once a year in July-September. Each course will be attended by up to 65 current field-based extension workers. During the life-of-project, each of the 135 Extension Assistants and 99 Nutrition Assistants will have participated in at least one intensive training course.

One-month training courses will be conducted by LAC every year in April at LAC for 93 Subject Matter Specialists and 32 Livestock Assistants.

Two-week management training courses will be conducted every second year at LAC for extension supervisors. Ten District Agricultural Officers, 8 District Extension Officers, 29 Area Extension Officers and 9 Senior Home Economics Assistants will receive management training; agricultural technical updates will also be provided. Local management trainers associated with such institutions as the Institute of Development Management (IDM) and the Lesotho Institute for Public Administration (LIPA) will conduct the management training courses.

Extension workers retrained at LAC will continue to train master farmers at FTCs or in village sites. As part of this effort, pilot programs will be initiated at the two upgraded FTCs in Matela and Mohales Hoek early in this Project to test the effectiveness of training organized by LAC. LAC will develop the curriculum and supervise the training programs. The re-trained extension workers and MOA technical resource persons will organize and conduct the training courses. This effort, to be conducted over a two-week period annually, will reach at least 500 master farmers over the life-of-project.

LAC will periodically provide District Agricultural Officers with training materials, and regular agricultural technical updates. These materials will, in turn, be presented to the extension workers during scheduled monthly meetings at the district headquarters.

The College will develop curricula and assist in organizing and conducting training courses as required for the participants of the Production Initiatives Component. Training will be offered to: (1) managers and members of LCCUL and participating credit unions; (2) managers and members of participating Farmers' Horticultural and Livestock Associations; (3) individual farmers; and (4) participating

input suppliers. The courses will deal primarily with horticulture, livestock, farm management and appropriate methods of input application.

(3) Output 3: The capacity of the Agricultural Information Office to develop, publish, distribute and broadcast agricultural information is increased.

The AIO director will be assisted to identify and nominate, from the AIO staff, one person for Master's degree training in Agricultural Communications and two persons for Bachelor's degree training in Radio Broadcasting and Agricultural Newswriting. On-the-job training, in areas such as media production and graphic arts, will be provided utilizing short-term technical advisors. The Team Leader/Curriculum Development Advisor will also assist the AIO director in arranging for in-service training of AIO personnel by staff at the Lesotho Distance Teaching Center (LDTC) and the Instructional Materials Resource Center (IMRC), when feasible.

Improved capacity will enable the AIO: (a) to upgrade the quality of its agricultural information leaflets, bulletins and agricultural radio broadcasts; and (b) to provide audio-visual training materials appropriate for implementing the training courses identified in Output 2.

(4) Output 4: Facilities at LAC, 2 Farmer Training Centers and the Agricultural Information Office are improved.

Equipment, supplies, books and publications will be procured to upgrade the laboratory, farm, library and office facilities at LAC. The replica of a typical Basotho village located on the LAC campus, will be furnished with traditional farm production and food processing facilities to serve as a demonstration site for farmers participating in training courses.

Two FTCs, located in Mohales Hoek and Matela, will be renovated and furnished with audio-visual equipment and supplies, instructional materials and field demonstration equipment.

The AIO will be provided with office, radio production, graphics and photo laboratory equipment and supplies.

(5) Output 5: Formal communication linkages are enhanced among the MOA agricultural training/information and the MOA technical divisions.

The Operations/Management Specialist will assist the LAC to: (a) conduct regular assessments of training needs in the field in collaboration with the existing MOA Training Committee; (b) develop the course content and materials for the training programs outlined in Output 2 above; (c) ensure that qualified resource persons are identified to conduct these training courses; (d) develop annual training schedules; and (5) ensure that the training schedules are followed.

Linkages will be developed between the LAC and all the divisions of the MOA. These divisions will be called upon to provide the technical inputs in the development of the course content for the training programs identified in Output 2, and provide qualified persons to help conduct the courses, as necessary.

53

The arrangement for joint utilization of personnel between LAC and the Research Division will be initiated by the second year of project implementation. The Team Leaders of Research and LAC will assist the LAC Principal and Director of Research to develop the terms of reference for the joint appointment arrangement. At least one LAC staff person will be involved in each major research activity of the Research Division, while the participating Research Division personnel will lecture in LAC classes and/or serve as resource person for LAC's staff development and short-term training programs and seminars for field-based extension personnel. In addition, linkages between LAC and the Research Division will include joint facilities utilization and the cooperation of the Research Division in developing an LAC student internship program.

(F) Component Implementation Responsibilities

The Lesotho Agricultural College will have overall responsibility for ensuring that the activities of this project component are implemented. The Extension Division will be responsible for upgrading the facilities in two Farmer Training Centers and implementing improved training programs at these Centers. The Extension Division will also be responsible for developing the facilities and improving the services of the AIO. The LAC and Research and Extension Divisions are charged with the coordination of the planning, scheduling, curriculum development and implementation of MOA short-term training courses for field staff, farmers, and other public and private sector individuals involved in agriculture.

The GOL will be responsible for ensuring that the above institutions are properly staffed, that divisions within the MOA cooperate with LAC to meet the objectives of this project component and that qualified candidates for training are nominated in a timely manner. In addition, the Government will be responsible for ensuring that adequate GOL funds are provided without delay to meet operating expenses, as agreed between USAID and GOL.

(G) Component Beneficiaries

The direct beneficiaries of the Agricultural Education component include: (1) the LAC staff (32 teaching staff and 4 administrative staff); (2) approximately 600 diploma and certificate students over the life of the Project; (3) 464 MOA field staff; (4) 28 AIO personnel; (5) 500 master farmers; (6) an estimated 53,000 farming households who will receive improved technical guidance from re-trained extension staff and master farmers; and (7) the ten people provided long-term training.

The indirect beneficiaries of this project component are: (a) an estimated 45,000 rural households and field-based extension staff who will receive improved and increased agricultural leaflets, bulletins and agricultural radio programs through the upgrading of AIO's capacity; (b) the Ministry of Education, which will have access to LAC graduates as a pool of potential primary and secondary school teachers qualified to teach agriculture subjects; (c) primary and secondary school pupils who will receive improved agricultural training from LAC-trained teachers; and (d) private and public sector institutions involved in agriculture who will have access to better trained LAC graduates for employment.

(H) Interrelationships with other LAPIS components

(1) Education with Production - This component will develop training curricula and coordinate training programs for the participants of the PIC. In addition, the PIC will provide a potential source of employment for LAC graduates who might desire to privately engage in horticulture or agribusiness project activities.

(2) Education with Research - The members of the FSR long-term advisory team and other Basotho professional FSR staff will provide 20 % of their time lecturing at LAC classes and/or serving as resource persons in LAC's staff development and short-term training programs. In addition, LAC diploma students will be assigned to specific research activities of the FSR component as part of their internship programs. Research staff professionals will contribute very importantly to revising LAC's curriculum and in developing the course content of the short-term training courses.

Under the planned joint appointment arrangement between LAC and the Research Division, LAC staff members will allot 20% of their time to collaborate with Research Division staff in specific FSR activities of the Research Division. The Agricultural Engineer/Irrigation advisor of this component will provide 10% of work time to assist the FSR project with irrigation systems design and management. The short-term training courses to be conducted under this project component will facilitate the transfer of technical findings, recommendations and cropping packages from the FSR project. In addition, through these courses, the FSR project will have access to better trained Extension Agents and farmers. Finally, the FSR team will have access, if needed, to LAC's upgraded demonstration farms which will be equipped under this Component.

BUDGET TABLE #1 - SOURCES AND USES OF FUNDS (in US Dollars)

	USAID			GOL	CUNA (3)	CARE (4)
	FX	LC	TOTAL			
TECHNICAL ASSISTANCE	12,553,450	0	12,553,450	0	0	21,600
TRAINING	2,065,900	826,000	2,891,900	524,480	44,000	0
COMMODITIES	89,700	1,948,300	2,038,000	25,600	15,000	26,600
EVALUATION	258,300	91,300	349,600	0	0	0
OTHER COSTS (1)	13,000	2,899,600	2,912,600	1,695,500	10,000	280,000
ADMIN SUPPORT (2)	0	0	0	2,043,576	96,000	0
CONTINGENCY	1,887,642	905,172	2,792,814	0	0	60,200
COOPERATIVE AGREEMENT WITH PVOs:						
CUNA/WOCCU (credit/ unions)	678,000	1,220,700	1,898,700	94,500	284,000	0
CARE (Nurseries)	0	629,200	629,200	107,100	0	172,500
TOTALS	17,545,992	8,520,272	26,066,264	4,490,756	449,000	560,900
		(Rounded Totals:	$26,100,000	$4,500,000)		

GRAND TOTAL: 31,566,920

(Rounded: $31,600,000)

(1) In the USAID Contribution, Other Costs include Construction, Vehicular Operation, Revolving Funds, Office Operations, Budget Support.

(2) In the GOL Contribution, Administrative Support includes Office Space, Facilities, Vehicular Operations, Miscellaneous.

(3) The figures shown are the LCCUL contribution to the CUNA/WOCCU activities. The CUNA/WOCCU contribution to its Cooperative Agreement will be calculated and submitted with their final proposal and thus is not included at this point.

(4) The figures shown are the planned CARE contribution to its Cooperative Agreement with AID. In addition there is planned to be a Village Cooperative contribution which will be reflected when the CARE proposal is finalized.

3.0 COST ESTIMATES AND FINANCIAL PLAN

3.1 Project Costs

(A) Overall Project Costs

The Project cost is $31,000,000 over the six year project period. This sum is composed of the following contributions: USG - $26,100,000; GOL - $4,500,000, CARE - $561,000, and LCCUL - $449,000.

The distribution of costs over the life of the Project have been planned with a low level of funding for FY 1985 because of the anticipated 4th quarter start and thereafter to be evenly distributed over the remaining years. Total project costs by funding categories are found in Budget Table 1, on the previous page.

(B) AID Contribution

The AID grant contribution to the Project will provide $26,100,000 or 83% of the total costs. Budget Table 4 on page 41 provides a summary of AID's contribution as follows: Agricultural Production ($9.6 million), Agricultural Research ($6.1 million), Agricultural Education ($4.5 million), Project Administration ($3.1 million) and Contingencies ($2.8 million).

Budget details for each component are contained in Budget Tables 6 - 9, to be found in Annex 10.6.

AID percentage contributions by funding categories found in Budget Table 1 may be summarized as follows:

Funding Categories	Percentages
Technical Assistance	48%
Training	11%
Commodities	8%
Evaluation	1%
Ag Production Credit	8%
Cooperative Nurseries	2%
Other Costs	11%
Contingencies	11%

(C) GOL Contribution

The Government of Lesotho's contribution to the Project is $4,500,000 which represents 14.2% of total costs. A summary of the GOL contribution is contained in Budget Table 5 on page 42. The GOL contributions to the three components (in Maloti equivalents) are: Agricultural Production ($2.3 million), Agricultural Research ($781 thousand), and Agricultural Education ($1.4 million). Budget details of the GOL contribution for each component are contained in Budget Tables 10 - 12 to be found in Annex 10.6.

The GOL contribution includes funds for vehicle operation and maintenance on an increasing basis as the project nears completion, the salaries of MOA staff who will devote a major part of their time to PIC activities,

The table below outlines the preferred methods of implementation and financing for the different Project activities. These are discussed in detail in the Implementation Plan in the next section.

