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UNCLASSIFED

Community Natural Resource Management

Project Paper

632-0228

June 26, 1991

UNCLASSIFED

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT DATA SHEET

1 TRANSACTION CODE: A (A = Add, C = Change, D = Delete) — Amendment Number: N/A — DOCUMENT CODE: 3

2 COUNTRY/ENTITY: Lesotho

3 PROJECT NUMBER: 632-0228

4 BUREAU/OFFICE: Africa Bureau — 06

5 PROJECT TITLE (maximum 40 characters): Community Natural Resource Management

6 PROJECT ASSISTANCE COMPLETION DATE (PACD): MM 06 DD 26 YY 91

7 ESTIMATED DATE OF OBLIGATION (Under B' below enter 1 2, 3, or 4)
A. Initial FY 91 B Quarter 3 C Final FY 99

8 COSTS ($000 OR EQUIVALENT $1 =)

A. FUNDING SOURCE	FIRST FY 91 B. FX	C. L/C	D Total	LIFE OF PROJECT E. FX	F L/C	G Total
AID Appropriated Total	1,339	161	1,500	10,776	3,310	14,086
(Grant)	(1,339)	(161)	(1,500)	(10,776)	(3,310)	(14,086)
(Loan)	( )	( )	( )	( )	( )	( )
Other U.S. 1	0	0	0	0	0	0
Other U.S. 2						
Host Country	0	505	505	0	6,352	6,352
Other Donor(s)	0	0	0	0	0	0
TOTALS	1,339	666	2005	10,776	9,662	20,438

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) DFA				0	0	1,500	0	14,086	0
(2)									
(3)									
(4)									
TOTALS				0	0	1,500	0	14,086	0

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each): 095 039 066 078

11. SECONDARY PURPOSE CODE

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

A. Code

B Amount

13 PROJECT PURPOSE (maximum 480 characters)

To establish effective community grazing associations which will manage rangelands at sustainable carrying capacities for livestock

14 SCHEDULED EVALUATIONS: Interim MM 10 YY 95; Final MM 01 YY 00

15 SOURCE/ORIGIN OF GOODS AND SERVICES: [x] 000 [x] 941 [ ] Local [x] Other (Specify) 935

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

The provision of the payment verification policy regarding methods of implementation and financing, financial capacity of recipients, and adequacy of audit coverage have been adequately addressed in this document

Rafael Zelaya, Controller

17 APPROVED BY

Signature: F Gary Towery

Title: Mission Director USAID/Lesotho

Date Signed: MM 06 DD 26 YY 91

18. DATE DOCUMENT RECEIVED IN AID/W OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION: MM 07 DD 31 YY 91

AID 1330-4 (8-79)

PROJECT AUTHORIZATION

Cooperating Country Lesotho
Project Title Community Natural Resource Management
Project Number 632-0228

1 Pursuant to the Foreign Assistance Act of 1961, as amended, the Foreign Operations, Export Financing, and Related Programs Appropriations Act, 1991, Africa Bureau Delegation of Authority (DOA) No 551, as amended, and the authority delegated under 90 State 387278 and State 193861, I hereby authorize the Community Natural Resource Management Project (Project) for the Kingdom of Lesotho (Grantee), involving planned obligations of not to exceed Fourteen Million Eighty-Six Thousand United States Dollars ($14,086,000) in grant funds from the Development Fund for Africa (DFA), over a nine year period from the date of authorization, subject to the availability of funds in accordance with the A I D OYB/allotment process, to help in financing foreign exchange and local currency costs for the Project Except as A I D may otherwise agree in writing, the planned life of the Project is ten years from the date of initial obligation

2 The Project is designed to provide support to the Grantee for the establishment of effective community grazing associations which will manage rangelands at sustainable carrying capacities for livestock

3 The Project Grant Agreement, which may be negotiated and executed by the officers to whom such authority is delegated in accordance with A I D regulations and delegations of authority, shall be subject to the following essential terms and covenants and major conditions, together with such other terms and conditions as A I D may deem appropriate

a <u>Source and Origin of Commodities, Nationality of Services</u>

The source and origin of commodities and the nationality of suppliers of commodities and services financed under the Project shall be in accordance with Africa Bureau DOA 551, Section 5F Accordingly, commodities financed by A I D under the Project shall have their source and origin in Lesotho, the United States or any other country included in A I D Geographic Code 935, except as A I D may otherwise agree in writing Except for ocean shipping the suppliers of commodities or services shall have Lesotho, the United States or any other country included in A I D Geographic Code 935 as their place of nationality, except as A I D may otherwise agree in writing Ocean shipping financed by A I D under the Project shall, except as A I D may otherwise agree in writing, be financed only on a flag vessel of the United States Procurement of commodities and services shall be from the U S to the maximum practicable extent

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b Conditions Precedent to Initial Disbursement

The Project Grant Agreement shall contain, in substance, the following conditions precedent to initial disbursement

Prior to the first disbursement, the Grantee will, except as the parties may otherwise agree in writing, furnish to A I D , in form and substance satisfactory to A I D

(i) A statement of the name and position of those persons in the Government of the Kingdom of Lesotho who are authorized to sign Project documents and communications, together with a specimen signature of each such person specified in such statement,

(ii) An opinion of counsel acceptable to A I D that the Project Grant Agreement has been duly authorized and/or ratified by, and executed on behalf of, the Grantee, and that it constitutes a valid and legally binding obligation of the Grantee in accordance with all of its terms, and

(iii) 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 A I D otherwise agrees in writing

c Covenants

The Project Grant Agreement shall contain, in substance, the following special covenants

(i) The Grantee agrees to provide on a timely basis all personnel required for implementation of the Project The Grantee guarantees that the level of resources for staff and other local costs, as described in Annex 1 to the Project Agreement, will be available throughout the life of the Project The Grantee further agrees to notify A I D in writing if other donors request Directorate of Livestock Services assistance to establish Range Management Areas (RMAs) and agrees to coordinate with A I D to assure that resources specifically allocated to this Project will not be committed or provided to another donor for establishing an RMA or for other related activities which would compete for Grantee resources In addition, the Grantee agrees to consult and coordinate with A I D regarding any RMA or related activities undertaken in areas adjacent to or otherwise near to the areas involved in this Project Finally, the Grantee covenants not to permit, and to use its best efforts to prevent, any of the above stated activities from being undertaken if A I D has stated in writing to the Grantee that such activities will jeopardize the effectiveness or success of this Project in a substantial and material degree

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(ii) The Grantee agrees to assist Grazing Associations (GAs) established under this project, or the LCRD and LAPIS projects, to receive within one month of collection by the Village Development Councils (VDCs), the percentage of grazing fees paid to VDCs which are due the GAs under the National Grazing Fee regulations Further, the Grantee agrees that it will not amend the National Grazing Fee regulations in a manner which will in any way diminish to less than 50 percent the amount of grazing fees due to GAs These fees are collected by VDCs for areas within RMAs and are paid to GAs managing those areas

(iii) The Grantee agrees to enter into a standard written loan bursary scheme agreement (hereinafter "bonding agreement") with each of its employees who receives long-term training abroad funded under the Project Said agreement shall be signed by both the trainee and the Grantee The Grantee agrees to closely monitor all aspects of the bonding agreement In the event the Grantee does not take all reasonable actions to remedy any violation of any of such agreements, the Grantee shall be responsible to repay to A I D any costs of training due under the particular bonding agreement,
unless A I D agrees otherwise in writing

(iv) The Parties agree to establish an evaluation program as part of the Project Except as the Parties otherwise agree in writing, the program will include, during the implementation of the Project and at one or more points thereafter

(1) Evaluation of progress toward attainment of the objectives of the project,

(2) Identification and evaluation of problem areas or constraints which may inhibit such attainment,

(3) Assessment of how such information may be used to help overcome such problems, and

(4) Evaluation to the degree feasible, of the overall development impact of the project

(v) To assure securing the most qualified training candidates, the Grantee shall use an appropriate competitive process, approved in writing by A I D , for the identification and final selection of candidates for long-term training under the Project

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(vi) The Grantee will assure that all vehicles and equipment procured for the Project will be used exclusively for the Project and that said usage shall be carefully monitored and controlled under a plan to be agreed upon with A I D The Grantee further agrees to take all reasonable measures to assure the physical security of equipment and vehicles purchased under the Project and quartered in or on Government premises

(vii) The Grantee agrees to include in its Recurrent Cost Budget for the year following the Project Assistance Completion Date sufficient funds to cover the recurrent costs for the continuation of Project activities

(viii) The Grantee shall not in any way discontinue, reverse or otherwise impede any action it has taken in satisfaction of any condition precedent to disbursement set forth herein, except as mutually agreed to in writing by A I D and the Grantee

F Gary Towery
Mission Director
USAID/Lesotho

6/26/91
Date

Clearances
PDO JDuRette
S/ADO CAReintsma
ADO CEMcIntyre
CONT RZelaya
RLA Draft TRiedler 5/20/91
RLA Revised DKeene 5/6/91, cleared faxed final draft by telephone, 6/26/91

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ACRONYMS AND ABBREVIATIONS

AA/AFR	Assistant Administrator for Africa Bureau
ADO	Agriculture Development Office
AFR/TR/ANR/NR	Natural Resource Subdivision of the Division of Agriculture and Natural Resources in the Office of Technical Resources of the Bureau for Africa at AID headquarters in Washington, D C
AFR/PD	Program Development Office of the A I D Africa Bureau
AID, A I D	U S Agency for International Development
AID/W	U S Agency for International Development headquarters in Washington, D C
B A	Bachelor of Art
CFR	Combined Federal Regulations
CNRM	Community Natural Resource Management Project
Cont	Contract, contractor
COP	Chief of Party
CP	Condition Precedent
CPSP	Country Program Strategic Plan
DFA	Development Fund for Africa
Dir	Direct or Director
DLS	Department of Livestock Services, or its Director
EEC	European Economic Community
FAA	U S Foreign Assistance Act
FY	Fiscal Year
GA, GAs	Grazing Association
GDP	Gross Domestic Product
GIS	Geographic Information System
GNP	Gross National Product
GOL	Government of the Kingdom of Lesotho
Ha	Hectare
HB	Handbook
HC	Host Country (Lesotho)
HF	High frequency
IFB/RFQ	Information for Bid/Request for Quote
ILCA	International Livestock Center for Africa
IRR	Internal Rate of Return
LAC	Lesotho Agricultural College
LAPIS	Lesotho Agricultural Production and Institutional Support Project
LAPSP	Lesotho Agricultural Policy Support Program
LCRD	Land Conservation and Range Development Project
LHDA	Lesotho Highlands Development Authority
LHWP	Lesotho Highlands Water Project
LIC	Livestock Improvement Center
LOP	Life of Project

M	Maloti (plural of Loti, the currency of Lesotho)
M A	Master of Art
MOA	Ministry of Agriculture, Cooperatives and Marketing
MOI, MOICA	Ministry of Interior and Chieftainship Affairs
M Sc	Master of Science
MS/OP/TRANS	Transportation Division in the Office of Procurement of the Bureau for Management Services
No	Number
NPV	Net Present Value
NRM	Natural Resource Management
NUL	National University of Lesotho
PACD	Project Assistance Completion Date
PCV	Peace Corps Volunteer
PID	Project Identification Document
PP	Project Paper
Prob	Probable
Proc	Procurement, Procuring
PVO, PVOs	Private Voluntary Organization(s)
Q	Quarter
Qty	Quantity
RCO	Regional Contracting Officer
REDSO/ESA	Regional Economic Development Support Office for East and Southern Africa
REDSO/ESA/RCMO	Regional Contract Management Officer at REDSO/ESA
Repro	Reproduction rate
RFP	Request for Proposals
RMA, RMAs	Range Management Area(s)
RMA/GA	Range Management Area managed by Grazing Association
RMD	Range Management Division
RSA	Republic of South Africa
SA	South Africa, Republic of
s/o	Source and Origin
SOW	Statement of Work
TA	Technical Assistance
TCT	Third Country Training
U S , U S A	United States of America
USAID or USAID/Lesotho	U S Agency for International Development, Mission to Lesotho

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EXECUTIVE SUMMARY

I Project Rationale and Description

Two-thirds of Lesotho is mountainous and particularly vulnerable to environmental degradation More than 60 percent of the country is rangeland for which extensive livestock production is the only viable agricultural activity The most serious environmental problem in Lesotho is soil erosion Much of the responsibility for loss of soil and declining soil productivity lies with the grazing system which has allowed free and open access to grazing lands

Wool and mohair are the country's most important agricultural exports The highest value wool and mohair produced in Lesotho come from its mountain regions Cattle, though less numerous, are important for their contribution of meat, milk, dung and traction to rural households Livestock are a preferred investment of remittances from employment outside Lesotho, and they indicate wealth and social status as well as mediating social contracts of marriage and '*mafisa*'[1]

Improvements in both productivity of animals and range quality have been achieved through previous projects funded by USAID The Ministry of Agriculture's Department of Livestock Services (MOA/DLS), assisted by technicians of the Land Conservation and Resource Development (LCRD) and Lesotho Agricultural Production and Institutional Support (LAPIS) projects, introduced the concept of Range Management Areas (RMAs) These are areas formally established by customary chiefs for the exclusive use of, and are administered by, Grazing Associations (GAs) made up of local livestock producers

RMAs aim to improve range and livestock quality Range quality is improved by developing and implementing a range management plan based on rotational grazing that allows the rangeland to "rest," and by reducing livestock numbers through culling programs Livestock quality is improved through breeding and animal health programs

Four RMAs now cover nearly 133,000 hectares which provide the livelihood for over 17,000 people Measurements of range quality in the longest established RMA show a nearly three-quarter reduction in the surface exposed to erosion by rainfall and increases in forage quality and quantity Improvements in the quality and productivity of animals have also been demonstrated in the RMAs The success of the RMA approach to management of

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[1] *Mafisa*' is a traditional arrangement by which an animal is loaned to another person

communally-owned resources is exceptional in AID's experience and merits continued support

The GOL's goals for rangeland development are 1) to support management of natural resources in a manner which is sustainable and socially acceptable to Basotho, 2) to encourage commercialization of extensive livestock production, and 3) to increase productivity and income of rural livestock producers[2] Creation of RMAs in order to improve natural resource management is one of the priorities of the National Livestock Policy, supported at the highest levels of the Government of Lesotho (GOL) The GOL has asked USAID to support further development of RMAs in Lesotho

The CNRM Project contributes to AID's strategy for Development Fund for Africa (DFA) programs and the Mission's strategic objectives One of the DFA Action Plan's strategic objectives is to develop the potential for long term increases in productivity in order to encourage economic growth that is sustainable The DFA Action Plan particularly targets improved natural resource management The Mission aims to maintain productivity of the mountain rangeland resource base by bringing carrying capacity and herd size into closer balance[3] The CNRM Project contributes to improved natural resource management by organizing communities to protect and manage common rangeland in a manner consistent with sustainable use Because of its stress on community management of a productive resource, the project also contributes to the DFA targets of reducing government involvement and increasing community participation in livestock production

The **goal** of this ten-year project is <u>to improve management of natural resources</u> The **sub-goal** is <u>to restore and improve rangelands</u> The **purpose** of CNRM is <u>to establish effective community grazing associations which will manage rangelands at sustainable carrying capacities for livestock</u> The targeted beneficiaries are individual livestock owners who have grouped themselves in associations for the purpose of managing their range resources for the common good of participating stock owners and other members of Lesotho's mountain community An additional 180,000 hectares (ha) of rangeland will be brought under improved management through these community organizations, affecting about 42,000 inhabitants of the participating communities

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[2] Basotho the plural of Mosotho, a citizen of Lesotho

[3] Carrying capacity is the number of animals which can be fed on an area of land given the quality and quantity of biomass it contains

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II Project Elements

The project will replicate six new RMAs by providing technical assistance, training, and commodities A six-person technical assistance (TA) team, consisting of host country and expatriate professionals, will work-in close collaboration with the MOA/DLS to establish the new RMAs Peace Corps volunteers will work in each new RMA to assist in organizing GAs and train GA members in business skills The project will support training to government personnel and grazing association officers and employees The project will also assist with developing RMA infrastructure

Although the strategy for CNRM implementation is based on experience from two prior projects, the CNRM approach will place considerably more emphasis than LCRD and LAPIS on developing a strong commitment to their RMA by members of the community grazing associations The importance attached to members' participation and commitment requires substantially more preparatory work in potential RMA communities The most important contribution of the technical assistance team will be its expertise in community organization and leadership training

Assistance with infrastructure will be phased based on evidence of commitment and investment on the part of the GA membership RMA infrastructure and operational costs have been scaled back to the minimum requirements and planned fee levels for grazing and membership have been increased to provide adequate income to cover recurrent costs

The training component includes 250 person months of short-duration training programs in the southern Africa region It will fund 18 person years of degree training in order to maintain the level of expertise already built up in the MOA and to add skills in rural sociology and geographic information systems The project will also provide partial funding for the National RMA Training Center which will train grazing association committee members and RMA managers in organizational maintenance, business skills, marketing, animal health, and the environmental aspects of rangeland management Courses specifically targeted to women and herdboys will be developed and taught there also Finally, the center will also be the site of in-country seminars and workshops for middle and senior level GOL officals

Infrastructure support financed by the project will include staff housing, office/storage and livestock handling facilities, fencing, water developments and minor access roads

III Cost

The total life of project cost for CNRM from all sources is estimated to be $20 4 million Of this, AID will contribute $14 0 million while the GOL will contribute $6 4 million

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IV Implementation

The Project Agreement will be signed with the GOL during the third quarter of Fiscal Year 1991 Technical assistance, training, commodities, construction, evaluation and audit will be implemented by direct AID contracts A minimum of ten percent of the technical assistance contract value will be reserved for Gray Amendment entities The technical assistance contractor will be responsibile for procuring nearly all the commodities, USAID will procure vehicles

V Monitoring, Evaluation & Audit

Monitoring, evaluations and audits will be arranged directly by AID outside the TA contract An interim evaluation, a final impact evaluation, and three audits are scheduled over the ten-year life of project Indicators of project achievements include increases in value of livestock and their products, such as wool and mohair, improvements in range quality, and socially and financially viable Grazing Associations

VI Analyses

In order to establish RMAs which are sustainable, aspects of social acceptability, environmental soundness, financial viability and net benefit to participating stock owners were analyzed The analyses found that

- The RMAs are financially viable given a reasonable level of member fees Even with their GA fees, individual RMA members are expected to make over twice what their counterparts outside the RMAs make from livestock production due to the benefits they receive from the RMA

- The economic benefit to society with RMAs is positive compared to the costs, comparing with and without RMA scenarios

- The social viability of the RMAs will be assured by adding substantial socio-economic data collection and community organization up front, followed by community organization and GA member training tailored to each RMA

- Participation and benefits to women will be insured in functions which are traditionally male-dominated Herdboys are an educationally-disadvantaged group compared to their female peers Training directed to herdboys by this project will be coordinated with the Missions's Primary Education Program

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- The initial environmental examination showed positive benefits to the environment, including protection of ground-dwelling species of animals, as well as health benefits to the population from improved water quality

- The administrative and institutional analysis showed that USAID and the GOL have sufficient staff and resources to implement the project, that the Peace Corps participation will add significant benefits, and that full and open competition will result in the best qualified technical assistance support to the project

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SOURCE SELECTION INFORMATION - See FAR 3.104[4]

I Project Rationale and Description

A Project Rationale

1 Country Situation The agricultural sector in Lesotho is characterized by an emphasis on livestock, using mainly extensive production methods (open range), declining production of dryland basic grains, increased fruit and vegetable production, including some export crops, good water resources with potential for small-scale irrigation, and serious degradation of the natural resource base (soil erosion, overgrazing)

Only about 13 percent of Lesotho is arable land suitable for cultivation The arable land is fully occupied, so any increase in production must come from increased productivity Over 60 percent of the country is rangeland for which extensive livestock production is the only viable agricultural activity, and two thirds of the country is mountainous and particularly vulnerable to environmental degradation About 25 percent of all households have no access to crop land

Key constraints in the sector include 1) strong competition for markets from the Republic of South Africa (RSA), and a poorly developed marketing system, 2) low levels of technology, 3) high risk (hail, drought, frost, price fluctuations), 4) labor constraints, including a largely absent male labor force, and 5) certain policy constraints The sector as a whole has been declining as a percentage of GDP (from 24 percent in 1980 to 20 percent in 1988), although livestock production has been basically stable with some yearly increases Wool and mohair are the country's second largest group of exports after goods from the assembly sector Lesotho's advantage in wool and mohair production is especially important because it is based on established local production, while its production of assembled goods is a temporary phenomenon due to international economic sanctions against exporting from RSA Export earnings from wool have increased from M 7 4 million in 1984 to M 27 million in 1989-90 Mohair exports peaked at M 11 7 million in 1985 and amounted to M 5 million in 1989-90, due to a combination of world price fluctuations and losses due to weather

With few natural resources, little arable land, and very low agricultural productivity, Lesotho faces a difficult future The most serious environmental problem is soil erosion, loss of soil and declining soil productivity are increasing, despite efforts to

[4] Budget information on this page should not be released to anyone connected with a potential offeror before the selection process for a contractor is completed

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reverse the trend Much of the responsibility lies with the grazing system which has allowed free and open access to grazing lands It is clear in Lesotho at the present moment that there is a lack of balance between the national herds and the carrying capacity of the rangeland The rangelands are in a distressed state, with great risk of desertification should this trend continue unabated

In recent years livestock numbers have increased, partly due to the fact that livestock are a relatively easy-to-manage and profitable investment for Basotho heads of household working in the RSA Livestock have thus become a major investment for the rural population, providing the main source of income, apart from remittances from mining employment outside the country, to a growing percentage of rural households, particularly in the mountains Livestock is an attractive option because of the open grazing system Livestock production costs and management requirements are low and returns relatively high This encourages the holding of large stocks An open grazing system, however, is characterized by a divergence of individual and community social costs and benefits

Furthermore, the desire of the rural farmer for greater income from livestock is in conflict with policies of livestock development which aim to resolve problems of an already overgrazed rangeland On overgrazed rangeland, the fertility of animals is low and mortality high, particularly among lambs and kids Most slaughter takes place with little or no relationship to productivity Poor livestock nutrition and low standard of animal husbandry are responsible for low average fleece weight, low milk yield per animal, and low carcass weights

So far, while most farmers realize the benefits of programs involving the reduction of livestock numbers, e g destocking, culling and expansion of land under fodder, they do not feel that as individuals they have the power or resources to implement such activities On a national level, culling as a method of maximizing returns from livestock has met little success as a policy because of unorganized livestock marketing channels Participants in RMAs, however, have begun practicing culling and conducting their own markets At the moment, the government, with the assistance of LAPSP, is increasing the cost of livestock ownership through the introduction of a grazing fee LAPSP is also actively exploring ways to implement other policy reforms relating to destocking, range management, the privatization of agricultural input distribution and promoting private sector participation in livestock marketing

Improvements in the quality of animals and increased productivity have been achieved by a number of individual farmers, especially in the Range Management Areas (RMAs) These can be generalized through the introduction of more prudent animal

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husbandry measures, primarily nutrition improvements, but also involving changes in sex-age compositions of the herds, improved animal care and breeding, veterinary care, a closer analysis of grazing areas, and above all, adoption of destocking programs

Implementation of the RMA activities under the LCRD and LAPIS projects has covered 132,940 hectares, 73 villages and a population of about 17,100 people In 1989-90 GA members received an average sale price per ox which was 8 4 percent above that received by stockowners in adjacent, nonRMA zones Comparisons of rangeland surveys at Sehlabathebe, the oldest RMA, in 1983 and 1990 showed 1) reduction in surface exposed to erosion by rainfall by nearly a quarter, 2) increase in desirable (from 58 8% to 64 8) and intermediately desirable (from 22 6% to 25 5%) species, 3) decrease in undesirable species from 18 2% to 9 8%, and 3) improvement in range condition (average condition scores increased from 139 (low good) to 161 (good), with the sites in the worst condition in 1983 showing the greatest improvement

2 Natural Resources in Lesotho The entire country of Lesotho is above 5000 ft in altitude, with mountains covering the central, northeastern and eastern parts The mountain region is a harsh environment in which to make a living While the per capita GNP of US$410 indicates that Basotho are poor, the people of the mountain region are the poorest (Dedorath, Gay and Hall, 1990) Due to their poverty, the population is dependent on the resources of the area and the people extract as much from the environment as they possibly can, sometimes at the expense of sound land use conservation principles

The mountain region is of considerable significance in broad economic and development terms to the welfare of Lesotho as a whole For example, its water resources will bring in royalties from water exports to the Republic of South Africa via the Lesotho Highlands Water Project (LHWP) The same project will utilize the water for electric power While agriculture provides only 20% of GDP, wool and mohair are the most important group of agricultural exports, and the best wool and mohair production is in the mountains

There are conflicts of interests between immediate local subsistence needs and desirability at the national level of conserving natural resources There are no simple solutions to these problems and conflicts Local residents and outside organizations agree that there are serious environmental problems Some attempts have been made to reach an agreement on how these problems will be solved, for example, past AID and current World Bank funded soil conservation projects The World Bank is funding training and development of Village Development Councils (VDCs) to foster locally-based planning and financing of environmentally-sound local development

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a Water Lesotho is an oasis within the region of southern Africa Surrounded by the comparatively dry country of South Africa, Lesotho has good freshwater resources Rainfall within Lesotho varies from approximately 500 mm in the lowlands and rainshadow areas of the Senqu valley to well over 1000 mm along the Thaba Putsoa escarpment of the Drakensberg/Maluti mountains Over 40% of the total mean annual rainfall of southern Africa falls in the Drakensberg/Maluti mountains Variation in monthly rainfall can be large, and similarly, variability from year to year can be high The mountain areas are therefore characterized by extremes in precipitation

The mountain topography is characterized by steep slopes, associated with river networks As a result, soils are well drained, with generally low water holding capacities Consequently, response to heavy rainfall is rapid, with little base flow during dry periods Snow falls can be expected at any time of the year and hail is a common occurrence during the summer months The "flats" which are found in many mountain valleys, provide the important wetland environments necessary for water retention, water regulation and flood attenuation, sediment stabilization, groundwater recharge and the removal of toxic substances and nutrients Soil moisture content influences the availability of grazing for livestock Destruction of the mountain sponge environments will adversely affect the downstream, highly populated areas with their attendant infrastructural facilities Equally important is the role that water coming from the mountains plays in augmenting the groundwater resources of the agriculturally rich lowland areas In turn, seepage from groundwater contributes to the base flow of rivers

The waters are a fundamental resource both within the mountains and for use downstream An assured supply of high quality water is important for domestic and livestock use Water resources also provide habitats which sustain aquatic animals, and form a portion of habitats necessary for the survival of many terrestrial species

Water is also vital for power generation and as a source of foreign exchange The Senqu-Orange River system goes 1,500 km before emptying into the Atlantic Ocean Water from Lesotho provides one-half its total flow The Lesotho Highlands Water Project (LHWP) aims to prevent loss of water resource and convert it to a source of income for Lesotho It will dam and redirect water north via tunnels to Vaal River system, a better market, and assist in the development of electricity generation Infrastructure development is phased over 30 years The first phase is Katse dam and Vaal tunnels on the Malibamatso River, which will be complete by 1995 Royalty income alone from the LHWP water supply to the Vaal River area of RSA is expected to be M50 million in 1995, and M150 million by 2020

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Adverse change to the mountain zone will reduce the lifespan of hydroelectric equipment and reservoirs because of increasing sediment loads Most important, therefore, is the effect of deteriorating hydrological conditions on the long term viability and profitability of all existing and potential developments The long term success of the entire LHWP is dependent on the conservation of the catchments

The flooding of certain major valleys of the Senqu and its tributaries by the LHWP could result in displacement of people This would cause a ripple effect and increase the environmental pressure higher up in mountainous zones

b Soil The most outstanding physical characteristics of the mountains of Lesotho are their steep slopes, high elevation and cold winter climate The temperatures are low and highly variable and hence restrict or prohibit soil formation These factors have discouraged influxes of people, and the human impact on the environment has historically been less than the rest of Lesotho The entire area is covered by basalt, a basic volcanic rock, which, through geological erosion has produced extremely rugged and broken country The mountains are a sensitive environment which responds rapidly to any disturbances or poor land use methods The soils are susceptible to erosion from high intensity rain storms, particularly if the vegetation cover on steep slopes is decreased Uncontrolled use of this sensitive environment will affect its water yielding capacity by destabilizing flow, increasing silt loads and possibly deteriorating water quality, to the detriment of downstream developments and investments

Although the basaltic areas generally have low sediment production characteristics, there is a paucity of data about siltation downstream due to degradation of soil cover Observations of the Tsehlanyane and Malibamatso rivers above the Butha-Buthe/Mokhotlong road now flow "red" (turbid) during floods, which was not the case during the early 1970s It can be assumed therefore, that the increase in suspended sediment loads is due to degradation of the upstream catchment

The forage base for summer grazing of the high mountains is critical to the agricultural economy of Lesotho The report of the Drakensberg/Maluti Conservation Programme states that the eastern mountain region, in its prime condition, has the poten-tial to provide forage to support grazing at an average stocking rate of approximately 0 60 animal units/ha (1 67 ha/animal unit) However, degradation of the plant communities decreases this to 0 15 Animal Units/ha (6 67 ha/animal unit) These figures refer to the highlands' average six month grazing season, after which most of the animals are moved to village grazing in the lower lying areas Recent, authoritative, calculations show that stocking rates are 40-50% higher than the rangeland can support

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The mountain grasslands are threatened by overgrazing During the last 20 years the number of cattleposts has increased markedly The current impression is that the lower altitude grasslands used during the winter months are being overgrazed more than the higher lying grasslands in the summer cattlepost areas

c Flora The terrestrial vegetation of the eastern mountains is not represented elsewhere in Africa The zone is characterized by a high proportion of endemic species, and some of these are regarded as threatened or rare The flora of the wetlands consists of persistent emergent vegetation, aquatic vegetation and mosses This vegetation also contains endemic, rare and endangered species

d Fauna Indigenous vertebrates known from eastern Lesotho include 40 mammal species, 1276 bird species, 16 reptile and 16 amphibian species Endangered species known in the highlands include six mammals, at least seven birds, two reptiles and three amphibians The three amphibian and one reptile species are endemic to the Drakensberg highlands It is believed that a reduction of wildlife species (especially large mammals) and their populations sizes has occurred in the recent past because of habitat changes caused by human use, hunting pressures and competition from livestock

The special environmental features described result in a fragile environment which degrades under unsympathetic land uses Overgrazing is one of the principal land uses which currently cause degeneration

3 Government of Lesotho Livestock Development Strategy Government support is a prerequisite to developing the necessary long-term strategies to address specific natural resource management issues The GOL, through a variety of legislative, regulatory and policy actions is forcing gradual but far-reaching changes in the way rural people manage their land and livestock In 1990, the Lesotho National Livestock Taskforce completed the National Livestock Policy Implementation Plan, which was adopted by the government The plan specified priorities in natural resource management, livestock production, animal health and marketing The GOL's goal for rangeland development is (1) to support management of natural resources in a manner which is sustainable and socially acceptable to Basotho, (2) to encourage commercialization of extensive livestock production, and (3) to increase productivity and income of rural livestock producers

The GOL has recently amended the Range Management and Grazing Control Regulations of 1980 The amendments include termination of transhumance of livestock from the lowlands and foothills to the highlands, adjudication of grazing rights of stock owners in community managed-grazing areas, and a national grazing fee imposed on livestock owners for use of rangelands The amended regulations

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were approved by the Principal Secretary of the Ministry of Agriculture, Coorperatives and Marketing (MOA) and were sent on to the Law Office for legal review in February 1991 The grazing fee system is expected to be initiated in November 1991

The GOL has also encouraged livestock farmers to form grazing associations, which, on a voluntary basis, collect grazing fees for range improvements in RMAs serving the associations As of November 1991, these grazing fees will be additional to the national grazing fees The GOL is requesting USAID support for further development of RMAs in Lesotho The proposed project fits well within the GOL strategy and development priorities for rangeland conservation and extensive production in that it aims to reduce the degradation of rangelands and to increase stock owner income through improving livestock productivity The project investments in each RMA are heavily loaded up-front in community development and leadership training, phasing out over four-five years by shifting increasing responsibility to the grazing association members The phased approach reduces direct government responsibility and obligations, consistent with the organizational changes already undertaken in the Ministry The project also provides a model for community participation in rangeland management It focuses community involvement in managing local resources for its own benefit The project should help instill in stockowners a sense that they can do something to conserve the range for their own animals and increase productivity

4 Relationship to AID Strategy The CNRM Project relates directly or indirectly to four of the six objectives of the Agency Mission Statement of September 1990 It is directly related to the principles of (1) responsible environmental policies and prudent management of natural resources, (2) concern for individuals and the development of their economic and social well-being, and (3) support for free markets and broad-based economic grown Indirectly, it addresses the principle of support for democracy, because the Grazing Associations established by the project are democratically organized, decentralized, community self-help organizations

AID's overall goal for programs under the Development Fund for Africa (DFA) is to encourage economic growth that is broad based, market oriented, and sustainable The Community Natural Resource Management Project addresses the DFA Action Plan's strategic objective of developing the potential for long term increases in productivity, particularly the target for improved natural resource management Population pressure, both human and animal, on the mountainous rangeland of Lesotho threatens destruction of rangeland The project contributes to improved natural resource management by organizing communities to protect and manage common rangeland in a manner consistent with sustainable use Because of its stress on community management of a productive resource, the project also contributes to the DFA targets of reducing government

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involvement and increasing community participation in livestock production

USAID/Lesotho is preparing a Country Program Strategic Plan (CPSP) for submission during the fall of 1991 One of its planned strategic objectives is "to improve long-run sustainability and increase production in selected agricultural subsectors," by pursuing two targets One of them is to "maintain productivity of the mountain rangeland resource base by bringing carrying capacity and herd size into closer balance " Specifically, the Mission will assist Lesotho to increase its current low levels of animal and rangeland productivity while decreasing the number of its livestock, thereby achieving a sustainable balance between the national herd and the rangeland which feeds it This contributes to an overall objective of sustained economic growth with employment generation Continued degradation of the rangelands, which are the key base of economic activity in the mountains, will clearly have a detrimental impact on rural employment Because livestock production accounts for a tenth of GDP, to which should be added downstream, value-added processing and artisanal production, it will remain a priority area for the government's development programs USAID is the leading donor in the range management aspects of livestock production Since increased efficiency of livestock production consistent with ecologically sustainable use of the highland range will be the focus of this project, it contributes to USAID's strategy

The project builds upon experience with grazing associations and the formation of RMAs developed under the Land Conservation and Range Development (LCRD) project, which ended in 1988 Assistance continued under the LAPIS project, which is scheduled for completion in August 1992 LCRD and LAPIS have focused on testing, training and institution building to improve the RMA model, the proposed project will focus on replicating the model in a sustainable manner, i e , a more cost-effective RMA which is built upon community participation and ownership The approach employed will make the Grazing Associations (GAs) financially viable and able to manage the rangelands for ecologically sustainable livestock production

Parallel policy reform actions are underway through the Lesotho Agricultural Policy Support Program (LAPSP) Policy conditions under LAPSP encourage livestock destocking, increased private sector involvement in livestock marketing, increased export of animals to the RSA, as well as community adjudication of disputes on grazing rights and land usage

B **Project Objectives**

1 Project Goal and Purpose In response to the problems described above, the **Goal** of the Community Natural Resource Management Project is to improve management of natural

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resources The **Sub-goal** is to restore and improve rangelands. This is consistent with the strategic objective that is expected in the forthcoming USAID/Lesotho CPSP It is also consistent with current GOL policies concerning natural resource management and rangelands improvement

To move towards achieving this goal, the **Purpose** of CNRM is to establish effective community grazing associations which will manage rangelands at sustainable carrying capacities for livestock The targeted beneficiaries are individual livestock owners who have grouped themselves in association for the purpose of managing their range resources for the common good of participating stock owners and other members of Lesotho's mountain community

2 End of Project Status The purpose will have been achieved if, by Project Assistance Completion Date (PACD) of May 31, 2001

a CNRM and the GOL agencies with which the project collaborates have developed procedures to effectively involve livestock owning communities in the formation of six new grazing associations which are managing RMAs, at least four of which are self-sustaining,

b Participating stock owners are financially better off through membership in the GA and they demonstrate their commitment to the RMA concept by assuming increased responsibility for recurrent costs,

c Increasing numbers of livestock owners are participating in RMAs/GAs,

d The capability for replicating RMA development will have been fully institutionalized within various government agencies and nongovernmental organizations,

e There is increased awareness among project beneficiaries of the long-term importance of managing natural resources at sustainable levels

While it is not anticipated that CNRM will be able to develop all the potential areas in Lesotho suitable for RMAs, CNRM is a major effort to replicate RMAs throughout Lesotho It is anticipated that CNRM will serve as a model for further replication of RMAs during the life of the project and following PACD The CNRM approach for RMA/GA development will be under constant review and steps will be taken to modify the approach when warranted

However, CNRM should not be viewed as the single solution to the problem of rangeland degradation and other ecological threats to Lesotho's highlands Effective natural resource management also requires parallel actions by the government in terms of good