Budget Table 3: Methods of Implementation and Financing

Category	Method of Implementation	Method of Financing	Amount (000s)
Technical Assistance	Direct AID Contract	Direct Reimbursement	$12,554
Training	Direct AID Contract	Direct Reimbursement	$ 2,892
Commodities	Direct AID Contract	Direct Reimbursement or Direct Payment	$ 2,038
CUNA/WOCCU	Cooperative Agreement	Direct Reimbursement or FRLC	$ 1,899
CARE	Cooperative Agreement	Direct Reimbursement or FRLC	$ 629
Construction	FAR's	Fixed Amount Reimbursement	$ 457
Evaluation	Direct AID Contract	Direct Payment	$ 350

The USAID Agricultural Development Officer will be the assigned Project Manager and will be responsible for review and administrative approval or disapproval of all contractor requests for reimbursements.

Because the preferred methods of implementation are Direct AID Contracts and Cooperative Agreements, no Project funds have been budgeted for independent audits. In the event independent audits are required, sufficient funds are available in the contingency category.

(C) Budget Tables 4 and 5 (on the following two pages) are the summaries respectively of the total USAID and GOL contributions to LAPIS. Details of these contributions by component are described in Budget Tables 6 - 12 to be found in Annex 10.6.

BUDGET TABLE #4 - SUMMARY OF USAID CONTRIBUTIONS TO LAPIS

DESCRIPTION	FY 85		FY86		FY 87		FY 88		FY 89		FY 90		TOTAL	
	FX	LC	FX	LC	FX	LC	FX	LC	FX	LC	FX	LC	FX	LC
AGRICULTURAL PRODUCTION														
L.T. Technical Assist	0	0	300,000	0	779,200	0	1,161,100	0	1,056,200	0	814,600	0	4,111,100	0
S.T. Technical Assist	0	0	56,000	0	58,800	0	62,000	0	64,800	0	68,000	0	309,600	0
Training	0	0	0	30,000	139,000	70,000	0	110,000	0	110,000	0	70,000	139,000	390,000
Commodities	0	0	0	255,200	0	95,600	0	59,600	0	323,400	0	247,300	0	981,100
Other Costs	0	0	85,000	613,000	166,000	602,100	170,000	579,600	146,000	683,000	111,000	566,200	678,000	3,043,900
SUB-TOTAL	0	0	441,000	898,200	1,143,000	767,700	1,393,100	749,200	1,267,000	1,116,400	993,600	883,500	5,237,700	4,415,000
AGRICULTURAL RESEARCH														
L.T. Technical Assist	0	0	228,000	0	889,200	0	904,500	0	750,100	0	432,000	0	3,203,800	0
S.T. Technical Assist	0	0	0	0	29,600	0	139,000	0	113,400	0	34,000	0	316,000	0
Training	198,000	0	220,000	0	260,400	16,500	271,800	17,300	311,300	18,500	51,000	19,700	1,312,500	72,000
Commodities	0	0	25,000	163,100	0	76,500	0	74,900	0	158,800	0	29,000	25,000	502,300
Other Costs	0	0	0	49,000	0	131,000	0	145,800	0	149,800	0	1[illegible],900	0	637,500
SUB-TOTAL	198,000	0	473,000	212,100	1,179,200	224,000	1,315,300	238,000	1,174,800	327,100	517,000	210,600	4,857,300	1,211,800
AGRICULTURAL EDUCATION														
L.T. Technical Assist	0	0	504,000	0	890,400	0	760,200	0	444,600	0	154,500	0	2,753,700	0
S.T. Technical Assist	0	0	56,000	0	89,000	0	94,000	0	67,000	0	0	0	306,000	0
Training	0	0	220,000	55,000	193,600	60,000	106,500	68,000	0	74,000	0	82,000	520,100	339,000
Commodities	0	0	32,000	247,100	7,400	23,000	7,700	13,200	8,600	35,200	9,000	17,400	64,700	335,900
Other Costs	0	0	0	150,000	0	8,400	0	8,800	0	9,200	0	10,000	0	186,400
SUB-TOTAL	0	0	812,000	452,100	1,180,400	91,400	968,400	90,000	520,200	118,400	163,500	109,400	3,644,500	861,300
PROJECT ADMINISTRATION														
Technical Assistance	0	0	224,000	0	296,800	0	314,600	0	333,400	0	384,450	0	1,553,250	0
Training	0	0	0	5,000	46,000	5,000	48,300	5,000	0	5,000	0	5,000	94,300	25,000
Commodities	0	38,900	0	25,000	0	5,500	0	45,500	0	6,700	0	7,400	0	129,000
Other Costs		24,000	1,000	72,000	56,000	137,100	68,900	281,500	67,800	282,400	77,600	176,000	271,300	973,000
SUB-TOTAL	0	62,900	225,000	102,000	398,800	147,600	431,800	332,000	401,200	294,100	462,050	188,400	1,918,850	1,127,000
TOTAL PROJECT COSTS	198,000	62,900	1,951,000	1,664,400	3,901,400	1,230,700	4,108,600	1,409,200	3,363,200	1,856,000	2,136,150	1,391,900	15,658,350	7,615,100
CONTINGENCY 12%	23,760	7,548	234,120	199,728	468,168	147,684	493,032	169,104	403,584	222,720	256,338	167,028	1,879,002	913,812
TOTAL US COSTS	221,760	70,448	2,185,120	1,864,128	4,369,568	1,378,384	4,601,632	1,578,304	3,766,784	2,078,720	2,392,488	1,558,928	17,537,352	8,528,912

TOTAL FX & LC 26066264
(Rounded to: $26,100,000)

BUDGET TABLE #5
SUMMARY OF GOL CONTRIBUTIONS TO LAPIS
(In US Dollars, Maluti equivalents)

ALL COMPONENTS

DESCRIPTION	FY 85 LC	FY 86 LC	FY 87 LC	FY 88 LC	FY 89 LC	FY 90 LC	TOTAL LC
AGRICULTURAL PRODUCTION							
Personnel	0	138,500	297,600	321,700	312,400	462,300	1,532,500
Overseas Training Support	0	0	14,400	15,800	17,300	182,000	229,500
Administrative Support	11,000	18,750	23,280	25,600	27,850	29,000	135,480
Commodities	0	0	5,500	6,100	6,700	7,300	25,600
Construction	0	0	35,200	38,700	42,500	46,600	163,000
Support CARE	0	19,100	22,000	22,000	22,000	22,000	107,100
Support to LCCUL	0	15,700	17,300	19,000	21,000	21,500	94,500
SUB-TOTAL (Ag Prod.)	11,000	192,050	415,280	448,900	449,750	770,700	2,287,680
AGRICULTURAL RESEARCH							
Overseas Training Support	0	0	28,800	63,400	75,500	76,700	244,400
Administrative Support	0	0	108,100	153,990	173,800	101,560	536,340
SUB-TOTAL (Research)	0	0	136,900	217,390	249,300	178,260	780,740
AGRICULTURAL EDUCATION							
Overseas Training Support	0	16,800	18,480	15,300	0	0	50,580
Administrative Support	55,905	191,696	224,975	262,900	299,200	337,080	1,371,756
SUB-TOTAL (Education)	55,905	208,496	243,455	278,200	299,200	337,080	1,422,336
TOTAL GOL CONTRIBUTION	66,905	400,546	795,635	944,490	998,250	1,286,040	4,490,756

(Rounded to $4,500,000)

4.0 IMPLEMENTATION PLAN

4.1 Overall Project Management

The GOL Ministry of Agriculture has the overall responsibility for the successful implementation of the Project. Four mechanisms have been incorporated into the project design which are intended to assist the GOL in this regard: (A) a LAPIS Coordinating Group; (B) a Project Management Committee; (C) a Project Financed Contractor to carry out and implement the project to include coordination of all Project activities within the contract and in collaboration with the GOL and USAID; and (D) Annual Outside Evaluations.

4.11 The LAPIS Coordinating Group

The Coordinating Group will provide policy guidance for the Project and enlist the participation and support of the MOA, other Ministries and other organizations. It will be chaired by the Permanent Secretary, MOA, and include representatives from other Ministries and organizations, such as the Ministry of the Interior, Ministry of Finance, Ministry ofCooperatives and Rural Development, Ministry of Central Planning and Development, Lesotho National Development Corporation, and others, as may be deemed appropriate. USAID/Lesotho will be represented at the Coordinating Group by the Director. The Group will meet bi-annually, preferably immediately after the Contractor's biannual report is submitted. The Chief of Party of the Contractor will provide the Secretariat to the Coordinating Group.

The Coordinating Group will have the following responsibilities: (A) reviewing overall progress in implementing the project and providing policy guidance; (B) assisting in the coordination of the implementation of the LAPIS Project with other development projects and programs; (C) resolving issues submitted to it by the Project Management Committee (see below); and (D) providing guidance for obtaining needed support from other Ministries and organizations for the implementation of LAPIS.

4.12 Project Management Committee

The Project Management Committee (PMC) provides a permanent structure for the MOA senior staff to monitor and supervise the implementation of the Project. This Committee will be chaired by the Director of Technical Services and will include: the Director of Field Services, the USAID/Lesotho Agricultural Development Officer, the LAPIS Chief of Party, the MOA Heads of Divisions, and the Team Leaders for the three components of the Project. The PMC will meet quarterly, or more often as required. The LAPIS Chief of Party will provide The Executive Secretariat for the Committee.

The PMC will be responsible for: (A) monitoring the overall implementation of the Project; (B) identifying and resolving issues and problems that arise in the course of implementation; (C) making certain that required communication and information sharing among the different components is maintained; (D) coordinating the work programs of the different divisions for the implementation of LAPIS; (E) forwarding unresolved policy issues and problems to the Coordinating Group; (F) serving as a reference group for the annual evaluations; (G) reviewing

61

(at least initially) PIC-initiated proposals for agriculture production projects; and (H) advising the Permanent Secretary of progress/problems related to LAPIS.

Illustrative tasks that will be undertaken by the Committee include: (A) review of pre-feasibility studies related to the Production Initiatives Component; (B) coordination of personnel and professional expertise provided under the Project; (C) reviewing the coordination of LAPIS long term training requests and in-country short term training with the MOA Training Committee; (D) reviewing the financial status of the project, making recommendations; and (E) reviewing coordination and monitoring of commodity procurement plans.

4.13 Project Contractor

The Design Team firmly believes that increased agricultural production can only be achieved by a major agricultural program which integrates Research and Education activities focused on production targets. At the same time, such a program stretches the scarce management resources of both the GOL and USAID/L. However a single Project Contractor will be responsible for all three activities and will be directed to ensure that the contracted activities are coordinated and implemented as an integrated group of activities. This will facilitate from an implementation standpoint the coordination and integration required and act as an additional catalyst to MOA coordinated implementation of Project activities.

The Contractor will have the following principal responsibilities: (A) to provide the overall supervision of project implementation and ensuring coordination of project activities; (B) to recruit, manage and support the technical assistance required for the project (Note: The credit and forestry activities will be the subject of a Cooperative Agreement arrangement directly by AID with CUNA/WOCCU and CARE, respectively); (C) to procure the commodities identified on the procurement list; and (D) to carry out the long and short term training, and to design and implement on-the-job and in-service training programs.

The GOL and USAID will be jointly responsible for selecting the Contractor. When the Project has been authorized by AID/Washington a Request for Proposal will be prepared in accordance with the general selection procedures set forth in Subpart 15.6 of the Federal Acquisition Regulations (FAR) and advertised in the U.S. inviting interested offerers to submit proposals for consideration. A Bidders Conference will be held in Maseru to clarify details about the project to interested parties.