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policies concerning natural resource management Other USAID and World Bank projects are addressing related environmental issues which are complementary to CNRM Also contributing to successful implementation of CNRM will be an increased commitment by the population residing in the area for the preservation of their environment

3 Planned Inputs and Expected Outputs The strategy for CNRM implementation is based on experiences from two prior projects, LCRD and LAPIS The project will focus on replicating six new RMAs Towards this end, CNRM will provide technical assistance, training, and commodities A six person technical assistance team, consisting of host country and expatriate professionals, will work in close collaboration with the MOA/DLS to establish these new RMAs The project will support training to government personnel and grazing association officers and employees The project will also assist with developing the RMA infrastructure

This approach will differ from prior efforts in that considerably more emphasis will be placed on developing a strong commitment from the membership for the RMA concept Assistance with infrastructure will be phased based on evidence of commitment and investment on the part of the membership Without members' developing a sense of ownership of the RMA, the chances for long-term sustainability will be greatly diminished

Community organization will include project extension demonstrating the kinds of observable benefits which livestock owners who are members of previously organized GAs and RMAs are achieving Such an approach will motivate the individual GA member's to participate in, and pay the fees associated with sustaining, the association By the end of the project, these efforts should have resulted in the following outputs

a An estimated additional 180,000 hectares of rangeland brought under management of the RMAs

b Carrying capacity of RMAs increased

c Personnel skilled in range management and grazing association maintenance available in rural communities

d The methodology for establishing viable and self-sustaining RMAs refined, and systems and GOL staff trained available to replicate it

If the main premise underlying CNRM proves to be sound, i e that the RMA is an ecologically and socially sound approach for managing rangelands and the livestock owners view participation in an RMA to be beneficial to their own financial interests, then CNRM

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will not only help Lesotho to conserve its natural resources, but will also provide a means to increase livestock productivity at sustainable levels, thus increasing the incomes of participating livestock owners CNRM will also help those involved in RMA development to be more cognizant of how to influence human behaviour in favor of sustainable exploitation of natural resources

4 Sustainability CNRM is the third USAID-funded project supporting RMA development in Lesotho The issue of sustainability is fundamental to the long-term success of the RMAs Analyses undertaken as part of the PP design examined sustainability from a social as well as financial perspective The question of RMA sustainability was also a major issue in evaluations of the previous RMA projects

The question of sustainability is linked to aspects of social acceptability, environmental soundness, financial viability, and net benefit to participating stock owners Addressing the question of social sustainability has led to substantial changes in the CNRM approach to RMA replication The importance attached to members' participation and commitment requires substantially more preliminary work with potential RMA communities Community leadership needs to be identified and developed The technical assistance team will have considerable expertise in community organization and leadership training For a better understanding of local customs and culture and to improve communications in the language of the members, host country professionals will make up about half of the technical assistance team

To assure financial sustainability, RMA infrastructure and operational costs have been scaled back to the minimum requirements, and minimum grazing and membership fees have been calculated to insure adequate GA income to cover recurrent costs The financial analysis established that RMAs are capable of paying all their own costs at reasonable levels of fees

The sustainability of the GOL's support of the RMAs over the life of this project and beyond was closely examined, both at the Ministry of Agriculture and at the Range Management Division level The costs of supporting RMAs fall well within the projected budget levels for recurrent costs of the RMD Further, the contribution of the MOA to the project in support of RMAs is less than six percent of its budget (based on 1990/91 and 1991/92 figures), a share which is small enough to ensure that future attributions will not be jeopardized

Finally, the RMAs' environmental soundness, its visible results in reducing rangeland degradation, must continue to be monitored and demonstrated to the nation Both social and financial viability of the RMA require that environmental effects and concomitant improvements in animal nutrition and quality be

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demonstrated in order to garner continuing support from the RMA communities and the surrounding larger society

By the PACD, it is anticipated that the RMA modified model will have been refined and institutionalized An RMA will be able to maintain operations from internal resources At least four of the six new GAs will have gained enough management experience and membership involvement to be self-sufficient Finally, with strengthened extension capability, experience in phased disengagement from "graduated" RMAs, and additional staff trained in community organization, the MOA can continue the process of RMA replication with its own resources

5 Other Donor Coordination Two other agencies, the Lesotho Highlands Development Authority (LHDA) and the European Economic Community (EEC), are currently contemplating support for new RMA developments The LHDA proposes to establish two RMAs in areas adjacent to the reservoirs created by the Highland Water Project, and the EEC is exploring the possibility of forming RMAs in the current EEC-funded Mphaki Project Both agencies are considering modelling their efforts on the model developed under the LCRD and LAPIS projects The LHDA-planned RMAs flank the existing RMA at Pelaneng, established in 1988, which will continue to be developed by MOA under CNRM

Initial discussions have been held between USAID and the other agencies (EEC and LHDA) on the possibility of combining all RMA developments into a single co-funded project If this approach goes forward, technical assistance might be provided through a single contract The MOA would prefer this approach because they are concerned that future RMAs with several technical assistance contractors would result in problems with coordinating implementation activities and staffing for simultaneous RMA development by three donors

USAID/Lesotho agrees with the MOA that it would be desirable to incorporate all new RMA activities into a single project However, it is unlikely that discussions and negotiations with either LHDA or the EEC will have been completed by the time the CNRM Project is scheduled for authorization Note that if negotiation with either or both agencies are successfully concluded, then provisions might be made to prepare a project paper supplement and amend the Project Agreement to incorporate these new activities into CNRM Combining AID, EEC, and LHDA RMA development will require a special arrangement to facilitate payments This may entail establishing a trust account to facilitate payments for the co-funded activities The Mission recognizes that AA/AFR approval would be required for any such trust arrangement The RFP and subsequent contract with the organization providing technical assistance will note that the contract is subject to re-negotiation and amendment to accommodate development of an expanded number of RMAs

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C **Project Elements** CNRM will provide (1) long- and short-term technical assistance, both expatriate and national, for replicating and expanding the RMA model, expanding geographical coverage under six RMAs and assisting the MOA/RMD develop a phase-in/phase-out plan for its support to RMAs, (2) assistance to the MOA for specialized studies including monitoring and evaluation activities, (3) support for training including development of the National RMA Training Center, and (4) assistance to new RMAs with basic infrastructure development All technical assistance personnel will work in close collaboration with the Range Management Division at headquarters and in the field

1 Technical Assistance Team This team, composed of six professionals, will be formed as two field-oriented operational groups working with the RMD to establish RMAs in designated communities Because advice from host country technicians is so important, the RFP for the contract will specify approximately three members of the team should be Basotho The composition of the technical assistance team will be as follows

Position	Duration
1 Team Leader - Rural Development & Project Management	10 person years
3 Community Organization Specialist	28 person years
1 Range Management/Livestock Specialist	9 person years
1 Agriculture Extensionist	10 person years
Person Years	**57 person years**

Two four-person field teams will be composed of the following

TA Contractor	-	Community Organization Specialist Livestock/Agriculturalist
MOA	-	Range Management Advisor (initially RMA Manager)
Peace Corps	-	Volunteers Advisors/GA Organization and Management Skills

The exact composition of the team will vary according to the skills required by the individual RMA One of the three community organization specialists will be responsible for advising already established RMAs in leadership, group maintenance and problem solving The aim of these activities will be for existing RMAs to become self-sustaining and for MOA/RMD support to be phased out

The TA team will be involved in assisting the MOA/RMD with preliminary work on newly-identified RMA areas Several potential areas may be under active consideration at any one time The

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initial effort with these RMAs is intermittent and will not require the full-time presence of TA advisors during this early phase As development progresses within the grazing association, the level of effort will increase on the part of the RMA field team

The team will prepare an implementation plan for each RMA For the first two RMAs, the plan will integrate analyses prepared by the LAPIS project from baseline surveys In the other four, the team will do baseline data gathering for each RMA prior to its initiation The implementation plan will be prepared in close collaboration with the GA executive committee to reflect the requirements of each individual RMA The plan will identify specific activities and actions and the sequencing of these events The plan will identify which technical assistance resource is required and its duration On-the-job training activities will be included These plans will be jointly formulated with the MOA/RMD and a timetable negotiated with them which specifies RMD inputs, and when and how they will be phased out Advisors will also conduct short training courses in their area of specialization at the National RMA Training Centre

The majority of extension assistance required for existing RMAs will be provided by the MOA, however, CNRM TA advisors may also provide assistance on matters related to organization, management, and production CNRM technical assistance to these RMAs is not likely to exceed one person year annually

The TA contract will incorporate an action plan which will identify the specific steps in developing new RMAs, and types of on-going support required for existing RMA On an annual basis, the TA contractor will develop detailed workplans which will describe specific activities they will carry out during the year The TA team will develop these annual workplans in consultation with the RMD and request approval by the RMD and USAID The TA team will submit quarterly progress reports to the RMD and USAID which indicate the level of accomplishment against the targets in the annual workplans (see also Annex F, Monitoring and Evaluation, for a schedule of reports)

Support and administrative staff for the technical assistance team will consist of local hires These will include an administrative officer, accountant, secretary, and other support staff

The main task of the TA team is to provide operational support and on-the-job training leading to the establishment of new RMAs The TA team will work through the RMD to identify and prioritize the new RMA areas The process of RMA formation will follow the procedures outlined in the Technical Analysis (Annex G-1)

The MOA has one technician who is highly skilled in community organization The TA team will develop their approach to

This might include intermediation with existing financial institutions to encourage establishment of services to agriculturists in remote rural areas

2 Short-Term Technical Assistance Short-term technical assistance will be required to provide assistance to the MOA for specialized studies The project will budget for 30 person months of short-term technical assistance for consulting assignments These assignments may include (1) assistance with policy analysis, (2) impact assessments, (3) examination of technical production constraints, (4) assistance with natural resource management issues, and (5) a training needs assessment Short-term technical assistance would also be appropriate for specialized in-country seminars for MOA staff or courses at the National RMA Training Centre Short-term technical assistance will be procured as part of the overall technical assistance contract from U S or local sources

3 Peace Corps Peace Corps Volunteers will provide specific technical skills on site during the initiation of new RMAs/GAs Peace Corps volunteers have in the past provided qualified volunteers for similar assignments Volunteers assigned to CNRM will have training and experience appropriate to the following tasks community organization, non-formal education, business skills, and water resource development (job descriptions for the volunteers can be found in Annex H

a Community organization Because the successful development of new RMAs and GAs under the CNRM project will depend largely on how well prospective communities understand the RMA/GA concept and demonstrate their commitment to this concept, Peace Corps volunteers with good community organization and leadership development skills will play a key role in formation of the GAs This activity is a key prerequisite to legally establishing the RMA and the subsequent physical developments of the RMA It is estimated that 3-4 volunteers at a time would be required for these activities over the life of the project

b Non-formal education One volunteer couple will work at the National RMA Training Center Executive committees and members of new GAs will undergo short-term training at this facility The couple selected will provide a combination of skills for training a manager in center administration and logistics management Volunteers will finish this task by year three of the project

c Business and management skills Following one volunteer's organizing the GA, a second volunteer would begin teaching skills to GA committees and employees about how to manage the GA as a viable business The volunteer would do the training on-the-job and at the Training Center

incorporate and expand upon his expertise MOA field staff will also be providing support at the community level It is the responsibility of the TA team to continuously assess the progress being made by the local community in forming their grazing association The TA team must ensure that members' desires to have their RMA be operational do not outpace the process of developing a comprehensive, community understanding of the RMA concept, GA leadership capability and management expertise, and securing adequate member investment in the RMA

Management training responsibilities of the TA team are at two levels The first is training for members of the GA management and executive committees Some training will be provided through short courses at the National RMA Training Centre, but most of the training will be gained from supervised, on-the-job, practical experience The GA committee members require training in (1) how to conduct the business of the grazing association, member relations, formulation of policy, (2) understanding the technical constraints and parameters of the RMA, (3) planning for physical developments and RMA expansion, and (4) financial responsibilities and how to assess RMA performance Training at this level in these skill areas is essential to establish a strong foundation of committed members in the GA

At the second level, the TA team will be working with employees of the GAs, especially the managers or manager trainees Each RMA is expected to recruit a manager-designate to understudy the interim manager (an MOA employee) and assume full management responsibility after gaining adequate practical experience and completing an on-the-job training program MOA staff will serve as interim managers during transition periods, the recruiting period or in situations when the manager designate/trainee is away undergoing off-site training

In both the existing and new RMAs, practical training in planning and costing, at both levels, for committee members and management, is essential for the long term sustainability of the RMA The general membership of the GA, and the committee members in particular, must understand the temporary nature of project assistance and not view government as the source of follow-on financial support From the onset members will be expected to contribute their fair share towards the cost of establishing and operating the RMA This is the only way by which members will come to appreciate the real cost of operating the RMA and recognize the need for prudent management of financial and physical resources Here again, the TA team will play a critical role in helping to foster understanding by the members about their GA

The TA team will provide, either through its long-term staff or through short-term technical assistance, strategies for expanding investment opportunities in rural areas which would provide alternatives to livestock for migrant workers' remittances

d Water resource development One volunteer would continue water resource development work initiated under the LAPIS project, specifically operation of the horizontal drilling rig According to the Initial Environmental Examination (IEE) the development of watering sources for livestock and potable water for RMA head-quarters sites has been especially beneficial to the environment of the previous RMAs

The maximum number of volunteers required would be 5-7 at any one time over a period of 6-7 years which is the planned period for starting all new RMAs/GAs under the CNRM project As with the contract technical assistance, Peace Corps Volunteers will be interim technical specialists, employed only until host country staff can be identified and trained to fill these positions The replacement of PCVs will be phased over the life of CNRM

4 Training The project will fund in-country, regional, and a limited amount of overseas degree training The replication of six new RMAs will increase the demand for training of GA committee members and employees Specific courses will bedeveloped for women and herdboys in livestock husbandry and management skills in order to improve their contribution to, and the benefits they receive from, improvements to rangeland conservation and livestock productivity

a National RMA Training Center The National RMA Training Center will be the site of the majority of short-term training for the project The Center is under construction and is scheduled to open in 1992 in Sehlabathebe, the first RMA CNRM will provide equipment, funds for teaching materials and curriculum development, and operating costs for the first three and one-half years of Center operation After that the project contribution will end Based on experience with two similar centers elsewhere in the country, the center is expected to be self supporting by then through collection of training fees Annex I gives details of the center budget

b In-country seminars and workshops Project resources will be available to fund seminars and workshops on special topics related to natural resource management and planning These training activities will likely be designed for middle and senior level GOL officials, as well as nongovernment organization and private participants

c Regional training Short duration training programs offered by training institutions in southern Africa, such as the Mananga Agricultural Management Center in Swaziland and the SADCC Resource Economics Institute, will be used to enhance the practical skills of project related personnel The emphases will be on skills training for

practical application such as farm planning, financial management, and data processing

d Degree training Only a limited amount of degree level training will be offered under CNRM Five of the RMD staff have received long-term degree level training under previous projects Those projects also provided institutional strengthening to the MOA, including DLS However, the continued availability of skills within RMD needs to be enhanced, particularly in quantitative analysis and community organization (rural sociology) RMD needs to strengthen its capability to undertake social soundness assessments, community organization and rural leadership training Therefore, CNRM will fund one M A in rural sociology or a related social science

Two M Sc degrees in range management will be provided in order to maintain the current level of technically trained staff over the coming ten years Geographic information system training is required to improve MOA capability for natural resource monitoring and to assist the adjudication program to rationally allocate range resources among traditional users in an area based on geographic criteria

The project will fund three participants for B S level training, two in GIS and the third in rural sociology The training will be in regional institutions (except RSA) to keep the duration of training less than three calendar years B S level training is justified in these disciplines because these are very specialized areas--RMD has only one diploma level staff in GIS and no one trained in rural sociology Regional training in rural sociology at the B S or B A level will be directed at practical metholodogical and analytical techniques appropriate to studies in the region

Degree training for those already employed in the RMD will be phased over the LOP in order to reduce negative effects on CNRM implementation resulting from vacant positions due to long-term training

5 RMA Infrastructure The project will fund, on a cost sharing basis, the construction of basic infrastructure for the six new RMAs Individual cost sharing arrangements will be worked out with each GA Cost sharing is viewed as a good indication of member commitment The cost sharing will range between 5% to 15% of the construction costs and may be provided through in-kind contributions The construction will consist of staff housing, office/storage facility, livestock handling facilities, fencing, water developments, and access roads

The project will fully fund the RMA infrastructure, but only after its GA is sufficiently organized and the members have adequately demonstrated their commitment to the RMA concept

Commitment will be demonstrated by a minimum required number of members fully paid up, and evidence that (1) there are adequate financial resources to begin to cover the recurrent operational expenses and (2) a fund has been established for repair or replacement of the donated RMA infrastructure The TA team will subcontract for construction AID will separately contract an engineer who will be responsible for review and approval of all construction plans and supervision of construction contractors Costs are estimated based on construction experience in the four existing RMAs Infrastructure development at each new RMA is estimated at a base cost of $100,000 (with a contingency for inflation of 12% additional per year)

6 Construction The construction component for RMA infrastructure was reviewed by the REDSO/ESA Chief Engineer Section 611(a) certification is discussed in Section III D below and certification of adequate planning and sufficient engineering is attached as Annex I

II COST ESTIMATES AND EXPENDITURE PROJECTIONS

The total life of project cost for CNRM from all sources is estimated to be $ 20,438,000 Of this, the A I D contribution will be $ 14,086,000 or 69 percent of the total The Government of Lesotho contribution will be the equivalent of $ 6,352,000 or 31 percent of the total The GOL contribution was calculated as the cost to the government for the Range Management Division and 20-25% of the cost for other aspects of the Livestock Services program (contribution from the Animal Production and Veterinary Services Divisions) The GOL 1990 Budget Estimates were used as base year levels with five percent growth in successive years A detail of the GOL contribution is included on page 3 of Annex E The estimated cost to the GOL is conservative GOL will incur expenditures from other sections of the MOA (marketing and conservation) and with other ministries (e g Interior) involved with CNRM implementation

The contribution of GA members will become increasingly important sources of funding It is estimated that each new RMA established under the project will generate over $19,000 per annum from grazing fees and other sources By the PACD, the combined income from all project-assisted RMAs would be in excess of $190,000 annually

Table 1 summarizes the anticipated contribution to CNRM by A I D and the GOL An annual inflation rate of 14 percent for local procurement, 12% for commodities procured from the RSA and 5% for U S procurement has been factored into the line items Annex E provides a detailed budget

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[5] Budget information on this page should not be released to anyone connected with a potential offeror before the selection process for a contractor is completed

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SOURCE SELECTION INFORMATION - See FAR 3.104[6]

TABLE 1 Summary Cost Estimate by Input Category
(U S $ '000 or equivalent)

INPUT CATEGORY	A I D	G O L	TOTAL
Technical Assistance	8,991	-	8,991
Training	973	-	973
Commodities	562		562
Local Costs	1,936	6,352	8,288
Construction	883	-	883
Evaluation & Audit	741		741
TOTAL	14,086	6,352	20,438

TABLE 2. AID Obligations Schedule vs Planned Expenditures
(U S $ '000)

FISCAL YEAR	PLANNED OBLIGATION	ESTIMATED EXPENDITURE	ANTICIPATED PIPELINE
1991	1 500	0	1,500
1992	1 400	800	2,100
1993	2,250	1,300	3,050
1994	1,500	1,400	3,150
1995	1,600	1,500	3,250
1996	1,600	1,700	3,150
1997	1,600	1,600	3,150
1998	1,700	1,800	3,050
1999	936	1,500	2,486
2000	-	1,500	986
2001	-	986	0
TOTAL	14,086	14,086	

The plan in Table 2 will provide sufficient obligated funds to meet planned expenditures of the project

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TABLE 3 Methods of Implementation and Financing
(U S $ '000)

Category	Method of Implementing	Method of Financing	Amount
Technical Assistance	Direct AID Contract	Dir Reimbursement	$8,991
Training	Direct AID Contract	Dir Reimbursement	$ 973
Commodities	Direct AID Contract	Dir Reimbursement or Direct Payment	$ 562
Construction	Direct AID Contract	Direct Payment	$ 883
Evaluation/ Audit	Direct Aid Contract	Direct Payment	$ 741

The direct hire Assistant Agricultural Development Officer will be assigned as the Project Officer for the Project and will be responsible for review and administrative approval or disapproval of all contractor requests for reimbursement

USAID will procure the services of a local firm to conduct project audits in Years 3, 6 and 9 of the project A Regional Inspector General audit, or audits, are expected during the LOP, RIG will finance its auditor(s)

III IMPLEMENTATION PLAN

A Procurement Plan

1 Technical Assistance

Project Contractor - Analyses undertaken as part of PP design for CNRM have indicated that the project objective, successful replication of the RMA model, will primarily require technical expertise in the area of grass roots community organization and rural leadership development This will be the key factor in achieving sustainability for the grazing associations Therefore the technical assistance contractor must have clearly demonstrated capability to do effective community organization and leadership development work Most of the technical assistance team will be required to reside in close proximity to the RMA sites

While there is considerable institutional capability in the GOL in the technical aspects of range management, community organizational skills are minimal Therefore it will be necessary to procure outside assistance for the new project which

[7] Budget information on this page should not be released to anyone connected with a potential offeror before the selection process for a contractor is completed

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can expand the community organizational and leadership skills in the country to make the RMA approach sustainable

Such an effort requires that the technical assistance agent be committed to as well as experienced in grass roots organization development Successful implementation of the project demands this organizational character for its leading implementation agent Although some for-profit firms have demonstrated experience in community organization, this type of character and expertise is found more frequently in the PVO community

The design team has examined various ways by which this capability can be procured for project implementation The merits of both competition limited to PVOs (requiring a cooperative agreement) and open competition contracting were examined relative to appropriateness for CNRM implementation needs Considering the merits of various possible approaches and in the interest in obtaining the maximum number of qualified responses, it was decided that technical assistance procurement would be via full and open competition

The Requests for Proposals (RFP) will be written to solicit proposals from a broad range of organizations with an emphasis on experience and organizational commitment to community organization and leadership development Skills related to natural resource management, technical livestock production, and training activities will also be included in the RFP PVOs and other organizations with overseas rural community development experience will be encouraged to bid on this contract

Because the creation of community organizations responsible for managing range resources in a sustainable manner is still to be carried out on an experimental basis, it is unlikely that a single organization will possess all the skills and services required for successful implementation of this project Therefore, offerors will be encouraged to explore joint venture arrangements such as joint proposal or sub-contracting arrangements with the agency providing community organization expertise playing the lead role in providing the full range of required services

<u>Gray Amendment</u> - A minimum of ten percent of the contract value will be reserved for economically and socially disadvantaged entities To satisfy this requirement, organizations responding to the RFP will be required to identify such eligible firms as part of their proposal submissions

A single contract will be awarded which will include the provision of long- and short-term technical assistance, commodity procurement services (with the exception of those items procured by AID on behalf of the project), construction and training Services for certain monitoring, evaluation and audit services will be contracted separately by AID

The Regional Contracting Officer (RCO) will procure the technical assistance under this project Activities within the USAID's delegation of authority may be executed at the Mission or by the RCO

2 Commodities

a Responsible agencies Overall responsibility for procurement of commodities listed below will reside with the contractor selected to implement the CNRM Project It is expected, however, that USAID/Lesotho will procure project vehicles The modality and responsibility for receiving and clearing all commodities will be worked out at the project implementation stage of the project

b Contractor procurement capacity. The technical assistance contractor chosen to implement CNRM must, as part of the technical evaluation, demonstrate its understanding and compliance with A I D 's procurement procedures Except for vehicles, the contractor will be responsible for procuring commodities listed in Table 4

Additionally, the contractor will procure certain items and services (listed in Table 5) at various stages during the implementation of CNRM These may possibly be procured in the southern Africa region If, however, consolidated procurement of these items occurs, the contractor will explore the possibility of sourcing from the U S Items that are not currently made in the U S , or which because of the very nature of the item(s) cannot be purchased and shipped to Lesotho from the U S at a reasonable cost, are eligible for purchase from Code 935 or 941 source/origin

When procuring project vehicles USAID/Lesotho will employ the services of the Central Procurement Office of the U S Embassy in Tokyo and order directly from Japan Sixteen vehicles are planned for the project, as follows

Year	Qty. and For Whom
FY 91	2 RMD Advisor (one for each RMA)
	4 - T A Field Teams (two for each RMA)
	1 - T A Team Leader
	1 - T A Team Assistant (troubleshooter)
FY 95	(replacements for vehicles purchased in FY92)

The contractor will issue the appropriate solicitation documents when soliciting quotations or proposals from local vendors Additionally, the contractor will submit a comprehensive procurement list to the RCO for approval prior to purchasing any of the items shown above, and a quarterly report of all procurement to the Mission Project Manager

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TABLE 4 Equipment List

ITEM	QTY	PROB S/O	PROC ENTITY	AMOUNT
Radios (HF)	9	000	Contractor	$ 20,000
Computers	5	000	Contractor	25 000
Facsimile Machine	2	935	Contractor	4,000
Photocopier	2	935	Contractor	5,000
Office/Household Furniture		941	Contractor	35,000
Training Equipment and Materials		935/941	Contractor	45,000
Well Drilling Rig	1	000	Contractor	72,000
Vehicles	16	935	AID	475,000
Total				$ 680,000

TABLE 5 Source/Origin of Commodities

ITEMS	PROBABLE S/O	AMOUNT
Fencing Material	HC/SA/USA	variable
Building Material	"	variable
Water Pipes/Fittings	"	variable
Farm Tools/Equipment	"	variable
Livestock Handling Equipment	"	variable
TOTAL		$660,000

c Development Fund for Africa certification

This project will be funded under the DFA Per Congressional guidelines set forth in the legislation authorizing DFA, all reasonable efforts will be made to utilize U S source/origin commodities and U S services to the maximum extent practicable The above list was reviewed by the REDSO/ESA Regional Commodity Management Office Only those items that are not currently made in the U S or which because of the very nature of the item(s) cannot be purchased and shipped to Lesotho from the U S at a reasonable cost, have been designated as eligible for purchase from Code 935 source/origin

The long-term TA contractor will be from the U S and long-term training will be either in the U S or in Code 941 countries Air travel will be on U S carriers where they are available (U S air carriers do not currently fly in to southern Africa) At least 50% of commodities shipped will be shipped on U S carriers The USAID Project Officer will cable the cargo shipping plan to

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MS/OP/TRANS when an approved procurement schedule is completed

The authorized source for procurement of motor vehicles is Code 935, and no 'Special Circumstances' waiver is required to purchase vehicles from non-U S sources Because the U S does not manufacture the type of right-hand drive vehicle required for the project and for safe-driving in accordance with Lesotho driving practices, the Project intends to purchase vehicles from Code 935 sources

Based on the above, the REDSO/ESA/RCMO has concluded that USAID/Lesotho is in accordance with Agency Africa Bureau guidelines of maximizing U S procurement whenever practicable At the time of field approval of the CNRM Project, the Project Officer will cable a brief summary of the procurement plan to AFR/PD, which indicates the intended percentage in terms of dollars of both U S -based commodity and technical assistance procurement, including training When significant changes in U S source procurement occur from that indicated in the cable summary, the Project Officer will update the cable summary to AFR/PD

Consonant with DFA procurement guidelines, the contractor will follow this order of preference for procurement (subject to the qualifications noted above) (a) U S only, (b) host country, (c) Code 941 (Selected Free World), and (d) Code 935 (Special Free World)

d <u>Commodity Marking</u> Commodities purchased under the Project will be appropriately marked with the AID handclasp emblem It is the responsibility of the Project Officer of USAID/Lesotho to assure compliance with AID marking requirements When marking is not in compliance with requirements, the Project Officer of USAID/Lesotho should initiate corrective action which could entail informing the RCO of contractor non-compliance and requesting corrective action, or may necessitate the submittal of AID Form 1450-1 ('Reporting of Violation - Marking Requirements') to AID/W AID policy on marking requirements for AID-financed commodities is contained in HB 1B, Chapter 22

e <u>Procurement Schedule</u> Realistic advance planning for the procurement of all commodities listed above is essential for project success Because the TA contract has not yet been prepared, it is unclear now exactly when procurement will take place For this reason the contractor will, within ninety (90) days of signature of the contract, submit a comprehensive procurement schedule to the RCO and USAID/Lesotho detailing the expected sequence for receipt of all commodity items listed in this Procurement Plan USAID Project Office approval of the procurement schedule will then be required

B Administrative and Logistic Arrangements

1 Administrative Responsibilities The Technical Assistance contractor will be responsible for administrative and logistic arrangements for all project components The details of the contractual arrangements are explained above The contractor will be responsible for all administrative and logistical requirements of the sub-contractors with the exception of audit and evaluation contractors, the procurement of vehicles, and the provision of any housing in Maseru which will be procured separately by USAID/Lesotho

The contractor's field team (technical advisors) who provide technical assistance for RMA/GA development will collaborate closely with the MOA/RMD Except for office space, the MOA will not be responsible for providing logistic or administrative support to the technical assistance team The contractor will also be responsible for providing logistical support and backstopping for all Peace Corps Volunteers assigned to the project The technical assistance team will provide on-site housing (at the level usually furnished to PCVs), furnishing, (horse) transportation, training supplies and the part of the volunteer's training costs which concern on-site orientation prior to swearing in and assignment

The Mission's Agricultural Development Office will oversee and monitor project activities The Assistant Agricultural Development Officer, a USAID direct hire employee, will be assigned as the Project Officer for CNRM

2 Project Coordination and Start-Up The contractor's Chief of Party (COP) will arrive in the second quarter of FY 1992, approximately one month before the other expatriate staff arrive The host country professional staff will be scheduled to start during that month The COP will be responsible for

- Recruitment of administrative and support staff,
- Liaison with the Executive Office of USAID/Lesotho to complete procurement of project vehicles,
- Procurement of equipment necessary to establish project office at MOA,
- Liaison with GOL/MOA during transition from the LAPIS contractor to the new technical assistance team, and
- Coordination of the transition of any LAPIS contractor activities to be continued under the CNRM contract

3 Project Support Services The contractor will be responsible for housing and maintenance, and other services related to office and personnel support other than housing that is provided in Maseru The contractor will be responsible for procuring all project commodities, including materials for RMA

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construction, except vehicles Specific guidelines for commodity procurement are given in the commodity procurement section of this document The contractor can obtain further guidance oncommodity procurement from the Mission Executive Officer, AID Handbook 15, or from the REDSO/ESA Commodity Management Office

C Implementation Schedule

Action	Action Agent	Scheduled (in FY)
RFP for TA contract published	USAID/RCO	4th Q 91
Review of TA proposals	USAID/RCO	1st Q 92
Selection and execution of the technical assistance contract	USAID/RCO	1st Q 92
CPs fulfilled	GOL	1st Q 92
Project vehicles ordered	USAID	1st Q 92
Baseline survey	LAPIS TA	3rd Q 93
Arrival of TA contractor COP	TA Cont	2nd Q 92
Establishment of TA contractor project office at MOA	TA Cont	2nd Q 92
TA advisors arrived and operational	TA Cont	3rd Q 92
Transition from LAPIS TA team to CNRM TA team completed	CNRM & LAPIS TA, MOA & USAID	3rd Q 92
Team building exercise	USDA/OICD, CNRM, MOA & USAID	3rd Q 92
Two New RMAs Identified	CNRM & LAPIS TA, MOA & USAID	3rd Q 92
First annual work plan and strategy Statement (due annually 6/30) and procure ment schedule	TA Cont	3rd Q 92
Review of TA contractor's management information system and accounting	USAID Controller	4th Q 92
First TA quarterly report (due 12/31, 3/30, 6/30, 9/30 annually)	TA Cont	4th Q 92
Placement of Peace Corps Volunteers	Peace Corps & TA Cont	1st Q 93
Prepare training schedule for MOA staff	MOA, USAID & TA Cont	1st Q 93
Commence assistance to first two RMAs	MOA & TA Cont	2nd Q 93
First non-federal audit	USAID, Auditor	3rd Q 94

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C **Implementation Schedule** (continued)

Action	Action Agent	Scheduled (in FY)
Two more RMAs identified commence assistance	MOA & TA Cont	2nd Q 95
Interim evaluation	USAID & MOA	1st Q 96
Final two RMAs identified	MOA & TA Cont	2nd Q 97
Second non-federal audit	USAID, Auditor	3rd Q 97
Project impact evaluation	USAID & MOA	2nd Q 00
Third non-federal audit and sustainability review	USAID, Auditor	3rd Q 00
Departure of TA team	TA Cont	2nd Q 01
Project Assistance Completion Date	USAID	2nd Q 01

D **Section 611 Considerations** Section 611, parts (a) through (e), of the Foreign Assistance Act specify aspects of all A I D projects which must be addressed during design The following addresses each part of Section 611 as regards the CNRM Project

Section 611(a)(1) requires that engineering, financial, and other plans necessary to carry out the project, and a reasonably firm estimate of the cost to the U S government, have been completed All plans necessary have been completed I e ,

- Engineering plans have been reviewed by the REDSO engineer and his certification appears in Annex I

- Financial plans are discussed in Section II of this paper, a detailed budget appears in Annex E

- Other analyses appear in Annex G, they are summarized in Section V below

Section 611(a)(2) requires review of existing or pending legislation within Lesotho which permits the orderly accomplishment of the purposes of the project A complete review indicates that legislation required to permit the project to achieve its purposes has been enacted Legislation required to establish the RMA has been enacted and tested in the Courts National grazing regulations, which are not necessary for the project to achieve its goals but which will promote destocking of overgrazed rangelands, will be enacted in 1991

Section 611(b) does not pertain to the project

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Section 611(c) requires construction contracts made in connection with the project to be made on a competitive basis The minor infrastructure construction planned under the project (as described in Section I C 5 and 6 of this paper) will be subcontracted by the TA contractor, all of whose procurement will be governed by the FAR Standard Provisions for contracts These provisions assure competition

Section 611(d) does not pertain to the project

Section 611(e) does not pertain to the project because the construction component for the project will cost less than $1,000,000 Therefore, Mission Director certification is not needed

E **Waivers** Prior to execution of the Project Agreement and as provided for in Chapter 16 C of A I D Handbook 10, the Mission Director will authorize a waiver of the requirement that Lesotho be responsible for the cost of international round-trip travel, including incidental costs enroute The justification will be based on the country's limited international airline capacity (small planes to Johannesburg, South Africa), its Least Developed Country status and participation in an Enhanced Structural Adjustment Program, and its contribution of local currency to the project

IV **Monitoring, Evaluation and Audit**

This section describes information that will be needed during the period of the CNRM project organized with regard to the objectives and issues that generate the information requirements, information needs which are priority, and resources needed to carry out monitoring, evaluation and audit Annex F, Monitoring, Evaluation and Audit specifies the Management Information System how, when, where and by whom information will be collected, analyzed and reported

A **Information Needs** The GOL needs data from CNRM in order to make programming and budgeting decisions each year, as well as to evaluate the effectiveness of policy changes and program efficiency The implementing contractor needs information to measure its progress toward achieving its contract deliverables, and to specify problem areas as well as successes to its field staff and headquarters USAID/Maseru needs information in order to track its expenditures, allocate resources, assess progress toward project objectives, and evaluate program impact each year AID/W, especially the Africa Bureau, needs information on program impact to report to Congress and to make decisions about programming resources to reach Bureau and Agency objectives Finally, the people of Lesotho need reliable information on the best means to guard their national rangeland resource, and to use it wisely to sustain their economic well-being

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The following description of information needs is organized according to the Natural Resource Management (NRM) Framework The AFR/TR/ANR/NR established the NRM Framework in order to track progress toward Target 3 1 of the DFA Strategic Objective III (SO3) "achieving sustainable increases in productivity through better management of natural resources " The framework organizes natural resources management activities with respect to how they contribute to achieving Target 3 1 (A fuller discussion of the NRM framework is found in "An Impact Indicator Framework for Target 3 1 of Strategic Objective 3," Ben Stoner, AFR/TR/ANR/NR, September 14, 1990) Following the framework, a comprehensive list of CNRM indicators has been established which identifies five levels of measurement (more detail on specific measures is found in Annex F)

Level I. (Inputs) Actions that contribute to establishing conditions in Level II Indicators

A Community meetings to organize villages into Grazing Associations
B Completion of cattlepost inventories and statistics on cusomary use
C Approval of Principal Chief for establishing RMA
D Adjudication of grazing rights
E Adequate and appropriate staffing
F Expenditures, financial activity
G Construction, upgrading sale yards
H Donor coordination

Level II (Outputs) Condition contributing to adoption of better practices Indicators

A Number of communities organized for range management
B Area of land (no of ha) under RMA management
C Number of Animal Units/ha for each RMA
D Training completed community organization, administration of GAs, livestock production, animal nutrition and health, environment
E Content of environmental training
F Sustainable operation of Sehlabathebe Training Center
G Training for GOL personnel
H Trained personnel available in RMA

Level III (Purpose) Adoption of practices that produced (or show promise of producing) Level IV effects Indicators