4.14 Annual Outside Evaluations

The annual evaluations designed into this Project are an extremely important and integral management tool. They will be used to assess performance in meeting objectives during the previous year of implementation and, with this information, recommend subsequent adjustments to be made in project activities. The major purpose of these evaluations is to make certain that project activities underway or planned are appropriate to enable project objectives to be reached. (See Evaluation Section for a thorough discussion of the procedures to be followed.)

62

4.2 Project Contractor
A. Acquisition Considerations.

Contracting for technical assistance personnel will be the most crucial element in pre-implementation of the project. There are three major components of the project requiring technical assistance contracting: (1) the Production Initiatives Component; (2) the Research Component; (3) the Education Component. These technical assistance personnel must be highly trained and experienced in their areas with overseas development experience and must be able to carry out a variety of operational functions in diverse work situations.

As a result of extensive discussions of the project design team and USAID/Lesotho with GOL officials, the preferred method of contracting for technical assistance services has been established as a direct AID contract negotiated by the REDSO/ESA Contracting Officer using the Agency's general selection procedures. This would involve an open competition among all interested parties -- Title XII, non-profit and profit making institutions. The Design Team has recommended that a single contractor be engaged to be responsible for carrying out the overall Project.

We did consider restricting procurement to Title XII institutions only. Although these institutions usually have individuals available with high levels of technical expertise, frequently such persons do not have the administrative, management and operational experience found in non-profit or profit making organizations. Additionally, the GOL has expressed its strong view that it does not want to staff all of the positions with university personnel. We have also considered small and disadvantaged business firms, including women-owned and Grey Amendment firms and have concluded that this is not a suitable Project for such firms or businesses because of the size and complexity of the Project.

The Request for Proposals will allow the offerors to propose alone or with subcontractors. The overall management of the Project will be awarded to a single, prime contractor. Tasks lending themselves to separate arrangements will be detailed in the RFP.

The contract will be awarded for a period of three years with renewal for an additional term to be based upon the results of the Project mid-term external evaluation and the recommendations of the GOL and USAID/Lesotho.

The acquisition plan further contemplates that the REDSO/ESA Contracting Officer and the USAID/Lesotho ADO will do as much advance work as possible aimed at having an RFP ready for issuance when the project is approved. The CBD Notice and the RFP will contain the caveat that award of contract is contingent upon the following conditions: (a) Project Agreement signed; (b) initial Conditions Precedent met; and (c) funds available.

USAID/Lesotho will form an RFP evaluation committee consisting of two or more direct hire U.S. employees and two or more Basotho. The RLA and the REDSO/ESA Contracting Officer will serve as advisors to the evaluation

committee, but neither the RLA nor the Contracting Officer will be voting members of the committee, The USAID/Lesotho ADO will serve as the Committee Chairperson. Following initial review of the proposals and establishment of a competitive range, some of the members of the panel could visit the site of those organizations in the competitive range. Upon the receipt of best and final offers from these firms, contractor selection will be made. The resulting contract will be negotiated by the REDSO/ESA Contracting Officer with RLA/SA assistance in Maseru.

The Contractor will be represented in country by a Chief of Party. He/she will be assisted by one Administrative Officer provided in the contract, an accountant, a procurement specialist, and a secretary who will be locally hired under the contract.

B. Technical Assistance - PVO's - Cooperative Agreements

Within the Production Initiatives Component there are two activities which uniquely lend themselves to implementation by PVO's, namely the Fruit and Fuelwood Nursery Development (CARE) and Credit Union activities (CUNA) (Outputs 5 and 6).

Cooperative Agreements will be used to procure the services of these two PVO's, CARE and CUNA/WOCCU and to provide assistance to them to carry out the nursery and credit activities respectively. The Cooperative Agreement instrument is chosen because substantial involvement is planned between AID and the two PVOs during performance of their activities. These agreements will contain language specifying that the respective CARE and CUNA/WOCCU activity coordinators will maintain close communication and implementation linkages with the Team Leader of the Production Initiatives Component of LAPIS. Because of the importance of the activities being undertaken by the PVOs to the overall success of the LAPIS Project, USAID plans to monitor their activities to enable it to redirect work as necessary.

CARE and CUNA/WOCCU currently have operational programs in Lesotho and have the demonstrated experience, background and competence to carry out the assigned activities.

CARE was provided an AID grant of $500,000 (FY1978-79) for assistance in implementation of the Wool and Mohair Spinning Project. Through this highly successful activity, CARE has demonstrated a capacity to work at the community level, an ability to organize and motivate communities for self-help development activities, and a locally-based infrastructure (wool and mohair cooperatives) serviced by an effective procurement, distribution, and management system.

CUNA/WOCCU has demonstrated proven capability to provide credit in Lesotho's rural areas as supported by the ongoing AID project for assistance to the LCCUL. Recent evaluations of this project (nearly $1.0 million) have indicated significant accomplishments in institution building, staff training and capability to extend credit to rural people.

Approval is being requested in 9.0 and in the Project Authorization to permit USAID/Lesotho to invite an application from CARE and CUNA to undertake the Project activities described above under a Cooperative Agreement.

64

4.21 Technical Assistance

Long-term technical assistance personnel will be recruited according to the job descriptions which appear in Annex 10.11. Candidates will be scrutinized on specific qualifications at the time the Project Contractor is selected. Short term technical assistance candidates will be identified by the Component Team Leaders in consultation with the Chief of Party and their MOA Divisional Heads and presented to the PMC for approval. Arrangements for providing short-term technical assistance will be undertaken by the Contractor. All management and support costs associated with the technical assistance personnel will be the responsibility of the Contractor.

4.22 Training

Qualified long-term training candidates will be identified by the Team Leaders of the three components in consultation with the Chief of Party, and with their respective Heads of Divisions. These candidates will be recommended to the MOA Training Committee which will be responsible for selecting from the qualified candidates those who should be nominated for long-term training positions and to monitor progress in obtaining the necessary clearances within the GOL. The contractor will be responsible for the placement and monitoring of participants in long term training. The selection of candidates and the placement and monitoring for short-term training outside Lesotho will follow the same process. For short-term training in Lesotho, Team Leaders and Divisional Heads will nominate qualified candidates to the LAPIS Chief of Party who will make arrangements for their training (see Training Plan, Annex 10.10).

4.23 Commodity Procurement Plan

A list of commodities to be procured under the project appears in Annex 10.8 of this Project Paper, listing commodities by the year needed, probable source and who will do the purchasing. The LAPIS Contractor will have major responsibility for procurement. The Contractor will also be responsible for refining the commodity specifications, identifying items which will require waivers, and procuring commodities , in accordance with USAID Handbook 11, Chapter 3.

The procurement tasks will appear in the Contractor's statement of work. The contractor's fee for procurement services will be negotiated separately from the other services which the contractor will provide, and the contract will require separate accounting for commodity purchasing under the contract.

Specialized Procurement activities are:

Vehicles - USAID/L will issue PIO/Cs naming itself as authorized agent to procure right hand drive vehicles and light weight motorcycles in accordance with the AIDAR and FAR. These commoditiess are included in the Source Origin Waiver discussed below.

Fertilizer - Handbook 1, Supplement B, Section 4C8 provides that regardless of the authorized source for commodity procurement under a

USAID loan or grant, it is USAID policy to restrict fertilizer procurement to U.S. sources. The Director of SER/COM may authorize procurement of non-U.S. fertilizer upon a finding of significant U.S./Offshore price differentials. An Action Memorandum for the Director of SER/COM to authorize procurement of non-U.S. fertilizer is included in Annex 10.16. Fertilizer is also included under the source/origin waiver to authorize procurement from 899 source.

Pesticides/Herbicides - will be procured by the Contractor in accordance with the guidelines set forth in the Initial Environmental Examination, which has been approved by AID/Washington, and the guidance provided by the Regional Pest Management Advisor.

Waiver - a source origin waiver from USAID Geographic Code 941, including the Cooperating Country, to Code 899 is included in the Project Authorization for approximately $2 million of commodities.

4.24 Disbursements

USAID/L will directly disburse funds for a limited amount of commodities as outlined above, the annual evaluations, and the Private Voluntary Organizations which are responsible for implementing projects under the Production Initiatives Component. The Contractor will disburse funds for long and short term technical assistance, overseas training, in-country training, and commodities.

4.25 Logistics Support

USAID will allocate housing to the U.S. contractor technical personnel from existing housing built with AID funds under previous projects. The Contractor will provide or reimburse the U.S. technical assistance personnel for reasonable costs of utilities, guard service, travel costs and per diem. The GOL will provide basic household furniture, office space, secretarial support, use of office equipment, and basic office supplies.

4.26 Implementation Schedule

The overall Project's implementation plan is located in Annex 10.9.

4.3 Pre-Implementation Phase

The complex nature of this project, which incorporates three linked components focusing primarily on agricultural production, requires special attention to project implementation. A lengthy period is anticipated for contractor selection. It is specifically planned, therefore, to seek PD and S funds for pre-implementation activities.

The following are key activities planned:

Outside consultant assistance and funds for in-country activities will be necessary to:

A. Work with key MOA Basotho personnel to ensure that essential committees and working groups required for implementation, coordination and communication are formed.

61

B. Work with USAID/L and key Basotho personnel to review current objectives, inputs, outputs of current USAID projects in the agricultural sector (Agriculture Planning, Farming Systems Research and Land Conservation/Range Development) to redirect these projects as necessary to meld with the overall objectives of the LAPIS Project. This will ensure that the LAPIS and current agricultural projects become smoothly meshed in purpose and objectives.

C. Work closely with the Project Formulation and Evaluation Section of the MOA Planning Division to initiate pre-feasibility studies for potential agricultural production sites that have been identified. This will accelerate implementation of the Production Component.

D. In a series of workshops, assist the MOA to establish key working and communication relationships with the Ministries of Interior, Cooperatives and Rural Development, Finance, and Economic Planning; the Lesotho Agricultural Development Bank; the Lesotho National Development Corporation; and other key organizations to discuss their relationships with the LAPIS Project and plan for their more direct involvement in its implementation.

E. Identify non-farm, secondary industry opportunities related to the Project. The consultants will examine needed inputs such as tools, seeds and seedlings, equipment and marketing systems to evaluate their potential for local supply manufacture or marketing. It is possible that local production of various inputs needed by Basotho farmers can be a major income and employment generator.

F. Symposia/workshops will be held to address and review technical issues directly related to LAPIS. Topics will include: soil fertility, crop adaptability (especially vegetables), irrigation, pesticide use marketing, storage of agricultural products and farm planning.

G. A conference will be held to review the special situation of women in relation to agriculture production, their legal status, and how they can be most productively involved in this Project.

4.4 Component Implementation

4.41 Production Initiatives Component Implementation Plan

(A) Management

The management of this component will be the responsibility of the Director of Field Services (DFS) under the guidance and direction of the Director of Technical Services. The DFS will provide leadership for the Production Coordination Unit. The counterpart of the Director of Field Services is the PIC Production Advisor.

(B) Technical Assistance

The technical assistance included in the PIC will be supervised by the Production Advisor who will report to the LAPIS Chief of Party. (See Project Description.)

The Production Coordinating Unit will also include three locally hired staff employed for the duration of the Project, a Design Officer, an Administrative Officer, and a Secretary. Allocation of the staff's services will be the responsibility of the Production Advisor with the advice of the Director of Field Services.

Short-term technical assistance requirements will be identified by the Production Advisor in consultation with the Director of Field Services. The Production Advisor will forward requirements to the Chief of Party who will seek necessary GOL clearances and will make contractural arrangements with appropriate individuals and/or firms.