A Implementation of grazing plan
B Payment of fees and enforcement [8]
C Support of Chief for enforcement
D Utilization of livestock improvement packages
E Culling to reduce herd size by 10% over 7 years (see also II C)
F Financial viability income *vs* costs
G Accountability reports to RMA members, bookkeeping skills
H Communications GA officers, RMA advisors, and GA members
I Problem-solving vis-a vis outsiders, non-stockholders and stockholders with few animals
J Impact of livestock and other national policies

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[8] USAID will not at any time finance "range riders," who are paid by the GAs to patrol the RMA, impound animals found grazing without permits or in areas restricted by the GA grazing plan

Level IV (Goal, Subgoal) Biophysical changes that produce Level V (people level) impact Indicators

A Range quality species composition (frequency, density, cover distribution, no and size each plant) range condition and trend
B Soil loss
C Control of fire
D Effect of RMA construction (fencing, housing, water supplies, waste water and solid waste disposal, access roads)
E Rainfall (in conjunction with IV A)

Level V (People level impact) Increases in Income and/or Production Indicators

A Animal productivity weight of cattle sold
B Animal productivity reproduction rates
C Animal productivity herd composition sheep and goats
D Animal productivity wool and mohair quantity (quality?)
E Animal productivity herd composition and repro - cattle
F Baseline social statistics for each new RMA (No of residents by sex and household type no of stock owners, herdboys, no of stock per household, characterization of livestock care)
G Remeasures of V F social statistics
H Alternatives for outsiders, stockholders with few stock
I Cost to GOL continuing extension
J Cost to GOL other costs that will be phased out

B **Priorities** Priority needs for data are baseline socio-economic surveys of each area identified as an RMA, the interim evaluation at Year V and the audit at year III, and periodic measures of animal production and pasture quality

1 Baseline socio-economic surveys These surveys serve as the basis for identifying constraints in organizing communities, such as those identified in the social soundness analysis Surveys described in the technical analysis for the initiation of each RMA should be carried out Community members should be asked the same sorts of questions as the 1991 survey of three existing RMAs (Attachment A to Annex G 4 **Social Soundness Analysis**), and responses should be analyzed and reported by the TA Contractor The baseline studies will be repeated by an evaluation team during the interim evaluation in order to gauge the effect of the project on particular groups herdboys, women, stockholders with few animals, and outsiders displaced by establishment of the RMAs, as well as to evaluate the social cohesion factors affecting the Grazing Association as a whole

2 Interim external evaluation at Year V The interim evaluation will cover the progress made in the first two RMAs as well as the four RMAs established prior to commencement of CNRM project Results of the interim evaluation will be used to correct and refine the community organization approach of the project, and assess whether GA members are willing to pay the real costs of the RMA The audit from year III will assist the external evaluation team to determine how much the GAs are really costing, and how effectively income is generated and spent The interim evaluation

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will serve as the basis for structuring implementation during the second five years of the project The interim evaluation will also include analysis of biophysical and animal production data which have been collected to assess progress in range improvement and animal productivity (Annex F gives details on measurement for range quality and targets for animal productivity for each RMA by year)

3 Range quality and animal productivity Measurements on these variables for each RMA will be done slightly less frequently than has been done under previous RMA projects because of the increase in the number of RMAs Also, sometimes data which was heretofore collected has not been analyzed The CNRM monitoring schedule is designed to allow time to analyze data, as well as to allow enough time to pass so that measurable changes can be detected Animal productivity at the point of measurement will be compared to the targets described in the financial and economic analyses as well as the baseline data collected for each RMA Of particular interest are annual data on quantity of wool and mohair exported and earnings received from their sale

At the PID stage, aerial photo analysis with ground truthing was considered as a means of measuring natural resource change Based on considerations of time and cost to get the desired level of precision, aerial photos were discarded as a methodology All the natural resource measurements will be done on the ground One biophysical measurement which had not been done in earlier RMA projects is soil loss The means of measuring it are simple, measurements are taken in conjunction with pasture quality so that the same teams and schedule can be used The measurement allows some inferences to be made about erosion which can be compared to other measurements taken within the country, for example, in the LHWP

A final impact evaluation will take place in the ninth year of the project An external evaluation team will analyze data and conduct their own supplemental studies of indicators at the purpose, goal/subgoal, and people-level impact levels

Non-federal audits are scheduled for Years 3, 6 and 9 Federal audit(s) are expected during the life of the project, it/they will be procured by the Regional Inspector General's office

C **Resources** Resources are needed to increase the government capacity to measure, analyze and report measurements which they are already taking, as well as resources for USAID to use for audits, evaluations, and analyses for Assessment of Program Impact

RMD needs include an additional, temporary analyst to be attached to the RMD, some equipment upgrades to extend the computer

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capability of its data analysis units, funds for rental of vehicles during periods of intensive measurement in various RMAs, and printing of reports

USAID resources include funds for contracting the temporary RMD analyst and a local engineer to monitor construction, purchasing equipment and renting vehicles, as well as for interim and final evaluations, audits, and monitoring construction A budget covering these costs is presented in Annex F It is expected that REDSO/ESA and/or AFR/TR/ANR will provide technicians for monitoring and evaluation, including assessment of the environmental impact of construction Joint AID-GOL-TA internal reviews, with REDSO/ESA facilitation, will take place in years when an external evaluation is not held Ideally, these reviews will be timed to contribute to the Agriculture and Natural Resources review for the annual Assessment of Program Impact submission to Washington

V Summaries of Analyses

A Summary Technical Analysis

1 Land Tenure The land tenure system of Lesotho has historically been based on the principle of equal distribution to all its inhabitants, all land belongs to the Basotho Nation and is held in trust by the King Under Lesotho law, a chief can ensure proper management of rangelands and set aside areas for specific purposes to improve rangeland and livestock production through application of advanced management practices GAs acquire exclusive use rights through provisions of these Regulations which provide adequate legal protection

2 Transhumance Transhumance, the movement of livestock between winter lowlands and summer highlands, has been the historical grazing pattern in Lesotho Recent Government policy initiatives, which are at the conceptual stage, will terminate transhumance, thus alleviating grazing pressure, and encourage farmers to engage in more intensive production systems in the lowlands and foothills

3 National Grazing Control and the Role of Chief Rangelands are traditionally under the management and control of chiefs In the past, chiefs effectively regulated the use of rangelands, but their authority has been reduced due to numerous factors Chiefs are empowered by the Range Management and Grazing Control Regulations of 1980 to regulate grazing, however, implementation of the well-intended legislation did not have sufficient impact to ameliorate degraded rangelands The role of RMD personnel has mainly been to advise chiefs on recommended stocking rates, and preparation and implementation of grazing plans

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4 Grazing Associations The Government of Lesotho (GOL) recognizes both the importance of the chieftainship institution and the weakened administrative capacity of the chiefs It therefore advocates more democratic grassroots organizations, with the chiefs as chairmen, which involve users of resources such as rangelands Community-based GAs are an outgrowth of such a policy At the beginning of the 1980s, USAID commenced support of the Land Conservation and Range Development Project (LCRD) Under the LCRD the concept of GAs was adopted from the Quthing GA experience

The only difference was that the Project's main thrust focused on participation of the whole community in natural resource management in a designated area All other previous GAs had restricted membership to farmers with special common interests The LCRD (and later, LAPIS) projects evolved the concept of what are now called RMAs RMAs are defined as special grazing areas declared by a chief for improvement of rangeland and livestock production through application of advanced management practices GAs form an integral part of the RMA by ensuring farmers' participation in grazing management, both in cattlepost and in village grazing areas

The goals of an RMA are

a To increase the productivity and income of rural livestock producers,

b To stimulate commercialization of extensive livestock production, while at the same time satisfying the subsistence needs of rural families, and

c To manage range resources in a manner which is sustainable and socially acceptable

Establishment of RMAs is currently initiated by the RMD head office in Maseru through which donor funding is channelled The long term goal, however, is for the Districts to provide government extension services to self-sustaining RMAs

5 The RMA Approach in the CNRM Project Successful management of communal natural resources depends on clearly understood goals and objectives, good leadership, and enthusiastic member participation in management activities Over the past eight years the RMD and the LCRD and LAPIS Projects have evolved a step-by-step process to instill these institutional attributes into GAs Thus far, the process has evolved in such a manner that establishment of recent RMAs has successfully stimulated participation of community residents at the "grassroots" level and built strong foundations for initiating and administering community based management efforts The steps to be followed to establish an RMA are described in Annex G 1 **Technical Analysis**

6 Sustainability The sustainability of Lesotho's RMAs and GAs will be strengthened by adjudication, effective extension, strong management, financial viability and well-trained leaders The aim of the on-going adjudication program is to redistribute use rights to residents of villages nearest to cattlepost areas This diminishes arbitrary displacement of livestock

Sustainability of the RMAs may run contrary to current thinking within GOL which is to delegate responsibility of management of the natural resources to development councils The GA may be a better instrument for rangeland management than development councils because it reduces overhead costs, provides better livestock services and can protect its territorial boundaries better

Financial viability is a crucial aspect of RMA sustainability RMA income generation capabilities have been promising, but need to be improved under the CNRM project Potential sources of additional income for GAs under the CNRM Project include increased breeding fees and increased RMA grazing fees With the imminent introduction of national grazing fees, impoundment fines could also be increased Associations can also introduce commissions at auction sales, establish breeding herds so as to accelerate the livestock improvement program by selling offspring to members and outsiders, sell fodder through share-cropping arrangements, provide animal feeds (supplements) and veterinary supplies at a profit, and levy special joining fees for outsiders

Sustainability of the RMAs also requires scaling down infrastructure in order to reduce maintenance costs

Strong, representative leadership also promotes sustainability Leaders must devote a lot of time and effort to ensure that the GA is viable Future RMAs must address the issue of incentives for executive committee members, including remuneration for the chairman

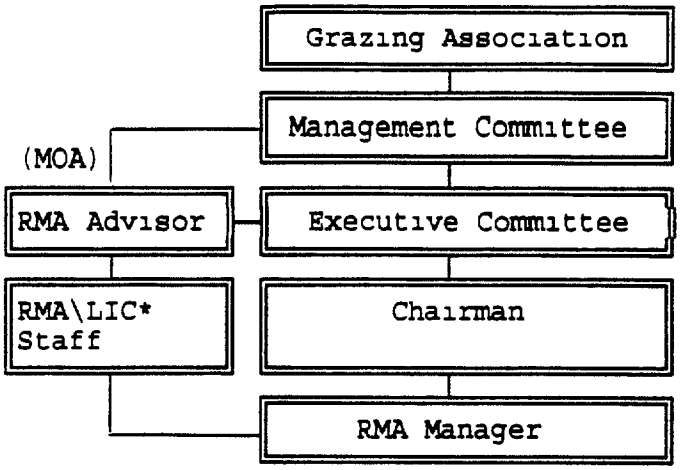
The GOL currently provides diploma graduates to assist in the management of GAs, but for the long-term sustainability of RMAs, associations will hire their own managers A training center is being constructed at Sehlabathebe which will provide facilities for training new managers

Managers will be back-stopped by government technicians and extension personnel The 1987 Agricultural Policy on Livestock Production recommended that formation of RMA headquarters be at already existing Livestock Improvement Centres (LICs) If all existing LICs were fully staffed, there would be sufficient personnel to backstop managers employed by the GAs One government technician, provided with a vehicle, could backstop managers of three adjacent RMAs Adequate numbers of MOA staff exist to provide these services not only throughout the life of the project,

but also for the continuation of RMA development past the CNRM Project completion date

The organizational structure of a typical RMA is shown in Figure 1 The present RMAs do not have a manager hired by the GA, but the organizational structure shown represents future RMAs

FIGURE 1 RMA Organizational Structure



* LIC = Livestock Improvement Center

7 RMA Livestock and Rangeland Performance Data collected from Mokhotlong (without RMA) and Sehlabathebe RMA from 1982\83 to 1988\89 indicate increasing price differential for oxen between the two areas The question has been asked whether the gains made by improved nutrition of livestock due to better range quality could be wiped out by other factors, such as parasites, poor genetic stock, diseases, poor herd management practices, etc Information available from the longest running RMA clearly indicates that improved nutrition of livestock has not been wiped out by such factors RMAs are in a better position to receive adequate support from the District Veterinary Officer because of the RMAs good communication systems (radio, transport) The availability and quality of veterinary services to RMAs is reliable because each district has a veterinary officer to give required support in training farmers as well as assisting the Livestock Assistants at the LICs in all matters relating to animal health RMAs will therefore obtain better animal health services than areas without an RMA The CNRM project is not expected to increase the demand for government provided veterinary services beyond the level for nonRMA areas

Comparisons between measurements of range quality from 1983 and 1990 indicate substantial improvements in total ground cover, range condition scores, a general advance of the ecological

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successional process towards a grassland climax stage, and an upward range trend Given the data available to-date, the management practices employed by the Sehlabathebe GA do appear to be effective with respect to improving rangeland condition The benefits of existing RMAs can be demonstrated to communities where RMAs will be established by exchange visits Such education will be an important part of the CNRM project

A few special range treatments have been undertaken as direct means of developing and improving range forage resources, and may be explored further in some of the RMAs that require additional treatment in order to improve range quality

8 Staff and Training Availability of staff is not forseen to be a constraint during project implementation However, the RMA program will be heavily supported by the RMD, so training is suggested for RMD staff as follows Long-term three MS, three BS and three diploma level, short-term for RMA managers, GA members, and staff of both the RMAs and the Department of Livestock Services

B **Summary: Economic Analysis.** The objective of the economic analysis is to establish the viability of the project at the national level The economic analysis adjusts prices for project inputs and outputs to reflect their market value after adjusting for any distortions resulting from taxes, duties, or subsidies The analysis also explicitly considers the probable external benefits and costs of the project

The economic analysis utilizes the same enterprise budgets for cattle , sheep and goats as the financial analysis The 'Without' case assumes that productivity remains unchanged The analysis adjusted the price of veterinary supplies, salt, purchased herd recruits, family herding labor, and the price of wool and mohair to allow for implicit GOL subsidies The cost of providing the existing GOL extension services to the RMA areas was estimated

The external benefits and costs are particularly important in natural resource management projects Important external benefits resulting from an improvement in the quality of the range were impossible to quantify, or were quantified conservatively These include an improvement in forage cover, a reduction in soil loss, protection of downstream infrastructure such as roads and hydroelectric facilities, flood and sediment load control, improved water quality, protection of bio-diversity, and impacts on rural employment Hence, the analysis is extremely conservative The external costs were primarily restricted to herd and flock owners who were non-resident in the RMA but had traditional grazing rights in the RMA area

The CNRM project is expected to have a positive impact on the balance of trade It is estimated that each RMA when operating at

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full capacity will earn approximately M160,000 (in 1990/91 prices) per annum It is estimated that each RMA will cost the GOL an additional M73,000 (in 1990/91 prices) per annum at current subsidy levels

The base discount rate for the economy is set at 8% which reflects the relative scarcity of viable projects in the economy At this rate, the NPV of incremental net benefits of the CNRM Project is M4 63 million, with an economic rate of return (IRR) of 17 0 percent Thus, the project is socially profitable and will show a significant return on investment The net incremental benefits of the CNRM project are also calculated for a range of CNRM Project cost to show the sensitivity to varying mark-up percentages on the total cost of the contract With a mark-up of 25 percent, the CNRM indicates an IRR of 13 0 percent, a NPV of M2,840,659 If the contractor has a mark-up of 50 percent, the IRR becomes 9 0 percent, and at 75 percent, the IRR declines to 7 0 percent A summary table showing the results is shown below

TABLE 6 Economic Profitability under Various Conditions

Contractors Mark-up	I R R	NPV AT 8% (1985 Prices)
0%	17 0	4,632,357
25%	13 0	2,840,659
50%	9 0	1,012,311
75%	7 0	(797,712)

C **Summary: Financial Analysis** Results from the financial analysis indicate that there is sufficient financial incentive for farmers to participate in a GA and an RMA Financial returns from increases in productivity easily outweigh the loss livestock owners incur through reducing herd and flock size At present levels of GA and national grazing fees and without covering RMA running costs from GA members' fees, the annual incremental net returns to the average livestock owner, in a typical RMA, would be around 450 maloti (US$ 180)

The net present value of the benefit stream to livestock owners in the RMA as a group (over 20 years, discounted at 8%) is 1 45 million maloti The project should be considered to be profitable from a financial perspective (particularly for rural Lesotho) When the initial investment and annual operating costs of a GA/RMA are included in the analysis, the NPV drops slightly to 1 31 million maloti, which is still considered to be a profitable rate

The financial viability of a typical RMA with present grazing association membership fees (60 maloti first time and 10 maloti per annum) and grazing fees (M0 50 per large stock, M0 20 per small

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questionable However, by increasing annual membership fees to M70 first time and M40 per annum thereafter, and grazing fees to M2 0 per large stock and M0 70 per small stock, the association would more than cover any annual shortfalls without substantially cutting into the income of livestock owners The NPV of the net benefit of a self-sustaining RMA is M46,605 (over 20 years, discounted at eight percent), which is profitable

The financial sustainability of the GAs and RMAs rests in their ability to cover most of the annual operating costs which are presently being funded by the GOL To do this they must expand their revenue making capabilities (e g , breeding animals for sale, charging marketing fees, renting facilities, fund raising, etc) and make sure that members pay the real cost for services they receive which have a direct impact on animal productivity

Internalizing all of the initial investment and annual operating costs of the RMA leaves livestock owners with an average annual incremental net income from livestock of M403 (including RMA running costs from GA members' fees), which is more than twice that earned by their counterparts outside the RMA However, there are limits to the amount to which GA and RMA members will be willing to pay, which is a central issue regarding the sustainability of the GA The key to getting members to accept higher fee levels rests in the ability to directly associate those payments with financial benefits and increased animal productivity Thus, an essential feature of the CNRM project must be to demonstrate to participants the financial benefits they will realize through their membership in the association

Results from the sensitivity analysis indicate that the NPV of incremental net income is still positive at 20 percent discount rate and with a 100 percent increase in the national grazing fee Furthermore, wool and mohair prices would have to drop considerably, and simultaneously, to seriously jeopardize the profitability of the project Even with a 50 percent decrease in both prices the NPV is still positive Only once in the last ten years, in 1980, did both prices nearly decrease by 50 percent It should be emphasized that whatever happens to these prices, livestock holders in the GA and RMA will be better off than those who are not members Lower wool and mohair prices should not effect financial incentive to join, however, they could influence the ability of members to pay membership and grazing fees

D **Summary Social Soundness Analysis**

1 <u>The Project</u> The project aims for the new GAs it establishes are to increase the productivity of livestock and the income of livestock owners, to provide better systems of marketing livestock, to foster better management of the natural resources, and to accomplish these goals in a manner which is sustainable and socially acceptable to the people of the area

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This will be done through community organization and the formation of a management committee, adoption of a constitution and by-laws, development of a grazing management plan and enforcement powers, and development of means to obtain income, through fees and sales, to run the GA

The project will fund training for males and females of many ages, types of households and occupational status In-country courses and workshops will be organized Some Ministry of Agriculture staff will receive out-of-country training

Spouses and family members of livestock owners of various household types will benefit indirectly from increased income from improved animals and livestock products Areas to provide thatching grass will be set aside Plant species composition and biomass will be positively affected There may be an increase in medicinal plants Households will benefit from increased milk yields Herdboys will be better trained, thus improving overall livestock management Part of GA income will be used for livestock improvements (improved breeding, veterinary care, etc)

Poorer families may not become members or share in the benefits because fees may be too high The initiation of a national grazing fee in late 1991 increases the burden to poorer families There will be a decrease in power and income for the Chiefs as the traditional way of managing livestock is changed by the GAs The chieftainship changes augment those already occurring nationally such as the institution of Village Development Councils Others who will be negatively affected are outsiders because these people will no longer be allowed to graze inside the RMA area People who presently graze in two different administrative districts may be adversely affected

2 <u>Existing Structure</u> Economically and socially livestock play a significant role in these mountainous areas They are kept for cash income and security, for food, for ceremonial uses and wedding fees and for basic agricultural practices, such a plowing Although the primary source of rural income is usually from origins other than livestock, such as remittances from miners working in South Africa, livestock are a sign of status and wealth

Male owners have the rights to animals Women have rights only if they are, or were, married Women traditionally do not manage livestock and will only milk cows if male labor is not available Men are involved with all the care and use of the animals They start herding the animals at a very young age Herdboys are either relatives of the livestock owner or employed individuals who care for the animals on a daily basis They are responsible for following the rules and regulations of the GAs Due to lack of education, their young age and very little contact with GA affairs, the quality of herdboy management has been poor and animals have been impounded

The decisions on livestock matters are made by the male owners However, if the owner is gone over an extended period his wife can make such decisions, but she will generally ask a male relative for advise in these affairs

There are two types of communal grazing lands used by livestock owners village grazing areas (also known as winter grazing areas) and cattleposts These rangelands are used at certain times of the year and by all types of livestock owners and caretakers (who participate in arrangements with owners such as *mafisa*, animal loans from absentee owners or female-headed households) There is a rotational grazing pattern which traditionally was set by the owner's individual circumstances With the RMAs the GAs establish a grazing plan which is observed by all members

There are four existing GAs, of which three were studied for this analysis (Pelenang/Bokong, Ha Moshebi & Ramatseliso and Sehlabethebe) The fourth, Mokhotlong, is in such an early stage of implementation that there is insufficient experience there to analyze The three RMAs studied have had success in some areas and problems in others The years of experience with GAs and RMAs considerably aids the development of new GAs The social impact of the GAs on the community is substantial The degree of community participation has largely determined the social sustainability of the existing GAs

3 <u>Problems and Constraints</u> The existing GAs have had problems dealing with members and outsiders not following the rules and regulations of the GA Impoundment of animals, which is necessary if people do not obey specified procedures, has been difficult An effective method of collecting fees and fines, needed for improvement objectives and operational costs, must be developed

Communications between all people involved in the GAs (and outsiders) need improvement in order to facilitate the operations of the GA and to increase the interest and participation of the people Extension and training are essential due to low levels of education in the mountain areas There is much interest in such programs in the villages where there are existing GAs

Local participation in all aspects of the development of the GAs is indispensable In the first RMA, where "grassroots" involvement was not a priority, serious problems have emerged, especially when project personnel were withdrawn and the community itself had to handle the GA Since then, RMAs have been formed with much more community organization up front, this approach diminishes the problems observed in the earliest RMA Graziers should not be led to expect the project either to manage the GA or be a continual source of funds Motivation of GA members is a key aim of the project

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The problems of the poorest households, who may not be able to afford the GA fees, should be addressed by enlisting assistance from other rural development projects and by including these community members in *pitsos* and training so that they may experience some direct benefits from the project Those who will become "outsiders" will face special problems which the project must consider because outsiders can cause considerable problems for the Association

The concept of a sustainable stocking rate and conservation awareness must be communicated effectively to the GA members or overgrazing will continue to be a long-term problem

The problems of women, who have few, if any, rights to livestock, must be dealt with through programs for improved milk yield, management training (for female-headed households), and other relevant projects (A separate discussion of Gender Considerations is found in section V E below)

4 In response to recommendations made in the Social Soundness Analysis, the project is incorporating several elements in order to maximize the social benefits and minimize the social costs of the CNRM project

a Baseline data will be gathered on each new RMA Refer to the evaluation and monitoring section for details on which variables will be included Followup data collection is also scheduled in order to assess changes which come about because of the project

b The technical assistance contractor will present in its proposal a plan to encourage members to participate and work on all aspects of the Association from the beginning of the RMA The entire CNRM approach will focus on grass-roots level training and extension to develop within the community the ability necessary to sustain both the GA and the RMA

c Livestock owners will be responsible for managing and controlling grazing areas The GAs will hire and pay range riders from member contributions and fines

d The RMD and the technical assistance contractor will establish radio linkages between their main office and the RMAs, as well as communications between them The RMA team will be responsible for detecting and resolving communication blockages within the RMAs

e In organizing communities into GAs, GOL and TA technicians will teach community members that rangelands are a limited resource the conservation of whose long term benefits are their responsibility

f Project contractors, PCVs and GOL/DLS will systematically communicate to outsiders the availability of resources outside the RMAs as alternatives to the grazing land to which they no longer have access

g The RMA manager should be given a significant "package" of benefits including training and housing The GA will be expected to plan for sustaining these benefits

E **Summary Gender Considerations** Women are known to be active in community groups and hold leadership positions In existing RMAs some women are acting Chiefs and on the GA executive committee Although they are not physically involved in the care and management of livestock, they are responsible for some livestock matters Often women who are heads of households or women with husbands away for extended periods of time make decisions about livestock Due to their lack of knowledge and experience these women are obliged to ask male advice on livestock matters The opportunity for women to be trained in livestock affairs where they play a role would be helpful

Studies have shown that female-headed households keep cattle for milk, draft power and sale, they keep sheep for wool production and sale Extended knowledge of livestock management and products would benefit women in their decision-making

Female-headed households, due to the labor requirement of caring for livestock, will *mafisa* their animals Making good arrangements and insuring that agreements are honored is essential for women However, this is not always easy

Women do not attend *pitsos*, which conduct business about livestock matters or GA activities, in large numbers *Pitsos* held for women, which would increase their awareness of the GA and how women can be beneficial to the GA and visa versa, would open up to women a better understanding of the importance of their link with the GA This may show them additional ways in which they could participate more fully

The GA can be beneficial to itself and others by specifically including women and giving them a role to play in assisting their husbands and/or themselves to improve the management of livestock Increased livestock productivity will provide more family income Milk production should improve, which will help women have an adequate supply of milk for their children and possibly more to sell to others With a livestock breeding program there will be improved animals which will provide a better quality of animal for sale, use for draft power or for social requirements (weddings, ceremonial purposes and funerals) With improved veterinary services and animal nutrition, those animals used for meat will be fatter and of better value

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Female GA members will be offered opportunities to participate in training courses Improved range management will reduce soil erosion which lowers silt yields and improves water quality This will increase the productivity of fish in rivers which will yield more food Higher quality drinking and washing water will be another result of decreased soil erosion Non-grazing areas put aside by the GA for thatching grass will provide more grass for family homes

The CNRM project will include special training for herdboys because of their important role in livestock production and grazing control Herd boys are educationally-disadvantaged compared to their female peers USAID/Lesotho has just authorized a Primary Education Program, part of which addresses the special educational needs of herdboys Herdboy training provided by CNRM will be coordinated with the Primary Education Program

F **Summary Environmental Analysis (IEE).** Important improvements in the vegetation on rangelands in RMAs over the period 1983-1990 have been documented In addition to range management, RMAs are also contributing in other critical areas improved breeding programs, better animal health, and marketing

Finally, other long term beneficial environmental impacts are being observed from improved vegetational cover on the Sehlathebe range Increases in ground nesting birds and fisheries provide both food for local inhabitants, such as herdboys, and increased potential for tourism

Construction will have a minimal adverse impact on the natural and man made environments Construction of operational head-quarters will take place on six RMAs As noted above, this will consist of staff housing, an office building, a storage shed, a cattle sale yard and weighing station Steel and barb wire fencing will be constructed around the breeding and cattle yards A horizontal well will supply limited volumes of water to a tank both for drinking water and to supply the cattle yard while the cattle are in the holding pens The location of the site will be determined in collaboration with the RMD of the MOA to assure that it is environmentally sound Care will be taken to assure that sewage and solid waste disposal and potable water supplies are adequate The cattle yard will be located in such a manner that direct runoff from the yard does not contaminate surface waters and/or potable ground waters

Based upon the goals and objectives of this project and the nine years of experience with this type of activity that demonstrates how communal management of range lands can improve livestock production to the benefit of the rural community, the economy, and the government while ameliorating environmental degradation, it is recommended that this project be accorded a Negative Determination both for the range management and

construction segments of this project based upon Regulation 22 CFR, Part 216, Section 216 3 (a) (2) (iii) The proposed actions under these activities will not have a significant effect on the environment because the Mission will ensure that mitigative measures, at the levels which have been taken in prior RMAs, are continued, specifically, care shall be given to location of the site and cattle yard, as well as sewage and solid waste disposal and potable water supply

The Initial Environmental Examination recommends that the existing monitoring program be continued to collect simple baseline trend data that will allow the success/failure of this project to be determined, including the change over time in the quality of rangeland vegetation, the quality and quantity of livestock marketed from the RMAs and the number of requests from the rural communities for new RMAs Monitoring the quality of water in streams is very costly, it may be possible to share the costs of water quality measurements in some RMAs with the LHW Project

A Categorical Exclusion is recommended for the Technical Assistance and Training components of the project based upon 22 CFR, Part 216, Section 216 2 (c)(2)(i) The Bureau Environmental Officer approved the IEE by STATE 100657 (see Annex G 6, page 2)

F **Summary Administrative/Institutional Analysis** This analysis assessed

1 The institutional capacity and administrative capability of the MOA to provide requisite services in support of CNRM Project implementation,

2 USAID/Lesotho's administrative relationships with the GOL/MOA relative to project implementation,

3 The role of the Peace Corps Volunteers in project implementation, and

4 The contractual modality for procurement of technical assistance and other project services

Included in this summary are some matters related to institutional capability and administrative relationships between the Range Management Area/Grazing Association (RMA/GA) and the GOL/MOA, and/or with other technical assistance component of the project which are also addressed in the Technical Analysis

USAID has about nine years' experience working with the MOA on RMA development Two major A I D -funded projects have provided support to strengthen the institutional capability and capacity of the MOA to undertake an expanded program of rangelands development The MOA/RMD have adequate staff to support proposed CNRM project

activities except for the areas of community organization and data analysis The project will provide technical assistance and training to support these areas

GOL responsibility for project administration will largely reside in the MOA with the DLS/RMD being the principal administrative unit The RMD's Chief Range Management Officer will be the GOL counterpart responsible for project implementation

The Department of Livestock Services (DLS) has three divisions Range Management, Animal Production and Veterinary Services Demand for service from the animal production and veterinary services is not expected to increase because of the impact of the CNRM project

The RMD has four staffed sections Range Inventory and Planning, Grazing Management, Field Operations and Data Management The staffing pattern is as follows

Permanent Staff (15 + 3)	2 Masters level
	3 BS level (+2 in District Offices)
	6 diploma level (+1 in training until 93)
	3 certificate level (all in field)
	1 less than certificate level (in field)
Temporary Staff (17)	4 diploma level (3 LAPSP, 1 LAPIS)
	13 certificate level (all LAPSP local currency)

Five of RMD staff received BS or MS level training in range management through LCRD and LAPIS Training is therefore planned to maintain trained staff over the ten years of the project, and to upgrade skills of BS and diploma level staff Training will be staggered so that only one MS level trainee will be gone at a time, BS training will be done in the region

Because CNRM is largely an effort to replicate RMAs/GAs, prior project implementation experience under LAPIS has demonstrated that the DLS/RMD have sufficient technical capability and administrative resources to support further replication of RMAs Certain aspects of CNRM implementation will also involve the MOI

Should other agencies (such as LHDA) or donors (e g EEC) decide to also establish RMAs, staffing will be sufficient In particular, two DLS staff now assigned to Mphaki will be assigned to RMA development for the EEC, and the EEC will hire temporary staff to complete the RMA development team(s) If LHDA comes in, they will pay for temporary RMA development staff

Plans to eventually decentralize GOL extension to the RMAs depend on MOA's being able to fill all the range management technical positions at District Agricultural Offices At present, there are range management specialists in only two districts

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The Agricultural Development Office in USAID/Lesotho will be responsible for A I D project management The office is staffed by two direct hire agricultural officers and three FSN professional staff One of the direct hire officers will be designated as Project Officer It is anticipated that the Mission will have substantial involvement with project implementation

Peace Corps volunteers will be participating as part of the technical assistance team PCVs will assist with community organization, training of GA committee members and staff, and support to the National RMA Training Centre Peace Corps will also be involved with water development

A thorough review was conducted of options for contracting technical assistance The likely involvement of Private Voluntary Organizations in project implementation was examined Both the cooperative agreement and direct contracting were reviewed In the interest of obtaining the best possible combination of responses from for-profit firms and PVOs, the contracting modality most appropriate would be free and open direct competition The terms of reference for proposal solicitation will require prospective bidders to demonstrate experience with project implementation activities directly related to community organization, and leadership and management training in developing countries Experience with livestock and range management projects will also be part of the selection criteria Proposers will be required to include host country professionals as part of the technical assistance team

The use of a cooperative agreement was considered as an alternative contracting mechanism for procuring technical assistance However, the cooperative agreement mode was not selected as it would likely restrict competition to a limited number of PVOs and it would provide less control over the implementation process than a contract

H Summary Training Costs Analysis The analysis discusses long- and short-term training, and the National RMA Training Center The CNRM project will train three participants to the Masters level, and three to the Bachelors level in rural sociology, range science and geographic information systems Undergraduate training will be Third Country Training in institutions which have been AID-funded, which do not require additional preparation for entry, and whose environs are English-speaking and with natural resource problems similar to Lesotho

The bulk of short-term training will take place at RMAs or at the National RMA training center Seven types of courses will be offered each year to GA members, courses will be developed especially for women and herdboys The National RMA Training Center, now under construction at Sehlabathebe RMA, will serve not only GA members, but also the training needs of other Ministries

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and the surrounding community, as well as being the site for practical research for educational institutions inside and outside Lesotho The CNRM Project will provide the Center with start-up funding (e g , for equipment, furniture and management training) and operating costs during its first three and one-half years of operation After that, the Center will be self-supporting

VI **Conditions Precedent and Covenants**

The following conditions precedent will be written into the Project Agreement

SECTION 4 1 First Disbursement Prior to the first disbursement under the Grant, or to the issuance by A I D of documentation pursuant to which such disbursement will be made, the Grantee will, except as the Parties may otherwise agree in writing, furnish to A I D in form and substance satisfactory to A I D

(a) a written statement setting forth the names and titles of those persons in the Government of Lesotho who are authorized to sign Project documents and communications, together with a specimen signature of each such person specified in such statement,

(b) an opinion of counsel acceptable to A I D that this Agreement has been duly authorized and/or ratified by, and executed on behalf of the Grantee, and that it constitutes a valid and legally binding obligation of the Grantee in accordance with all of its terms, and

(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 A I D otherwise agrees in writing

The following covenants will be written into the Project Agreement

SECTION 5 1 Project Evaluation The Parties agree to establish an evaluation program as part of the Project Except as the Parties otherwise agree in writing, the program will include, during the implementation of the Project and at one or more points thereafter

(a) evaluation of progress toward attainment of the objectives of the project,

(b) identification and evaluation of problem areas or constraints which may inhibit such attainment,

(c) assessment of how such information may be used to help overcome such problems, and

(d) evaluation, to the degreee feasible, of the overall development impact of the project

SECTION 5 2 Counterpart Resources The Grantee agrees to provide on a timely basis all personnel required for implementation of the Project The Grantee guarantees that the level of resources for staff and other local costs, as described in Annex 1 to the Project Agreement, will be available throughout the life of the project The Grantee further agrees to notify A I D in writing if other donors request Directorate of Livestock Services assistance to establish Range Management Areas, and agrees to coordinate with A I D to assure that resources specifically allocated to this project will not be committed or provided to another donor for establishing an RMA or for other related activities which would compete for Grantee resources In addition, the Grantee agrees to consult and coordinate with A I D regarding any RMA or related activities undertaken in areas adjacent to or otherwise near to the areas involved in the Project Finally, the Grantee covenants not to permit, and to use its best efforts to prevent, any of the above stated activities from being undertaken if A I D has stated in writing to the Grantee that such activities will jeopardize the effectiveness or success of this Project in a sustantial and material degree

SECTION 5 3 Grazing Fee Receipts The Grantee agrees to assist Grazing Associations established under this project, or the LCRD and LAPIS projects, to receive within one month of collection by the Village Development Councils, the percentage of grazing fees paid to VDCs which are due the GAs under the National Grazing Fee regulations Further, the Grantee agrees that it will not amend the National Grazing Fee regulations in a manner which will in any way diminish to less than 50 percent the amount of grazing fees due to GAs These fees are collected by VDCs for areas within RMAs and are paid to GAs managing those areas

SECTION 5 4 Bonding Agreement The Grantee agrees to enter into a standard written loan bursary scheme (hereinafter "bonding agreement") with each of its employees who receives long term training abroad funded under the Project Said agreement shall be signed by both the trainee and the Grantee The Grantee agrees to closely monitor all aspects of the bonding agreement In the event the Grantee does not take all reasonable actions to remedy any violation of any of such agreements, the Grantee shall be responsible to repay to A I D any costs of training due under the particular bonding agreement, unless A I D agrees otherwise in writing

SECTION 5 5 Selection of Training Candidates To assure securing the most qualified training candidates, the Grantee shall use an appropriate competitive process, approved in writing by

A I D , for the identification and final selection of candidates for long-term training under the Project

SECTION 5 6 Vehicle Use and Security The Grantee will 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 A I D The Grantee further agrees to take all reasonable measures to assure the physical security of equipment and vehicles purchased under the Project and quartered in or on Government premises

SECTION 5 7 Recurrent Costs The Grantee agrees to include in its Recurrent Cost Budget for the year following the Project Assistance Completion Date sufficient funds to cover the recurrent costs for the continuation of Project activities

SECTION 5 8 Continued Compliance The Grantee shall not in any way discontinue, reverse or otherwise impede any action it has taken in satisfaction of any condition precedent to disbursement set forth herein, except as mutually agreed to in writing by A I D and the Grantee

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ANNEX A

PID Approval Message

Actions from PID Review and PP Guidance Cable

The PID Approval Cable STATE 387278 is attached The following is a summary of its guidance and actions taken by the Mission to abide by the guidance

1 **Guidance** Demonstrate that the RMA system is cost effective - respond to economic/financial questions **Action** Financial Analysis makes a "with without" projection based on experience in prior RMA's, which shows that 1) financial returns to farmers from increases in productivity easily outweigh the loss livestock owners incur through reducing herd and flock size and 2) there is sufficient financial incentive for farmers to participate in a GA and an RMA

The financial analysis establishes specific targets for livestock productivity by type of animal

The economic analysis identifies externalities and quantifies the cost of loss of soil to crop production and loss of thatching grass Other major externalities such as damage to downstream infrastructure and water quality could not be quantified Even without these though, the IRR was positive

2 **Guidance** Submit draft SOW for economic and financial analysis to AFR/OPD **Action** The scope of work was submitted by MASERU 032446 on November 2, 1990 AFR/OPD faxed comments on December 27, 1990 The comments were passed to the consultants and were incorporated into their analyses A separate response to the AFR/OPD fax will be prepared

3 **Guidance** Consider other technical factors re livestock **Action** Specific questions in the guidance were incorporated into the scope of work for the technical analysis Accordingly, considerations of animal health availability of veterinary services and range enrichment alternatives are addressed in the technical analysis

4 **Guidance** Reassess possibility of total NGO administration **Action** The administrative/institutional analysis reviews the intensive consideration given to the costs and benefits of total NGO administration and determines it is not a reasonable option Because rangeland degradation is the major environmental problem for the nation, the government is fully involved in implementing policies, such as instituting national grazing fee regulations which are integral to conservation of the mountain resources The sensitive socio cultural changes from traditional chieftainship to democratic community self governance directly affect the sustainability of grazing associations The GOL plays a strong role in directing these changes Nongovernmental organizations can not direct complex societal changes, that is the valid role of government

5 **Guidance** Consider PVO/NGO for technical assistance and consider reducing number of expatriate techical assistance contractors **Action** The issue of limiting the procurement to the PVO community was considered Given that some for profit firms have expertise in community organization the primary area of need for technical assistance limiting the pool of bidders on the technical assistance contract to PVO's was rejected The implementation plan section of the paper gives more detail The RFP will specify that about three of six T A team members be Basotho nationals and the selection criteria will reward the presence of local experts on the long term TA team

6 **Guidance** Describe monitoring and evaluation procedures **Action** The monitoring evaluation and audit section of the paper addresses concerns raised at the PID review It includes a full range of people-level impact indicators, and, in Annex F, a detailed description of how, when, where and by whom data will be collected, analyzed and reported

7 **Guidance** Develop strategy for involvement of women **Action** The gender considerations analysis reviews literature and analyzes responses from a rapid-reconnaissance study of three existing RMA's to describe how women can best be integrated into the project Animal production is traditionally a male occupation The recommendations for training and addressing women through traditional communication channels ("*pitsos*"), in particular, have been incorporated into the implementation plan to promote women's participation and benefit from the project

8 **Guidance** Submit deferred IEE to Bureau Environmental Officer **Action** The regional environmental advisor from REDSO/ESA prepared the final IEE, which was cleared by the Regional Legal Advisor and the Mission Director The IEE recommends a negative determination and categorical exclusions for the Technical Assistance and Training components The Bureau Environmental Officer approved the IEE by STATE 100657 (paragraph 2, see Annex G6)

9 **Guidance** Construction costs over $1 million indicate that 611(e) certification is required **Action** The REDSO/ESA engineer visited existing RMA sites and reviewed costs of construction Based on his assessment, the construction costs will be less than $1 million and thus no 611(e) certification is required The budget shows construction costs of $883,000

10 **Guidance** Assure tenure security for RMA's under customary law **Action** The question of tenure is addressed in the technical analysis Review of customary and formal law shows no obstruction to secure tenure for RMA's

11 **Guidance** Clarify in project purpose and logframe how many RMAs will be functioning at PACD **Action** Purpose and logical framework are now consistent All six RMAs planned in the project will be functioning at PACD, with at least four being self-sustaining

12 **Guidance** Send to AFR/PD the Project Paper, the Project Authorization, the Action Memo the Issues Paper, and supporting documents **Action** The PDO will send all these documents to Washington when the project is authorized

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SUBJECT LESOTHO COMMUNITY NATURAL RESOURCE MANAGEMENT (632-0228) (CNRM) PID REVIEW AND PP GUIDANCE CABLE

REF STATE 334138

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1 THE ECPR MET ON SEPTEMBER 25, 1990 TO REVIEW THE SUBJECT PID AFR/PD DIRECTOR TIMOTHY BORK CHAIRED THE MEETING AND REPRESENTATIVES OF AFR/SA, GC/AFR, AFR/TR/ANR, ST/AGR, ST/FENR AND AFR/PD/SA ATTENDED. ADO CURT REINTSMA REPRESENTED THE MISSION AND DIRECTOR DESIGNATE GARY TOWERY ATTENDED. THE SUBJECT PROPOSAL WAS APPROVED FOR FURTHER DEVELOPMENT, SUBJECT TO THE FOLLOWING GUIDANCE

2. COUNTRY STRATEGY AND AFRICA BUREAU ACTION PLAN· THE ECPR AGREED THAT THE CNRM PROJECT CONFORMED TO THE APPROVED MISSION STRATEGY. FURTHER, IT FOLLOWS THE DEVELOPMENT FUND FOR AFRICA'S GUIDANCE ON MAINTAINING AND IMPROVING THE NATURAL RESOURCE BASE, AS WELL AS AGENCY POLICY AND STRATEGY FOR SUSTAINABLE NATURAL RESOURCE IMPROVEMENTS.

NAN
ActionTaken Various follow up re PP design
File underway 632 0228
Initial [illegible] Date 11/20

3. ISSUES THE FOLLOWING ISSUES WERE DISCUSSED

A. ECONOMIC AND FINANCIAL VIABILITY

THE ECPR UNDERSTANDS THAT THE PURPOSE OF THIS PROJECT IS IMPROVED RANGE MANAGEMENT AND NOT LIVESTOCK PRODUCTION. HOWEVER, SUCH A RANGE IMPROVEMENT PROGRAM MUST BE SELF-SUSTAINING AND NOT DEPENDENT UPON GOL OR AID SUBSIDIES TO SURVIVE. TO DO SO, THE SOLE SOURCE OF REVENUE TO SUSTAIN THIS PROJECT MUST FLOW FROM IMPROVED LIVESTOCK PRODUCTION BECAUSE THE KEY TO IMPROVING THE GRAZING AREA, AND THUS ACHIEVING THE PROJECT OBJECTIVE, DEPENDS UPON THE FINANCIAL VIABILITY OF THE RANGE MANAGEMENT ASSOCIATIONS AND THE INCREASED RETURNS TO PRODUCERS FROM THEIR ASSOCIATION WITH THE RMA'S, IT IS ESSENTIAL TO DEMONSTRATE THAT THE SYSTEM IS COST EFFECTIVE THE PP MUST DEMONSTRATE THAT INCREASED PROFITS FROM AN IMPROVED CATTLE AND WOOL OPERATION ARE SUFFICIENT TO INDUCE HERDERS TO JOIN THE RMA'S AND SUSTAIN ALL COSTS WE HAVE DEL'D A COPY OF A PP FROM A

REC'D AG DIVISION
DATE 11/19
ACTION DUE BY 11/24

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TO DATE'S DEVELOPMENT PROJECT WHICH SOUGHT TO ESTABLISH A LIVESTOCK COOPERATION REPRESENTING SMALL PRODUCERS TO SERVE AS AN EXAMPLE OF THE LEVEL OF FINANCIAL AND ECONOMIC ANALYSES REQUIRED. IN ADDITION, THE MISSION SHOULD RESPOND TO THE FOLLOWING ECONOMIC/FINANCIAL QUESTIONS [illegible] BY THE DP/PIP ECONOMISTS [illegible] AND ATUROPALA DURING A MEETING WITH [illegible] ON SEPT 24. REGIONAL AGREED THAT THE FOLLOWING QUESTIONS SHOULD BE ADDRESSED BY THE ANALYSES

WHAT SPECIFIC TARGETS AND TIME FRAME CAN BE ESTABLISHED TO BOOST PRODUCTIVITY (I E , MEASURABLE CRITERIA SUCH AS PRODUCTIVITY GROWTH OF X PERCENT PER ANNUM)?

IS RAISING PRODUCTIVITY OF ANIMALS A NECESSARY AND SUFFICIENT CONDITION FOR INCREASING THE INCOMES OF FARMERS? HOW DOES THIS RELATE TO EMPLOYMENT?

DOES LESOTHO HAVE PROCESSING CAPABILITY TO INCREASE THE VALUE ADDED OF ITS EXPORTABLES TO RSA? IF NOT, HOW CAN IT BE IMPROVED?

HOW SENSITIVE ARE PRODUCERS TO PRICE CHANGES IN RSA, GIVEN THE COMPETITIVENESS OF THAT MARKET? WHAT ARE THE MARKETING CONSTRAINTS, IF ANY? (NOTE THE PRICE

ELASTICITY DATA REQUIRED TO ANSWER THIS SHOULD BE READILY AVAILABLE IN RSA).

IDENTIFY EXTERNALITIES ASSOCIATED WITH RMAS AND, IF POSSIBLE, COST THEM FOR INCLUSION IN THE ECONOMIC ANALYSIS.

WHAT IS THE IMPACT OF DIFFERENTIAL FEES ON CONTIGUOUS RMAS? OF RELATED INTEREST, CAN A P/L PROJECTION BE MADE TO IDENTIFY ECONOMIC COSTS, AND THE SUSTAINABILITY OF THE PROGRAM?

DEFINE THE PROPER ROLE OF THE GOL GIVEN ITS OWNERSHIP/TRUSTEESHIP OF LAND AND POTENTIAL CONSEQUENCES OF EXTERNALITIES.

B. TECHNICAL PACKAGE

THE PID DID NOT INCLUDE ANY DISCUSSION OF THE TECHNICAL PACKAGE FOR IMPROVING ANIMAL PRODUCTION. THIS IS LINKED TO THE VIABILITY ISSUE DISCUSSED ABOVE AND RELATES TO THE BENEFITS PRODUCERS WILL RECEIVE WHICH WILL JUSTIFY

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THE COSTS ASSOCIATED WITH JOINING THE RMA WHILE THE PID DISCUSSES IMPROVING NUTRITION, THIS FACTOR ALONE [illegible] THE PROPOSITION [illegible] THIS CONCERN [illegible] THE PID DID NOT OUTLINE [illegible] IMPROVEMENTS WOULD BE SUFFICIENT TO [illegible] IN MEMBERSHIP. CLEARLY, OTHER TECHNICAL FACTORS THAT AFFECT LIVESTOCK PRODUCTION NEED TO BE CONSIDERED

(1) THE LIKELIHOOD OF HAVING THE GAINS MADE BY IMPROVED NUTRITION WIPED OUT BY OTHER FACTORS, SUCH AS PARASITES, POOR GENETIC STOCK, DISEASES, POOR HERD MANAGEMENT PRACTICES, ETC,

(2) THE REPORTED UNEVENESS OF THE AVAILABILITY AND QUALITY OF VETERINARY SERVICES FROM ONE RMA TO ANOTHER AND THE COSTS AND BENEFITS ASSOCIATED WITH IMPROVED ACCESS TO SUCH SERVICES,

(3) THE CHANCE THAT PLANNED RANGE MANAGEMENT ACTIVITIES WILL BECOME INSUFFICIENT DURING THE COURSE OF PROJECT IMPLEMENTATION TO PROVIDE THE QUALITY OF GRASSLANDS TO IMPROVE LIVESTOCK NUTRITION, AND THAT ALTERNATIVE RANGE BUILDING TECHNIQUES (SIMPLE ROTATION, RESEEDING,

CONTROLLED BURNING, EROSION CONTROL) OUGHT TO BE INVESTIGATED AND THEIR COST IMPLICATIONS CONSIDERED.

C. ROLE OF THE GOVERNMENT OF LESOTHO

GIVEN THE MISSION'S LARGER PROGRAM STRATEGY OF EVENTUALLY PRIVATIZING SOME SERVICES NOW PROVIDED BY THE GOVERNMENT, AND GIVEN THE MINIMAL ROLE GOVERNMENT IS EXPECTED TO PLAY IN THIS PROJECT, THE ECPR SUGGESTS THAT THE MISSION RE-ASSESS THE POSSIBILITY OF USING ALL NON-GOVERNMENT RESOURCES TO IMPLEMENT THE PROJECT WHY SHOULD THE SUCCESS OF THE RMA'S BE DEPENDENT ON PROVISION OF A MINIMAL AMOUNT OF SUBSIDIZED, BUT VERY IMPORTANT SERVICES? GIVEN THE GOL BUDGET DEFICIT AND THE PRODUCTION POTENTIAL OF LIVESTOCK ORGANIZATIONS, WHY SHOULDN'T THE RMA'S AND THEIR MEMBERS PAY FOR THE SERVICES THEY REQUIRE FROM THE OUTSET?

D SOCIAL AND INSTITUTIONAL ASPECTS

THE ABILITY OF THIS PROJECT TO IMPROVE RESOURCES MANAGEMENT AND RANGELAND PRODUCTIVITY IS DEPENDENT ON HOW WELL THE RMA'S FUNCTION AS INSTITUTIONS DURING AND BEYOND THE LIFE OF THE PROJECT THE PP SHOULD DESCRIBE THE PROCEDURES TO MONITOR AND EVALUATE THE DEVELOPMENT OF THE RMA'S, INCLUDING THE IMPACT ON THE QUALITY OF LIFE OF THE INDIVIDUAL HERDER, LIVESTOCK OWNER OR PASTORAL FAMILY MONITORING AND EVALUATION SHOULD OCCUR ANNUALLY, REFLECT EXOGENOUS FACTORS SUCH AS WEATHER AND CLIMATE, AMONG OTHERS, AND FOCUS ON THE IMPROVED QUALITY OF LIVESTOCK, OF HABITAT (RANGELAND) AS WELL AS

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4 CONCERNS

[illegible] THE FOLLOWING CONCERNS

[illegible] ASSISTANCE RECENT EVALUATIONS HAVE [illegible] THAT A NUMBER OF AID'S PROJECTS WERE NOT SUSTAINABLE BECAUSE THE LONG-TERM TECHNICIANS INVOLVED ENDED UP IMPLEMENTING THE PROJECT INSTEAD OF TRAINING COUNTERPARTS AS PLANNED TO AVOID THIS HAPPENING WITH CNRM, THE MISSION IS URGED, TO THE EXTENT POSSIBLE, TO REDUCE THE NUMBER OF LONG-TERM CONSULTANTS AND SEARCH FOR QUALIFIED NATIONALS, SUPPORTED BY SHORT-TERM CONSULTANTS, WHO CAN SUPPLY THE NEEDED EXPERTISE.

B. WOMEN AS PARTICIPANTS· WE UNDERSTAND THAT IMPROVING THE PARTICIPATION OF WOMEN IN THE SOCIETY, PARTICULARLY THEIR LEGAL STATUS, IS A BROADER ISSUE, AND IS BEING ADDRESSED BY OTHER MISSION EFFORTS. HOWEVER, THE PP SHOULD CONTAIN A STRATEGY FOR IMPROVING THE STATUS AND INVOLVEMENT OF WOMEN IN THE PROJECT. SPECIFICALLY, THE FACT THAT WOMEN ARE MANAGING 28 PERCENT OF THE THE HERDS, BUT HAVE NO LEGAL VOTE IN THE RMA'S NOR MAY OWN HERDS IN THEIR OWN RIGHT, SHOULD BE ADDRESSED DURING THE COURSE OF THE PROJECT. WE UNDERSTAND THAT THE NORWEGIANS AND THE SWEDES HAVE LARGE WID PROGRAMS AND MAY BE ABLE TO PROVIDE ASSISTANCE IN THIS AREA. IN ADDITION, USAID/MASERU MAY WANT TO ENLIST THE ASSISTANCE OF PPC/WID, WHICH CAN PROVIDE A SOCIAL SCIENTIST/GENDER SPECIALIST TO THE PP TEAM TO ADDRESS THESE ISSUES. THROUGH PPC/WID'S GENESYS (GENDER IN ECONOMIC AND SOCIAL SYSTEMS) PROJECT, PPC/WID WOULD FINANCE 60 PERCENT OF THE ACTIVITY AND THE MISSION WOULD PROVIDE A MATCHING 40 PERCENT.

C IEE THE ECPR CONCLUDED THAT UNDER THE TERMS OF

- 71 -

REG 16, SEC [illegible], THE TA COMPONENT QUALIFIES FOR A CATEGORICAL EXCLUSION. NEVERTHELESS, WHILE A CATEGORICAL EXCLUSION MAY BE PERMISSIBLE WITHIN THE TECHNICAL TERMS OF REG 16, THE ECPR STRONGLY ENCOURAGED THE MISSION TO [illegible] CONSIDER [illegible] OF THE PROJECT (OUTSIDE THE [illegible] REGULATION 16 CONTEXT) AND STRONGLY SUPPORTED ITS [illegible] TO HAVE THE REO ON THE PP TEAM. THE CONSTRUCTION COMPONENT IS NOT ENTITLED TO A CATEGORICAL EXCLUSION, AND THE ECPR RECOGNIZED THAT IT IS THE FIELD THAT HAS THE INFORMATION ON WHICH TO MAKE A JUDGMENT ABOUT THE NEED TO DEFER THE IEE BEYOND THE PID STAGE. WE REQUEST THAT THE DEFERRED PORTION OF THE IEE BE SUBMITTED AS SOON AS POSSIBLE AFTER SUFFICIENT INFORMATION BECOMES AVAILABLE, AND IN ANY CASE PRIOR TO PP FINALIZATION, TO PROVIDE THE BEO WITH SUFFICIENT TIME TO MAKE ANY INPUT INTO FINAL PP DESIGN. THUS, THE MISSION IS REQUESTED TO SUBMIT A REVISED IEE TO THE BEO JOHN GAUDET ASAP.

D. FAA 611(E): GIVEN THAT THE ESTIMATED VALUE OF THE CONSTRUCTION COMPONENT IS IN EXCESS OF $1 MILLION, A 611(F) CERTIFICATION WILL BE REQUIRED. THE MISSION SHOULD SUBMIT TO AID/W ONLY THAT SUMMARY INFORMATION RELATED TO THE CONSTRUCTION COMPONENT, AS PER RECENT

GUIDANCE

E. FAA SEC. 611 (A) (2). SEC. 611 (A) (2) PROVIDES THAT, IF LEGISLATIVE ACTION IS REQUIRED TO ACCOMPLISH THE PROJECT PURPOSE, FUNDS MAY NOT BE OBLIGATED UNLESS, PRIOR TO OBLIGATION, THERE IS A BASIS FOR A REASONABLE BELIEF THAT THE LEGISLATIVE ACTION WILL BE ACCOMPLISHED IN TIME TO PERMIT ORDERLY ACCOMPLISHMENT OF THE PROJECT'S PURPOSE. THE MISSION'S REPRESENTATIVE STATED THAT THE MISSION HAD CAREFULLY CONSIDERED AND CONCLUDED THAT NO LEGISLATIVE ACTION WAS REQUIRED FOR MAINTENANCE AND EFFECTIVE OPERATION OF THE RMAS. THE ECPR UNDERSTANDS THAT LAND OWNERSHIP IN THE HIGHLANDS MAY STILL BE GOVERNED BY PRINCIPLES OF CUSTOMARY LAW (IN CONTRAST TO THE LAND TENURE REFORM THAT HAS OCCURRED/IS OCCURING IN THE LOWLANDS). THE PP TEAM SHOULD MAKE CERTAIN THAT THE THE RMAS WILL HAVE NO DIFFICULTY IN OBTAINING ADEQUATE TENURE SECURITY OF THE GRAZING LANDS UNDER CUSTOMARY LAW AND THAT THEIR VIABILITY OR EFFICIENT OPERATION WILL BE UNAFFECTED.

F. GRAY AMENDMENT: THE PID INDICATES THAT AN EFFORT WILL BE MADE TO INVOLVE U.S. DISADVANTAGED ENTERPRISES IN THE DESIGN AND IMPLEMENTATION OF THE PROJECT AND THAT NOT LESS THAN 10 PERCENT OF THE VALUE OF THE CONTRACT WILL BE SUBCONTRACTED TO DISADVANTAGED ENTERPRISES. IF A CONTRACT RATHER THAN AN ASSISTANCE AGREEMENT IS UTILIZED AND IF THE PRIME CONTRACTER ITSELF IS NOT A DISADVANTAGED ENTERPRISE. AFRICA BUREAU STAFF, INCLUDING THE AFR MINORITY/SMALL BUSINESS ADVISOR WILL BE HAPPY TO PROVIDE THE MISSION WITH THE NAMES OF DISADVANTAGED ENTERPRISES THAT POSSESS THE EXPERTISE TO

PARTICIPATE IN EITHER DESIGN OR IMPLEMENTATION OF THIS ACTIVITY

G. TECHNICAL ASSISTANCE MODALITY: WHILE THE PID IN SOME PLACES REFERRED TO QUOTE PROCUREMENT UNQUOTE OF TA (IMPLYING A CONTRACT) AND IN OTHER PLACES REFERRED TO USE OF A COOPERATIVE AGREEMENT (AN ASSISTANCE RELATIONSHIP), THE PID ISSUES SECTION DID RECOGNIZE THAT RESOLUTION OF THIS ISSUE, AND THE INVOLVEMENT OF PVOS AND PROFIT-MAKERS, NEEDED TO BE RESOLVED DURING THE PP DESIGN PROCESS. THE ECPR CONCLUDED THAT THIS PROJECT WAS NOT APPROPRIATE FOR A COLLABORATIVE ASSISTANCE APPROACH. THE MISSION SHOULD CONSIDER THE INVOLVEMENT OF A PVO (AND/OR INVOLVEMENT OF A QUALIFIED NGO) IN

PROVIDING THE APPROPRIATE TECHNICAL ASSISTANCE TO PROJECT IMPLEMENTATION. THE CAPACITY OF PVO'S TO MANAGE NATURAL RESOURCE ACTIVITIES HAS GREATLY INCREASED WITHIN THE LAST SEVERAL YEARS.

H. PURPOSE STATEMENT: THE PROJECT COMMITTEE NOTED A SLIGHT DIFFERENCE IN THE WAY THE PROJECT PURPOSE WAS STATED IN THE LOGFRAME AND IN THE BODY OF THE PID. THE PURPOSE IN THE TEXT SUGGESTS THAT BY THE END OF THE PROJECT THE RMAS WILL BE ESTABLISHED BUT THAT EFFECTIVE FUNCTIONING MAY BE DEFERRED UNTIL AFTER THE PACD. THE LOGFRAME PHRASING MAKES CLEAR THAT THEY WILL BE FUNCTIONING EFFECTIVELY BEFORE THE PACD, WHICH THE PROJECT COMMITTEE ASSUMED IS THE MISSION'S INTENT.

5 SUBJECT TO THE GUIDANCE CONTAINED HEREIN, INCLUDING RECEIPT BY AFR/PD OF DRAFT TERMS OF REFERENCE FOR THE ADDITIONAL ECONOMIC AND FINANCIAL ANALYSES REQUIRED, MISSION AUTHORITY TO APPROVE THE PP AND AUTHORIZE THE PROJECT PER DOA 551 IS HEREBY CONFIRMED. PLEASE SEND

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ANNEX B

LOGICAL FRAMEWORK

Narrative Summary	Measurable Indicators	Means of Verification	Important Assumptions
GOAL To improve management of natural resources SUBGOAL Restoration and improvement of rangelands	No ha of restored rangelands (increase)	MOA and Project measurement of range quality and soil loss	Continued GOL policy support for natural resource management
PURPOSE To establish effective community grazing associations to manage rangelands at sustainable carrying capacity for livestock	GAs operating six new RMAs of which four are self-sustaining Self-sustaining = (1) fees being paid, and (2) accountability, communications and problem-solving skills available in GAs	1 Project monitoring reports and evaluations 2 Monitoring of size and quality of livestock	1 Adequate rainfall 2 Resolution of transhumance usage by outsiders 3 Market for mohair and wool does not disintegrate 4 Relatively equitable adjudication and fee setting process
OUTPUTS 1 Additional 180,000 ha of land brought under self sustaining 2 Carrying capacity of RMAs increased (specific to each RMA) 3 Personnel skilled in range management and GA maintenance in rural communities 4 Method for establishing viable and self sustaining RMAs refined and systems and GOL staff trained to replicate it	1 No ha of land under RMA management 2 No of Animal Units (AU) per ha in RMA 3 No of trained persons available in GAs 4 No of trained GOL staff, presence of systems and clearly defined model in GOL	1 MOA and Project records and reports 2 MOA and Project records and reports 3 MOA and Project records and reports and evaluations 4 Project evaluations and MOA budgets	1 Other donors support livestock services 2 Adequate GOL or other donor advice for technical decisions in RMA 3 Animal health services institutionalized 4 Adequate GOL or other donor assistance for outsiders 5 Country's economic situation vis a vis South Africa does not become so poor that trained persons emigrate
INPUTS/RESOURCES Technical Assistance (US$ 8 991,000) Training (U S) (US$ 972 500) Commodities (US$ 562 000) Local Costs (US$ equivalent 1 956,000) Construction (US$ 883 000) Evaluation & Audit (US$ 741,000)	LT 57 PY ST 30 PM LT 18 PY ST 250 PM	Controller records Training office records Audits Controller records and audits Audits monitoring reports Evaluation and audit reports	1 Trained GOL staff remain available 2 Adequate recurrent costs 3 Improved livestock available and affordable

ACTION COPY

In reply please quote: CPO/6/02
Your Reference: NTM/MPS/TM

Cable address: PLANNOFF
Telephone: 323811 Maseru

UNITED STATES
A I D
21 JUN 1991
MASERU LESOTHO

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

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21st June, 1991

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Mr Gary Towery
Director
USAID
Maseru

Dear Mr Towery,

re PROPOSED COMMUNITY NATURAL RESOURCE MANAGEMENT PROJECT

I refer to recent discussions between representatives of the Kingdom of Lesotho and USAID with respect to subject Project The Government of Lesotho hereby requests the assistance of the Government of the United States of America to carry out the ten-year project, which is aimed at improving management of Lesotho's rangeland resource

The project will establish effective community grazing associations which will manage rangelands at sustainable carrying capacities for livestock We request AID to provide technical assistance to provide -

- Community organisation back-up to the Range Management Division in the Department of Livestock Services of the Minstry of Agriculture.
- Training to local groups, technical and policy makers, and
- Capital to finance some commodities, local costs, and limited infrastructure for new range management areas and grazing associations

The project will benefit individual livestock owners who have grouped themselves to manage range resources for the common good of participating livestock holders

We trust the Government of the United States will favourably consider this request for assistance

Yours sincerely,

REC'D AG DIVISION
DATE 6/21
ACTION DUE BY 6/26

[illegible] SEJANAMANE
Director Sectoral Programming

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5C(1) - COUNTRY CHECKLIST

Listed below are statutory criteria applicable to: (A) FAA funds generally; (B)(1) Development Assistance funds only; or (B)(2) the Economic Support Fund only.

A GENERAL CRITERIA FOR COUNTRY ELIGIBILITY

1. FY 1991 Appropriations Act Sec. 559(b). Has the President certified to the Congress that the government of the recipient country is failing to take adequate measures to prevent narcotic drugs or other controlled substances which are cultivated, produced or processed illicitly, in whole or in part, in such country or transported through such country, from being sold illegally within the jurisdiction of such country to United States Government personnel or their dependents or from entering the United States unlawfully?

No

2. FAA Sec. 481(h); FY 1991 Appropriations Act Sec. 559(b). (These provisions apply to assistance of any kind provided by grant, sale, loan, lease, credit, guaranty, or insurance, except assistance from the Child Survival Fund or relating to international narcotics control, disaster and refugee relief, narcotics education and awareness, or the provision of food or medicine.) If the recipient is a "major illicit drug producing country" (defined as a country producing during a fiscal year at least five metric tons of opium or 500 metric tons of coca or marijuana) or a "major drug-transit country" (defined as a country that is a significant direct source of illicit drugs significantly affecting the United States, through which such drugs

Lesotho has not been defined as a "major illicit drug producing country" or a "major drug transit country

are transported, or through which significant sums of drug-related profits are laundered with the knowledge or complicity of the government). (a) Does the country have in place a bilateral narcotics agreement with the United States, or a multilateral narcotics agreement? and (b) Has the President in the March 1 International Narcotics Control Strategy Report (INSCR) determined and certified to the Congress (without Congressional enactment, within 45 days of continuous session, of a resolution disapproving such a certification), or has the President determined and certified to the Congress on any other date (with enactment by Congress of a resolution approving such certification), that (1) during the previous year the country has cooperated fully with the United States or taken adequate steps on its own to satisfy the goals agreed to in a bilateral narcotics agreement with the United States or in a multilateral agreement, to prevent illicit drugs produced or processed in or transported through such country from being transported into the United States, to prevent and punish drug profit laundering in the country, and to prevent and punish bribery and other forms of public corruption which facilitate production or shipment of illicit drugs or discourage prosecution of such acts, or that (2) the vital national interests of the United States require the provision of such assistance?

3. <u>1986 Drug Act Sec. 2013</u>. (This section applies to the same categories of assistance subject to the restrictions in FAA Sec. 481(h), above.) If recipient country is a "major illicit drug producing country" or "major drug-transit country" (as defined for the purpose of FAA Sec 481(h)), has the President submitted a report to

N/A See (2) above

Congress listing such country as one (a) which, as a matter of government policy, encourages or facilitates the production or distribution of illicit drugs; (b) in which any senior official of the government engages in, encourages, or facilitates the production or distribution of illegal drugs; (c) in which any member of a U.S. Government agency has suffered or been threatened with violence inflicted by or with the complicity of any government officer; or (d) which fails to provide reasonable cooperation to lawful activities of U.S. drug enforcement agents, unless the President has provided the required certification to Congress pertaining to U.S. national interests and the drug control and criminal prosecution efforts of that country?

4. FAA Sec. 620(c). If assistance is to a government, is the government indebted to any U.S. citizen for goods or services furnished or ordered where: (a) such citizen has exhausted available legal remedies, (b) the debt is not denied or contested by such government, or (c) the indebtedness arises under an unconditional guaranty of payment given by such government or controlled entity?

(a) No
(b) No
(c) No

5. FAA Sec. 620(e)(1) If assistance is to a government, has it (including any government agencies or subdivisions) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities?

No

6.	FAA Secs. 620(a), 620(f), 620D; FY 1991 Appropriations Act Secs. 512, 545. Is recipient country a Communist country? If so, has the President: (a) determined that assistance to the country is vital to the security of the United States, that the recipient country is not controlled by the international Communist conspiracy, and that such assistance will further promote the independence of the recipient country from international communism, or (b) removed a country from applicable restrictions on assistance to communist countries upon a determination and report to Congress that such action is important to the national interest of the United States?	(a) No (b) N/A
	Will assistance be provided either directly or indirectly to Angola, Cambodia, Cuba, Iraq, Libya, Vietnam, South Yemen, Iran or Syria?	No
	Will assistance be provided to Afghanistan without a certification, or will assistance be provided inside Afghanistan through the Soviet-controlled government of Afghanistan?	No.
7.	FAA Sec. 620(j). Has the country permitted, or failed to take adequate measures to prevent, damage or destruction by mob action of U.S. property?	No
8.	FAA Sec. 620(l). Has the country failed to enter into an investment guaranty agreement with OPIC?	No.
9.	FAA Sec. 620(o); Fishermen's Protective Act of 1967 (as amended) Sec. 5. (a) Has the country seized, or imposed any penalty or sanction against, any U.S. fishing vessel because of fishing activities in international waters? (b) If so, has any deduction required by the Fishermen's Protective Act been made?	No

10.	FAA Sec. 620(q); FY 1991 Appropriations Act Sec. 515 (Brooke Amendment). (a) Has the government of the recipient country been in default for more than six months on interest or principal of any loan to the country under the FAA? (b) Has the country been in default for more than one year on interest or principal on any U.S. loan under a program for which the FY 1990 Appropriations Act appropriates funds?	(a) No (b) No
11.	FAA Sec. 620(s). If contemplated assistance is development loan or to come from Economic Support Fund, has the Administrator taken into account the percentage of the country's budget and amount of the country's foreign exchange or other resources spent on military equipment? (Reference may be made to the annual "Taking Into Consideration" memo: "Yes, taken into account by the Administrator at time of approval of Agency OYB." This approval by the Administrator of the Operational Year Budget can be the basis for an affirmative answer during the fiscal year unless significant changes in circumstances occur.)	N/A
12.	FAA Sec. 620(t). Has the country severed diplomatic relations with the United States? If so, have relations been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption?	No
13.	FAA Sec. 620(u). What is the payment status of the country's U.N. obligations? If the country is in arrears, were such arrearages taken into account by the A.I.D. Administrator in determining the current A.I.D. Operational Year Budget? (Reference may be made to the "Taking into Consideration" memo.)	No arrearages.