(C) Training

Three employees of the Range and Livestock Divisions will be sent for Bachelor's level training in the third year of the Project. The Basotho Director of Field Services, with the approval of the Production Advisor and appropriate Divisional Directors, will nominate three individuals for long-term training. The MOA Training Committee will consider these nominees, forward its selection to the MOA Training Officer who will prepare the appropriate documents for forwarding them through GOL channels for final review and approvals. The GOL formal nomination will then be submitted to USAID/Lesotho for approval. The approved list will then be submitted to the Contractor who will arrange for the training to be implemented.

Short-term training will be arranged by the Production Advisor in consultation with the Director of Field Services.

(D) Procurement

Commodity requirements for the Production Initiatives Component will be identified by the Production Advisor in consultation with the Director of Field Services. The Production Advisor will prepare the specifications and request the Chief of Party to make arrangements for procuring these commodities. (This may require referral to USAID if commodity procurement has been identified as a USAID responsibility in the commodity procurement plan herein.)

The Private Voluntary Organization, CARE, which is implementing Output 5, establishment of seedling nurseries, and CUNA/WOCCU which is implementing Output 6 credit union development, will provide for procurement of commodities required to carry out the specific initiatives under these outputs.

(E) GOL Logistic Support

The GOL will arrange for adequate logistic support for the technical assistance team, including office space and secretarial services. The GOL will also cover all salaries of Basotho personnel involved in this component, financial support for long-term trainees and their dependents, travel allowance for the short-term trainees and facilities for in-country training.

(F) Other Activities

(1) Horticultural Coordinating Committee

A Horticultural Coordinating Committee will be established, chaired by the Director of Field Services. This Committee is necessary because of the wide array of horticultural activities initiated under this component and the dispersal of responsibilities for their implementation. The following organizations will be represented: Research Division, the Crops Division, Agricultural Information Office, Lesotho Agricultural College, and the Planning Division. The Horticultural Coordinating Committee may invite other units of government or private organizations at their discretion to participate on the committee. The PCU will provide a secretariat for the committee.

(2) Extension Agent Transportation

The twenty-seven Extension Agents assisting farmer associations and individual farmers to produce horticultural Outputs 1 and 3 will be assisted to obtain appropriate transportation, motorcycles where feasible and horses elsewhere. Consideration is being given by the GOL to a plan whereby extension agents will be given motorcycles purchased with Project funds. The extension agents will then repay the GOL for the motorcycles over a period of three years without interest. The final method for handling and disbursing funds for this purpose will be determined during the pre-implementation phase of the Project.

The Chief of Party will pay Extension Agents located in areas where use of a motorcycle is not feasible a fixed daily fee for rental of a horse when on Project business.

(G) Implementation Schedule

The Implementation Schedule for the Production Component appears in Annex 10.9.

4.51 Research Component Implementation Plan

(A) Management

The administration and management of this component will be the responsibility of the Director of Research. The Director will be assisted by the Research Team Leader/FSR Specialist.

(B) Phasing in the Present Project

The LAPIS Project will phase into the existing Farming Systems Research Project in June 1986. One month overlap between the teams of the two projects is scheduled. The ongoing FSR Project expects to continue its work on food crop recommendations, adapt ox drawn planters, test crop rotations, test chemical weed control, and develop up to 40 bulletins before the current Project ends on June 30, 1986. Long-term training will be continued under the present FSR Project so that activities in research under LAPIS will not be delayed.

(C) Technical Assistance

The Design Team recommends that the successful contractor should have on its staff, or easy access to, a large enough pool of highly qualified, experienced, agricultural researchers who are oriented and committed to Small Farms Farming Systems Research to place in the field and also have sufficient supporting resources in the U.S.

(D) Training

The LAPIS Research Component will provide long-term training for 20 people. The Director of Research, in consultation with the Research Team Leader/FSR Specialist, will identify candidates for long-term training. These candidates will be recommended to the Ministry of Agriculture Training Committee for their consideration. With the endorsement of the Committee, the MOA Training Officer will obtain the necessary GOL clearances and nominate the candidate to USAID for long-term training. Upon USAID approval, the Contractor will then proceed to place the participant for appropriate training.

Short-term training outside Lesotho will follow the same procedures specified for the PIC (see 4.41C above).

The Research Team Leader will be responsible for implementing short-term, in country training. Candidates will be identified in consultation with the Director of Research. Short-term training will place a heavy emphasis on practical hands-on training, combining theory and repetitive field tasks. Proposed training courses will be announced in advance at MOA Training Committee Meetings and to Team Leaders of the other LAPIS components.

(E) Procurement

Equipment for the Soils Laboratory should be procured early after the Project Agreement is signed. As soon as funds are available USAID/L will undertake procurement of this equipment.

(F) Disbursement

The disbursement of funds for technical assistance, training, vehicle operation and maintenance and specified commodities will be the responsibility of the contractor.

(G) GOL Logistic Support

The GOL will arrange for adequate logistic support for the technical assistance team, including office space and secretarial services. The GOL also also cover all salaries of local personnel involved in this component, financial support for long-term trainees and their dependents, travel allowance for the short-term trainees and facilities for in-country training.

(H) Implementation Schedule

The Implementation Schedule for the Research Component appears in Annex 10.9

4.61 Agricultural Education Component Implementation Plan

(A) Management

The overall administration and management of this component will be the primary responsibility of the Principal of the Lesotho Agricultural College assisted by the Education Component Team Leader/Curriculum Development Specialist.

70

(B) Technical Assistance

The technical assistance team will be supervised by the Education Team Leader/Curriculum Development Specialist. Short-term technical assistance requirements in the areas of instructional materials development, agricultural communications and laboratory/library organization and development have been identified. Other short-term assistance requirements will be identified by the Team Leader.

(C) Training

The LAC Principal and the Agricultural Information Office (AIO) Director, in collaboration with the Team Leader, will identify and nominate eleven Basotho staff in LAC and the AIO for long-term training in the U.S. The process of identification, nomination, selection, clearance and placement of candidate participants will be identical to that followed for the Production Initiatives Component and the Research Component described above.

All short-term staff development training for LAC and AIO personnel will be conducted in-country, with assistance from the LAPIS Project long and short-term technical advisors. Trainers from local institutes will also be tapped as necessary. Short-term training courses for extension agents, master farmers and for the participants of the Production Initiatives Component will be coordinated by representatives from the LAC, Research and Extension Division, including AIO. Representation from other MOA technical divisions will be sought, as required.

(D) Procurement

The commodities to be procured under this component are described in detail in Annex 10.8. The Team Leader will provide the commodity specifications and request the Chief of Party to make arrangements to undertake procurement unless AID has been identified as the party to undertake procurement in the commodity procurement plan.

(E) Disbursement

The disbursement of funds for technical assistance, training, vehicle operation and maintenance and specified commodities will be the responsibility of the Contractor.

(F) GOL Logistic Support

The GOL will arrange for adequate logistic and administrative support for the technical assistance team, including office space and secretarial services. The GOL will also cover all salaries of local personnel involved in this component, financial support for long-term trainees and their dependents, travel allowance for the short-term trainees and facilities for in-country training.

(G) Implementation Schedule

The implementation schedule for the Education Component appears in Annex 10.9.

5.0 MONITORING PLAN

The Monitoring Plan has been established to accurately track the progress in the implementation of the LAPIS Project. This plan describes both the USAID/L's and the GOL's monitoring systems. Both systems are interconnected and provide feedback to each other.

5.1 USAID Monitoring System

The initial stage of monitoring involves the Conditions Precedent and Covenants in the Project Grant Agreement. After signing the Grant Agreement, a Project Implementation Letter will be sent to the GOL Central Planning and Development Office (CPDO) setting forth and explaining the Conditions Precedent which need to be met and the termination dates for meeting them. As each of the Conditions Precedent to Disbursement are satisfied, a Project Implementation Letter will be sent formally notifying the GOL that the specific condition has been met and that the relevant disbursement may proceed. The USAID Agricultural Development Officer will monitor compliance with the covenants.

Much of the USAID's monitoring attention will be focused on the contractor. Bi-annual reports will be required to provide information both on inputs and outputs under its contract. With regard to inputs, the reports will supply detail on the status of technical assistance, training, commodity procurement, and financial disbursement. The Contractor will also prepare a corresponding statement of outputs achieved during the same period for the overall Project broken down by the different components (Production, Research, and Education). In addition, the planned annual evaluations will be an invaluable tool for monitoring the Project.

Since procurement responsibilities will be undertaken by both USAID/L and the contractor, the monitoring system is designed accordingly. For USAID/L the approach is straight-forward. The USAID Executive Officer will be responsible for the procurement to be undertaken by USAID and for the required AID documentation in accordance with the AIDAR and FPR regulations. The monitoring of the Contractor's procurement will be the responsibility of the Agricultural Development Officer with the assistance of the USAID Executive Officer. The above mentioned reports and evaluations will be used as the mechanisms for monitoring the Contractor's commodity procurement. Details will be obtained from the bi-annual reports which will specify the list of commodities which have been ordered, their source and origin, cost, and delivery dates.

The Human Resources Development Officer will assist the Agricultural Development Officer to monitor the participant training provided under the Project. The contractor will maintain records of all training provided by the Project and include this information in the bi-annual report.

The financial disbursement and cash flow for project implementation will be monitored by the USAID/L Controller. This officer will review the monthly contractor billings and the quarterly reports of the Contractor and disbursements within the Mission to ensure that expenditure levels are within the limits of the approved fiscal authority. The Controller

will also monitor local currency fluctuations to ensure that smooth cash flows are maintained. Additionally it is important to assure that the dollar denominated budgets maintain their purchasing power.

Regular site visits by the Agricultural Development Officer, the Chief of Party of the contractor, and senior GOL officials will provide another mechanism for monitoring the implementation of the project. Project activities will be assessed and problem areas noted.

Bi-annual progress reports will be prepared by the Agricultural Development Officer, or his staff, for the USAID/L Director and AFR/PD. These reports will follow the standard format established by AID/Africa Bureau.

A project filing and record keeping system at USAID/Lesotho will be maintained to provide a chronological record of LAPIS activities to facilitate project monitoring.

5.2 GOL Monitoring System

The GOL will monitor the LAPIS Project both through the Central Planning and Development Office (CPDO) and, in the Ministry of Agriculture, through the Planning Division's Project Formulation and Evaluation Section (PFE).

The CPDO has overall responsibility in the GOL for monitoring all donor funded activities which includes this project.

One of the major functions of the PFE Section in the MOA is to monitor the progress of donor funded projects toward achievement of their major objectives. This system will be utilized by the LAPIS Project. MOA Division Heads will submit quarterly reports which include statements of targets, achievements and constraints relating to the major LAPIS objectives. These reports will circulate to the Project supervisors, the Planning Officer in the PFE Section responsible for the Project, the Chief Planning Officer and the Permanent Secretary for their information and, if necessary, their action.

6.0 SUMMARIES OF ANALYSES

6.1 Summary of Technical Analysis

6.11 Production Initiatives Component (PIC)

Two key issues are addressed in this analysis : (1) are the proposed outputs attainable; (2) are the planned methods and procedures appropriate.

Farm-based outputs are expected to be 150 catchment-irrigated hectares of fruits and vegetables, 70 river, stream or well irrigated hectares of fruits and vegetables, 15 ha of home gardens, 650 ha of orchards and 150 ha of multipurpose communal tree plantings, 2,400 ha of high value crops, and 45,000 animal units of high-quality cattle, sheep and goats.

Production of these crops and livestock products has been demonstrated to be technically feasible in Lesotho. Profitability of all outputs is

sufficient. The crucial questions are: (1) can farmers be motivated and (2) is the market capable of absorbing the increased production.

The fundamental strategy of LAPIS is to provide farmers with a complete package of services, including improved technologies; access to credit, inputs and markets; training; and technical assistance, leading to increased production and incomes. Crucial to this basic strategy is ensuring the capacity of the MOA to induce and assist increased production by integrating and focusing the activities of the existing MOA administrative and technical units. To address this concern, a Production Coordinating Unit will be established, headed by a Mosotho Director of Field Services, under the direction of the MOA Director of Technical Services. Functions of the PCU will be to serve as a catalyst to identify and assure support to production activities, provide liaison between field offices and Headquarters, coordinate actions of all Divisions involved in implementing initiatives, and assist the District offices to strengthen their capacity to increase production. Three U.S. technical advisors, a Production Advisor, an Irrigation Engineer, and a Marketing Specialist, as well as a Mosotho Design Officer, will provide guidance to all aspects of the PIC.

To determine if markets can absorb the increased production, estimated production was compared with 1980 imports. LAPIS stimulated production would be, at most, 84% of 1980 imports. This is a conservative approach as imports have been steadily increasing since then. Marketing development assistance by LAPIS will be focused on assisting farmers to move the local produce from farm to market.

The PIC will operate through several organizational systems. One hundred and fifty individual farmers will be assisted in construction of catchments to irrigate an average of one hectare each. Seven Farmers Associations will be assisted in production of 70 hectares of high-value crops. Through the actions of Nutrition Assistants trained under the LAPIS education component, 1,500 rural heads of households will plant home gardens to increase income and nutritional status. Five private community-based and cooperative-managed nurseries will provide fruit, fuel, and multipurpose tree and vegetable seedlings, supplying a demand demonstrated by Basotho farmers. Twenty-five credit unions will provide 3,000 members with inputs, equipment rental, technical assistance, training, credit and assistance with marketing to allow intensive farming of 2,400 ha and small scale egg, broiler and dairy production. An estimated 5,000 households will be supported by Range Management Associations to improve pastures and animal quality.

Several reasons exist for the variety of approaches to increasing production and income. Fundamentally, it is a pragmatic approach which makes the most use of existing structures and services. This also offers the opportunity to determine which of the approaches proves to be most effective in raising incomes and employment.

Based on previous Project operational experience long-term technical assistance, short-term technical assistance, in-country training and commodities are sufficient to accomplish the objectives of this component.

6.12 Agricultural Research

This Analysis of the Agricultural Research Component discusses: (1) the background and issues related to small farms in Lesotho; (2) the resources for Research; (3) the strategy and elements of the LAPIS Agricultural Research Component; and (4) the appropriateness of component inputs.

Lesotho's small-farm systems encompass a complex mix and level of proficiency in crops, livestock, soils, resource management, production/management technology and skills; and the availability, efficiency and use of farm power and labor. This component aims to: (1) instigate production and management practices that will increase the production of high yielding, high value, labor intensive crops and the yields of staple foods while preserving the land base; and (2) to encourage commercial development of the livestock sector given existing constraints.

The Research Division of the MOA has been receiving AID assistance since 1978. The physical infrastructure, trained personnel and equipment are sufficient upon which to support the research activities under LAPIS.

The LAPIS Project design focuses research, production and supporting activities on precise identification of critical constraints to improving farmers' productivity. It gives priority attention to the interrelationships between various crops and farming systems, and agronomic, physical, biological and socio-economic factors. It takes into account the skills, knowledge and level of development of the target group. The research/production technology designed for LAPIS implementation draws heavily upon the findings and accomplishments of the on-going FSR Project and preceding research activities, which have identified constraints in key areas of production, pre- and post-harvest management and marketing. The type, quantity and quality of production inputs and services delivered to and used by farmers will change and evolve as research findings are disseminated and their use validates or disproves initial assumptions. The technical services proposed are based upon the priority needs for guidance and training in FSR methodology, establishing an effective FSR capability in the MOA, and assuring that the host-country shortfall in trained personnel and skills is covered and in-country training is provided.

Based on prior experience in the current FSR project, the inputs proposed to support the aims of the component, and the methodology and technology to be used, are deemed appropriate and feasible given the existing environmental, agronomic, socio-economic and resource base circumstances.

6.13 Agricultural Education

The Technical Analysis of the Agricultural Education Component discusses: (1) the existing agricultural education programs and outputs; (2) the proposed elements of the LAPIS Agricultural Component in relation to the existing situation described above; and (3) the appropriateness of component inputs.

The GOL's objective of increasing agricultural production, incomes and employment, as well as its decentralization policy, have provided the framework for setting the priorities of the Agricultural Education component. The intent of the decentralization policy is to strengthen the agricultural services provided in the field to farmers.

In Lesotho, farmers have limited education and exposure to adequately trained technicians. An analysis of staff distribution within the Ministry of Agriculture (MOA) shows that 71% of MOA field personnel are at the Grade 1-3 level, and that only 31% of MOA staff at the Grade 4 and above levels are assigned to the field. In Lesotho, grade structure is largely determined by educational qualifications.

The Agricultural Education component is designed to: (a) improve the quality and relevance of education offered at the Lesotho Agricultural College (LAC), the only academic agricultural institution in Lesotho which has traditionally provided academic pre-service training to the MOA's extension personnel in the field; (b) reinforce the MOA's capacity to meet the recurring in-service training needs of the extension staff; and (c) initiate a pilot effort for training farmers at two Farmer Training Centers, utilizing extension agents retrained at LAC as lead trainers.

Project activities selected to strengthen LAC, such as long and short-term staff development, curriculum revision, improvements of instructional methods, improvement of administration and development of linkages with the Research, Extension and MOA Technical Divisions) are deemed sufficient to: (a) increase the relevance of academic teaching at LAC to Lesotho's agricultural conditions; and (b) expand LAC's capacity to assist the MOA meet the in-service training needs of field-based extension personnel.

6.2 Summary of Financial Analysis

The financial analysis addresses three issues: (1) Can the participating institutions utilize LAPIS funds in a cost effective manner? (2) Are the individual production activities proposed for farmers financially viable? (3) Are the recurrent costs arising from the Project within the financial capabilities of the GOL after AID assistance concludes?

The three primary organizations involved in implemention of the LAPIS Production Initiatives Component are the Ministry of Agriculture, the CUNA/WOCCU sponsored Lesotho Cooperative Credit Union League, and the CARE-sponsored Lesotho Handspun Mohair Cooperatives. All three of these institutions have, in the past, been supported by AID. Equally important, during the implementation of these prior activities, each organization has demonstrated the ability to fully utilize, and account for, funding made available by AID. The designers of the LAPIS Project have carefully examined the cost-effectiveness of the proposed activities of these organizations and has concluded that they represent the most financially viable approach to achieving the objectives of the Project.

The individual production activities which are being proposed for Lesotho's farmers, namely: the one hectare horticultural enterprise; the

Farmers Association's horticultural production unit; the home garden; the integrated tree and vegetable nursery, the LCCUL credit packages; and the Range Management Associations, have all been examined and are considered financially and economically viable.

Finally, the recurrent costs arising from the implementation of the LAPIS Project were estimated, and evaluated in terms of the GOL's financial ability to assume these costs at the end of the Project. The analysis indicates that after the PACD (beginning in 1991) an additional US$700,000 per annum is estimated to be required by the GOL to maintain the activities initiated by the LAPIS Project. Assuming different scenarios of growth in the MOA Recurrent Budget these additional recurrent costs could require various amounts between 3-10% of the Ministry of Agriculture's recurrent budget from 1990 to the year 2000. The new financial control measures recently put in place have improved the GOL macroeconomic situation. The team believes that continued progress will be made in increasing government revenues. The additional recurrent costs to be generated by the LAPIS Project represent small percentages of the future MOA recurrent budget. Therefore, the Design Team believes the GOL to be capable of sustaining the activities of this project after AID assistance concludes in FY 1991.

6.3 Summary of Social Analysis

(A) Social Background

Lesotho is a culturally homogenous country as 98% of the population is Basotho. Ninety percent live in rural areas, and 60% of the rural resident working population is female. As 80% live in the lowlands which comprise only 20% of the land area of the country, the lowlands have one of the highest population densities in Africa. The individual household has emerged as the basic social and economic unit, with the husband as household head. However, 30-40% of rural households are actually managed by women with absentee husbands, and an additional 30% have widowed, divorced or single female heads.

There are four sources of income available to rural Basotho households: (1) remittances from migrant workers, (2) off-farm employment in Lesotho, (3) farming and/or livestock production, and (4) other income generating activities. The ability of a household to achieve an acceptable standard of living depends upon access to productive domestic resources and/or the availability of cash incomes (which at present come primarily from mine employment). A number of recent analyses of resource holdings of households have found that, although the distribution of resources is more equitable in Lesotho than in many other countries, there are considerable differences among households. In particular, households with larger allocations of land appear to have relatively greater access to other types of income generating resources, and the reverse is true for the poorer households.

(B) The Agriculture Sector

The percentage of households with neither land nor livestock holdings has risen significantly in the last decade and the rise may accelerate when the Land Act of 1979 is fully implemented. The size of holdings is also

77

falling, and this trend decreases the capability of rural families to achieve acceptable standards of living, especially if they continue to cultivate only traditional cereal crops. Increases in the yields of traditional crops, the addition of high value crops and changes in livestock management practices will be needed to support job generation and attainment of self-reliance.

Half the rural families own cattle, but only 10% own the four oxen required for a plowing team. Eighty percent of the sheep and goat ownership is concentrated in 10% of the families illustrating that communal grazing rights and opening of all arable land to grazing at the end of the farming season benefits only a small percentage of households. It is apparent, however, that small livestock are kept primarily for economic rather than social reasons. Research indicates that income from these animals can be increased substantially through reductions in numbers combined with stock upgrading, confining of animals and improved nutrition.

Research on farming systems indicates that farm families have limited funds for the purchase of seeds and fertilizer, and that farm implements are owned by only a small percentage of households. Despite the fact that the two hectares held by the typical household require only 180 days of labor per year under current production practices, the sexual division of labor results in labor constraints at critical points in the production process, e.g., only men plow, only women weed. These constraints affect female managed/headed households most severely.

Overall, the current farming system is generally resource short, and a large number of households lack sufficient tools, oxen for plowing and inputs for effective farming. Although there are no nationwide figures on the differing resource position of male-headed, female-headed, and female-managed households, available information for the lowlands indicates that female-headed households are predominant among the resource short households.

The costs and returns from the traditional agricultural crops in Lesotho (maize, sorghum, wheat, beans and peas) has been analyzed. These studies indicate that the levels of production under traditional practices generally do not reach the break-even point when the cost of family labor used in production is taken into account, even if the labor is valued at the minimal level of M 1 per day. The majority of Basotho farmers are producing low yields of low value crops on an extremely limited land area.

Analysis of the yields possible with improved practices and some double cropping indicates that the net returns for maize, wheat, sorghum and beans can begin to approach M 500-700 per hectare. While these returns represent more attractive levels of income for farmers with larger land holdings and resource endowments, they do not provide a solution to the income needs of the average rural household with a small land holding. Development of activities to increase production of high value crops is essential to finding a solution to Lesotho's income/employment problems.