14.	FAA Sec. 620A. Has the President determined that the recipient country grants sanctuary from prosecution to any individual or group which has committed an act of international terrorism or otherwise supports international terrorism?	No.
15.	FY 1991 Appropriations Act Sec.556 Has the country been determined by the President to: (a) grant sanctuary from prosecution to any individual or group which has committed an act of international terrorism, or (b) otherwise support international terrorism, unless the President has waived this restriction on grounds of national security or for humanitarian reasons?	(a) No (b) No
16.	ISDCA of 1985 Sec. 552(b). Has the Secretary of State determined that the country is a high terrorist threat country after the Secretary of Transportation has determined, pursuant to section 1115(e)(2) of the Federal Aviation Act of 1958, that an airport in the country does not maintain and administer effective security measures?	No
17.	FAA Sec. 666(b). Does the country object, on the basis of race, religion, national origin or sex, to the presence of any officer or employee of the U.S. who is present in such country to carry out economic development programs under the FAA?	No
18.	FAA Secs. 669, 670. Has the country, after August 3, 1977, delivered to any other country or received nuclear enrichment or reprocessing equipment, materials, or technology, without specified arrangements or safeguards, and without special certification by the President? Has it transferred a nuclear explosive device to a non-nuclear weapon state, or if such a state, either received or detonated a nuclear explosive device? (FAA Sec. 620E permits a special waiver of Sec. 669 for Pakistan.)	No

19.	FAA Sec. 670. If the country is a non-nuclear weapon state, has it, on or after August 8, 1985, exported (or attempted to export) illegally from the United States any material, equipment, or technology which would contribute significantly to the ability of a country to manufacture a nuclear explosive device?	N/A
20.	ISDCA of 1981 Sec. 720. Was the country represented at the Meeting of Ministers of Foreign Affairs and Heads of Delegations of the Non-Aligned Countries to the 36th General Assembly of the U.N on Sept. 25 and 28, 1981, and did it fail to disassociate itself from the communique issued? If so, has the President taken it into account? (Reference may be made to the "Taking into Consideration" memo.)	Lesotho was represented at the meeting and did not disassociate itself from the communique. The President has taken this into consideration in setting the FY 1991 OYB.
21.	FY 1991 Appropriations Act Sec. 513. Has the duly elected Head of Government of the country been deposed by military coup or decree? If assistance has been terminated, has the President notified Congress that a democratically elected government has taken office prior to the resumption of assistance?	No
22.	FY 1991 Appropriations Act Sec. 539. Does the recipient country fully cooperate with the international refugee assistance organizations, the United States, and other governments in facilitating lasting solutions to refugee situations, including resettlement without respect to race, sex, religion, or national origin?	Yes

B. FUNDING SOURCE CRITERIA FOR COUNTRY ELIGIBILITY

1. Development Assistance Country Criteria

a. FAA Sec. 116. Has the Department of State determined that this government has engaged in a consistent pattern of gross violations of internationally recognized human rights? If so, can it be demonstrated that contemplated assistance will directly benefit the needy? — No / N/A

b. FY 1991 Appropriations Act Sec. 535. Has the President certified that use of DA funds by this country would violate any of the prohibitions against use of funds to pay for the performance of abortions as a method of family planning, to motivate or coerce any person to practice abortions, to pay for the performance of involuntary sterilization as a method of family planning, to coerce or provide any financial incentive to any person to undergo sterilizations, to pay for any biomedical research which relates, in whole or in part, to methods of, or the performance of, abortions or involuntary sterilization as a means of family planning? — No

2. Economic Support Fund Country Criteria

a. FAA Sec 502B. Has it been determined that the country has engaged in a consistent pattern of gross violations of internationally recognized human rights? If so, has the President found that the country made such significant improvement in its human rights record that furnishing such assistance is in the U.S. national interest? — N/A

b. FY 1991 Appropriations Act Sec. 559(d). Has this country met its drug eradication targets or otherwise taken significant steps to halt illicit drug production or trafficking? — N/A

5C(2) - ASSISTANCE CHECKLIST

Listed below are statutory criteria applicable to the assistance resources themselves, rather than to the eligibility of a country to receive assistance This section is divided into three parts Part A includes criteria applicable to both Development Assistance and Economic Support Fund resources Part B includes criteria applicable only to Development Assistance resources Part C includes criteria applicable only to Economic Support Funds

CROSS REFERENCE IS COUNTRY CHECKLIST UP TO DATE?	YES
A CRITERIA APPLICABLE TO BOTH DEVELOPMENT ASSISTANCE AND ECONOMIC SUPPORT FUNDS	
1 **Host Country Development Efforts** (FAA Sec 601(a)) Information and conclusions on whether assistance will encourage efforts of the country to (a) increase the flow of international trade, (b) foster private initiative and competition, (c) encourage development and use of cooperatives, credit unions, and savings and loan associations, (d) discourage monopolistic practices, (e) improve technical efficiency of industry, agriculture, and commerce, and (f) strengthen free labor unions	(a), (b) and (d) N/A (c) and (e) The project will train individual livestock owners on how to increase animal productivity and will assist owners as a group to manage their rangeland resources cooperatively and improve livestock production efficiency
2 **U.S. Private Trade and Investment** (FAA Sec 601(b)) Information and conclusions on how assistance will encourage U S private trade and investment abroad and encourage private U S participation in foreign assistance programs (including use of private trade channels and the services of U S private enterprise	Proposals for required technical assistance will be sought from U S private firms

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3 **Congressional Notification**

a **General requirement** (FY 1991 Appropriations Act Secs 523 and 591, FAA Sec 634A) If money is to be obligated for an activity not previously justified to Congress, or for an amount in excess of amount previously justified to Congress, has Congress been properly notified (unless the notification requirement has been waived because of substantial risk to human health or welfare)?	Yes The Congressional Notification was submitted and cleared without objection on June 23, 1991
b **Notice of new account obligation** (FY 1991 Appropriations Act Sec 514) If funds are being obligated under an appropriation account to which they were not appropriated, has the President consulted with and provided a written justification to the House and Senate Appropriations Committees and has such obligation been subject to regular notification procedures?	N/A
c **Cash transfers and nonproject sector assistance** (FY 1991 Appropriations Act Sec 575(b)(3)) If funds are to be made available in the form of cash transfer or nonproject sector assistance, has the Congressional notice included a detailed description of how the funds will be used, with a discussion of U S interests to be served and a description of any economic poolicy reforms to be promoted?	N/A
4 **Engineering and Financial Plans** (FAA Sec 611(a)) Prior to an obligation in excess of $500,000, will there be (a) engineering, financial or other plans necessary to carry out the assistance, and (b) a reasonably firm estimate of the cost to the U S of the assistance?	Yes Detailed costs for activities, including construction, have been prepared
5 **Legislative Action** FAA Sec [illegible] If legislative action is required within recipient country with respect to an obligation in excess of $500,000, what is the basis for a reasonable expectation that such action	N/A

will be completed in time to permit orderly accomplishment of the purpose of the assistance?	
6 **Water Resources** (FAA Sec 611(b), FY 1991 Appropriations Act Sec 501) If project is for water or water-related land resource construction, have benefits and costs been computed to the extent practicable in accordance with the principles, standards, and procedures established pursuant to the Water Resources Planning Act (42 U S C 1962, et seq)? (See A I D Handbook 3 for guidelines)	N/A
7 **Cash Transfer and Sector Assistance** (FY 1991 Appropriations Act Sec 575(b)) Will cash transfer or nonproject sector assistance be maintained in a separate account and not commingled with other funds (unless such requirements are waived by Congressional notice for nonproject sector assistance)?	N/A
8 **Capital Assistance** (FAA Sec 611(e)) If project is capital assistance (e g , construction), and total U S assistance for it will exceed $1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability to maintain and utilize the project effectively?	N/A
9 **Multiple Country Objectives** (FAA Sec 601(a)) Information and conclusions on whether projects will encourage efforts of the country to (a) increase the flow of international trade, (b) foster private initiative and competition, (c) encourage development and use of cooperatives, credit unions, and savings and loan associations, (d) discourage monopolistic practices, (e) improve technical efficiency of industry, agriculture and commerce, and (f) strengthen free labor unions	(a), (b) and (d) N/A (c) and (e) The project will train individual livestock owners on how to increase animal productivity and will assist owners as a group to manage their rangeland resources cooperatively and improve livestock production efficiency

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10 **U.S. Private Trade** (FAA Sec 601(b)) Information and conclusions on how project will encourage U S private trade and investment abroad and encourage private U S participation in foreign assistance programs (including use of private trade channels and the services of U S. private enterprise)	Proposals for required technical assistance will be sought from U S private firms
11 **Local Currencies**	
a **Recipient Contributions** (FAA Secs 612(b), 636(h)) Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U S are utilized in lieu of dollars	N/A
b **U.S -Owned Currency** (FAA Sec 612(d)) Does the U S own excess foreign currency of the country and, if so, what arrangements have been made for its release?	No
c **Separate Account** (FY 1991 Appropriations Act Sec 575) If assistance is furnished to a foreign government under arrangements which result in the generation of local currencies	N/A
(1) Has A I D (a) required that local currencies be deposited in a separate account established by the recipient government, (b) entered into an agreement with that government providing the amount of local currencies to be generated and the terms and conditions under which the currencies so deposited may be utilized, and (c) established by agreement the responsibilities of A I D and that government to monitor and account for deposits into and disbursements from the separate account?	

(2) Will such local currencies, or an equivalent amount of local currencies, be used only to carry out the purposes of the DA or ESF chapters of the FAA (depending on which chapter is the source of the assistance) or for the administrative requirements of the United States Government?

(3) Has A I D taken all appropriate steps to ensure that the equivalent of local currencies disbursed from the separate account are used for the agreed purposes?

(4) If assistance is terminated to a country, will any unencumbered balances of funds remaining in a separate account be disposed of for purposes agreed to by the recipient government and the United States Government?

12 **Trade Restrictions**

a **Surplus Commodities** (FY 1991 Appropriations Act Sec 521(a)) If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U S producers of the same, similar or competing commodity? N/A

b **Textiles (Lautenberg Amendment)** (FY 1991 Appropriations Act Sec 521(c)) Will the assistance (except for programs in Caribbean Basin Initiative countries under U S. Tariff Schedule "Section 807," which allows reduced tariffs on articles assembled abroad from U S -made components) be used directly to procure feasibility studies, prefeasibility studies, or project profiles of potential investment in, or to assist the establishment of facilities specifically designed for, the manufacture for export to the United States or to third country markets in direct competition with U S exports, of No

textiles, apparel, footwear, handbags, flat goods (such as wallets or coin purses worn on the person), work gloves or leather wearing apparel?

13 **Tropical Forests** (FY 1991 Appropriations Act Sec 533(c)(3)) Will funds be used for any program, project or activity which would (a) result in any significant loss of tropical forests, or (b) involve industrial timber extraction in primary tropical forest areas?

No

14 **PVO Assistance**

a **Auditing and registration** (FY 1991 Appropriations Act Sec 537) If assistance is being made available to a PVO, has that organization provided upon timely request any document, file, or record necessary to the auditing requirements of A I D , and is the PVO registered with A I D ?

PVOs may be included as principal or sub-contractors to provide technical services Only registered PVOs will be eligible as principals Standard auditing requirements will be included in any contract or sub-contract as appropriate

b **Funding sources** (FY 1991 Appropriations Act, Title II, under heading "Private and Voluntary Organizations") If assistance is to be made to a United States PVO (other than a cooperative development organization), does it obtain at least 20 percent of its total annual funding for international activities from sources other than the United States Government?

N/A

15 **Project Agreement Documentation** (State Authorization Sec 139 (as interpreted by conference report)) Has confirmation of the date of signing of the project agreement, including the amount involved, been cabled to State L/T and A I D LEG within 60 days of the agreement's entry into force with respect to the United States, and has the full text of the agreement been pouched to those same offices? (See Handbook 3, Appendix 6G for agreements covered by this provision)

N/A

16 **Metric System** (Omnibus Trade and Competitiveness Act of 1988 Sec 5164, as interpreted by conference report, amending Metric Conversion Act of 1975 Sec 2, and as implemented through A I D policy). Does the assistance activity use the metric system of measurement in its procurements, grants, and other business-related activities, except to the extent that such use is impractical or is likely to cause significant inefficiencies or loss of markets to United States firms? Are bulk purchases usually to be made in metric, and are components, subassemblies, and semi-fabricated materials to be specified in metric units when economically available and technically adequate? Will A I D specifications use metric units of measure from the earliest programmatic stages, and from the earliest documentation of the assistance processes (for example, project papers) involving quantifiable measurements (length, area, volume, capacity, mass and weight), through the implementation stage?	N/A
17 **Women in Development** (FY 1991 Appropriations Act, Title II, under heading "Women in Development") Will assistance be designed so that the percentage of women participants will be demonstrably increased?	Project will provide targeted training to strengthen rural women's capacity to participate increasingly in GAs and livestock production
18 **Regional and Multilateral Assistance** (FAA Sec 209) Is assistance more efficiently and effectively provided through regional or multilateral organizations? If so, why is assistance not so provided? Information and conclusions on whether assistance will encourage developing countries to cooperate in regional development programs	No

19 **Abortions** (FY 1991 Appropriations Act, Title II, under heading "Population, DA," and Sec 525)	
a. Will assistance be made available to any organization or program which, as determined by the President, supports or participates in the management of a program of coercive abortion or involuntary sterilization?	No
b Will any funds be used to lobby for abortion?	No
20 **Cooperatives** (FAA Sec 111) Will assistance help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward a better life?	No
21 **U.S.-Owned Foreign Currencies**	
a **Use of currencies** (FAA Secs 612(b), 636(h), FY 1991 Appropriations Act Secs 507, 509) Describe steps taken to assure that, to the maximum extent possible, foreign currencies owned by the U S are utilized in lieu of dollars to meet the cost of contractual and other services	N/A
b. **Release of currencies** (FAA Sec 612(d)) Does the U S own excess foreign currency of the country and, if so, what arrangements have been made for its release?	No
22 **Procurement**	
a **Small business** (FAA Sec 602(a)) Are there arrangements to permit U S small business to participate equitably in the furnishing of commodities and services financed?	The technical assistance contract will be openly competed in the U S At lease 10% of contract value will be set aside for disadvantaged organizations, including small businesses
b **U.S. procurement** (FAA Sec 604(a)) Will all procurement be from the U S except as otherwise determined by the President or determined under delegation from him?	Reasonable efforts will be made to amximize the procurements of U S source/origin commodities required for the project Proposals from U S organizations will be solicited for technical assistance

c **Marine insurance** (FAA Sec 604(d)) If the cooperating country discriminates against marine insurance companies authorized to do business in the U S , will commodities be insured in the United States against marine risk with such a company?	N/A
d. **Non-U.S. agricultural procurement** (FAA Sec 604(e)). If non-U S procurement of agricultural commodity or product thereof is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity? (Exception where commodity financed could not reasonably be procured in U S)	N/A
e **Construction or engineering services** (FAA Sec 604(g)) Will construction or engineering services be procured from firms of advanced developing countries which are otherwise eligible under Code 941 and which have attained a competitive capability in international markets in one of these areas? (Exception for those countries which receive direct economic assistance under the FAA and permit United States firms to compete for construction or engineering services financed from assistance programs of these countries)	Yes
f **Cargo preference shipping** (FAA Sec 603)) Is the shipping excluded from compliance with the requirement in section 901(b) of the Merchant Marine Act of 1936, as amended, that at least 50 percent of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U S flag commercial vessels to the extent such vessels are available at fair and reasonable rates?	N/A
g **Technical assistance** (FAA Sec 621(a)) If technical assistance is financed will such assistance be furnished by private enterprise on a contract basis to the fullest extent practicable? Will the	Yes Peace Corps volunteers will be used for training/ rural development tasks for which they are well suited

facilities and resources of other Federal agencies be utilized, when they are particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs?	
h **U.S. air carriers** (International Air Transportation Fair Competitive Practices Act, 1974) If air transportation of persons or property is financed on grant basis, will U S carriers be used to the extent such service is available?	Yes
i **Termination for convenience of U S. Government** (FY 1991 Appropriations Act Sec 504) If the U S Government is a party to a contract for procurement, does the contract contain a provision authorizing termination of such contract for the convenience of the United States?	Yes Anticipated contracts will include such a provision
j **Consulting services** (FY 1991 Appropriations Act Sec 524) If assistance is for consulting service through procurement contract pursuant to 5 U S C 3109, are contract expenditures a matter of public record and available for public inspection (unless otherwise provided by law or Executive order)?	N/A
k **Metric conversion** (Omnibus Trade and Competitiveness Act of 1988, as interpreted by conference report, amending Metric Conversion Act of 1975 Sec 2, and as implemented through A I D policy) Does the assistance program use the metric system of measurement in its procurements, grants, and other business-related activities, except to the extent that such use is impractical or is likely to cause significant inefficiencies or loss of markets to United States firms? Are bulk purchases usually to be made in metric, and are components, subassemblies, and semi-fabricated materials to be specified in metric units when economically available and technicall adequate? Will A I D specifications use metric units of measure from the earliest programmatic stages, and from the earliest	N/A

documentation of the assistance processes (for example, project papers) involving quantifiable measurements (length, area, volume, capacity, mass and weight), through the implementation stage?	
1. **Competitive Selection Procedures** (FAA Sec 601(e)) Will the assistance utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?	Competitive selection procedures will be used
23 **Construction**	
a **Capital project** (FAA Sec 601(d)) If capital (e g , construction) project, will U S engineering and professional services be used?	N/A
b **Construction contract** (FAA Sec 611(c)) If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable?	Yes
c **Large projects, Congressional approval** (FAA Sec 620(k)) If for construction of productive enterprise, will aggregate value of assistance to be furnished by the U.S. not exceed $100 million (except for productive enterprises in Egypt that were described in the Congressional Presentation), or does assistance have the express approval of Congress?	N/A
24 **U.S. Audit Rights** (FAA Sec 301(d)) If fund is established solely by U.S contributions and administered by an international organization, does Comptroller General have audit rights?	N/A
25 **Communist Assistance** (FAA Sec 620(h) Do arrangements exist to insure that United States foreign aid is not used in a manner which, contrary to the best interests of the United States, promotes or assists the foreign aid projects or activities of the Communist-bloc countries?	Yes

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26 **Narcotics**

a **Cash reimbursements** (FAA Sec 483) Will arrangements preclude use of financing to make reimbursements, in the form of cash payments, to persons whose illicit drug crops are eradicated? — N/A

b **Assistance to narcotics traffickers** (FAA Sec. 487). Will arrangements take "all reasonable steps" to preclude use of financing to or through individuals or entities which we know or have reason to believe have either· (1) been convicted of a violation of any law or regulation of the United States or a foreign country relating to narcotics (or other controlled substances), or (2) been an illicit trafficker in, or otherwise involved in the illicit trafficking of, any such controlled substance? — N/A

27 **Expropriation and Land Reform** (FAA Sec 620(g)) Will assistance preclude use of financing to compensate owners for expropriated or nationalized property, except to compensate foreign nationals in accordance with a land reform program certified by the President? — Yes

28 **Police and Prisons** (FAA Sec 660) Will assistance preclude use of financing to provide training, advice, or any financial support for police, prisons, or other law enforcement forces, except for narcotics programs? — Yes

29 **CIA Activities** (FAA Sec 662). Will assistance preclude use of financing for CIA activities? — Yes

30 **Motor Vehicles** (FAA Sec 636(i)) Will assistance preclude use of financing for purchase, sale, long-term lease, exchange or guaranty of the sale of motor vehicles manufactured outside U S , unless a waiver is obtained? — No Waiver is not required under DFA

31 **Military Personnel** (FY 1991 Appropriations Act Sec. 503) Will assistance preclude use of financing to pay pensions, annuities, retirement pay, or adjusted service compensation for prior or current military personnel?	Yes
32 **Payment of U.N. Assessments** (FY 1991 Appropriations Act Sec 505) Will assistance preclude use of financing to pay U N assessments, arrearages or dues?	Yes
33 **Multilateral Organization Lending** (FY 1991 Appropriations Act Sec 506) Will assistance preclude use of financing to carry out provisions of FAA section 209(d) (transfer of FAA funds to multilateral organizations for lending)?	Yes
34 **Export of Nuclear Resources** (FY 1991 Appropriations Act Sec 510) Will assistance preclude use of financing to finance the export of nuclear equipment, fuel, or technology?	Yes
35 **Repression of Population** (FY 1991 Appropriations Act Sec 511) Will assistance preclude use of financing for the purpose of aiding the efforts of the government of such country to repress the legitimate rights of the population of such country contrary to the Universal Declaration of Human Rights?	Yes
36 **Publicity or Propoganda** (FY 1991 Appropriations Act Sec 516) Will assistance be used for publicity or propaganda purposes designed to support or defeat legislation pending before Congress, to influence in any way the outcome of a political election in the United States, or for any publicity or propaganda purposes not authorized by Congress?	No

37 **Marine Insurance** (FY 1991 Appropriations Act Sec 563) Will any A I D contract and solicitation, and subcontract entered into under such contract, include a clause requiring that U.S marine insurance companies have a fair opportunity to bid for marine insurance when such insurance is necessary or appropriate? — Yes

38 **Exchange for Prohibited Act** (FY 1991 Appropriations Act Sec 569) Will any assistance be provided to any foreign government (including any instrumentality or agency thereof), foreign person, or United States person in exchange for that foreign government or person undertaking any action which is, if carried out by the United States Government, a United States official or employee, expressly prohibited by a provision of United States law? — No

B CRITERIA APPLICABLE TO DEVELOPMENT ASSISTANCE ONLY

1 **Agricultural Exports (Bumpers Amendment)** (FY 1991 Appropriations Act Sec 521(b), as interpreted by conference report for original enactment) If assistance is for agricultural development activities (specifically, any testing or breeding feasibility study, variety improvement or introduction, consultancy, publication, conference, or training), are such activities (1) specifically and principally designed to increase agricultural exports by the host country to a country other than the United States, where the export would lead to direct competition in that third country with exports of a similar commodity grown or produced in the United States, and can the activities reasonably be expected to cause substantial injury to U S exporters of a similar agricultural commodity, or (2) in support of research that is intended primarily to benefit U S producers? — N/A

2 **Tied Aid Credits** (FY 1991 Appropriations Act, Title II, under heading "Economic Support Fund") Will DA funds be used for tied aid credits?	No
3 **Appropriate Technology** (FAA Sec 107) Is special emphasis placed on use of appropriate technology (defined as relatively smaller, cost-saving, labor-using technologies that are generally most appropriate for the small farms, small businesses, and small incomes of the poor)?	N/A
4 **Indigenous Needs and Resources** (FAA Sec 281(b)) Describe extent to which the activity recognizes the particular needs, desires, and capacities of the people of the country, utilizes the country's intellectual resources to encourage institutional development, and supports civic education and training in skills required for effective participation in governmental and political processes essential to self-government	The project encourages community participation in grazing associations under community leadership to increase mutual benefits in preserving natural resources and increasing income Host country consultants will participate as members of the technical assistance team
5 **Economic Development** (FAA Sec 101(a)) Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities and self-sustaining economic growth?	The project will increase productive capacity of rangeland by improved management of land and livestock
6 **Special Development Emphases** (FAA Secs 102(b), 113, 281(a)) Describe extent to which activity will (a) effectively involve the poor in development by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, dispersing investment from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using appropriate U S institutions, (b) encourage democratic private and local governmental institutions, (c) support the self-help efforts of developing countries, (d) promote the participation of women in the national economies of developing countries	(a) The project involves rural communities in establishing improved management of their local land resources to enhance income, (b) N/A, (c) The project will encourage community participation in forming self-sustaining local associations for the management of rangeland, (d) Project will encourage the involvement of women in grazing associations and related training activities,

and the improvement of women's status, and (e) utilize and encourage regional cooperation by developing countries.

(e) N/A

7 **Recipient Country Contribution** (FAA Secs. 110, 124(d)) Will the recipient country provide at least 25 percent of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or is the latter cost-sharing requirement being waived for a "relatively least developed" country)?

The GOL will provide an in-kind contribution that totals at least 25% of total project cost

8 **Benefit to Poor Majority** (FAA Sec 128(b)) If the activity attempts to increase the institutional capabilities of private organizations or the government of the country, or if it attempts to stimulate scientific and technological research, has it been designed and will it be monitored to ensure that the ultimate beneficiaries are the poor majority?

The activity will strengthen government capacity and local organizations to better manage range resources This ultimately benefits the rural poor by providing increased productivity of publicly owned land resources

9 **Abortions** (FAA Sec 104(f), FY 1991 Appropriations Act, Title II, under heading "Population, DA," and Sec 535)

(a) - (g) N/A

a Are any of the funds to be used for the performance of abortions as a method of family planning or to motivate or coerce any person to practice abortions?

b Are any of the funds to be used to pay for the performance of involuntary sterilization as a method of family planning or to coerce or provide any financial incentive to any person to undergo sterilizations?

c Are any of the funds to be made available to any organization or program which, as determined by the President, supports or participates in the management of a program of coercive abortion or involuntary sterilization?

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d. Will funds be made available only to voluntary family planning projects which offer, either directly or through referral to, or information about access to, a broad range of family planning methods and services?

e In awarding grants for natural family planning, will any applicant be discriminated against because of such applicant's religious or conscientious commitment to offer only natural family planning?

f Are any of the funds to be used to pay for any biomedical research which relates, in whole or in part, to methods of, or the performance of, abortions or involuntary sterilization as a means of family planning?

g Are any of the funds to be made available to any organization if the President certifies that the use of these funds by such organization would violate any of the above provisions related to abortions and involuntary sterilization?

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

Yes

11 **Disadvantaged Enterprises** (FY 1991 Appropriations Act Sec 567) What portion of the funds will be available only for activities of economically and socially disadvantaged enterprises, historically black colleges and universities, colleges and universities having a student body in which more than 40 percent of the students are Hispanic Americans, and private and voluntary organizations which are controlled by individuals who are black Americans, Hispanic Americans, or Native Americans, or who are economically or socially disadvantaged (including women)?

It is planned that at least 10% of the total contract value will be awarded to economically and socially disadvantaged entities as prime or sub-contractors

12. **Biological Diversity** (FAA Sec 119(g). Will the assistance. (a) support training and education efforts which improve the capacity of recipient countries to prevent loss of biological diversity; (b) be provided under a long-term agreement in which the recipient country agrees to protect ecosystems or other wildlife habitats; (c) support efforts to identify and survey ecosystems in recipient countries worthy of protection, or (d) by any direct or indirect means significantly degrade national parks or similar protected areas or introduce exotic plants or animals into such areas?	(a) The project will support range management participant and in-country training that will include biological diversity information and concerns, (b) N/A, (c) N/A, (d) No
13 **Tropical Forests** (FAA Sec. 118, FY 1991 Appropriations Act Sec 533(c)-(e) & (g))	
a **A.I.D. Regulation 16:** Does the assistance comply with the environmental procedures set forth in A I D Regulation 16?	Yes
b **Conservation:** Does the assistance place a high priority on conservation and sustainable management of tropical forests? Specifically, does the assistance, to the fullest extent feasible. (1) stress the importance of conserving and sustainably managing forest resources, (2) support activities which offer employment and income alternatives to those who otherwise would cause destruction and loss of forests, and help countries identify and implement alternatives to colonizing forested areas, (3) support training programs, educational efforts, and the establishment or strengthening of institutions to improve forest management, (4) help end destructive slash-and-burn agriculture by supporting stable and productive farming practices; (5) help conserve forests which have not yet been degraded by helping to increase production on lands already cleared or degraded, (6) conserve forested watersheds and rehabilitate those which have been deforested, (7) support training, research, and other actions	The project contributes to the conservation and management of range land resources, but not to that of tropical forests

which lead to sustainable and more environmentally sound practices for timber harvesting, removal, and processing; (8) support research to expand knowledge of tropical forests and identify alternatives which will prevent forest destruction, loss, or degradation; (9) conserve biological diversity in forest areas by supporting efforts to identify, establish, and maintain a representative network of protected tropical forest ecosystems on a worldwide basis, by making the establishment of protected areas a condition of support for activities involving forest clearance or degradation, and by helping to identify tropical forest ecosystems and species in need of protection and establish and maintain appropriate protected areas, (10) seek to increase the awareness of U.S Government agencies and other donors of the immediate and long-term value of tropical forests, (11) utilize the resources and abilities of all relevant U S government agencies, (12) be based upon careful analysis of the alternatives available to achieve the best sustainable use of the land, and (13) take full account of the environmental impacts of the proposed activities on biological diversity?

c **Forest degradation:** Will assistance be used for: (1) the procurement or use of logging equipment, unless an environmental assessment indicates that all timber harvesting operations involved will be conducted in an environmentally sound manner and that the proposed activity will produce positive economic benefits and sustainable forest management systems, (2) actions which will significantly degrade national parks or similar protected areas which contain tropical forests, or introduce exotic plants or animals into such areas, (3) activities which would result in the conversion of forest lands to the rearing of livestock, (4) the construction, upgrading, or maintenance of roads (including temporary haul roads for logging or other extractive industries) which pass through relatively undergraded

(1) No

(2) No

(3) No

(4) No

forest lands; (5) the colonization of forest lands; or (6) the construction of dams or other water control structures which flood relatively undergraded forest lands, unless with respect to each such activity an environmental assessment indicates that the activity will contribute significantly and directly to improving the livelihood of the rural poor and will be conducted in an environmentally sound manner which supports sustainable development?	(5) No (6) No
d. **Sustainable forestry:** If assistance relates to tropical forests, will project assist countries in developing a systematic analysis of the appropriate use of their total tropical forest resources, with the goal of developing a national program for sustainable forestry?	N/A
e. **Environmental impact statements:** Will funds be made available in accordance with provisions of FAA Section 117(c) and applicable A.I D regulations requiring an environmental impact statement for activities significantly affecting the environment?	N/A
14 **Energy** (FY 1991 Appropriations Act Sec 533(c)) If assistance relates to energy, will such assistance focus on: (a) end-use energy efficiency, least-cost energy planning, and renewable energy resources, and (b) the key countries where assistance would have the greatest impact on reducing emissions from greenhouse gases?	N/A
15 **Sub-Saharan Africa Assistance** (FY 1991 Appropriations Act Sec. 562, adding a new FAA chapter 10 (FAA Sec 496)) If assistance will come from the Sub-Saharan Africa DA account, is it: (a) to be used to help the poor majority in Sub-Saharan Africa through a process of long-term development and economic growth that is equitable, participatory, environmentally sustainable, and self-reliant, (b) to be used to promote sustained economic growth, encourage	(a) The project targets the poor rural majority, encouraging their association to conserve and better manage rangeland, (b) N/A,

private sector development, promote individual initiatives, and help to reduce the role of central governments in areas more appropriate for the private sector, (c) to be provided in a manner that takes into account, during the planning process, the local-level perspectives of the rural and urban poor, including women, through close consultation with African, United States and other PVOs that have demonstrated effectiveness in the promotion of local grassroots activities on behalf of long-term development in Sub-Saharan Africa, (d) to be implemented in a manner that requires local people, including women, to be closely consulted and involved, if the assistance has a local focus, (e) being used primarily to promote reform of critical sectoral economic policies, or to support the critical sector priorities of agricultural production and natural resources, health, voluntary family planning services, education, and income generating opportunities; and (f) to be provided in a manner that, if policy reforms are to be effected, contains provisions to protect vulnerable groups and the environment from possible negative consequences of the reforms?

(c) PVOs with grassroots development experience will be encouraged to participate in a lead contractor, joint venture or subcontractor role,

(d) Yes The project emphasizes the development of community-based grazing associations to manage rangelands,
(e) Project activities will encourage the institutionalization of better rangeland management to complement the GOL reform to institute grazing fees and sustainable productivity of a critical natural resource,
(f) N/A

16 **Debt-for-Nature Exchange (FAA** Sec 463): If project will finance a debt-for-nature exchange, describe how the exchange will support protection of: (a) the world's oceans and atmosphere, (b) animal and plant species, and (c) parks and reserves, or describe how the exchange will promote (d) natural resource management, (e) local conservation programs, (f) conservation training programs, (g) public commitment to conservation, (h) land and ecosystem management, and (i) regenerative approaches in farming, forestry, fishing, and watershed management

N/A

17 **Deobligation/Reobligation** (FY 1991 Appropriations Act Sec. 515) If deob/reob authority is sought to be exercised in the provision of DA assistance, are the funds being obligated for the same general purpose, and for countries within the same region as originally obligated, and have the House and Senate Appropriations Committees been properly notified? N/A

18 **Loans** N/A

a. **Repayment capacity** (FAA Sec. 122(b)) Information and conclusion on capacity of the country to repay the loan at a reasonable rate of interest.

b **Long-range plans** (FAA Sec. 122(b)) Does the activity give reasonable promise of assisting long-range plans and programs designed to develop economic resources and increase productive capacities?

c **Interest rate** (FAA Sec. 122(b)) If development loan is repayable in dollars, is interest rate at least 2 percent per annum during a grace period which is not to exceed ten years, and at least 3 percent per annum thereafter?

d **Exports to United States** (FAA Sec. 620(d)) If assistance is for any productive enterprise which will compete with U.S enterprises, is there an agreement by the recipient country to prevent export to the U.S of more than 20 percent of the enterprise's annual production during the life of the loan, or has the requirement to enter into such an agreement been waived by the President because of a national security interest?

19 **Development Objectives** (FAA Secs 102(a), 111, 113, 281(a)) Extent to which activity will (1) effectively involve the poor in development, by expanding access to economy at local level, increasing labor-intensive production and the use of appropriate technology, spreading investment out from

(1) The project involves rural communities in establishing improved management of their local land resources to enhance income,

cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using the appropriate U.S. institutions, (2) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward better life, and otherwise encourage democratic private and local governmental institutions; (3) support the self-help efforts of developing countries, (4) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (5) utilize and encourage regional cooperation by developing countries?

(2) N/A,

(3) The project will encourage community participation in forming self-sustaining local associations for the management of rangeland, (4) Project will encourage the involvement of women in grazing associations and related training activities, (5) N/A

20 **Agriculture, Rural Development and Nutrition, and Agricultural Research** (FAA Secs 103 and 103A)

a. **Rural poor and small farmers:** If assistance is being made available for agriculture, rural development or nutrition, describe extent to which activity is specifically designed to increase productivity and income of rural poor, or if assistance is being made available for agricultural research, has account been taken of the needs of small farmers, and extensive use of field testing to adapt basic research to local conditions shall be made

(a) Assistance is designed to increase productivity of rangelands and livestock owned by rural farmers,

b. **Nutrition:** Describe extent to which assistance is used in coordination with efforts carried out under FAA Section 104 (Population and Health) to help improve nutrition of the people of developing countries through encouragement of increased production of crops with greater nutritional value, improvement of planning, research, and education with respect to nutrition, particularly with reference to improvement and expanded use of indigenously produced foodstuffs; and the undertaking of pilot or demonstration programs explicitly addressing the problem of malnutrition of poor and vulnerable people

(b) N/A,

c. **Food security:** Describe extent to which activity increases national food security by improving food policies and management and by strengthening national food reserves, with particular concern for the needs of the poor, through measures encouraging domestic production, building national food reserves, expanding available storage facilities, reducing post harvest food losses, and improving food distribution. (c) N/A

21. **Population and Health** (FAA Secs. 104(b) and (c)): If assistance is being made available for population or health activities, describe extent to which activity emphasizes low-cost, integrated delivery systems for health, nutrition and family planning for the poorest people, with particular attention to the needs of mothers and young children, using paramedical and auxiliary medical personnel, clinics and health posts, commercial distribution systems, and other modes of community outreach. N/A

22 **Education and Human Resources Development** (FAA Sec 105). If assistance is being made available for education, public administration, or human resource development, describe (a) extent to which activity strengthens nonformal education, makes formal education more relevant, especially for rural families and urban poor, and strengthens management capability of institutions enabling the poor to participate in development, and (b) extent to which assistance provides advanced education and training of people of developing countries in such disciplines as are required for planning and implementation of public and private development activities. N/A

23. **Energy, Private Voluntary Organizations, and Selected Development Activities** (FAA Sec 106) If assistance is being made available for energy, private voluntary organizations, and selected development problems, describe extent to which activity is N/A

a. concerned with data collection and analysis, the training of skilled personnel, research on and development of suitable energy sources, and pilot projects to test new methods of energy production; and facilitative of research on and development and use of small-scale, decentralized, renewable energy sources for rural areas, emphasizing development of energy resources which are environmentally acceptable and require minimum capital investment;

b concerned with technical cooperation and development, especially with U S private and voluntary, or regional and international development, organizations;

c. research into, and evaluation of, economic development processes and techniques,

d reconstruction after natural or manmade disaster and programs of disaster preparedness,

e for special development problems, and to enable proper utilization of infrastructure and related projects funded with earlier U S assistance,

f for urban development, especially small, labor-intensive enterprises, marketing systems for small producers, and financial or other institutions to help urban poor participate in economic and social development.

Technical Assistance	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Total
Tech Asst (expat)											
- Salary (60,000)	30 000	63 000	66 150	69 458	72 930	76 577	80 406	84 426	88 647	93 080	724 674
- Post Diff (10%)	3 000	3 150	3 308	3 473	3 647	3 829	4 020	4 221	4 432	4 654	37 734
- Fringe Benefits (25%)	7 500	7 875	8 269	8 682	9 116	9 572	10 051	10 553	11 081	11 635	94 334
- DBA Insur (3 44%)	1 138	2 281	2 395	2 515	2 640	2 772	2 911	3 057	3 209	3 370	26 288
- Housing (Provided)	0	0	0	0	0	0	0	0	0	0	0
- Overhead (100% salary)	30 000	63 000	66 150	69 458	72 930	76 577	80 406	84 426	88 647	93 080	724 674
- Education(1 @ elm/high	4 500	9 450	9 923	10 419	10 940	11 487	12 061	12 664	13 297	13 962	108 701
- Settle-in Allow	6 000	0	0	0	8 000	0	0	0	0	0	14 000
- Major Appliance	500	0	0	0	600	0	0	0	0	0	1 100
Travel Related Costs											
- Int Travel (4x4000)	16 000	0	0	0	36 000	0	0	0	0	24 000	76 000
- Air Freight	3 500	0	0	0	9 000	0	0	0	0	5 000	17 500
- Travel (R&R & H L)	0	6 000	17 600	8 800	0	9 680	20 800	10 648	22 880	0	98 408
- Storage (HHE)	1 000	2 100	2 205	2 315	2 431	2 553	2 680	2 814	2 955	3 103	24 156
- Per Diem	3 000				3 450						6 450
											0
- Sub-Total	106 138	158 856	175 999	175 119	231 685	193 046	213 335	212 809	235 149	251 883	1 954 018
Total (x 3) (Yr-9=2 Yr-10=1)	316 414	476 568	527 996	525 356	695 054	579 139	840 004	638 428	470 299	251 883	5 123 138
Tech Asst (HCN)											
- Salary/Benefits	8 500	17 850	18 743	19 680	24 993	26 243	27 555	28 933	36 744	38 582	247 822
- Overhead (100%)	8 500	17 850	18 743	19 680	24 993	26 243	27 555	28 933	36 744	38 582	247 822
Sub-total	17 000	35 700	37 485	39 359	49 986	52 486	55 110	57 865	73 489	77 163	495 644
Total (x 3)	51 000	107 100	112 455	118 078	149 959	157 457	165 330	173 596	220 467	231 490	1 486 931
Admin Staff											
- Admin Officer	6 000	12 600	13 230	13 892	17 642	18 524	19 451	20 423	25 937	27 234	174 933
- Secretary	4 500	9 450	9 923	10 419	13 232	13 893	14 588	15 317	19 453	20 426	131 200
- Driver	1 750	3 675	3 859	4 052	5 146	5 403	5 673	5 957	7 565	7 943	51 022
- Office Asst	1 750	3 150	3 308	3 473	4 411	4 631	4 863	5 106	6 484	6 809	43 983
- Security	1 500	3 150	3 308	3 473	4 411	4 631	4 863	5 106	6 484	6 809	43 733
- Sub-total	15 500	32 025	33 626	35 308	44 841	47 083	49 437	51 909	65 924	69 220	444 871

SOURCE SELECTION INFORMATION - See FAR 3.104

Office Costs	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Total
Tel/Fax	3 600	7 560	7 938	8 335	8 752	9 189	9 649	10 131	10 638	11 170	86 961
Supplies	2 000	4 500	5 148	5 889	6 737	7 708	8 817	10 087	11 540	13 201	75 628
Sub total	5 600	12 060	13 086	14 224	15 489	16 897	18 466	20 218	22 177	24 371	162 589
In Country/Regional Travel											
Vehicle Operations	18 000	40 000	55 000	57 750	60 638	63 669	66 853	70 195	73 705	77 391	583 201
Field Allowance	7 500	15 750	16 538	17 364	18 233	19 144	20 101	21 107	22 162	23 270	181 168
Per Diem	10 000	21 000	24 024	27 483	31 441	35 969	41 148	47 073	53 852	61 607	353 597
Sub total	35 500	76 750	95 562	102 598	110 311	118 782	128 102	138 375	149 719	162 267	1 117 967
Training											
RMA Train Ct	28 155	29 310	6 237	7 175	0	0	0	0	0	0	70 870
L/T Train	0	55 000	170 700	63 480	73 020	85 610	0	0	0	0	447 810
Other Training	20 685	37 075	41 493	32 060	51 800	40 065	44 110	69 715	54 640	62 210	453 853
Sub total	48 840	121 385	218 430	102 715	124 820	125 675	44 110	69 715	54 640	62 210	972 540
Short Term Tech Asst	30 000	63 000	66 150	69 458	72 930	76 577	80 406	84 426	88 647	93 080	724 674
RMA Support	10 000	21 000	22 050	23 153	24 310	25 526	26 802	28 142	29 549	0	210 531
Sub total (categories)	514 854	909 888	1 089 355	990 888	1 237 714	1 147 135	1 152 656	1 204 809	1 101 422	894 521	10 243 240
General/Admin (10%)	51 485	90 989	108 935	99 089	123 771	114 713	115 266	120 481	110 142	89 452	1 024 324
Sub Total+ G&A	566 339	1 000 876	1 198 290	1 089 977	1 361 485	1 261 848	1 267 922	1 325 290	1 211 565	983 973	11 267 564
Commodity Procurement											
Radio (2 000 @)	6 000	0	6 600	0	7 260	0	0	0	0	0	19 860
Computers (5 000 @)	15 000	0	0	0	10 000	0	0	0	0	0	25 000
Fax	1 500	0	0	0	2 400	0	0	0	0	0	3 900
Photocopy	2 000	0	0	0	3 200	0	0	0	0	0	5 200
Office Furniture/Equip	8 000	0	0	0	6 400	0	0	0	0	0	14 400
Furniture (PCV)	7 000	0	0	0	12 040	0	0	0	0	0	19 040
Drilling Rig	0	71 500	0	0	0	0	0	0	0	0	71 500
- RMA Infrastructure (building material)	0	100 000	112 000	125 440	140 493	157 352	176 234	0	0	0	811 519
- Sub total	39 500	171 500	118 600	125 440	181 793	157 352	176 234	0	0	0	970 419
Indirect Cost Rate (2%) (non consumable commodities)	790	3 430	2 372	2 509	3 636	3 147	3 525	0	0	0	19 408
Sub Total+indirect cost	40 290	174 930	120 972	127 949	185 429	160 499	179 759	0	0	0	989 827

SOURCE SELECTION INFORMATION - See FAR 3.104

T A (continued)	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Total
Estimated Contract Cost	599 903	1 174 046	1 320 362	1 219 115	1 547 713	1 423 265	1 448 742	1 326 447	1 213 125	984 672	12 257 392
Contractor Fee (5%)	29 995	58 702	66 018	60 956	77 386	71 163	72 437	66 322	60 656	49 234	612 870
Total Contract Cost	629 899	1 232 749	1 386 380	1 280 071	1 625 099	1 494 429	1 521 179	1 392 770	1 273 782	1 033 905	12 870 261
USAID Procurement											
- Vehicle (@ 25000 ea)	125 000	0	0	145 000	0	0	167 500	0	37 000	0	474 500
Monitoring and Evaluation											
- M&E Analyst	25 000	26 250	27 563	35 004	36 755	0	0	0	0	0	150 571
- Evaluation	19 700	0	12 778	7 090	73 552	12 001	21 866	15 125	57 247	37 425	256 784
- Construction		10 000		15 000		20 000					45 000
Audit	0	0	64 400	0	0	92 221	0	0	132 060	0	288 681
Total Non Contract Cost	169 700	36 250	104 741	202 094	110 307	124 222	189 366	15 125	226 307	37 425	1 215 536
Total Project Cost - AID	799 599	1 268 999	1 491 121	1 482 165	1 735 406	1 618 651	1 710 545	1 407 895	1 500 089	1 071 330	14 085 798
GOL/MOA Contribution 4/	505 000	530 250	556 763	584 601	613 831	644 522	676 748	710 586	746 115	783 421	6 351 836
TOTAL PROJECT COST - GOL AND AID	1 304 599	1 799 249	2 047 883	2 066 766	2 349 236	2 263 173	2 387 293	2 118 480	2 246 204	1 854 751	20 437 633
									% AID	69%	
									% GOL	31%	

Notes to the Budget -

1 Except for commodity procurement Yr 1 calculated for half-year expenditure because the T A team will arrive mid-year

2 Annual inflation for salaries and HCN employee costs 5% US 5% HCN except 27% in Yr 5 and Yr 9

3 Base Year (Yr 1) with annual inflation for commodities factored in at 14 4% for incountry procurement 12% RSA 5% U S and 4% other overseas

4 GOL contribution based on 100% of RMD and 25% of combined actual recurrent expenditures for Animal Production Division (APD) and Veterinary Services Division (VSD) in 1990/91 The 25% figure for the APD and VSD is an attribution actual amounts may vary year to year from 20% - 25% Figures in detail given below are in U S Dollars at the rate Maloti 2 5 = US$ 1 00 Year 1 is 1990/91 subsequent amounts are inflated by 5% annually

	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Total
- Range Management	214 780	225 519	236 795	248 635	261 066	274 120	287 826	302 217	317 328	333 194	2 701 480
- Animal Prod & Vet Serv	376 076	394 880	414 624	435 355	457 123	479 979	503 978	529 177	555 636	583 417	4 730 244
Total GOL/DLS Contribution	590 856	620 399	651 419	683 990	718 189	754 099	791 804	831 394	872 963	916 612	7 431 723

SOURCE SELECTION INFORMATION - See FAR 3.104

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ANNEX F

MONITORING, EVALUATION AND AUDIT

1 Management Information System (MIS) The following list of suggested indicators shows how, when, where and by whom information will be collected, analyzed and reported

Level I (Inputs) Actions that contribute to establishing conditions in Level II Indicators

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Indicator I A — Community meetings to organize villages into Grazing Associations - no of meetings, plus number of participants disaggregated by sex and type of participant

	Measure	Analyze	Report
Who	RMA T A team RMD Peace Corps	n/a n/a n/a	RMA T A team
When	at meetings during years 1 & 2 each RMA	n/a	Quarterly
Where	At meeting	n/a	Quarterly report

Indicator I B — Completion of cattlepost inventories and statistics on customary use - date of completion, review of statistics for each RMA

	Measure	Analyze	Report
Who	RMD	RMD	RMD
When	Years 1 and 2 for each new RMA	Year 1 & 2	Year 2
Where	at each RMA	MOA/RMD	LAPSP LPIC and CRC meetings

Indicator I C — Approval of Principal Chief for establishing RMA - report of reliable observor of public announcement by chief

	Measure	Analyze	Report
Who	RMA T A team RMD	n/a	RMD
When	Monthly during Years 1 and 2 for each new RMA	n/a	Month after it happens
Where	at declaration by chief	n/a	CRC meeting

Indicator I D — Adjudication of grazing rights - review of report to LPIC and/or CRC on each RMA's adjudication determination

	Measure	Analyze	Report
Who	RMD	RMD	RMD
When	Initiation of RMA	Initiation of RMA	Throughout Year 2
Where	at RMA	MOA/RMD	LAPSP LPIC and CRC meetings

Indicator I E Adequate and appropriate staffing - qualitative appraisal by outside expert

	Measure	Analyze	Report
Who	Contractor	Contractor and USAID	Contractor
When	October 1995	Nov-Dec 1995	January 1996
Where	RMA, RMD, USAID and Peace Corps	In Lesotho	Interim Eval Rept

Indicator I F Expenditures, financial activity - review of invoices and vouchers

	Measure	Analyze	Report
Who	USAID Controller RMA T A Contr	USAID Controller RMA T A Contr	USAID Controller RMA T A Contr
When	Quarterly	Quarterly	Quarterly
Where	USAID, RMA	USAID, RMA	Quarterly reports

Indicator I G Construction, upgrading sale yards - site visit and reports by representative of LPIC or CRC

	Measure	Analyze	Report
Who	a) RMD b) Contractor	a) RMD, DLS	a) DLS
When	a) As building or renovation is completed b) Throughout construction and at completion	a) RMD b) Contractor	a) Upon completion b) Monthly throughout construction and at completion--to A I D
Where	Site visits	n/a	LAPSP LPIC and CRC meetings

Indicator I H Donor Coordination - qualitative appraisal by USAID project officer

	Measure	Analyze	Report
Who	USAID	USAID and RMD	USAID
When	Annually, Feb and August	Annually, Feb and August	Annually, March and September
Where	USAID and RMD	USAID and RMD	Semi-annual Proj Rev and CRC

Level II (Outputs) Condition contributing to adoption of better practices Indicators

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Indicator II A Number of communities organized for range management

	Measure	Analyze	Report
Who	RMA T A team	RMA T A team and RMD	RMA T A team
When	Feb and Aug	Feb & Aug	March & Sept
Where	at RMA's	at RMD	Semi-Annual Proj Rev and CRC

Indicator II B Area of land (no of ha) under RMA management

	Measure	Analyze	Report
Who	RMD	RMD	RMD
When	April -May	June-July	August
Where	at RMA	at RMD	LAPSP LPIC and CRC meetings

Indicator II C No of Animal Units/ha for each RMA Extrapolation from objective sampling and count, could be replaced or complemented by systematic T A team counts of RMA herd

	Measure	Analyze	Report
Who	Contractor	RMD + tech	RMD
When & Where	Sept -Oct 1992 Rama's Gate Pelaneng Mokhotlong 1994 RMA #5 RMA #6 1995 Sehlabathebe 1996 Rama's Gate Pelaneng RMA #7 RMA #8 1997 RMA #9 RMA #10 1998 RMA #5 RMA #6	May-June RMD 2000 Pelaneng RMA# 7 and 8 2001 Mokhotlong RMA # 9 and 10	August CRC meeting

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Indicator II D Training completed community organization, administration of GA's, livestock production, animal nutrition and health, environment - review of training records by expert

	Measure	Analyze	Report
Who	RMA T A team	RMA T A team	RMA T A team
When	At end of course	Quarterly	Every quarter
What	(No of trainees by sex, type of participant, duration of training, site, purpose)		
Where	at training site	at RMA	T A Quarterly report

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Indicator II E Content of environmental training - review of training records by expert

	Measure	Analyze	Report
Who	Contractor	Contractor	Contractor
When	Oct 1995 Jan 2000	Nov -Dec 1995 Feb 2000	January 1996 March 2000
Where	Review of records and interviews in field	In Lesotho	Interim and Impact Evaluation Reports

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Indicator II F Sustainable operation of Sehlabathebe Training Center - qualitative appraisal by outside expert

	Measure	Analyze	Report
Who	a) Peace Corps and RMA T A team b) Contractor	a) RMA T A Team with RMD & DLS b) Contractor	a) RMA T A team b) Contractor
When	a) Quarterly b) Oct 1995 Jan 2000	a) Annually b) Nov -Dec '95 Feb 2000	a) Every Sept b) Jan 1996 March 2000
Where	a) Sehlabathebe b) Sehlabathebe and other RMA's	a) RMA and DLS b) In Lesotho	a) TA Qtrly Rept b) Interim Eval Rept

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Indicator II G Training for GOL Personnel - records of trainees disaggregated by type of training, sex and specialty of trainee

	Measure	Analyze	Report
Who	RMA T A team	RMA T A team and USAID	RMA T A team
When	Beginning of trng and every 6 mos thereafter	Semi-annually May and Nov	Semi-annually, June and Dec
Where	RMD, RMA T A (home office)	RMA T A Team (Maseru)	T A Quarterly Report

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Indicator II H Trained Personnel Available in RMA - followup on training by T A team and on-site reviews by outside experts

	Measure	Analyze	Report
Who	a) RMA T A Team b) Contractor	a) RMA T A team b) Contractor	a) RMA T A team b) Contractor
When	a) Annually, April b) Oct 1995 and Jan 2000	a) Annually, May b) Nov -Dec '95 Feb 2000	a) Annually, June b) Jan 1996 March 2000
Where	a) and b) at RMA's	a) RMA T A team b) In Lesotho	a) TA Qtrly Rept b) Interim Eval Rept

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Level III (Purpose) Adoption of practices that produced (or show promise of producing) Level IV effects

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Indicator III A Implementation of Grazing Plan - qualitative, on-site review by technicians

	Measure	Analyze	Report
Who	RMA T A team	RMD	RMA T A team and RMD
When	Monthly during years 2 thru 5 of each RMA	Annually, April	Annually, in March
Where	Observations on designated grazing areas, interviews with range riders and GA officers	at RMA's	Report to CRC with copy of grazing plans

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Indicator III B Payment of Grazing Fees and Enforcement - records review for fees and qualitative monitoring by t a team

	Measure	Analyze	Report
Who	RMA T A Team and Peace Corps	RMA T A Team and PCV	RMA T A team
When	Annually, November	Annually, Dec	Annually, March
Where	Review of GA records, Interviews with RMA members and GA officers	RMA t a team	T A Quarterly report

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Indicator III C Support of Chief for enforcement - qualitative review of on-site technicians' experience with chief, and reports they glean from community members and range riders

	Measure	Analyze	Report
Who	RMA T A team and and RMD	RMA T A team and RMD	RMA and RMD
When	Quarterly	Quarterly	When there's a problem
Where	at RMA's	RMD/DLS	LAPSP LPIC and CRC meetings

Indicator III D Utilization of Livestock Improvement Packages - responses to community survey questions regarding extension packages, comparison of livestock husbandry practices from baseline at each RMA to follow-up surveys

	Measure	Analyze	Report
Who	Contractor	Contractor	Contractor
When	Oct 1995 Jan 2000	Nov -Dec 1995 Feb 2000	January 1996 March 2000
Where	Interviews with RMA members at RMA's	In Lesotho	Interim Eval Repts

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Indicator III E Culling to Reduce Herd Size by 10% over 7 years (see also II C) - measurements over time of herd size and characteristics taking into consideration baseline for particular RMA and market demand

	Measure	Analyze	Report
Who	a) RMA T A team b) Contractor	a) Narr report b) RMD + tech	a) RMA T A team b) RMD
When & Where	a) September-October 1992 Rama's Gate Pelaneng Mokhotlong 1994 RMA #5 RMA #6 1995 Sehlabathebe 1996 Rama's Gate Pelaneng RMA #7 RMA #8 1997 RMA #9 RMA #10 1998 RMA #5 RMA #6	May-June RMD 2000 Pelaneng RMA # 7 and 8 2001 Mokhotlong RMA # 9 and 10	July-August LAPSP LPIC and CRC

Indicator III F Financial Viability Income vs Costs - auditor's review of books and overall appraisal of each RMA's capacity to support RMA

	Measure	Analyze	Report
Who	a) Auditor b) Contractor	a) Auditor b) Contractor	a) Auditor b) Contractor
When	a) June 1994 June 1997 June 2000 b) Oct 1995 Jan 2000	a) July-Aug '94 July-Aug '97 July-Aug '00 b) Nov -Dec '95 Feb -Mar '00	a) Sept 1994 Sept 1997 Sept 2000 b) January 1996 March 2000
Where	a) RMA Nos 2, 3 and 4 -1994, RMA Nos 3, 4, 5, 6, 7 and 8 - 1997 RMA Nos 7, 8, 9, and 10 - 2000 b) At RMA's, and review audits	a) In Lesotho b) In Lesotho	a) Audit Report b) Interim and Impact Eval Reports

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Indicator III G Accountability Reports to RMA members, bookkeeping skills - qualitative monitoring by on-site technicians, and responses to community survey during evaluations

	Measure	Analyze	Report
Who	a) PCV's b) Contractor	a) RMA T A team b) Contractor	a) RMA T A team b) Contractor
When	a) Semi-annually, Feb and August b) Oct 1995 and Jan 2000	a) Semi-annually, Feb and August b) Nov -Dec '95 and Feb -Mar '00	a) Semi-annually, March & September b) January 1996 and March 2000

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Indicator III G Accountability (continued)

	Measure	Analyze	Report
Where	a) at GA's b) Interviews with RMA members & GA officers	a) RMA T A team b) In Lesotho	a) T A Qtly Report b) Interim and Impact Evaluation Reports

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Indicator III H Communications GA Officers, RMA Advisors, and GA members - qualitative monitoring by on-site technicians, and reponses to community survey during evaluations

	Measure	Analyze	Report
Who	a) RMA T A team b) Contractor	a) RMA T A team b) Contractor	a) RMA T A team b) Contractor
When	a) Semi-annually, Feb and August b) Oct 1995 and Jan 2000	a) Semi-annually, Feb and August b) Nov -Dec '95 and Feb-Mar'00	a) Semi-annually, March & September b) January 1996 and March 2000
Where	a) at GA's b) Interviews with RMA members & GA officers	a) RMA T A team b) In Lesotho	a) T A Qtly Report b) Interim and Impact Evaluation Reports

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Indicator III I Problem-solving vis-a-vis outsiders, non-stockholders and stockholders with few animals - qualitative monitoring by on-site technicians, and reponses to community survey during evaluations

	Measure	Analyze	Report
Who	a) RMA T A Team and PCV's b) Contractor	a) RMA T A Team and RMD b) Contractor	a) RMA T A team b) Contractor
When	a) Quarterly during Years 1-4 for each new RMA b) Oct 1995 and Jan 2000	a) Quarterly b) Nov-Dec '95 and Feb-Mar'00	a) Quarterly b) January 1996 and March 2000
Where	a) at RMA b) at RMA's	a) at RMA b) In Lesotho	a) T A Quarterly reports b) Interim and Impact Evaluation Reports

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Indicator III J Impact of national livestock policies - analysis of interviews with key government and t a personnel by evaluator

	Measure	Analyze	Report
Who	Contractor	Contractor	Contractor
When	Oct 1995 and Jan 2000	Nov -Dec 1995 and Feb-Mar'00	January 1996 and March 2000
Where	RMA's and MOA/RMD	In Lesotho	Interim and Impact Evaluation Reports

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Level IV (Goal, Subgoal) Biophysical changes that produce Level V (people level) impact Indicators

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Indicator IV A Range Quality species composition (frequency, density, cover, distribution, no and size each plant), range condition and trend - see Annex F for methodology

	Measure	Analyze	Report
Who	RMD and RMA T A team	RMD + tech	RMD
When and When	April-May 1992 Rama's Gate Pelaneng Control #1 1994 Mokhotlong RMA #5 and 6 Control #2 1995 Sehlabathebe 1996 Rama's Gate RMA #7 and 8 Control #1 1998 Mokhotlong RMA #5 and 6 Control #2 2000 RMA #7 and 8 RMA #9 and 10 Control #1	June-August 1992, 1994, 1995, 1996, 1998 and 2000	August 1992, 1994, 1995, 1996, 1998 and 2000

Indicator IV B Soil Loss - simple measurements taken at same time as measurement of range quality See Annex F

	Measure	Analyze	Report
Who	RMD and RMA T A team	RMD + tech	RMD
When and Where	same as IV A	same as IV A	same as IV A

Indicator IV C Control of Fire - qualitative reports from on-site technicians and community members

	Measure	Analyze	Report
Who	RMA T A team, and RMD	RMD	RMD
When	Quarterly	n/a	Quarterly
Where	at RMA's	at RMA and RMD	Report to LAPSP LPIC and CRC

Indicator IV D Effect of RMA Construction (fencing, housing, water supplies, wastewater and solid waste disposal, access roads) - on-site review by environmental expert

	Measure	Analyze	Report
Who	a) REDSO/ESA REO b) Contractor	a) at RMA b) Contractor	a) REO b) Contractor

Indicator IV D Effect of RMA Construction (continued)

	Measure	Analyze	Report
When and Where	a) 1994 Mokhotlong RMA # 5 & 6 1996 RMA # 7 & 8 1998 RMA # 9, 10 b) Throughout construction and at completion	a) 1994, same week 1996, same week 1998, same week b) on site	a) 1994, same week 1996, same week 1998, same week b) Monthly throughout construction and at completion--to A I D

Indicator IV E Rainfall (In conjunction with IV A)

	Measure	Analyze	Report
Who	GOL/RMD	RMD	RMD
When	Monthly	Annually	March
Where	WEMMIN	National, broken down by area	LPIC and CRC

Level V (People level impact) Increases in Income and/or Production Indicators

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Indicator V A Animal Productivity Weight of Cattle Sold - quantitative review of marketing data

	Measure	Analyze	Report
Who	LPMS and RMA T A team	RMA T A team	RMA T A team
When	every auction in or near RMA's	Quarterly	Annually, Dec
Where	auction site	RMA T A , DLS	T A Qrty Report

Indicator V B Animal Productivity Reproduction Rates - extrapolation from systematic sampling and measurements of herd composition for sheep and goats, and annual eartagging data for cattle

	Measure	Analyze	Report
Who	Contractor	RMD + tech	RMD
When & Where	Sept -Oct 1992 Rama's Gate Pelaneng Mokhotlong 1994 RMA #5 RMA #6 1995 Sehlabathebe 1996 Rama's Gate Pelaneng RMA #7 RMA #8	May-June RMD	July-August LAPSP LPIC and CRC

Indicator V B Animal Productivity (continued)

Measure	Analyze	Report
1997 RMA #9 RMA #10 1998 RMA #5 RMA #6 2000 Pelaneng RMA #7 RMA #8	2001 Mokhotlong RMA #9 RMA #10	

Indicator V C Animal Productivity Herd Composition - Sheep and Goats (same as III E) - systematic sampling and measurements

	Measure	Analyze	Report
Who	a) RMA T A team b) Contractor	a) Narr report b) RMD + tech	a) RMA T A team b) RMD
When & Where	a) Sept -Oct 1992 Rama's Gate Pelaneng Mokhotlong 1994 RMA #5 RMA #6 1995 Sehlabathebe 1996 Rama's Gate Pelaneng RMA #7 RMA #8 1997 RMA #9 RMA #10 1998 RMA #5 RMA #6	a) May-June RMD 2000 Pelaneng RMA #7 RMA #8 2001 Mokhotlong RMA #9 RMA #10	a) December LAPSP LPIC and CRC

Indicator V D Animal Productivity Wool and Mohair Quantity and Quality - review and analysis of sales data, complemented by government woolshed data when it is available

	Measure	Analyze	Report
Who	Wool & Mohair	RMA T A team with LPMS assist	RMA T A team
When	n/a	Wool-August Mohair-January	Annually, March
Where	Port Elizabeth	RMA T A	T A Quarterly report

Indicator V E Animal Productivity Herd Composition and Reproduction Rate for Cattle - extrapolation from annual eartagging data at each RMA

	Measure	Analyze	Report
Who	RMA T A team	RMD + tech	RMD
When	Annually, at eartagging	Annually, Jan-Apr	Annually, May
Where	at RMA's	at RMD	Report to CRC

Indicator V F — Baseline social statistics for each new RMA (No of residents by sex and household type, no of stock owners, herdboys, no of stock per household, characterization of livestock care) - survey of RMA communities at initiation of each RMA

	Measure	Analyze	Report
Who	RMA T A team and RMD	RMA T A team	RMA T A team
When	Initiation of each new RMA	First year of each RMA	End of Year 1 for each RMA
Where	At RMA	RMA T A team	Report to CRC

Indicator V G — Follow-up socio-economic surveys -survey of sample communities in RMA's to measure change from baseline and analyze project impact on specified groups

	Measure	Analyze	Report
Who	Contractor	Contractor	Contractor
When	Oct 1995 and Jan 2000	Nov-Dec'95 and Feb 2000	Jan 1996 and Mar 2000
Where	at RMA's	In Lesotho	Interim and Impact Evaluation Reports

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Indicator V H — Alternatives for outsiders, stockholders with few stock - qualitative review by on-site technicians and observors

	Measure	Analyze	Report
Who	RMA T A team and Peace Corps	RMA T A team and DLS	RMA T A team
When	Semi-annually, April & Nov	Annually, May	Annually, June
Where	at and adjacent to RMA's	RMA and RMD	T A Quarterly report

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Indicator V I — Cost to GOL Continuing Extension - budget review and planning

	Measure	Analyze	Report
Who	DLS	RMD and DLS	1xS
When	Annually	Annually	Annually
Where	MOA	MOA	MOA Budget and Expenditures

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Indicator V J Cost to GOL Other Costs that will be phased out budget review and planning

	Measure	Analyze	Report
Who	DLS	RMD and DLS	DLS
When	Annually	Annually	Annually
Where	MOA	MOA	MOA Budget and Expenditures

Summary of Reports

Who	When	Which Indicators
T A Team	Quarterly	I A , I F , II D and III I
	March and September	II A, III G, III H
	June and December	II G
	September	II F , III E
	June	II H and V H
	March	III A and III B
	December	V A and V C
	Other	V F -one year after establishment of each RMA I B , I C and I D -two years after establishment of each RMA
R M D	Quarterly	IV C
	August	II B , II C , IV A , IV B and V B
	March	III A , IV E
	May	V E
	Other	March 1996 and May 2000 V C
MOA/DLS	March	I G , III C III E V I and V J
A I D	February and August	I H
	Quarterly	I F
Other REO	1994, 1996 and 1998	IV D
Eval Contr	January 1996 and March 2000	I E , II E II F II H , III D , III F , III G , III H III I , III J and V G
Auditor	Sept 1994 Sept 1997 Sept 2000	III F

2 Range Quality Measurements

Range quality will be measured by the RMD according to the methodology they have developed with the LCRD and LAPIS technical assistance technicians A schedule for measurement is shown under Indicator IV A above, it includes establishment of two control areas which will be matched to the RMA sites for assess longitudinal changes which are not due to changes in management within the RMA

Technicians do two to three kinds of measurements for each of the 10-12 sites in each RMA The sites are dispersed through the RMA in areas with major vegetation types They can do three transects per day--it takes half an hour for each set of measurements, but travel time eats up the rest of the day The method uses belt transects at 7 9, 15 8 and 31 6 meters, and includes two-three measurements on each transect Plant density (on a scale low to high), frequency, distribution and cover They also photograph cover by species and mark, by spray-painting well-imbedded rocks, the photo points of areas in poor condition to visually document changes The transect is photographed with a Polaroid camera and marked by spray-painting rocks to allow remeasurement at the same site over time

Measurements should be done at the end of the growing season (April preferably, or May/June) Measurements for CNRM need only be done according to the schedule set forth under Indicator IV A , i e at four to five-year intervals

The best methodology is to have the same RMD technician make the same measures each time a measurement is made In the past 26 exclosures were set up, including two at Sehlabathebe, one at Rama's Gate and one at Pelaneng Vegetation was clipped at each exclosure one - three times per year to measure productivity After theft of exclosures, and uncertain quality of data due to their small (6m x 12m) size, the RMD is considering discontinuing the exclosure measurements

There are more reliable methodologies, statistically speaking, to what is proposed above, and which could replace the exclosure measurements For example, the environmental section of LHDA knows of a low-cost wheel-point methodology which measures tens of thousands of points at each site Such a large number of observations minimizes bias from site selection or variation in judgement However, it requires some sophisticated computer software for analysis The basis for selection of this methodology is that it is well-known by the technicians, thus having a reasonable level of reliability, and it has demonstrated enough precision to pick up the level of change one expects from the interventions which will be practiced within the RMA's

3 Animal Productivity Measurements Changes in the quantity and value of wool and mohair from RMA sheep and goats are expected to be the source of the most economic gain from nutritional and other improved husbandry gains due to RMA management of rangelands These changes will be monitored and evaluated by annual reports from the Wool and Mohair Association in Port Elizabeth, RSA

The quantity and value of exported wool and mohair are highly affected by

- o Changes in herd composition (hamels give the best wool)
- o Number and health of ewes (for reproduction rate and survival rates of lambs), and
- o Breeding improvements from fewer, but higher quality, rams

Because of the enormous numbers of sheep and goat, compared to cattle, it has been impossible to get systematic measurements of herd size and composition from stockowner estimates In order to get measurements which are reliable and precise enough to pick up the level of improvements in

productivity which the project seeks to attain, a sampling process is prescribed for the CNRM project Indicator V B presents the sampling plan

In the past, LAPIS technicians sampled RMA herds by counting a sample of animals as they were released in the morning from kraals at the summer cattleposts This was done with the assistance of the stockowner in order to assure collaboration of the herdboys The incentive for the stockowner to participate in the count was to eartag his/her animals A team of five (including the range and livestock production unit team leader, the owner, the RMA manager, and two other technicians (including a livestock specialist), was able to count about 3,000 animals within one RMA in four-five days

Analyses of the eartagging data for cattle, which are collected annually, (Indicator V E) will assess changes in the numbers, herd composition, and surviving calves for each RMA The cattle data are important, not primarily for their sale value, but because cattle are owned by the poorest stockowners within the RMA so that any gains in productivity for cattle are important from an equity perspective Sale weights of cattle will also be monitored (Indicator V A)

Measurements of changes in animal productivity for the project as a whole will be analyzed and compared to most of the targets established as part of the Financial Analysis for the CNRM A period of four-five years between measurements will allow enough time for direction of change to be assessed The project targets for change over ten years are

a Cattle[1]
- (1) Reduction in Bulls (from 9% to 1% of herd),
- (2) Increase oxen (from 34% to 35% of herd),
- (3) Increase in cows (from 57% to 63% of herd),
- (4) Increase in reproduction rate (from 50% to 60%),
- (5) Increase calf survival rate (from 47% to 65%),
- (6) Increase in percent of cows milked per herd (from 50% to 60%), and
- (7) Increase in milk production per cow milked by 15%

b Sheep
- (1) Reduction in Rams (from 10% to 2% of flock),
- (2) Increase in Hamels (from23% to 36% of flock),
- (3) Decrease in Ewes (from 67% to 62% of flock),
- (4) Increase in Reproduction rate (from 80% to 86%),
- (5) Increase in lamb survival rate (from 64% to 72%),
- (6) Increase in wool production by 21%, and
- (7) Increase in wool value (quality) by 3%

c Goats
- (1) Reduction in Bucks (from 12% to 2% of flock),
- (2) Increase in Kapaters (from 22% to 36% of flock),
- (3) Decrease in Does (from 66% to 62% of flock),
- (4) Increase in reproduction rate (from 80% to 86%),
- (5) Increase in Kid survival rate (from 42% to 54%),
- (6) Increase in mohair production by 18%, and
- (7) Increase in mohair value (quality) by 3%

Changes for individual RMA's will take these figures into consideration, but the actual comparison will be change from the baseline measurement for the RMA with subsequent measurements

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[1] Increases in reproduction rate and calf survival rate will have to be proxied by the number of calves per cow in the eartagging count Increases in cows milked and milk production can be indirectly inferred from the same proxy Data from socioeconomic survey data gathered at the time of evaluations will supplement the proxy assessment of milk supply

4 Measuring Soil Loss Using the spray-painted rock as a survey point benchmark, the RMD technicians who are measuring range quality will use a survey rod to measure level of soil From the rod they will measure at points every 10 cm out for a meter in four specified compass directions At each point they will make five to six measurements, which will be averaged to minimize variability The measurements will be taken every four-six years according to the schedule established for range quality

5 Budget. The following budget illustrates the funding proposed to carry out the monitoring and evaluation plan described above It includes funding for A I D to contract a local engineer who will monitor construction works carried out by the T A contractor or its subcontractor

Item	Yr. 1	Yr. 2	Yr. 3	Yr. 4	Yr. 5	Yr. 6	Yr. 7	Yr. 8	Yr. 9	Yr. 10	Total
RMD Analyst	25,000	26,250	27,563	35,004	36,755	0	0	0	0	0	150,571
Evaluation											
Soc ec surveys[1]	0	0	0	0	18,920	0	0	15,125	0	16,638	50,683
Eval team	0	0	0	0	30,341	0	0	0	36,409	0	66,750
Animal counts	13,662	0	10,436	5,874	21,610	12,001	18,444	0	19,127	20,083	121,236
Rental vehicle[2]	1,538	0	2,342	1,215	2 682	0	3,423	0	1,711	704	13,616
Comp upgrades	4,500	0	0	0	0	0	0	0	0	0	4,500
Constr monitor	0	10,000	0	15,000	0	20,000	0	0	0	0	45,000
Audit	0	0	64,400	0	0	92,221	0	0	132,060	0	288,681
TOTAL	44,700	36 250	104,741	57,093	110,308	124,222	21,867	15,125	189,307	37,425	741,037

[2] Local team collects re-survey data in the RMAs under direction of evaluation team social scientist

[3] Provision for rental vehicles for RMD to assure timely data collection of range quality and soil loss measurements in RMAs

ANNEX G

1 TECHNICAL ANALYSIS

A Land Tenure The land tenure system of Lesotho has historically been based on the principle of equal distribution to all its inhabitants, all land belongs to the Basotho Nation and is held in trust by the King In the past when there was sufficient land, every citizen was assured of three pieces of land for cultivation, access to grazing land and residential sites The population has outgrown available land resources so much that estimates indicate 25 percent of Basotho are currently without land for crop farming Rangelands have been reduced in carrying capacity due to overgrazing even though there are 20 percent fewer animals now than in 1931 Rangelands are presently not able to support the current livestock population on an ecologically sustainable basis The stocking rate has exceeded carrying capacity by about 50 percent

The historical and traditional administrative structures remain, with some modifications Chiefs are charged with responsibility for administering land on behalf of the State However, the Land Act of 1979 instituted Land Allocation Committees of which chiefs are chairmen and ex-officio members The committees have powers to allocate and revoke allocations, particularly with regard to cropping fields Allottees have use rights over land for farming and residences The Land Act provides for long-term lease arrangements, but this has been applied mainly in urban areas and for commercial sites in both rural and urban areas Land use rights are determined on the basis of citizenship, sex, age and marital status Only applicants who are citizens may gain right of access to land, including companies and societies registered and carrying out business in Lesotho

There is open access to rangelands to any person who owns livestock regardless of sex, age or marital status The Land Husbandry Act of 1969, with its enabling Range Management and Grazing Control Regulations of 1980 (amended in 1986), give support to chiefs With these Regulations, a chief can ensure proper management of rangelands and set aside areas for specific purposes to improve rangeland and livestock production through application of advanced management practices Grazing Associations (GA's) acquire exclusive use rights through provisions of these Regulations which provide adequate legal protection GA's may also apply for a lease under the Land Act, but they will probably choose not to because traditional practices are still strong Not only would a GA lease be new to most rural communities, but the requirement to pay annual ground rent would also add costs to Associations

The Land Husbandry Act (Section 6 (3)) also provides sufficient authority to the Minister of Agriculture to delegate management and enforcement authority to GA's; it reads thus

> "The regulations may confer a power upon any society, cooperative or other associations of persons, and subject to the agreement of that society, cooperative or other association, impose a duty upon such organization in order to carry out provisions of this Act and the regulations"

B Transhumance the Historical Grazing Pattern Traditionally, the rangelands have been divided according to season of use In spring (October), it has been a historical practice for herdsmen to move their livestock from the lowlands, Senqu River Valley, foothills and mountain villages to remote summer grazing cattlepost areas at high elevations A cattlepost comprises a kraal to keep animals overnight, a hut for a herder s accommodation and a communal grazing area In some cases, grazing is changed to lower elevations in the middle or end of summer From these lower elevations animals then move to either winter cattleposts nearer to villages, or to the lowlands and other areas of origin During winter, animals graze on both the rangelands and on

crop residues from harvest The Range Management and Grazing Control Regulations permit exclusive use of crop residue for individual owners of the fields

Since the nineteenth century, it has been compulsory for stock farmers to adhere to this transhumant practice The practice ensured that there wouldg during active growing periods because field crops are not protected by fences Of late, this practice is being used less and less for several reasons

- Many small livestock holders are reluctant to send their animals for cattlepost grazing due to hardship endured by young herders, "herdboys," who are sometimes as young as eight years old Most stock farmers would rather see their children go to school

- It is also expensive to hire herdboys Herders are usually paid about twelve small stock per year This amounts to an equivalent of M160 per month, although cash remittances are uncommon When cash is paid, it could be a much smaller figure, as low as M60 per month

- Stockholders also fear that their stock will be stolen because stock theft has been increasing

- Recent Government policy initiatives, which are at the conceptual stage, will terminate transhumance, thus alleviating grazing pressure, and encourage farmers to engage in more intensive production systems in the lowlands and foothills The more intensive systems imply stall feeding with very limited grazing (where it is available) and changing to intensive livestock production enterprises such as dairy, poultry, piggery, rabbitry and fish

C <u>National Grazing Control and the Role of Chief</u> Rangelands are traditionally under the management and control of chiefs, who are responsible to the Ministry of Interior, Chieftainship and Rural Development (MICARD) The role of personnel of the Range Management Division (RMD) of the Ministry of Agriculture, Cooperatives and Marketing (MOA) has mainly been to advise chiefs on recommended stocking rates, preparation and implementation of grazing plans, and general extension through meetings and courses

Chiefs are empowered by the Range Management and Grazing Control Regulations of 1980 to regulate grazing, but several factors have impeded this regulation. These are a) low fines for transgressors caught on grazing areas closed to livestock, (b) inadequate support by the judiciary, (c) intensive competitive use of the range resources, (d) eroded power of chiefs due to socio-political and economic influences; and (e) lack of managerial skills in the range managers (chiefs) to administer increasing developmental demands