(C) Food Supply and Nutrition Situation

As the preceding discussion suggests, only a small number of households in Lesotho have the resources to produce sufficient food for their needs and the average production is approximately 50% of requirements. Imported foods are available in most areas. However, prices are increased by transportation costs and, as a result, families have to depend primarily on the lowest priced/lowest nutrition value foods. This is the source of the deficiency diseases found in the population which are most severe in remote mountain areas.

Gross figures on food supply in Lesotho indicate that caloric needs are adequately met as are a bare minimum of protein requirements. The most serious problem in the nation's diet is the heavy dependence on maize for both calories and protein. Although there is disagreement over the total amount of cereals consumed, which cannot be resolved given current data, most observers agree that the Basotho consume almost twice as much cereals as they should for a healthy diet. On the other hand, consumption of such foods as milk, meat, fruit and vegetables is considerably below recommended levels. Available evidence indicates that the composition of the diet results in deficiencies in calcium, Vitamin A, Riboflavin and Niacin (some chronic, more seasonally).

Removing these deficiencies will require a general increase in production and consumption of fruits and vegetables and of livestock products. It should also be recognized that redirection of the diet towards consumption of these foods would also help meet Lesotho's desire for self-reliance. A fall in consumption of cereals to a level near that of the recommended diet would enable Lesotho's farmers (especially those with larger land holdings) to produce most of Lesotho's cereals needs. The balance of requirements could be met, to a major extent, by increased domestic production of fruits, vegetables and livestock products.

Nutrition studies indicate that the groups most affected by nutritional problems are young children, women and the poor. Approximately 20% of children under five are below 80% of their standard weight for age. Five percent of mothers have visible goitre and 5% of the mothers are undernourished. Approximately 30% of households do not have sufficient resources either from their own production or from cash incomes to provide the food needed to meet their basic energy requirements. The solution to nutrition problems will depend primarily on increasing incomes from domestic sources and, secondarily, on education to change food habits. For the poorest, deficiencies can only be solved by increased home production of foods of higher nutritional value and recognition of this fact has led to inclusion of the home garden promotion activity in the LAPIS Project.

(D) Beneficiaries

Direct beneficiaries of the Project are the 15,000 farm households which will be reached by the Production Initiatives Component and the 4,000 households which will experience income increases through their participation in the Farming Systems Research activities. Other direct beneficiaries are: (1) extension personnel and staff of the Ministry of Agriculture who will receive training and support directly from the Project, and (2) students at LAC who will receive improved instruction.

Indirect beneficiaries are an estimated 53,000 families who will benefit from access to improved quantity and quality of extension services, the availability of appropriate farm inputs and assistance with marketing.

Project activities are designed to reach households with a range of resources. The MOA has identified four target groups which will be utilized in planning project initiatives. These four groups are: (1) those with enough resources for self-sufficiency plus a marketable surplus (17% of farm households); (2) those with enough resources for self-sufficiency (55%); (3) resource poor (13%); and, (4) landless with no livestock (15%). LAPIS has chosen interventions to increase income from agriculture suitable to the needs of each of these groups. These include an improved quantity and quality of extension and resources for groups 1 and 2, and the household garden initiative for group 4. Many of the interventions are particularly suitable for land short, traction/labor/equipment short households. For example, the Project will assist in increasing intensity of cultivation through the provision by credit unions of extension services and in-kind credit for a range of improved inputs and services such as seed, fertilizer and oxen plowing/equipment hire.

E. Participation, Social Feasibility and Issues

Participation has been wide-spread in the planning of LAPIS and will be in the implementation. MOA employees have been fully involved in design and, in addition, there has been consultation with men and women farmers and members of cooperatives and credit unions. During project implementation, extension staff, LAC students, farm households and MOA employees at all levels will participate in monitoring, feed back, evaluation or design of specific project activities.

Analysis indicates that production initiatives presenting the least difficulty in the socio-cultural context are those that take place in the farmer's own fields. Project strategy is to assist groups organize themselves (which is historically done in Lesotho), not impose forms of organization or activities. Farmers participating in the current FSR project field programs exhibit a willingness to experiment to achieve improved production.

Two factors crucial to Project success are the involvement of women and demonstrating to Basotho that agriculture is a viable source of income. A pre-project implementation conference will be convened to work out a specific action plan for women's participation in LAPIS and to identify the steps to be taken to implement it. Continuous monitoring and evaluation will be carried out during implementation to assure attainment of the goal of maximum female participation. For the second factor, the Project will help create financially and technically feasible village-based production activities.

6.4 Summary of Economic Analysis

The assessment of the economic worth of investing in LAPIS takes into account the interrelationships that exist between the institution-building and direct production assistance components of the Project. Its economic worth is assessed from three perspectives. First, the economic

internal rates of return (IRR) of fruit, vegetable, livestock and food grain production are calculated separately. The overall IRR of LAPIS is also presented. Second, a stream of benefits needed to justify investment in agricultural research and training is estimated. Finally, key cost-effective measures designed into the Project are described.

It is estimated that by 1990, a total of 2,635 hectares will be planted to fruits and vegetables by individual farmers, farmer associations and in home gardens. Relating to fruit production, assuming 20% for wastage and losses, an internal rate of return of 12.37% was derived. A 15% reduction in gross revenues which could result from lower than anticipated yields, additional post harvest losses or lower prices will reduce the IRR to about 10%. If on-farm costs were increased by 15%, the IRR will drop to 11.3%. Assuming a typical mix of vegetable crops which would be grown by small farmers (cabbage, carrots, tomatoes, beetroot, potatoes and onions) the IRR for the combined commercial and home garden vegetable production is 18.2%. If costs are increased by 15% or benefits reduced by 15%, the IRR would be 12%.

Through LAPIS, Care-Lesotho will establish five nurseries that will produce fruit, vegetable and fuelwood seedlings. Besides providing seedlings for sale, the nurseries will offer orchard pruning and spraying services. The analysis of costs and the benefit stream estimated to be generated by the nurseries show an IRR of 14.8%. If the estimated benefits are reduced by 10%, the IRR will drop to 11.8%. These IRRs do not include benefits that will accrue to farmers who will purchase the nurseries' seedlings or utilize the nurseries' spraying and pruning services.

The livestock and land conservation interventions of LAPIS will commence in 1987 as a follow-on to the present Land Conservation and Range Development Project. Unlike most livestock and range management projects in Africa, USAID's pilot effort in Sehlabathebe has been judged by the recent evaluation as being very promising. In Sehlabathebe, the current project has been able to bring about a reduction in the cattle herd from 9,000 head to 6,000. For the follow-on effort, the objective of the livestock sub-component is to increase the animal off-take rate by 45%, and improve the quality of the remaining herd. The LAPIS Project calls for the participation of 24,000 livestock farmers owning approximately 45,000 animal units (AUs).

Including the contemplated increases in fodder production which the LAPIS livestock subcomponent envisions (production of up to 500 hectares of fodder), the IRR for livestock and fodder production is estimated at 10.4%. This IRR is based on a very conservative assumption that the culling and herd improvement adoption rate among the 24,000 livestock owners will be 6% in the first year and will increase to 65% by year 18.

Over the life-of-project, it is estimated that 325 extension agents will receive intensive training at the Lesotho Agricultural College, as well as refresher training at Farmer Training Centers (FTCs) and at district headquarters. While it is anticipated that each retrained extension agent will supervise 150 farmers each, a conservative estimate of about 25% adoption rate by the end of project is assumed. In addition to retraining extension agents, 500 master farmers will be trained at 2 FTCs. Each trained master farmer is expected to train 10 other farmers.

91

Incremental farm production gains will be achieved starting in 1987. Research results indicate that through the use of improved seed varieties, better seedbed preparation, improved weed control, appropriate fertilizer application rates and modest increases in labor utilization, average yields per hectare of corn can conservatively be increased by 60%, sorghum by 35%, wheat by 50%, beans by 100% and peas by 50%.

Based on current planting patterns, it was estimated that corn will be cultivated on 47% of total area, sorghum on 24%, wheat on 13%, beans on 7% and peas on 4%. Since the average area cultivated per farmer is about one hectare, incremental production gains will be achieved on 13,000 hectares cultivated by the 25% of farmers who are estimated to adopt improved technologies. To present a pessimistic scenario, it is assumed that productivity will level off at the rates achieved by the end of the life of project and that no production increases will be achieved by farmers who are trained by master farmers. With these assumptions, the IRR for food grain production is estimated at approximately 9%. If 50% of farmers trained by master farmers achieve the increased yields, the IRR will increase to 11.6%.

The relatively lower returns to investment in food grain production is the chief reason why LAPIS is focussing on developing the potentials of horticultural crops.

The overall IRR for LAPIS is estimated at 13.7%. The analysis includes USAID's contribution to the Project, the GOL's contributions during and after the life of the project and farmers' incremental costs. The benefit stream includes all the incremental returns to fruit, vegetable, livestock and food grain production.

A sensitivity analysis of the LAPIS IRR shows that if the total incremental costs increase by 15%, the IRR will drop to 10%. Alternatively, if benefits generated are 10% less than anticipated, the IRR will be 11.4%.

Over a 20-year period, the present value of incremental costs associated with the agricultural research and agricultural education components of LAPIS, discounted at 12%, is M 25,151,301. The costs include the proposed USAID investment, as well as the GOL's incremental contribution to the two components. It also includes the costs that will be incurred by 50% of farmers who will participate in the horticultural activities of LAPIS and the incremental cost to the 25% of farmers who will adopt the improved technologies for food grains.

In order to justify the investments mentioned above, a flow of incremental benefits whose present value over a 20-year period is equal to or greater than M 25,151,301 would be necessary. For the purposes of this analysis, a discounted benefit stream over a 20-year period, amounting to M 25,786,124 was achieved by assuming that at least 50% of gross returns from the LAPIS horticultural production activities will be achieved; that 25% of farmers reached by the retrained extension agents will achieve the production gains estimated for food grain production; and that at least 50% of LAC's output of 110 graduates every year will receive increased incomes of M 100 annually.

The Production, Education and Research Components are designed to ensure the cost-effectiveness of proposed activities. These measures include: (1) joint utilization of local staff, facilities and technical advisors among the three components, where appropriate; (2) emphasis on in-country training; (3) long-term training only up to appropriate and necessary levels; (4) emphasis on the "training of trainers" approach; and (5) concentration on the adaptation to Lesotho of basic research results available from international agricultural research centers, rather than developing a local capacity for undertaking basic research.

Recognizing the GOL's current budget situation, the LAPIS Project has been designed to minimize recurrent costs. The Project's design has, as far as possible, redirected existing resources. Since personnel represent the largest percentage of the MOA's resources, staff training is provided under the Project to increase their productivity. Nevertheless, some additional costs will be generated by this Project. The most serious is the replacement and operation expenses of the 25 project vehicles. In-service training to maintain the skills of the Basotho trained under the project will also be a recurrent expense. However, the small amount of construction included in the project will minimize the need for recurrent maintenance funds. Likewise, replacement of commodities will not require major expenditures. Comparison these recurrent costs (inflated from 1989 onward) to the MOA recurrent budget, shows that in the worst case (the MOA budget growth of only 5% per annum) recurrent costs do not quite reach 10% of the budget by the year 2000. In the best case (a growth rate of 15% per annum in the budget), recurrent costs reach only 2.71% of the budget by the year 2000. These recurrent costs are considered to be entirely manageable.