The 1980 Regulations are a modernized version of the customary Laws of Lerotholi of 1939 According to these Regulations range riders receive payment each time they impound trespassing animals Trespass fines had been only seven cents per head of large stock until the Regulations were promulgated The regulations increased fines to 50 cents, and stated that riders would receive 30 percent of all monies collected by their chief This level of remuneration was still not attractive to range riders, resulting in their reluctance to carry out the risky impoundment drives In most cases they got only part of their 30 percent entitlement or nothing at all Furthermore, the fines were still not punitive enough They were therefore increased to M2 50 in the 1986 Amendment Village riders now receive 70 percent of the collections

Implementation of the well-intended legislation did not have sufficient impact to ameliorate degraded rangelands It has taken the RMD extra effort in both public relations and extension to ensure that the customary judiciary

system (local and central court) applies the current legislation These courts have been given powers to adjudicate grazing control cases according to the 1980 Regulations, which they had not regulated under the Laws of Lerotholi Still, some courts continued to use the superceded Laws of Lerotholi Under the LCRD project, funds were made available for a wide circulation of the Regulations to stock farmers, Land Allocation Committees, Village Development Councils, Chiefs and the courts

While degeneration of rangelands was observed as early as the 1870s, the "dust bowl" of the 1930s had the most debilitating impact on livestock populations and range regeneration This resulted in very high grazing pressure which is being experienced today Physical confrontations and consequent loss of life are not uncommon as herders compete for the scarce range resources, livestock numbers have increased faster during the decade of the 1980s, despite decreasing carrying capacity Increasing demands by human population for more land for settlement and cultivation, thus reducing available rangelands has also added pressure

In the past, chiefs effectively regulated the use of rangelands, but their authority has been reduced due to

- Highly competitive use of the range;
- Inconsistent quality of leadership, since chieftainship is inherited along family lines irrespective of prospective candidates' leadership capabilities and educational achievements,
- Loss of respect for traditional authority due to some chiefs' negative personality traits and deportment,
- Poor remuneration and incentives for the leaders, and
- Threat of financial loss to the chief if he/she loses a legal case against a transgressor found violating the 1980 Regulations The chief bears the personal brunt of meeting all costs of a lost case

The role of a chief during the pre-independence period was easier, because chiefs were less involved in development programs Increasing demands on chiefs who have inadequate administrative skills have added to their ineffectiveness Many individuals within the society have acquired better wealth and tend to overshadow the power of chiefs

The relationship of livestock farmers and chiefs has polarized, each side accusing the other as rangelands rapidly deteriorated Farmers claim that chiefs lack interest in managing grazing areas, while chiefs argue that farmers abuse rangelands and disregard the authority and power of the chief It was imperative that Government modify its approach to management and administration of rangelands, which had been entrusted to chiefs, so that users of these vital resources could take part in decision-making processes which would lead to improved productivity

D <u>Grazing Associations</u> The Government of Lesotho (GOL) recognizes both the importance of the chieftainship institution and the weakened administrative capacity of the chiefs It therefore advocates more democratic grassroots organizations, with the chiefs as chairmen, which involve users of resources such as rangelands Community-based grazing associations (GA s) are an outgrowth of such a policy These have proven successful in the last decade

The following describes the development of GA s in Lesotho

1 **Quthing District Associations** The first GA s were started in 1975 under the UNDP funded Senqu Project Although this project did not produce notable results, it established the concept of GA's The Project pioneered two GA's in Quthing district for specific purposes

one for breeding Brown Swiss cattle and another, the Ongeluk's Nek Association, for improving beef production

The Brown Swiss GA was given the privilege of exclusive grazing rights to an area of 400 ha Its objectives were to breed and sell Brown Swiss cattle to other farmers throughout the country and sell milk locally Project funds provided fencing This GA has survived as an informal group, and in 1988 received some material assistance (construction of a storeroom and a milking shed) from an EEC-funded Mphaki Project As of 1988, the GA had neither been legally registered nor formally allocated the grazing area At that time, the group was advised to acquire these as soon as possible to avoid imminent legal challenge to their right of access to the land The advice was heeded and action taken immediately The procedures they followed will be described in 4 3 below

The Ongeluk's Nek GA was allocated 4200 ha and drew its membership from an existing progressive wool and mohair growers association These were wealthier stock farmers who practiced advanced breeding programs, and who were (and still are) regarded by the majority of other farmers as an elite group They, however, graze communally with every other farmer The Senqu Project had started the GA in 1975, and supported it for only one year of operation After the Ongeluk's Nek GA was abandoned by the Senqu Project, the Mphaki Project attempted to reactivate it It defined the objectives for the GA The GA was also registered in 1989 upon receiving advice from the RMD

There were problems from the start in that members' other animals, besides their cattle, were not allowed to graze in the association area This was contrary to members desires

2 **Thaba Tseka Grazing Association** Enthused by the idea of GA's, the Governments of Canada and Lesotho funded the Thaba-Tseka Rural Development Project The project was initiated in an area of 1500 ha There were insurmountable problems from the start and the GA had a short life (1979 to 1980)

The first problem was that the GA was only for the Wool and Mohair Growers Association members Because they were few in number, registered members only reached eight, whereas the minimum number of members for an association must be ten in order for it to be legally registered In essence, the Thaba-Tseka GA existed only as an informal group The majority of other livestock farmers saw the GA as an elite group to which the government gave special privileges such as exclusive use of grazing land and funds provided from the Canadian Project for constructing a fence

It so happened that the area claimed by the GA improved in range production quite considerably The grass grew too tall for sheep and goats to be able to graze So the GA decided to introduce members' cattle to reduce the herbage Nonmembers thought that the area had been opened for all, and also brought their cattle in for grazing That led to a confrontation which ended in court

The judge of the court passed a judgement based on the fact that the GA had never registered with the Law Office (under the Attorney-General), and that no proof was brought forth as evidence that the land was allocated to them, nor even to the Project Even if the GA had been allocated the land they had no basis for exclusive grazing rights over the area, because they were not a legal entity That brought an abrupt end to that GA The fences were destroyed There were dismal attempts to revive the idea, but to no avail

3 **Community-Based Associations** At the beginning of the 1980s, the Government of the United States of America assisted the Government of Lesotho with long-term USAID support for the Land Conservation and Range Development Project (LCRD) Under the LCRD the concept of GA's was adopted from the Quthing associations The only difference was that the Project's main thrust focused on participation of the whole community in natural resource management in a designated area All other previous GA's had restricted membership to farmers with special common interests The LCRD (and later, Lesotho Agricultural Production and Institutional Support (LAPIS)) projects evolved the concept of what are now called Range Management Areas (RMA's), through lessons learned from Quthing and Thaba-Tseka GA's

RMA's are defined as special grazing areas declared by a chief for improvement of rangeland and livestock production through application of advanced management practices GA's form an integral part of the RMA by incorporating farmers' participation in grazing management, focusing on both cattlepost and village grazing areas

The goals of an RMA are

a To increase the productivity and income of rural livestock producers,

b To stimulate commercialization of extensive livestock production, while at the same time satisfying the subsistence needs of rural families; and

c To manage range resources in a manner which is sustainable and socially acceptable

Establishment of RMA's is currently initiated by the Range Management Division (RMD) head office in Maseru through which donor funding is channelled The long term goal, however, is to hand over responsibility for government extension services to the districts At that point the RMA should be self-sustaining, requiring only extension service support from MOA

E <u>The RMA Approach in the CNRM Project</u> The following lays out a step-by-step process for the formation of RMA's and the institutionalization of GA's which will be followed in the CNRM Project

1 **Process of RMA Formation** Successful management of communal natural resources depends on clearly understood goals and objectives, good leadership, and enthusiastic member participation in management activities Over the past eight years the RMD and the LCRD and LAPIS Projects have evolved a step-by-step process to instill these institutional attributes into GA's Thus far, they have been successfully applied in four RMA's having different geographic, resource, and local political settings The procedure has successfully stimulated participation of community residents at the "grassroots" level and built strong foundations for initiating and administering community based management efforts Following are steps that will be followed

a <u>Identification of Potential Sites for RMA Development</u> At the onset of the RMA Program it was determined that RMA s would initially be developed in areas having the greatest potential for quick response and success Thus, a scorecard system was developed for evaluating potential RMA s on the following criteria

- Condition of the rangelands in the proposed RMA, and their capacity to respond to management,

- High proportion of a grazing area compared to other land uses,

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- Residents' acceptance,
- Development programs in the area,
- Size of the proposed area for development;
- Number of villages and populations of the proposed area,
- Accessibility of the proposed area by road;
- Degree of support provided by the Principal Chief,
- Jurisdictional boundaries of ward and area chiefs,
- Presence of an existing Livestock Improvement Centre

The selection of Lesotho's first four RMA's was premised upon the use of this scorecard system However, now that several RMA's have been initiated, opportunities to expand geographically from established RMA's may offer a more efficient and socially acceptable approach to RMA development

b Determination of Community Interest A prerequisite towards ensuring community participation is having community residents who desire the program Thus, prior to initiating proposed RMA development activities, an assessment of the level of community interest is carried out The assessment is conducted in a general public meeting (*pitso*) in the area where the benefits and costs of initiating an RMA are explained. A follow-up meeting may be required After the *pitso*(s), technicians carry out household surveys in the area to obtain a more precise estimate of the level of community support If responses to the proposed RMA are positive, the GA development process will be initiated

c Formation of a GA Management Committee Following the decision to establish an RMA, an intensive period of extension will be initiated *Pitsos* will be held in each village lying within the boundaries of the RMA to explain in detail the benefits which may be reaped by the communities if they work cooperatively to improve management of their range resources Special efforts will be made to help potential members understand their obligations and responsibilities should they decide to form a GA The lead time required to accomplish this task will vary depending upon the level of interest indicated by potential members and evidence of adequate community leadership Residents will be asked to elect two village representatives to represent the community's interests in development and management of the GA

In addition to the elected representatives, the village chief/headman will be asked to be a part of the GA committee The involvement of village leaders cannot be overemphasized, and maximum effort will be made to obtain their support

d Development of Management Committee Administrative Capacity Basic instruction will be given on group leadership and interaction, group identification and prioritization of problems, and group decision-making procedures This basic training will provide an essential foundation for the development of administrative and management capabilities by the committee Furthermore, this development phase will be an important bonding period between committee members and the RMA Managers and technical support staff, during which time trust and confidence will be generated

e Identification of Community Management Constraints It will be essential that committee members themselves identify potential constraints to community rangeland management This will be important

in the learning process, and will allow committee members to consolidate their opinions and understandings of the GA's proposed management objectives This step is often by-passed by governments or projects, whose technicians instead make assumptions concerning constraints Doing so can result in technical advisory staff seeking solutions to problems that local participants do not consider particularly important, and may contribute to misunderstanding within the committee or between the committee and technical staff

A simple but effective procedure has been developed to ensure group participation in the identification of constraints The procedure uses meetings of Management Committee and public meetings (*pitsos*) to generate active group participation and prioritization of both large and small management constraints Benefits of these meetings, properly directed, will be threefold 1) community management constraints will be identified and ranked according to their perceived importance, 2) a common understanding will be achieved within the Committee and between the Committee and technical advisory staff, and 3) the common understanding of constraints will facilitate the development of specific management objectives to overcome the constraints

f <u>Field Tour of Relevant Management Approaches</u> Experience has shown that field tours to established RMA's in which similar activities are being conducted can be helpful A single, well planned field trip for the management committee at this stage of development can contribute in several ways

The most obvious benefit is exposure to new concepts and assessment of their application to local conditions Many of the concepts have proven to be applicable, whereas others have not Discussion sessions are held at the end of each day of the field trip to highlight those activities that are applicable to the visiting GA's development effort and, just as important, those that are not Detailed notes of these sessions serve as references when the committee members report back to their respective villages

The field trip also places committee members in each others' company for a concentrated and extended period, and allows members to become better acquainted and to assess one another's capabilities This knowledge is useful when electing Executive Committee officers, and is especially important given the fact that representatives come from several villages in an area and often have not been familiar with one another

An additional benefit of the field trip is increased enthusiasm, which occurs as a result of speaking directly with successful participants and seeing improvements on the ground

Special attention will be given to the question of sustainability during visits to existing RMA's

g <u>Election of GA Executive Committee</u> The management committee is the decision-making body for the GA with regard to development and management Hence, effective leadership must be provided to this group by an Executive Committee As discussed earlier, the field trip will allow the management committee to gain a better feel for the capabilities of its members and their respective levels of commitment to the GA Thus, following the field tour a general management committee meeting will be held to nominate and elect officers to form the GA's Executive Committee

h <u>Group Determination of Management Objectives</u> The committee session in which management constraints were identified and prioritized will provide an excellent starting point for the development of

management objectives, communication strategies, training plan, and formulation of duties of various people involved in the RMA development The identified constraints will be those issues specified by GA members which presently inhibit important management or production efforts in the RMA Hence, each major constraint serves as the basis for establishing management objectives

In many instances, the solutions to overcome constraints or implement management practices are technical or organizational in nature Thus, it is necessary for the RMA Advisor to provide advice on such issues so the management committee can make informed decisions

i Adoption of a Constitution and By-Laws The GA goals and management objectives are the core issues around which a constitution and by-laws will be formulated This document outlines the GA's goals and management objectives, membership conditions, and the authority under which the grazing constitutions will act Development and registration of the constitution and by-laws is a prerequisite to legal registration of the association Furthermore, recording of the GA's mandate in written form will serve to reduce potential misunderstanding within the GA membership

The drafting of a GA constitution and by-laws is a lengthy process It will involve numerous meetings with the management committee to develop a draft document, and once this draft has been developed, it must be presented to GA members at *pitsos* conducted in each RMA village This process in itself can be lengthy, as the number of villages in RMA's ranges from 10 to 35 However, this input stage by livestock producers at the "grassroots" level is extremely important to the process of ensuring participation in the GA and commitment to the management objectives it seeks to achieve

Following the receipt of inputs from members of all RMA villages, a final edition of the GA constitutional by-laws will be developed This edition will be registered with the Law Office Upon approval by the Law Office copies of the constitution and by-laws will be provided to each member of the management committee It is the duty of the management committee member to ensure that members of the GA from his\her respective village has access to the constitution and by-laws

j Declaration of a Range Management Area The Principal Chief must declare the area as an RMA in order that it obtains a legal recognition, and documentation of the declaration should ideally be done after the GA has been registered so that the declaration will have the GA name stipulated

Transgressors from outside the area can be prosecuted under the Range Management and Grazing Control Regulations Transgressors would include RMA members who do not follow the grazing plan agreed upon by the GA, upon being advised by technical staff of the Ministry of Agriculture

k Development of a Grazing Management Plan The introduction of improved rangeland and livestock management within the RMA is facilitated by application of a grazing management plan This plan will be developed by the Management Committee with the assistance of the RMA technical advisor Technical advice will be provided in three major areas of concern range management, livestock production, and livestock marketing Types of advice provided in relation to each of these areas include

Range Management - information on current rangeland stocking rates, carrying capacity estimates, rangeland condition and trend, grazing systems, rangeland improvements, etc

Livestock Production - information on livestock culling and breeding, animal health, fodder production, livestock management practices, and the development of a general RMA herd\flock improvement programme

Livestock Marketing - information on livestock sale prices, background information on how livestock markets operate, and general organization of livestock sales

The importance of the management plan again mandates that a series of *pitsos* be conducted in each RMA community to ensure participation at the "grassroots" level Following inputs from all RMA livestock producers, the management plan will be finalized and implemented

l Development of Management Enforcement Powers Introduction of the management plan will call for a change in traditional grazing patterns in the RMA Most RMA livestock producers will tend to follow the management guidelines as established within the plan However, no matter how well the plan is explained, a small percentage of the RMA's livestock producers (or producers from outside the RMA boundaries) will fail to follow the plan

During the initiation period of the plan, transgressors will be warned that failure to follow the plan will result in the impoundment of their livestock If producers still refuse to follow the plan (i e the grazing rotational system, removal of culled livestock, etc), then it will be necessary to impound their livestock To allow them to continually break the GA's management regulations would cause the association to lose its authority in the eyes of the RMA livestock producers Should this occur the management plan will fail

GA's have established enforcement capacity in the form of range riders One range rider will be appointed from each community, and he is the legal representative of the village chief\headman with respect to enforcement of grazing management regulations The range rider will be responsible for ensuring that village livestock producers adhere to the management plan in the village grazing area The range riders as a group will be responsible for enforcing grazing regulations in the grazing areas of the RMA The amount of range riders' remuneration will be decided upon by the GA

m Development of Income Generation For GA's GA income will be generated from initial membership subscription fees, woolshed use fee, grazing fees, livestock breeding fees, and the sale of GA livestock and livestock products

Presently, no two GA's in Lesotho are charging the same fee amounts The management committee of each GA will determine the fee level which it feels will be applicable to its respective GA members Thus, the capacity to generate income may vary from one GA to another, depending on the types and level of fees charged

The steps outlined above are intended to maximize community participation, and enhance GA administrative and management capabilities The procedure should be flexible, as it must effectively address the requirements of different communities with varying interests, needs, institutional developments, and political motivations Implementation of these steps is relatively straight-forward, but will require intensive extension efforts

2 **Sustainability** Lesotho s approach to range management has been notably successful compared to attempts in other African countries The GOL has supported heavy extension support and mobilization of village communities into a sense of unity and responsibility for

managing their own resources Lesotho's national legislation imposes heavy penalties for violators, and the judiciary system is widespread throughout the country Judicial support permits strong protection against outside aggressors who may pose a threat to successful establishment and further development of the RMA Lesotho is also the only country in Africa where grazing permits are issued to stock owners

The sustainability of Lesotho's RMA's and GA's will be strengthened by adjudication, effective extension, strong management, financial viability and well-trained leaders Adjudication is a process recently established by the MOA Re-allocation of cattlepost grazing areas through adjudication precedes establishment of RMA's The aim of the on-going adjudication program is to redistribute use rights to residents of villages nearest to cattlepost areas This ensures that groups of villages can be allocated cattlepost grazing areas rationally, thus eliminating arbitrary displacement of livestock, as was experienced in Sehlabathebe RMA

Currently, cattlepost users come from all over, from villages widely separated geographically, making extension difficult Effective extension would address cattle-post users collectively to link management of village grazing area to the cattlepost grazing resources Thus, adjudication must precede effective extension

Sustainability of the RMA's may run contrary to current thinking within GOL which is to delegate responsibility of management of the natural resources to development councils These councils will require substantial government support and technical assistance to carry out their natural resource management prerogatives Experience from existing RMA's shows that the number of villages within each RMA range from 10 to 36 The GA may be a better instrument for rangeland management than development councils

The advantage of the RMA approach is that a number of villages are brought together under one cooperative management group, with representation from each village Donor and government support services are best concentrated in one central management unit, such as a GA, rather than being split to smaller social units, such as villages The RMA/GA approach reduces overhead costs, and an association is better able to provide services for animal breeding, animal health, and marketing of livestock and their products The RMA can also protect its territorial boundaries from external transgressors with a mightier force than individual villages could organize These qualities distinguish the RMA approach from the development council approach

Financial viability is a crucial aspect of RMA sustainability RMA income generation capabilities have been promising, but need to be improved under the CNRM project The first two RMA's were able to acquire loans from the Agricultural Development Bank and met their repayment schedule from annual membership fees, breeding fees, impoundment fines, and sale of wool and mohair from association stud animals The last two RMA's that were formed added a joining fee, and thereby increased their incomes substantially Potential sources of additional income for GA's under the CNRM project include increased breeding fees and increased RMA grazing fees With the imminent introduction of national grazing fees, impoundment fines could also be increased

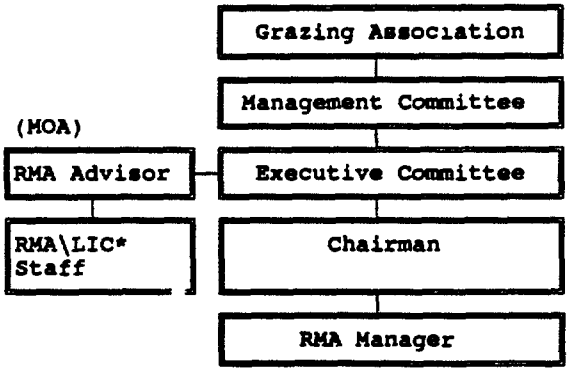
Associations will also be encouraged to introduce a commission at auction sales, establish a breeding herd so as to accelerate the livestock improvement program by selling offspring to members and outsiders, sell fodder through share-cropping arrangements and provide animal feeds (supplements) and veterinary supplies at a profit The GA

will not necessarily be in competition with government suppliers of subsidized veterinary supplies because centers will be fully integrated into existing RMA's Another source of additional GA income would be special joining fees for outsiders During the eight years since the Sehlabathebe RMA was established, the tangible benefits there have attracted outsiders to settle in the area They did so without paying any joining fee The Sehlabathebe GA now intends to impose a high joining fee for newcomers The current chairman of the association indicated that new settlers would be required to pay M300 irrespective of their herd size, an amount decided upon by the GA

Sustainability of the RMA's also requires that infrustructure will be scaled down in order to reduce maintenance costs.

Strong, representative leadership also promotes sustainability Past experience has shown that the election process, at least of the Executive Committee of the GA, should be made in as free an atmosphere to the electorate as possible The secret ballot system has been found to be very effective in electing members to the Executive Committee The elected members, however, must devote much of their personal time and effort to ensure that the GA is viable Future RMA's must address the issue of incentives for executive committee members, these may include remuneration for the chairman

The organizational structure of a typical RMA is shown below The present RMA's do not have a manager hired by the GA, but the organizational structure shown represents future RMA's As much as possible, Basotho professionals will be engaged for the technical assistance team This approach will give the project more indigenous flavour and facilitate more meaningful institutionalization of RMA's and their long- term sustainability



* LIC = Livestock Improvement Center.

The GOL currently provides diploma graduates to assist in the management of GAs, but for the long-term sustainability of RMAs, associations will hire their own managers A training center is being constructed at Sehlabathebe which will provide facilities for training new managers

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graduates to assist in the management of GA's, but for the long-term sustainability of RMA's, associations will hire their own managers A training centre is being constructed at Sehlabathebe, and should provide facilities for training new managers High school qualifications would be adequate entry requirements, and curriculum should be tailored for one year training This calibre of managers will be back-stopped by government technicians\extension personnel with higher qualifications

The 1987 Agricultural Policy on Livestock Production recommended that formation of RMA headquarters be at already existing Livestock Improvement Centres (LICs) LICs cover approximately 50,000 ha, and each is expected to be staffed with a Livestock Assistant (with certificate in agriculture), Livestock Attendants, Grazing Control Supervisors (range riders) and woolshed staff If all existing positions were filled, there would be sufficient personnel to backstop managers employed by the GA's One government technician, provided with a vehicle, could backstop managers of three adjacent RMA's As experience from existing RMA's augments, it will likely take less time to develop new RMA's It is anticipated that most of the RMA's initiated under the project will be self-sustaining by completion of the project

3 **RMA Livestock Improvements** Data collected from Mokhotlong (without RMA) and Sehlabathebe RMA from 1982/83 to 1988/89 indicate increasing price differential for oxen between the two areas In 1982/83 prices per head in both areas were about M250, while in 1987/88 Sehlabathebe oxen were approximately M200 per head higher than oxen in Mokhotlong The higher price at Sehlabathebe is clearly attributable to improvements in livestock performance there as a result of RMA Again, in 1983/84 oxen sale weights were approximately 470kg per head in Mokhotlong and 480 kg per head in Sehlabathebe In 1988/89 Mokhotlong average weight per head dropped to 420kg, while in Sehlabathebe it increased to 550kg More data are being compiled but are yet to be reported for comparative analysis between RMA and non-RMA animal performance indicators

The question has been asked whether the gains made by improved nutrition of livestock due to better range quality could be wiped out by other factors, such as parasites, poor genetic stock, diseases, poor herd management practices, etc Available information clearly indicates that improved nutrition of livestock at Sehlabathebe has not been wiped out by other factors such as diseases and poor management Because of its climate, livestock in Lesotho are not vulnerable to tropical livestock diseases For other diseases, the potential for damage to animals managed in an extensive manner is higher than those intensively managed However, the potential is less so for livestock extensively grazed in RMA's, because the risk of infection from outside is reduced by the exclusive nature of the RMA

RMA's also conduct more regular culling and auction sales than in other areas This program is vital to the improvement of the RMA herd and as compensation for increasing calving, lambing and kidding percentages so that livestock do not exceed carrying capacities by large proportions

Further, RMA's are in a better position to receive adequate support from the District Veterinary Officer because of the RMA's good communication systems (radio, transport) Each new RMA will most likely be established near an existing Livestock Improvement Centre where there are facilities for supply of veterinary drugs to livestock farmers and a Livestock Assistant in place The Livestock Assistant's role is to assist farmers with animal health problems, improvement of genetic quality of their stock and livestock husbandry practices In existing RMA's, Government veterinarians have given high priority to GA

activities The availability and quality of veterinary services to RMA's is reliable because each district has a veterinary officer to give required support in training farmers as well as assisting the Livestock Assistants at the LICs in all matters relating to animal health RMA's will therefore always obtain better animal health services than areas without an RMA

4 **Marketing** Improvements in the Livestock Production and Marketing Services (LPMS)-conducted auction sales will be made under Lesotho Agricultural Policy Support Program (LAPSP) funding to better disseminate marketing information This will supplement intensive extension programs At LPMS auction sales the dominant buyer has been the National Abattoir and Feedlot Complex (NAFC) but plans are underway to encourage participation of private enterpreneurs (speculators) and other buyers such as butchers Currently, butchers in Lesotho purchase their slaughter animals in South Africa because of better availability, lower price and credit provisions, then slaughter them at the national abattoir The GOL is considering introduction of restrictions on meat imports and strict control on importation of animals for slaughter Butchers would then be required to purchase from the NAFC, which would be the only importer of slaughter animals This legislative change shall be done only when it is exceptionally essential due to shortages within the country Even without restricted imports, the improvements in marketing information, extension and broader participation in marketing of animals will facilitate destocking of the rangelands and concommitant improvement of the carrying capacity

Other marketing constraints include a requirement for all animals on sale to have an official document for identification (*bewys*) These documents are sometimes not available and therefore impede commercial offtake through marketing The MICARD, which is responsible for making these documents available will ensure that sufficient copies are well distributed to chiefs and at all times

5 **Range Improvement** During June 1983 a total of 17 metric belt transects of 100-m length were measured within the Sehlabathebe RMA These measurements were conducted to provide estimates of the RMA's carrying capacity and to serve as a baseline for monitoring the effectiveness of the Sehlabathebe GA's management effort in improving the RMA's rangelands In July, 1990 six of the original 17 transects were re-measured (The other eleven were under snow at the time of re-measurement) Comparisons between the transects of 1983 and 1990 indicate substantial improvements in total ground cover, range condition scores, and a general advance of the ecological successional process towards a grassland climax stage In addition, five of the six transects were found to exhibit an upward range trend Hence given the data available to-date, the management practices employed by the Sehlabathebe GA do appear to be effective with respect to improving rangeland condition

A few special range treatments have been undertaken as direct means of developing and improving range forage resources These have been at an experimental stage only, and have not been applied on a large scale They include range seeding, control of undesirable range plants, applying fertilizer, and pitting, furrowing, and water spreading The Agricultural Research Division has been carrying out research on re-seeding and control of undesirable shrubs (mainly *Sehalahala* - bitter karoo shrub *Chrysocoma tenuifolia*) Canadian International Development Agency (CIDA) also undertook some investigative work from the late 1970s into the early 1980s They recommended several grass species but it would not have been cost effective to re-seed without control of trespass Since RMA s can control trespass, these species will be explored further in some of the RMA's that require additional treatment in order to improve range quality

6 **Staff** As discussed in Section E 2 Sustainability, the roles of RMA manager and RMA advisor will be separate in future RMA s The position of RMA Advisor will be graded at a higher salary scale in order to attract experienced diplomate range and livestock officers who have acquired considerable capabilities in the field The GOL will be required to establish six positions or less depending on whether three RMA s are in the same geographic area and can be served by one Advisor Availability of staff is not forseen to be a constraint during project implementation

7 **Training** Suggested training requirements for the RMD are summarized below The RMA program will be heavily supported by the RMD. RMA section heads will be trained to masters degree level so that they can better provide advice on Range Inventory and Planning, Grazing Management and Range Development Sections Additional input on organization of GA's is needed from a rural sociologist, a specialty which has been lacking in the RMD since its creation in 1979 Most problems faced in implementing future RMA's will be people-oriented

Type of training	Number Trained by Specialty		
	Range	Rural Sociology	GIS*
Long-Term overseas			
MS degree	2	1	-
BS degree	3	-	-
Diploma	-	-	2
Short-term			
Management	144mo		
In-country	4mo		
Study Tours	20mo		

* Long-term GIS training can be done within Africa, e g at UNEP, Nairobi

The Field Operations Section of RMD is headed by an MS degree graduate, but the section needs additional staff--specifically three BS graduates--in order to carry out the expansion of the RMA program

In support of the National Range Adjudication Program (re-allocation of cattlepost grazing), cattlepost surveys have to be completed throughout the country to lay a good foundation for creation of RMA's The RMD Range Inventory Section performs these surveys and the Data Management Section analyzes them These sections will be strengthened by training two persons to degree level and three to diploma The Data Management Section also provides important information and analysis of data from RMA's as well as other grazing areas in the country Its GIS capability will enhance planning and management capacity of the entire RMD The GIS coordinates data on cattlepost adjudication, vegetation, soil, management units, stocking rates, carrying capacities, and water distributions

Short-term management training for RMA managers will be held at the Range Management Education Centre at Sehlabathebe, and in other countries in the southern Africa region There will also be in-country short courses, and study tours within and outside the country, for GA members, staff of both the RMA s and the Department of Livestock Services

ANNEX G

2 Economic Analysis

A Approach to the Analysis The purpose of the economic analysis is to establish the viability of the project at the national level The financial analysis seeks to establish the viability of the project from the viewpoint of the participants - or the private investors - while the economic appraisal aims to establish the appropriateness of spending scarce resources on this project given the various competing uses for the funds

The economic analysis adjusts prices for project inputs and outputs to reflect their economic value Principally this entails identifying the existence and scale of taxes, duties or subsidies The objective is for economic prices to reflect their market value after adjusting for any distortions The economic analysis explicitly considers the likely external benefits and adverse effects of the project Where possible these will be quantified

Once the project inputs and outputs have been adjusted to economic prices and the external consequences have been accounted for, the appraisal compares the net benefits to society from implementing the project with the net benefits of continuing without the project This provides a measure of the incremental net benefit of the project

The economic analysis follows the financial analysis for the Lesotho CNRM project in utilizing the same enterprise budgets for cattle, sheep and goats with 1985 as the base year for costs and prices This base year was selected as being representative of a typical production year for Lesotho The production targets and assumptions underpinning the financial analysis form the basis of the 'with' CNRM project analysis The assumptions for both the 'with' and the 'without CNRM cases are outlined in section B The adjustment to economic prices and the consideration of externalities are outlined in sections C and D respectively

The macroeconomic impact of the CNRM project is outlined in sections E and F , which focus on the expected impact on the government budget and on the balance of payments

The selection of an appropriate discount rate is discussed in section G The findings on the Internal Rate of Return (IRR) and the Net Present Value (NPV) of the incremental CNRM project are shown in section H

B Assumptions for the 'With' and 'Without' CNRM Cases

1 'With' CNRM Through belonging to a grazing association and a RMA it is assumed that livestock owners will participate in range management practices which will lead to increased productivity within the RMA area The adoption of a set grazing pattern will allow the range forage to recover It is expected that herd and flock sizes will be reduced by 10% to achieve a sustainable stocking rate Further participation in the RMA is expected to lead to increased use of veterinary services and improved breeding practices which will contribute to increased animal productivity Improved management practices are expected to result in improvements in herd and flock composition

It is assumed that all of these production increases are achieved by year 7 of the RMA and are maintained at that level through to year 20, the approximate useful life of the capital assets

The specific productivity increases which were assumed are shown below

a Cattle
(1) Reduction in Bulls (from 9% to 1% of herd),
(2) Increase oxen (from 34% to 35% of herd),
(3) Increase in cows (from 57% to 63% of herd)
(4) Increase in reproduction rate (from 50% to 60%),
(5) Increase calf survival rate (from 47% to 65%)
(6) Increase in percent of cows milked per herd (from 50% to 60%),
(7) Increase in milk production per cow milked by 15%

b Sheep
(1) Reduction in Rams (from 10% to 2% of flock),
(2) Increase in Hamels (from23% to 36% of flock),
(3) Decrease in Ewes (from 67% to 62% of flock),
(4) Increase in Reproduction rate (from 80% to 86%),
(5) Increase in lamb survival rate (from 64% to 72%),
(6) Increase in wool production by 21%,
(7) Increase in wool value (quality) by 3%

c Goats
(1) Reduction in Bucks (from 12% to 2% of flock),
(2) Increase in Kapaters (from 22% to 36% of flock),
(3) Decrease in Does (from 66% to 62% of flock),
(4) Increase in reproduction rate (from 80% to 86%),
(5) Increase in Kid survival rate (from 42% to 54%),
(6) Increase in mohair production by 18%,
(7) Increase in mohair value (quality) by 3%

2 'Without' CNRM

a The average number of members and the total inventory of livestock is assumed to remain equal to the year 1 level of the 'with' case, throughout the life of the project

b It is assumed that there will be no culling

c Holding the inventory of livestock constant entails the equality of acquisitions and dispositions The proportion of the different categories of acquisitions and dispositions are assumed to remain in the same ratio as shown in the 1985/86 enterprise budgets in Swallow et al (1987)

d All the cash and non-cash costs are adjusted to the same ratio as the 1985/6 enterprise budgets(v) Investment in year 0 is assumed to be zero, since the kraal and the livestock represent bygone investments

e At the end of the life of the project all investments are assumed to have a zero residual value

f All the costs are adjusted to reflect their economic values

g External benefits and costs are explicitly included

C The Adjustment to Economic Prices

1 Cash Costs

a Hired labour The herding labour costs are based on Swallow et al (1987) pp37ff The average cost of a non-relative hired herder inclusive

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of both cash and in-kind payments was calculated to be M404 82 per annum in 1985/86 prices These payments are significantly below the stipulated minimum wage for unskilled labour and are consistent with wages paid for unskilled work in the rural areas No adjustment has been made to the costs for hired labour

b Veterinary supplies and medicine The prices paid for veterinary supplies do not reflect their full market cost In 1985/86 all veterinary supplies obtained through the GOL District Veterinary Clinics were charged at cost price (obtained through GOL central purchasing from the Republic of South Africa (RSA)) plus 10% The Livestock Division have indicated that the 10% mark-up was not sufficient to cover the administration, breakages, personnel and transportation costs There is some justification for a proportion of the overheads to be covered from central government funds because of the external benefits resulting from the control and elimination of sheepscab and other livestock diseases However, it would appear that the price charged to livestock owners for veterinary supplies includes a subsidy of between 50-100% The higher figure of 100% will be used because the veterinary drugs will in many cases be administered with the advice of the veterinary officer, and evidence from Maseru District indicates that private veterinary clinics fees are up to 400% of the GOL charges

c Salt All the mineral licks (eg molasses blocks with protein supplement) are distributed by the GOL veterinary system and charged at cost price plus 15% This does not take into account transport costs which are estimated to represent 50% of the purchase price Hence, salts are adjusted upwards by 30 4% which is the purchase price times 50% (ie (1/1 15) x 1 5)

d Purchased fodder No adjustment is made as the purchase price does not contain a subsidy element Livestock owners in the existing RMA s purchase from private sector suppliers in the RSA

e Purchased herd recruits The RMA may purchase herd recruits from within Lesotho from a private livestock owner or in the case of Angora goats and Merino sheep from the Department of Livestock of the Ministry of Agriculture (MOA) The Department of Livestock charges the purchase price plus 5% which covers the cost of freight to the border This does not take into account the cost of feeding, transport to the districts, death loss and medication which is estimated to be (in 1990 prices) from GOL, approximately M75 per head on a M350 animal Thus purchased recruits from GOL for goats and sheep should be increased in value by 20% to reflect their economic prices It is further assumed that the Department of Livestock accounts for approximately half of all purchased recruit of goats and sheep, consequently the adjustment factor becomes 10% (0 2 x 0 5) No adjustment is made to the purchase price for cattle

f Breeding fees These fees are set by an individual RMA without the involvement of the MOA No adjustment is made to the fee level used for the financial appraisal

2 **Non-Cash Costs**

a Family herding labour It is assumed that the opportunity cost of family herding labour is only 10% of the estimated financial value The opportunity cost is greater than zero because of the potential foregone education,however,the evidence from the work of Shoup (1988) is that the

value of education to residents in the existing RMA's has yet to be demonstrated This may reflect the low private returns to education for males who do not require it to either tend their livestock or to work in the mines of the RSA

b Own feeds In 1985 fertilizer was sold by Co-Op Lesotho with a subsidy of 30% However, this subsidy was removed in 1989 and since there are no plans to restore the subsidy no adjustment has been made to the financial price

c Wool and mohair price The wool and mohair price used in the financial appraisal were based on the prices paid by the Livestock Products Marketing Service (LPMS) The work of Crees and Grimble (1985) and Hunter and Mokitimi (1990) has shown the existence of an implicit price subsidy through the GOL bearing many of the operating costs of the government outlets (e g shed maintenance, staff salaries) Hunter and Mokitimi estimate the subsidy to have been M0 52 per Kg in 1985/86