According to the latest published Annual Bulletin of Statistics, Lesotho imported over M 7.0 million worth of fresh and canned fruits and vegetables in 1980. Of these imports, fresh vegetables accounted for M 3.7 million, 66% of which consisted of cabbages, potatoes, tomatoes and onions -- crops which can be grown in Lesotho. Fresh fruits accounted for M 1.9 million. The projections made in this analysis of production and value of fruits and vegetables that can be generated through the PIC show that by 1990, M 5.8 million worth of vegetables could be produced, which is over 55% of the 1980 import demand. By 1993, M 2.2 million worth of fruits will be produced. If the potentials of horticultural production are realized as projected, foreign exchange savings can be generated through local production within the medium term. In the longer-term, horticulture export products could serve as a source of foreign exchange for Lesotho. The Project has incorporated appropriate technical assistance to investigate and develop local markets for fruits and vegetables produced domestically as well as to explore the potentials for exportation in the longer-term. It is estimated that by the year 2004, M 13.0 million worth of fruits and vegetables could be produced on over 2,000 hectares of land. If current trends in local consumption continue, excess supplies of fruits and vegetables should be available for export.

6.5 Summary of Administrative Analysis

Many studies have been accomplished which have determined that implementation of this project is administratively feasible (see Annex 10.15).

Based upon the background studies accomplished, and on our experience with current project implementation, we conclude that the Ministry of Agriculture has sufficient staff and organization and management strengths to carry out the implementation tasks assigned under this project.

With respect to CARE and CUNA, the other two implementing agencies, our experience with both organizations gives ample evidence of their organizational and management ability to carry out the implementation tasks assigned to them.

The Ministry of Agriculture will be responsible for overall Project implementation on behalf of the GOL. The MOA organization is divided into three broad categories: administration, technical services and field services. The Minister of Agriculture provides the policy direction for the Ministry and has the ultimate responsibility for its actions. The Minister is supported by the Permanent Secretary, who is assisted by the Deputy Permanent Secretary for Administration (DPS/A) and the Director of Technical Services (DTS). These three officers are responsible for the day to day administration and technical activities of the MOA.

The LAPIS Project will operate across many of the technical Divisions. Extension, Range, Planning, Crops, Lesotho Agricultural College, Research, and Livestock will be directly affected. Currently the MOA has 335 professional positions and over 1,200 field and support positions. GOL/LAPIS does not anticipate the establishment of additional positions. Instead LAPIS will concentrate its efforts on upgrading existing staff by in-service, on-the-job, and short-term in-country training for field and support staff and degree training at U.S. universities for a number of qualified professionals.

6.6 Summary of Environmental Analysis

The PID's initial IEE was revised, cabled to AID/W in April 1983 (Maseru 01029), and approved. The IEE determined that no negative environmental impacts would result from the Agricultural Education and Agricultural Research components of LAPIS.

It was determined that all but three of the proposed activities under the Production Initiatives Component would result in positive effects. There is a slight possibility that three activities may result in negative effect: (1) use of pesticides and herbicides; (2) management of catchments (especially impoundments); and (3) use of irrigation techniques. No negative effects were determined for salinity, water borne diseases, or siltation from irrigation. The Production Initiatives Component will request the assistance of the REA/RPA to help provide training and supervision in handling, application and storage of

pesticides where this practice is introduced and applied by the producers. (The first short course in pesticide use and safety was conducted by the REDSO/ESA Regional Pesticide Advisor in Lesotho in August 1984 and was very positively evaluated.) The guidelines for pesticide use will be followed prior to design of any activities.

No negative environmental impact is anticipated from the small scale irrigation schemes. However, as and when small scale riverside irrigation activities are initiated, the general USAID guidelines for small irrigation projects will be followed per instructions in the IEE. Small catchments/impoundments will be constructed with a dam core, in areas free from congas, and in areas with gently sloping terrain where possible. Construction and erosion control measures will follow guidelines in the Peace Corps manual on small dams per IEE instructions.

USAID/L will also advise the internal implementing entities to request the assistance of the Environmental Advisory Committee at the National University to assess the site selection, feasibility, and final design of water catchments and to copy the report to USAID/REDSO-RLA.

With the exception of the slight possibly negative effects noted above, it has been determined that the LAPIS Project promises to increase and sustain the production and incomes of small farmers and generate additional employment opportunities. The potential benefits appear to far outweigh the potential negative impacts on the human environment which have been identified. A negative determination was recommended in the PID and an Environmental Assessment and a Risk/Benefit Analysis as required is attached as Annex 10.70.

6.7. Summary of Employment Analysis

Relevant literature on employment, manpower utilization, the Basotho labor market and agricultural production in Lesotho revealed that Lesotho's employment/underemployment problems are approaching crisis dimensions as follows:

1. The total number of Basotho expected to seek agricultural employment is projected to approach 800,000 by the year 2000, an increase of over 400,000 potential workers.

2. Some 20,000 people will be entering the labor force annually, most of them expecting to find employment in the agricultural sector.

Other charcteristics which affect employment in Lesotho are:

- Present agricultural labor in Lesotho is under-utilized both in terms of person-days per year spent in agriculture and from the standpoint of unrealized productivity.

- Large numbers of Basotho will not have the resources to be self employed in the agricultural sector and therefore will need alternative employment opportunities in the rural areas.

For purposes of the analysis, it was decided to focus on gainful employment, defined as "full or part-time employment, for which the worker receives a wage which enables him or her to support himself/herself and one other person in the family at a level which is considered to be at, or just above the subsistence level in Lesotho." Under this definition, LAPIS activities could impact on employment in three ways: they may (a) maximize employment by promoting more efficiency from existing labor; (b) create jobs where employment opportunities did not previously exist; and (c) displace marginally productive labor if less employment results under activities designed to increase the productivity of labor.

Using the above background, criteria and definitions, LAPIS has the potential for maximizing or creating nearly 4200 employment opportunities in the production of high-value fruit and vegetable products. Over 1200 gainful employment opportunities are affected through the individual farmers (Output 2); 700 jobs are affected through the Farmer Associations (Output 3); 2240 gainful employment opportunities could be stimulated by the home gardens (Output 4); and 50 jobs could be created by the development of the fruit tree and vegetable seedlings nurseries (Output 5).

Considering the special problems associated with increasing livestock production and factoring in estimated labor displacement estimates, LAPIS Output 7 will create employment opportunities as follows: (a) Large livestock production, 1,027; (b) Small livestock production, 770; and (c) other employment related to livestock production activities, 600.

Section 2 of the Analysis projected secondary employment that could be expected to result from LAPIS generated production activities in the following areas: (a) agro-industries, (b) Lesotho Agricultural College graduates, and (c) the agricultural credit field. Estimates are that 150 jobs could be created in fruit and vegetable processing. Five hundred jobs could result in leather industries. Meatpacking could directly employ 175 persons. The utilization of graduates from the Lesotho Agricultural College could produce 75 person years of employment. The extension of credit to participants in the production component of LAPIS would produce 195 person years of employment.

Thus, the LAPIS project is expected to have a positive effect on near- and far-term employment within the life of the project - from both direct and indirect employment impact viewpoints.

7.0 CONDITIONS, COVENANTS, AND NEGOTIATING STATUS

7.1 Conditions Precedent

The conditions precedent to disbursement in this Project are detailed in the Draft Project Authorization.

(A) The LAPIS Coordinating Group and a Project Management Committee will be formally established prior to the first disbursement of funds for the Project. These are very important coordinating bodies essential for successful Project implementation.

(B) The GOL will formally establish a Production Coordinating Unit under the supervision of the Director of Technical Services and appoint a senior Basotho Agriculturist as the Director of Field Services before disbursement of the grant for the Production Initiatives Component (PIC).

7.2 Covenants

The following covenants will also be detailed in the Draft Project Authorization.

1. The Cooperating Country will develop a plan, mutually agreeable with AID, to include the use of the competitive process, as appropriate, for the identification and final selection of candidates for long-term training under the Project to assure securing the most qualified persons.

2. The Cooperating Government will provide on a timely basis all personnel required for implementation of the Project.

3. The Cooperating Government shall assure that all vehicles and equipment procured for the Project will be used exclusively for the Project and that usage shall be carefully monitored and controlled under a plan to be agreed upon with AID.

4. The Cooperating Government will provide the required local currency costs of the Project as indicated in Budget Table 5, GOL Contribution, in a timely manner.

5. The Cooperating Country covenants that it will undertake to provide the recurrent costs for the continuation of the activities of the Project after the Project assistance completion date.

6. The MOA will develop, by June, 1986, a plan for joint staff appointment arrangements proposed for expatriate technical assistance personnel assigned to the Research Division and the Lesotho Agricultural College; and, if the MOA positively evaluates this plan, it will take steps to include Basotho staff assigned to Research and LAC under the same type of arrangements.

7. The GOL will develop, by June, 1986, a plan to allow for the transfer of student course credits between the Lesotho National Teacher Training College (NTTC) and the Lesotho Agricultural College (LAC) in order to encourage (a) LAC students, who so desire, to pursue careers at primary and secondary levels as agriculture teachers; and (b) NTTC students, who so desire, to do likewise.

8. The Cooperating Country agrees to accord continuing priority to the accomplishment of researach and analysis and studies which are essential to the development of improved long-term policies in agriculture. This includes: (a) studies which will determine the export potentials of selected agriculture crops and products; (b) analyses which determine the structure of livestock and crop markets and the determinants of livestock products and crop prices; and (d) develop a capacity to make crop production forecasts.

9. The Cooperating Country covenants that it will support efforts in the livestock and crop sub-sections as follows: (a) develop a plan for implementing a livestock culling program as empowered by the Range Management and Grazing Control Regulations of 1980 to reduce total livestock numbers by 10% by 1990, 20% by 1995 and reach carrying capacity by the year 2000; (b) develop a plan for the implementation of the Land Act of 1979 to allow for the implementation of Selected Agricultural Areas and Agricultural Leasing Regulations and the establishment of Land Committees essential for the development of viable Range Management Associations (RMA); and (d) develop, by June, 1986, a plan for implementing grazing management legislation to establish and implement livestock grazing fees.

7.3 Negotiating Status

This Project has been developed with the full collaboration of the Ministry of Agriculture. Appropriate meetings have also been held with the Ministry of Cooperatives and Rural Development, the Lesotho Agricultural Development Bank, the Lesotho Cooperative Credit Union League, the Private Voluntary Organizations (CARE and CUNA/WOCCU) and with the U.S. Peace Corps, all of which will participate in the implementation of this Project. It is believed that no significant issues will arise in the negotiation of the grant agreement, and that once the agreement is signed, the implementation of Project Components can commence expeditiously. In addition the Cooperative Grant Agreements will then be scheduled for signing.

8.0 EVALUATION ARRANGEMENTS

8.1. Structure

(A) Functions

The supervision and management of the Project will be reinforced by annual outside evaluations. These evaluations will provide the resources and expertise required to review the design and organizational complexities associated with increasing the agricultural production of small farmers. Flexibility in LAPIS implementation is essential, given the broadness of its goal of increasing agricultural production and incomes, and consequently the wide range of exogenous factors which may affect it. The annual evaluation process will therefore be central to the successful management and implementation of the Project.

Since LAPIS Project support to the Lesotho agriculture sector is comprehensive, point by point assessment of a checklist of discrete statistical indicators per se will not permit adequate assessment of Project performance. A broader analysis of the performance of the agriculture sector and the Project's role in coordinating support to the sector through MOA will, therefore, be undertaken annually. This will be particularly important if evaluators are to make realistic and accurate recommendations on adjustments to Project direction.

A key concept of LAPIS is that USAID/L support to the agricultural sector will be more efficient if supplied through one coordinated project, and that GOL support to agricultural producers can be materially enhanced

through improved coordination of the various MOA Divisions, which LAPIS will achieve in part. Assessment of Project performance year by year in achieving this coordination will therefore be a critical factor to be considered in each evaluation. This type of evaluation does not lend itself to objectively verifiable statistical indicators, and will depend largely upon the administrative insights the expertise of the evaluation team will provide. In this regard, the evaluators will annually assess and report upon all LAPIS related bodies and personnel relevant to the coordination of agricultural production and the coordination of MOA support.

If this Project is successful, farmers will come to view MOA institutions at every level as important contributors to their increased agricultural production. To assess progress towards this target, each evaluation will, therefore, review the extent to which Basotho administrators and farmers perceive these institutions as useful. Much of this review will necessarily be subjective. This does not detract from its significance.

Given the importance of flexibility in LAPIS implementation, adjustments in project direction should be anticipated as a normal function rather than the undesirable result of inadequacy of design or adverse evaluation. Such adjustments, as suggested by the evaluators, will be discussed in detail with the LAPIS Coordinating Group each year. A summary of the evaluators' assessment will be linked to a draft Project work plan for the following year, prepared during consultation between the evaluators and the Project team. After receiving the evaluators' assessment and the draft work plan, the LAPIS Coordinating Group will forward a formal work plan for the following year to GOL and USAID/L for approval.

(B). <u>Preparation for and Implementation of evaluations: Summary of Tasks</u>

1. The MOA Planning Division will produce annual Agriculture Situation Reports (see 8.2.B).

2. The MOA Planning Division will be supported with Project funds to undertake sample surveys of agricultural income and employment (see 8.2.B).

3. The FSR Team Leader will collect statements of all pertinent research findings not previously reviewed or since updated for use by the team. This collection should include details of new technical packages developed by FSR, explaining how they increase yields and/or income.

4. The Research Component Team Leader will maintain a detailed daily record of the activities of FSR personnel so that the time spent in the field and at the LAC can be checked by evaluators.

5. Prior to the arrival of the evaluation team, the LAPIS Chief of Party will ensure that the contractor's bi-annual reports and procurement and training data as specified in 5.01 are ready for their review. He/she will also prepare for the evaluators' attention all evaluations of PIC activities undertaken by MOA Planning Division since the previous annual evaluation.

6. The LAPIS Chief of Party will schedule a meeting of the LAPIS Coordinating Group for the end of the evaluation period, to be attended by the evaluation team for the purposes outlined in 8.1.A. He/she will arrange two meetings of the Project Management Committee, which will be the Evaluation Reference Group: one just after the evaluators' arrival, and one immediately prior to the LAPIS Coordinating Group meeting. He/she will prepare field visits to FSR prototype areas and/or other farming communities (see 8.3). The LAPIS Chief of Party will further arrange a visit by the evaluators to a district outside Maseru for meetings with district level agricultural staff, producer associations, credit unions and cooperative nuseries (see 8.3.).

(C) Implementation

1. The evaluation team will undertake consultations with GOL, the LAPIS Project team and USAID/L as necessary. They will attend the meetings arranged in advance by the LAPIS Chief of Party (see 8.3.).

2. Benchmark data will be analyzed in order to measure progress against objectively verifiable indicators shown in the Logical Framework (see 8.2.B and Annex 10.3).

3. Field visits will be made to farmers, district agricultural staff, producer associations, credit unions and cooperative nuseries (see 8.3.).

4. An overall review of the status and performance of the Lesotho agricultural sector will be undertaken (see 8.3).

5. Project performance and direction will be assessed in the evaluation report, a summary of which will be presented to the LAPIS Coordinating Group.

6. Discussion of the evaluation recommendations will lead to drafting of the Project work plan for the following 12 months and its presentation to the same meeting of the Project Coordinating Group.

7. The work plan, supported by the evaluation report, will be forwarded to the Coordinating Group for approval.

8.2 Measurement of progress against objectively verifiable indicators

(A) Baseline data

In addition to the baseline data provided at various points in this PP and Annexes, the general baseline document will be provided by the 1984 Agriculture Situation Report published by the MOA Planning Division (issued in August 1984). Additional sources of baseline data will be the 1984 Annual Reports, when published, of the MOA Research and Marketing Divisions.

(B) Benchmark data

The evaluators will make an annual assessment of Project performance as measured against all the objectively verifiable indicators specified in the Logical Framework (Annex 10.3).

A major goal of LAPIS is to raise rural incomes. As in other countries, accurate income data is difficult to obtain in Lesotho. General GDP statistics will be available, with a lag of about two years. A surrogate for agricultural income can of course be calculated by estimated average yields and crop mixes and the cash value of these crops. More accurate information is available from MOA records for income accruing from wool and mohair sales and, if commercial cattle sales are successfully stimulated, MOA records for this income may also become available. But timely, regularly collected and accurately surveyed data on agricultural income is not available.

The measurement of agricultural employment is fraught with methodological problems because of the varying time and labor inputs involved, and can generally be calculated only by elimination: subtracting numbers in other forms of employment from the total population. Again, it cannot be anticipated that accurate benchmark data will be available for the evaluators on this important issue.

In order to establish the necessary benchmark data on agricultural income and employment, the Project Formulation and Evaluation Section of the MOA Planning Division will mount a detailed sample survey each year during the LOP supported with Project funds. The data will be broken down by sex. Short term TA will be used during the first year of Project implementation to help the Planning Division establish this round of surveys and undertake the first one, and further short term TA will be used as required in subsequent years to support each further survey.

In addition to these surveys, the principal source of benchmark data will be the annual Statistical Bulletin and Agriculture Situation Reports. Wherever GOL statistics permit it, the Agriculture Situation Reports will break down agricultural data by sex. MOA will request the Bureau of Statistics to increase coverage of fruit and vegetable production in its regular, nationwide agricultural sample surveys so that adequate data on this key LAPIS component is available. The MOA Planning Division will also continue to upgrade its own collection of data on fruit and vegetable production and imports through reporting from the DAOs.

Activities of LAC under the education component of the Project are clearly targeted. Progress will be carefully evaluated each year with reference to the objectively verifiable indicators shown in the Logical Framework (Annex 10.3).

A large number of Basotho women already grow vegetables in home gardens. To permit evaluators to check the number of new home vegetable gardens established by women, the Statistical Section of the MOA Planning Division will arrange for extension agents and Nutrition Assistants to forward data gathered on such new gardens for inclusion in the Agriculture Situation Reports.

Interim progress towards targets will be measured in terms of the objectively verifiable indicators stated in the logical framework, the preceding work plans of LAPIS component leaders, the overall Project work plan and the benchmarks established in the annual budgeting cycle of USAID/L. Progress will be assessed annually as satisfactory or unsatisfactory by evaluators after consultation with the Project Management Committee.

Each evaluation will also review the contractor's bi-annual reports and procurement and training data as specified in 5.1.

8.3 Overall review of the Lesotho agriculture sector

As indicated in 8.1.A, a broader analysis of the performance of the Lesotho agriculture sector and the Project's role in coordinating support to it will be necessary in each evaluation. For this purpose, the evaluators will make a careful, overall review of the most recent Agriculture Situation Report and other reviews completed.

Particular reference will be made in each evaluation to agricultural practices, production and problems in the three FSR prototype areas. These are not areas where PIC component activities will necessarily be concentrated, but they were selected as representative of conditions in the lowlands, foothills and mountains of Lesotho. They are areas on which data should be more readily available for a sample assessment of overall shifts in patterns of agricultural production in Lesotho. Each year the evaluators will either make a site visit to at least one of these areas for consultation with Basotho men and women farmers, Farm Management Assistants, Research Extension Assistants and US personnel, or hold a consultative meeting with a group of these persons from one or more of the prototype areas arranged in Maseru by FSR. Regardless of whether a site visit to an FSR prototype area is made, each annual evaluation will include visits to Basotho men and women farmers -including producers of high value crops, fruit and vegetables, Basotho women who have and have not adopted home vegetable production, and farmers who still practice only traditional subsistence cropping - for discussion of production practices and problems and farmers' attitudes to GOL support of agricultural production development.

In reviewing the overall performance of the agriculture sector and LAPIS impact upon it, the evaluators will specifically note the impact of the Project on women farmers and female employment.

The evaluators will, in addition, study all evaluations of PIC activities undertaken by the MOA Planning Division.

In reviewing LAPIS Project performance in coordinating support for higher levels of agricultural production and employment, the evaluators will make particular reference to the LAPIS Coordinating Group, the Project Management Committee (itself the evaluation reference group), the Production Coordinating Unit, the district level Production Development Officers, and the Horticultural Coordination Committee. The evaluators will attend meetings of the Coordinating Group, the Management Committee and the Horticultural Coordinating Committee. The LAPIS Chief of Party

will identify agenda items for these meetings to permit self-assessment by GOL and LAPIS personnel in terms of GOL effectiveness in supporting agricultural production increases and their own effectiveness in coordinating them.

In addition, the annual evaluations will include an assessment of district and village level agricultural production. For this purpose, the MOA Planning Division will arrange in advance for each evaluation to include a visit by the evaluators to at least one district outside Maseru where they will:

1. Discuss support to and coordination of agricultural production - with particular reference to high value cash crops, horticulture and fruit - with the District Coordinator (referring especially to fruit and vegetable marketing and import control, and the functions of the District Development Committee); the District Agricultural Officer; the Production Development Officer, if any; and the District Agricultural Planning Officer;

2. Attend a meeting of district agricultural staff; and,

3. Visit at least one Farmers' Association, at least one Livestock Association and at least one Credit Union and one Cooperative Nusery and hold consultations with them on the effectiveness of GOL support to them.

The fourth annual evaluation will assess whether Basotho personnel and farmers are by then capable of effectively administering the activities LAPIS is supporting. Shortfalls in this regard should be specified and remedies during remaining LOP or in subsequent USAID/L support should be recommended.

8.4. Timing and Personnel

Four weeks will be allowed for each annual evaluation, with the exception of the mid-term and final evaluations for which six weeks will be allowed.

The evaluation team will comprise:

1. Team Leader: experienced in agricultural administration in developing countries and in agriculture project management, with proven ability in organization and methods analysis;
2. Horticulturist with production marketing experience;
3. Agronomist specializing in high value crops;
4. Farmer organization specialist with experience in Lesotho agriculture;
5. Agricultural economist with experience in analysis of developing country smallholder and livestock production and credit support;
6. Extension specialist with developing country crop and livestock association experience;

(Mid-Term Review only:)

7. Manpower/training specialist;
8. Livestock production specialist with African experience.

9.0 WAIVERS AND APPROVALS

Waivers and Approvals Required

1. Waiver of the 25% cost sharing requirement contained in Section 110 (a) of the Foreign Assistance Act.

2. Procurement source and origin waiver from AID Geographic Code 941 (Selected Free World) and the Cooperating Country to Geographic Code 899 (Free World) for procurement of commodities estimated tocost $2,000,000.

3. Procurement source and origin waiver from AID Geographic Code 000 (United States) to Geographic Code 935 (Special Free World) for fertilizer anticipated to cost approximately $83,000 over the six year life of the Project.

4. Approval of AA/AFR to invite applications to enter into a Cooperative Agreement from a single entity, namely: CARE for development of fruit and fuelwood nurseries; and CUNA/WOCCU for assisting agriculture credit unions, as the most appropriate organizations to undertake the selected Project activities. Estimated cost: CUNA - $1,900,000; Care - $629,200. Justification for each of these is in Annex 10.10.

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