The LPMS deducts Sheepscab dipping costs from the price of wool and mohair at the rate of M0 07 per Kg for wool and M0 15 per Kg for mohair The fee level has remained unchanged since 1978 It was estimated in 1988 based on the actual fees collected relative to the costs that the fees would need to be increased by 50% to cover costs

In view of the above the following adjustments have been made to the price of wool and mohair

Wool	3 26 - 0 52 - (0 07+0 035) = 2 64
Multiplier	2 64/3 26 = 0 808
Mohair	9 34 - 0 52 - (0 15+0 075) = 8 59
Multiplier	8 59/9 34 = 0 92

It is assumed that all the wool and mohair is sold through the LPMS

d Cost of Government extension services Each RMA contains a livestock improvement centre which is fully funded by the GOL In addition the Range Management Division funded by government provides assistance and advice to the RMAs It is estimated that 60% (M1 9 million) of the Livestock Division's recurrent expenditure is allocated to the lowlands (ie non-range) It is estimated that 24 2% (M2 5 million) of the Programming, Administration and Districts Division is allocated to range areas This is derived by taking the ratio of the Livestock Division's recurrent expenditure on range areas (0 4) as a proportion of the total Livestock Division's recurrent expenditure in relation to Crop Division's recurrent expenditure (60 5% is the ratio of Livestock Division to Crop Division's recurrent expenditure) Thus the expenditure of the Range Division (M0.5 million) plus 0 4 of the Livestock Division (M1 27 million) plus 0 242 of the Programming, Administration and Districts Division (M2 56 million) was estimated to be the total cost (M4 3 million) in 1990/91 of GOL support to range areas

This was divided by the total range area in Lesotho (1,981,896) hectares (National Resource Inventory) and then adjusted to 1985 prices Although the livestock division includes the recurrent funding required for the veterinary clinics and adjustments were made to the cost of veterinary medicines to reflect this, it is believed that dividing by the total range areas in the country compensates for this because the

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expenditure is biased towards the RMA's The estimated cost of GOL extension services is M2 20 per hectare It is assumed that each RMA will be 32,000 square hectares, consequently the cost of GOL extension services is estimated to be M70,400 per RMA (in 1990 prices)

e Opportunity cost of the land The opportunity cost of the land is the net value of its next best alternative use which in this case is the value of the land without the project It is assumed that the land is already used for grazing and as a result of the CNRM project proceeding, it will increase in value This will be assumed to be reflected in the herd productivity assumptions shown in the financial analysis

D External Benefits and Costs

1 **Benefits** As a result of the implementation of CNRM project, the community will receive benefits beyond the improvements in livestock productivity noted in the financial analysis This section outlines those benefits and, where possible seeks to quantify them It is important to be aware that the CNRM project has a series of significant external benefits which will not be quantified in the economic appraisal

a Reduction in soil loss The improved grazing practices that result from the implementation of a RMA will reduce the soil loss resulting from gully,sheet and wind erosion This has an impact on the production of crops and the growth of forage Further, reduced soil run off reduces the amount of siltation in rivers which lengthens the life of any downstream dams and improves the quality of the water Reducing the amount of siltation in river water will encourage the breeding of trout Owing to the difficulty of assigning a monetary value to all of the possible external benefits costings will be estimated for the probable adverse impact of not proceeding with the CNRM for forage and crop production

(1) Forage Loss 'Without' the Project It is estimated (personal communication, C Weaver, COP LAPIS), that in the absence of a RMA being established, the area would experience a reduction in forage, because of continued overgrazing, of between 5-7% over a 10 year period In contrast with the project, forage is expected to increase by 15-17% over the same period In the 'with case, it will be conservatively assumed that these benefits have been reflected in the increased productivity of the livestock

The Lesotho Highlands Development Authority (LHDA) has estimated the loss of forage cover for compensation purposes to be equivalent to 560 Kg per hectare The price of high protein *Eragrostis* per Kg in 1985 prices is estimated at M0 143 It is assumed that the range forage will have a protein content of 0 7 of the *Eragrostis* The protein difference is reflected in the imputed value (ie 0 143 x 0 7) The average grazing area (cattlepost plus winter) is assumed to be 32,000 hectares per RMA and the reduction in forage cover is assumed to decline by 0 75% per annum throughout the life of the project (20 years) For calculating the cost of not proceeding with the project it is assumed that any loss of forage has to be purchased as fodder In practice, the farmers would not purchase increased fodder but would experience a decline in the productivity of their livestock Thus the cost of purchasing fodder is a proxy for the likely reduction in livestock prices and yields, which will result from the deterioration of the range

through overgrazing without the project It is also a measure of the degradation of the range

(2) Crop Loss 'Without' the Project It is extremely problematic to estimate the impact of soil erosion on crop yeilds Bojo (1990) has recently reviewed the literature on soil erosion and crop yields noting the absence of a simple relationship Nevertheless, based on an observed loss of 11-15 tons of soil per hectare per annum Bojo estimated an annual yield reduction of 7 Kg per hectare per annum for maize

It will be assumed that each RMA has approximately 1,500 hectares of cropland, approximately 4 8% of the total area for the RMA This is similar to the situation in Sehlabathebe The 1985 producer price for maize is assumed to be M0 21 per Kg Without the project the 'lost' crop production per year would be

1,500 x 7 Kg x 0 21 = M2205

Thus each year of soil loss would result in an additional loss of M2205

With the project it is probable that yields would improve, since with more controlled grazing and improved administrative structures for impounding animals it is possible that there would be a reduction in crop loss due to roaming animals However, they have rather conservatively been assumed to remain constant Consequently, only the incremental income foregone is considered in the economic appraisal

b <u>Thatching grass</u> The evidence from Sehlabathebe Range Management Area Vegetation Analysis for various Transects comparing June 1983 with July 1990 (Weaver, 1990), found an increase in cover of 8 9% The improved cover results in reduced exposure to soil erosion and also leads to more varied vegetation The benefit of improved vegetation is extremely difficult to quantify It is, however, possible to quantify the increase in thatching grass

It is assumed that there will be 10 villages per RMA and each village grows 3 hectares of thatching grass Without the RMA each hectare is expected to yield 2 tons With the CNRM project each hectare is expected to yield 6 tons from year 5 There is evidence that all of this would be consumed by the village

In 1990 Yeats and Dare purchased a 1 5 Kg bundle at M0 87 In 1985 prices this would be M0 43 per bundle Thus, without the project

2 x 30 x 667 x 0 433 = 17,329

With the project (from year 5)

6 x 30 x 667 x 0 433 = 51,986

Thus, incremental income with the project from year 5 = 34,657

c <u>Other external benefits</u> There are several other important external or indirect benefits that cannot be quantified as precisely as the increase in thatching grass The improved vegetation will result in more

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insects in the grass which will encourage an increase in poultry, hares, quail, and franklin The improved habitat in the RMA will have a beneficial effect on endangered species, indeed, the Drakensberg area, where all the RMA's will be located, contains a number of species that are recognised to be endangered The International Union for the Conservation of Nature is in the process of declaring the Drakensberg Maluti area a managed resource area and the United Nations is also considering declaring the area a World Heritage site

The area has the opportunity to be a major tourist attraction for its scenic beauty and the diversity of the flora and fauna This potential will be significantly reduced if the present pattern of grazing is continued since few tourists would be interested in viewing a barren and eroded landscape

The evidence from existing RMAs is that they exert a positive demonstration effect on neigbouring areas The farmers in the areas adjacent to RMAs become more receptive to adopting improved husbandry techniques and begin to request the MOA to develop an RMA covering their area Further, the establishment and operation of an RMA with its related organizational structures increases the capability of its members to work together on other development activities Other external benefits include provision of potable water with consequent beneficial impacts on the health status of the rural population, road construction, employment generation and reduction in rural outmigration

In summary the non-quantifiable external benefits are considerable including the conservation of the landscape, an improvement in water quality through reducing siltation, the protection of wildlife, the potential to increase tourism in the Drakensberg area, the protection of the watershed (reducing the damage to infrastructure, especially that of the multi-billion dollar Lesotho Highlands Water Project, from flooding resulting from soil erosion), and the benefits from all the training carried out by the project The value of these beneficial impacts is assumed very conservatively to be equal to at least half of the value of incremental net benefits from livestock production, and is included in the calculation of the economic rate of return

2 **External Costs** There is evidence that two groups of livestock owners may experience a decline in their income from the establishment of a RMA These include small herd owners resident in the RMA, and herd owners non-resident in the RMA with traditional grazing rights in the RMA area

a <u>Small herd owners</u> The small herd owners who, prior to the RMA would have kept their animals in or near the village communal grazing areas all the year round, find that with the new grazing rules they need to employ and provision a herd boy and to build or gain access to a Kraal (Matebo) The recent work by Artz (1990) based on a baseline survey of herdsmen at Ramatseliso's Gate indicates that small herd owners may choose not to pay the cost of complying with the RMA grazing rules and may either dispose of the animals that they cannot keep in the village or they may *mafisa* (an arrangement where the animal is loaned out with the guardian maintaining the animals in return for prior agreed compensation) their livestock to someone who is following the rules If the small livestock owner chooses to *mafisa* out he will experience a reduction in his income,however,the person who receives the animal will gain Assuming that the animal remains within the RMA one may argue that this is purely a distribution issue as the reduction in income to the owner is mirrored by the gain in

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income to person *mafisa* ing the animal Therefore no adjustment to the returns at the level of the RMA is required

In the event that the small livestock owner disposes of his livestock this represents a reduction in income In the absence of quantitative data it is not possible to derive a reliable estimate of the magnitude of such a loss However, this may also be regarded as a redistributive issue if one assumes that the decline in income sustained by residents selling their livestock is reflected in the increase in income of larger livestock owners

b Non-RMA residents When a RMA has been established grazing rights have been (with the exception of Mokhotlong) restricted to residents within the area This automatically excludes the non-residents who have been grazing their livestock in the area Dobb s (1988) paper on cattlepost grazing in the Pelaneng/Bokong RMA has shown that a de facto grazing right is established through cattlepost ownership or use He found many examples of joint tenancy involving non-residents and cautioned that simply prohibiting residents from grazing would be viewed as removing legitimate grazing rights The Range Division addresses this issue through its adjudication process

For the economic appraisal it is assumed that, as a result of the level of overstocking, the adjudication process fails to compensate, in full, for the loss of the traditional grazing rights The Range Division estimates that approximately 25% of the livestock that were grazing prior to the establishment of the RMA at Sehlabathebe were excluded In Mokhotlong it is estimated that between 25% and 33% of the livestock belonged to non residents For this analysis,it is assumed that the livestock in the RMA represents 80% of the total prior to the establishment of the RMA(ie 25% were excluded)

It is estimated that each livestock unit will experience a one time decline in profitability of 5% on the base year with immediate effect This relatively modest decline is based on the excluded livestock, on average, belonging to larger better managed herds who will be able to negotiate access to new cattleposts

	Number excluded	Per unit income pre-RMA	post-RMA	Decline in income per unit	Total
cattle	580	33 97	32 27	1 70	986
sheep	3796	7 32	6 95	0 37	1404
goats	705	5 98	5 68	0 30	212
Total					2602

E Impact on the Government Budget The total GOL budgeted recurrent expenditure for 1990/91 is 467 7 million Maloti, with the MOA being allocated 31 0 million The Range Division of the MOA, which will be responsible for coordinating GOL participation in the implementation of the project, has a budget for recurrent expenditure in 1990/91 of 0 515 million maloti

The management of the existing RMA s accounts for an estimated M80,000 of the Range Division s existing recurrent expenditure While each RMA would cost the GOL an additional M73,000 in 1990/91 prices per annum at current subsidy levels, it is expected that under the proposed CNRM Project, the GOL will incur costs of M40,000 (1990 prices) per annum for each RMA implemented These costs have been assumed to run through the life of the project (ie for 20 years)

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In addition to this explicit financing for the RMA's the GOL currently provides an implicit subsidy through its pricing policies for veterinary services,salts,purchased recruits and wool and mohair The incremental GOL expenditure, defined as the subsidy 'with' the project less the 'without' case, is estimated to sum to approximately M33,000 (1990 prices) per annum per RMA with the existing levels of subsidies If the subsidy levels remain unchanged the establishment of six new RMA's implies a total increase of M198,000 (1990 prices) per annum

F The Impact of the CNRM on the Balance of Payments The CNRM project will have a positive impact on the balance of payments through increasing the value of traded outputs The incremental impact was derived by assuming that all veterinary supplies, salt, purchased fodder, other supplemental feeds and purchased herd recruits are imported In the 'without' case the input assumptions are held as for the 'with' case, however, only half the purchased herd recruits are assumed to be imported All the prices are adjusted to their import price through removing the costs involved in distribution within Lesotho This included the following adjustments to the economic prices

Veterinary supplies	0 5 x 0 909
Salt	0 667

The total cash income excluding sales of milk is assumed to represent the potential traded exports The incremental increase in exports is defined as the net balance of trade 'with' the project less the net balance 'without' the project The calculation was carried out for year 7 of a RMA when it is operating at its optimal capacity In 1985 prices each RMA will potentially generate approximately 80,000 Maloti per annum

The CNRM project costs will be largely met by capital inflows which will cover all the foreign exchange costs The proposed counterpart funding required from the GOL will be used for local costs

G Discount Rate Ideally the discount rate for the economy should be set at the level which allows the government to just utilize the funds available for investment The discount rate must ensure that only those projects which have a positive social value are undertaken If the rate selected by government is too low the economy will experience excess investment leading to inflation, however, too high a rate may result in not effectively utilizing available funds resulting in higher unemployment Further a high discount rate will lend a bias to selecting high and quick yielding projects

Unfortunately the GOL Ministry of Planning does not have an accepted discount rate which they recommend for all public sector investments In the absence of an accepted rate one shortcut method, if the economy is relatively undistorted, is to estimate the returns to private sector manufacturing However, the Lesotho National Development Corporation does not have data on the rate of return prevailing in the private sector in a readily usable format

The existence of a rapidly growing manufacturing sector producing labour intensive products for export indicates that a discount rate close to 10% may be approriate However, the Lesotho economy remains predominantly rural and there is some evidence of a dearth of viable projects in the rural sector This would appear to justify adopting a rate of return of less than 10% The economic appraisal will use 8% as the base rate Sensitivity analyses will be carried out at 10%, 16% and 20 percent

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H Economic Viability of the CNRM The economic viability of the CNRM project was derived by producing a budget for a RMA area (defined as the 'with' case) and a budget for a NON-RMA area of equivalent size (defined as the without case) Both the 'with' and the 'without' cases were adjusted to economic prices, adopting the assumptions described above, and the quantifiable external benefits and costs were added in It is assumed that two new RMAs will be established in the first, third and fifth years each The recommended national grazing fees and the RMA fees are adjusted to 1985 prices The estimated annual running costs of a RMA are computed as M35,800 (in 1990 prices) This is in addition to the existing costs of government extension services The total costs of the CNRM project were adjusted to 1985 prices The economic analysis is done at constant prices, excluding contigency allowance for inflation in the project cost However, the financial project budget includes a contingency allowance for inflation

The net incremental benefit of the CNRM project is defined to be the net benefits of the 'with' case less the project cost of the CNRM and less the net benefit of the 'without' case The project analysis is conducted over a 20 year period

At the base discount rate of 8%, the NPV of incremental net benefit from the CNRM project is M4,632,357 with an economic rate of return (IRR) of 17 0 percent over 20 years The NPV is still positive at M275,922 at 16% discount rate Measures of project worth were also calculated for a range of CNRM project costs to show the sensitivity of project viability to varying mark-up percentages to the total contract cost of the project With a mark-up of 25% the CNRM indicates an IRR of 13 0% and a NPV of M2,840,659 at 8 percent If the cost of the contract increases by 50% the IRR becomes 9 0%, and at 75% the IRR declines to 7 0 percent

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SUMMARY CALCULATION OF ECONOMIC RATE OF RETURN

YEAR	WITH TOTAL COSTS	CNRM TOTAL BENEFITS	WITHOUT TOTAL COSTS	CNRM TOTAL BENEFITS	INCREMENTAL COSTS	INCREMENTAL BENEFITS	OTHER EXTERNAL BENEFITS	CNRM PROJECT COSTS	INCREMENTAL NET BENEFIT
0	0	0	0	0	0	0	0	799,599	(799,599)
1	526,696	796,060	400,532	729,230	126,164	66,830	(29,667)	1,297,505	(1,260,342)
2	1,348,630	1,826,604	848,072	1,458,460	500,558	368,144	(66,207)	1,450,001	(1,148,064)
3	2,048,022	2,885,492	1,326,526	2,187,690	721,496	697,802	(11,847)	1,392,278	(706,323)
4	2,194,658	3,173,588	1,435,164	2,187,690	759,494	985,898	113,202	1,415,568	(316,468)
5	1,960,558	3 313,186	1,527,314	2 187 690	433,244	1 125,496	346,126	1,290,676	180,946
6	1,798 108	3,419 1[illegible]	1,618,8[illegible]	2,13[illegible],690	16[illegible],236	1, [illegible]1,432	531,098	1,311 0[illegible]1	45[illegible],509
7	1,582,790	3,416,621	1,709,842	2 187 690	(127,052)	1, 28,93[illegible]	677,992	,368,220	838,704
8	1,462,970	3,328,136	1,800,228	2,187,690	(337,258)	1,140,446	738,852	987,115	892,183
9	1,404,042	3,244,968	1,890 036	2 187,690	(485,994)	1,057,278	771,636	698,974	1,129,940
10	1,404,042	3,244,968	1,979,270	2,187,690	(575,228)	1,057,278	816,253	0	1,873,531
11	1,404,042	3,244,968	2,067,934	2,187,690	(663,892)	1,057,278	860,585	0	1,917,863
12	1,404,042	3,244,968	2,151,624	2,187,690	(747,582)	1,057,278	902,430	0	1,959,708
13	1,404,042	3,244,968	2,230,342	2,187,690	(826,300)	1,057,278	941,789	0	1,999,067
14	1,404,042	3,244,968	2,304,092	2,187,690	(900,050)	1,057,278	978,664	0	2,035,942
15	1,404,042	3,244,968	2,377,288	2, 87,690	(973,246)	1,057,278	1,015,262	0	2,072,540
16	1,404,042	3,244,968	2,449,936	2,187,690	(1,045,894)	1,057,278	1,051,586	0	2,108,864
17	1,404,042	3,244,968	2,522,038	2,187,690	(1,117,996)	1,057,278	1,087,637	0	2,144,915
18	1,404,042	3,244,968	2,595,600	2,187,690	(1,191,558)	1,057,278	1,124,418	0	2,181,696
19	1,404,042	3,244,968	2,646,624	2,187,690	(1,242,582)	1,057,278	1,149,930	0	2,207,208

DISCOUNT RATE

	8%	10%	16%	20%
INCREMENTAL NPV OVER 20 YEARS	4,632,357	3,017,190	275,922	(584,860)
IRR OVER 20 YEARS	0 170			

CNRM Economic Appraisal With Project

Budget for Cattle in an RMA		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Units
Total G A Members in RMA		276	302	293	286	294	310	304	304	304	304	
Cattle Owners in RMA		238	250	243	226	246	257	249	249	249	249	
Average Cattle/G A Member in RMA		8 4	6 9	8 2	7 8	7 7	6 9	6 5	6 5	6 5	6 5	
Average Cattle/Cattle Holding Member in RMA		9 7	8 3	9 9	9 9	9 2	8 3	7 9	7 9	7 9	7 9	
Inventory	Bulls	203	183	104	56	56	40	38	38	38	38	
	Oxen	791	709	922	856	885	782	684	684	684	684	
	Cows	1324	1195	1380	1328	1324	1316	1249	1249	1249	124°	
	TOTAL	2318	2087	2406	2240	2265	2138	1971	1971	1971	19	
Disposition	Males lost or stolen	19	9	7	5	4	3	3	3	3	3	
	Females lost or stolen	14	7	4	3	2	2	1	1	1	1	
	Males died	72	60	62	38	35	31	29	29	29	29	
	Females died	107	96	87	82	78	76	75	75	75	75	
	Males marketed	57	43	141	111	151	133	79	79	79	79	
	Females marketed	17	11	48	35	56	79	42	42	42	42	
	Males slaughtered	43	30	103	82	112	115	50	50	50	50	
	Females slaughtered	45	29	96	59	82	93	35	35	35	35	
	Males culled	26	33	55	46	30	13	13	13	13	13	
	Females culled	68	23	62	51	27	27	27	27	27	27	
	TOTAL	468	341	665	512	577	572	354	354	354	354	
Acquisition	Calves surviving	194	253	262	306	310	311	300	300	300	300	
	Males recruited	19	188	101	99	58	39	24	24	24	24	
	Females recruited	24	219	136	132	82	55	30	30	30	30	
	TOTAL	237	660	499	537	450	405	354	354	354	354	
Cows milked		206	253	248	274	275	251	228	228	228	228	
Average yearly milk collection per cow		92	92	92	92	96	98	100	100	100	100	litres
Number of Oxen span days	Ploughing	2094	2200	2138	1989	2165	2262	2191	2191	2191	2191	
	Planting	1142	1200	1166	1085	1181	1234	1195	1195	1195	1195	
	Cultivation	1309	1375	1337	1243	1353	1414	1370	1370	1370	1370	
	Harvest Transport	432	454	441	410	447	467	452	452	452	452	
PRODUCTION OF CASH PRODUCTS												
Males marketed		57	43	141	111	151	133	79	79	79	79	
Females marketed		17	11	48	35	56	79	42	42	42	42	
Hides marketed		22	16	57	44	62	64	36	36	36	36	
Milk sold per households selling milk		9476	11638	11408	12604	13200	12299	11400	11400	11400	11400	litres
Dung sold		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Draught sold		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
PRODUCTION OF NON CASH PRODUCTS												
Males slaughtered		43	30	103	82	112	115	50	50	50	50	
Females slaughtered		45	29	96	59	82	93	35	35	35	35	
Hides used in household		234	171	333	256	289	286	177	177	177	177	
Fallen Males consumed		58	48	50	30	28	25	23	23	23	23	
Fallen Females consumed		86	77	70	66	62	61	60	60	60	60	
Dung consumed as fuel		359290	323485	372930	347200	351075	331390	305505	305505	305505	305505	kg
Own milk consumed in household		9476	11638	11408	12604	13200	12299	11400	11400	11400	11400	litres
Oxen span days		4978	5229	5082	4727	5146	5376	5208	5208	5208	5208	days

CNRM Economic Appraisal With Project

Budget for Cattle Continued	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Units
PRODUCT PRICES OR IMPUTED PRICES											
Male Cattle sale price	392 00	392 00	410 62	429 24	429 24	429 24	429 24	429 24	429 24	429 24	maloti
Female Cattle sale price	266 00	266 00	278 64	291 27	291 27	291 27	291 27	291 27	291 27	291 27	maloti
Male Cattle purchase price	522 54	522 54	522 54	522 54	522 54	522 54	522 54	522 54	522 54	522 54	maloti
Female Cattle purchase price	354 58	354 58	354 58	354 58	354 58	354 58	354 58	354 58	354 58	354 58	maloti
Male Cattle inventory value	294 00	294 00	294 00	294 00	294 00	294 00	294 00	294 00	294 00	294 00	maloti
Female Cattle inventory value	199 50	199 50	199 50	199 50	199 50	199 50	199 50	199 50	199 50	199 50	maloti
Male Cattle culled value	313 60	313 60	328 50	343 39	343 39	343 39	343 39	343 39	343 39	343 39	maloti
Female Cattle culled value	212 80	212 80	222 91	233 02	233 02	233 02	233 02	233 02	233 02	233 02	maloti
Milk sales price	0 35	0 35	0 35	0 35	0 35	0 35	0 35	0 35	0 35	0 35	M/litre
Dung value	0 10	0 10	0 10	0 10	0 10	0 10	0 10	0 10	0 10	0 10	M/kg
Hides value	60 00	60 00	60 00	60 00	60 00	60 00	60 00	60 00	60 00	60 00	M/hide
Oxen span draught value	7 93	7 93	7 93	7 93	7 93	7 93	7 93	7 93	7 93	7 93	M/day
Kraal and Cattle Post value	400 00	400 00	400 00	400 00	400 00	400 00	400 00	400 00	400 00	400 00	maloti
INVESTMENT COSTS AND RETURNS											
Investment											
Kraals and Cattle Posts	95 200 00	100 000 00	97 200 00	90 400 00	98 400 00	102 800 00	99 600 00	99 600 00	99 600 00	99 600 00	maloti
Cattle Bulls	59 682 00	53 802 00	30 576 00	16 464 00	16 464 00	11 760 00	11 172 00	11 172 00	11 172 00	11 172 00	maloti
Oxen	232 554 00	208 446 00	271 068 00	251 664 00	260 190 00	229 908 00	201 096 00	201 096 00	201 096 00	201 096 00	maloti
Cows	264 138 00	238 402 50	275 310 00	264 936 00	264 138 00	262 542 00	249 175 50	249 175 50	249 175 50	249 175 50	maloti
TOTAL INVESTMENT	651 574 00	600 650 50	674 154 00	623 464 00	639 192 00	607 010 00	561 043 50	561 043 50	561 043 50	561 043 50	maloti
Cash Costs											
Hired Labour	35 604 48	32 323 46	37 572 10	35 409 92	36 240 00	34 208 00	31 536 00	31 536 00	31 536 00	31 536 00	maloti
Veterinary supplies and medicine	27 403 40	25 745 23	30 917 10	29 935 36	30 269 46	28 572 23	26 340 44	26 340 44	26 340 44	26 340 44	maloti
Salt	16 246 48	14 627 44	16 863 26	15 699 79	15 875 02	14 984 89	13 814 42	13 814 42	13 814 42	13 814 42	maloti
Purchased fodder	1 096 41	987 15	1 138 04	1 059 52	1 071 35	1 011 27	932 28	932 28	932 28	932 28	maloti
Other supplemental feeds	3 008 76	2 708 93	3 122 99	2 907 52	2 939 97	2 775 12	2 558 36	2 558 36	2 558 36	2 558 36	maloti
Purchased herd recruits	18 438 06	175 889 35	100 998 74	98 535 36	59 382 48	39 880 69	23 178 20	23 178 20	23 178 20	23 178 20	maloti
Breeding fees	0 00	0 00	2 250 00	2 250 00	2 250 00	2 250 00	2 250 00	2 250 00	2 250 00	2 250 00	maloti
TOTAL CASH COSTS	101 797 59	252 281 56	192 862 23	185 797 47	148 028 27	123 682 22	100 609 71	100 609 71	100 609 71	100 609 71	maloti
Non-cash costs											
Family herding labour	6 592 39	5 935 43	6 842 66	6 370 56	6 441 66	6 080 47	5 605 52	5 605 52	5 605 52	5 605 52	maloti
Own feeds	6 119 52	5 509 68	6 351 84	5 913 60	5 979 60	5 644 32	5 203 44	5 203 44	5 203 44	5 203 44	maloti
TOTAL NON CASH COSTS	12 711 91	11 445 11	13 194 50	12 284 16	12 421 26	11 724 79	10 808 96	10 808 96	10 808 96	10 808 96	maloti
Gross cash income											
Male animal sale	22 344 00	16 856 00	57 897 42	47 645 64	64 815 24	57 088 92	33 909 96	33 909 96	33 909 96	33 909 96	maloti
Female animal sale	4 522 00	2 926 00	13 374 48	10 194 45	16 311 12	23 010 33	12 233 34	12 233 34	12 233 34	12 233 34	maloti
Culled males	8 153 60	10 348 80	18 067 28	15 796 03	10 301 76	4 464 10	4 464 10	4 464 10	4 464 10	4 464 10	
Culled females	14 470 40	4 894 40	13 820 30	11 883 82	6 291 43	6 291 43	6 291 43	6 291 43	6 291 43	6 291 43	
Milk sale	3 316 60	4 073 30	3 992 80	4 411 40	4 620 00	4 304 65	3 990 00	3 990 00	3 990 00	3 990 00	maloti
Draught rental	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Hides sale	1 332 00	972 00	3 402 00	2 628 00	3 726 00	3 816 00	2 178 00	2 178 00	2 178 00	2 178 00	maloti
TOTAL VALUE OF CASH PRODUCTS	54 138 60	40 070 50	110 554 28	92 559 34	106 065 55	98 975 43	63 066 83	63 066 83	63 066 83	63 066 83	maloti

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Budget for Cattle Continued	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Units
Gross non cash income											
Products from											
Slaughtered males	16 856 00	11 760 00	42 293 86	35 197 68	48 074 88	49 362 60	21 462 00	21 462 00	21 462 00	21 462 00	maloti
Slaughtered females	11 970 00	7 714 00	26 748 96	17 184 93	23 884 14	27 088 11	10 194 45	10 194 45	10 194 45	10 194 45	maloti
Fallen males	12 700 80	10 584 00	10 936 80	6 703 20	6 174 00	5 468 40	5 115 60	5 115 60	5 115 60	5 115 60	maloti
Fallen females	12 807 90	11 491 20	10 413 90	9 815 40	9 336 60	9 097 20	8 977 50	8 977 50	8 977 50	8 977 50	maloti
Hides used in household	7 020 00	5 115 00	9 975 00	7 680 00	8 655 00	8 580 00	5 310 00	5 310 00	5 310 00	5 310 00	maloti
Own milk consumed in household	3 316 60	4 073 30	3 992 80	4 411 40	4 620 00	4 304 65	3 990 00	3 990 00	3 990 00	3 990 00	maloti
Oxen draught power	39 473 95	41 465 97	40 302 64	37 481 94	40 804 61	42 629 30	41 298 65	41 298 65	41 298 65	41 298 65	maloti
Kraal dung consumed in household	35 929 00	32 348 50	37 293 00	34 720 00	35 107 50	33 139 00	30 550 50	30 550 50	30 550 50	30 550 50	maloti
TOTAL VALUE OF NON CASH PRODUCTS	140 074 25	124 551 97	181 956 96	153 194 55	176 656 73	179 669 26	126 898 70	126 898 70	126 898 70	126 898 70	maloti
Value of Net Change in Capital Assets											
Male animals	(29 694 00)	41 013 00	(39 984 00)	(8 820 00)	(34 986 00)	(29 547 00)	0 00	0 00	0 00	0 00	maloti
Female animals	(25 935 00)	35 810 25	(5 985 00)	10 972 50	(1 596 00)	(13 266 75)	0 00	0 00	0 00	0 00	maloti
TOTAL NET CHANGE IN VALUE OF CAPITAL ASSETS	(55 629 00)	76 823 25	(45 969 00)	2 152 50	(36 582 00)	(42 813 75)	0 00	0 00	0 00	0 00	maloti
SUMMARY FINANCIAL STATISTICS											
Total Income (cash non cash capital)	138 583 85	241 445 72	246 542 24	247 906 39	246 140 28	235 830 94	189 965 53	189 965 53	189 965 53	189 965 53	maloti
Total Costs (cash and non-cash)	114 509 51	263 726 67	206 056 73	198 081 63	160 449 53	135 407 01	111 418 67	111 418 67	111 418 67	111 418 67	maloti
National Grazing Fees Paid M1 49 per head	0 00	3 117 98	3 594 56	3 346 56	3 383 91	3 194 17	2 944 67	2 944 67	2 944 67	2 944 67	maloti
RMA Grazing Fees Paid M1 25 per head	0 00	0 00	0 00	0 00	2 819 93	2 661 81	2 453 90	2 453 90	2 453 90	2 453 90	maloti
TOTAL NET INCOME FROM CATTLE IN RMA	24 074 35	(25 398 92)	36 890 94	46 478 19	79 486 91	94 567 95	73 148 29	73 148 29	73 148 29	73 148 29	maloti
RATE OF RETURN ON CAPITAL INVESTMENT	3 69	(4 23)	5 47	7 45	12 44	15 58	13 04	13 04	13 04	13 04	percent
AVERAGE NET INCOME FROM CATTLE IN RMA											
Average Gross Income per animal	59 79	115 69	102 47	110 67	108 67	110 30	96 38	96 38	96 38	96 38	maloti
Average Cost per animal	49 40	126 37	85 64	88 43	70 84	63 33	56 53	56 53	56 53	56 53	maloti
Grazing Fees per animal	2 74	2 74	2 74	2 74	2 74	2 74	2 74	2 74	2 74	2 74	maloti
AVERAGE NET INCOME PER UNIT IN RMA	7 65	(13 42)	14 09	19 50	35 09	44 23	37 11	37 11	37 11	37 11	maloti
AVERAGE NET INCOME FROM CATTLE PER FARMER IN RMA	64 22	(92 71)	115 68	152 76	270 36	305 06	240 62	240 62	240 62	240 62	maloti
INCOME EARNED PER ANIMAL UNIT	64 22	(92 71)	115 68	152 76	270 36	305 06	240 62	240 62	240 62	240 62	

CNRM Economic Appraisal With Project

Budget for Sheep in an RMA		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Units
Total G A Members in RMA		276 00	302 00	293 00	286 00	294 00	310 00	304 00	304 00	304 00	304 00	
Sheep Owners in RMA		145 00	159 00	154 00	150 00	154 00	163 00	160 00	160 00	160 00	160 00	
Average Sheep/G A Member in RMA		55 01	49 44	50 10	50 44	48 20	44 90	44 95	44 95	44 95	44 95	
Average Sheep/Sheep Holding Member in RMA		104 72	93 91	95 31	96 17	92 03	85 39	85 41	85 41	85 41	85 41	
Inventory	Rams	1 519 00	1 094 00	827 00	666 00	509 00	407 00	260 00	260 00	260 00	260 00	
	Hamels	3 492 00	3 833 00	4 163 00	4 383 00	4 593 00	4 743 00	4 933 00	4 933 00	4 933 00	4 933 00	
	Ewes	10 173 00	10 004 00	9 688 00	9 376 00	9 070 00	8 769 00	8 473 00	8 473 00	8 473 00	8 473 00	
	TOTAL	15 184 00	14 931 00	14 678 00	14 425 00	14 172 00	13 919 00	13 666 00	13 666 00	13 666 00	13 666 00	
Disposition	Males lost or stolen	310 00	293 00	274 00	248 00	208 00	165 00	124 00	124 00	124 00	124 00	
	Females lost or stolen	330 00	314 00	294 00	268 00	226 00	181 00	132 00	132 00	132 00	132 00	
	Males died	386 00	368 00	346 00	344 00	312 00	276 00	237 00	237 00	237 00	237 00	
	Females died	763 00	737 00	692 00	688 00	624 00	552 00	475 00	475 00	475 00	475 00	
	Males marketed	441 00	462 00	523 00	575 00	615 00	666 00	773 00	773 00	773 00	773 00	
	Females marketed	453 00	479 00	540 00	584 00	647 00	687 00	610 00	610 00	610 00	610 00	
	Males slaughtered	770 00	894 00	830 00	782 00	783 00	780 00	758 00	758 00	758 00	758 00	
	Females slaughtered	639 00	769 00	648 00	606 00	622 00	670 00	552 00	552 00	552 00	552 00	
	Males Culled	251 00	161 00	150 00	152 00	153 00	155 00	156 00	156 00	156 00	156 00	
	Females Culled	197 00	123 00	291 00	281 00	272 00	263 00	254 00	254 00	254 00	254 00	
	TOTAL	4 540 00	4 600 00	4 588 00	4 528 00	4 462 00	4 395 00	4 071 00	4 071 00	4 071 00	4 071 00	
Acquisition	Lambs surviving	3 907 00	4 011 00	4 052 00	4 027 00	4 000 00	3 969 00	3 934 00	3 934 00	3 934 00	3 934 00	
	Males recruited	152 00	151 00	141 00	136 00	119 00	100 00	81 00	81 00	81 00	81 00	
	Females recruited	228 00	185 00	142 00	112 00	90 00	73 00	56 00	56 00	56 00	56 00	
	TOTAL	4 287 00	4 347 00	4 335 00	4 275 00	4 209 00	4 142 00	4 071 00	4 071 00	4 071 00	4 071 00	
Sheep Shorn		10 629	10 750	10 862	10 891	10 912	10 926	10 933	10 933	10 933	10 933	
Wool sold per sheep shorn		2 30	2 35	2 40	2 50	2 65	2 70	2 80	2 80	2 80	2 80	kg
PRODUCTION OF CASH PRODUCTS												
Males Marketed		441 00	462 00	523 00	575 00	615 00	666 00	773 00	773 00	773 00	773 00	
Females Marketed		453 00	479 00	540 00	584 00	647 00	687 00	610 00	610 00	610 00	610 00	
Skins Marketed		111 00	109 00	107 00	105 00	104 00	102 00	100 00	100 00	100 00	100 00	
Total wool sales		24 446 24	25 263 25	26 068 13	27 227 19	28 917 97	29 501 32	30 611 84	30 611 84	30 611 84	30 611 84	kg
PRODUCTION OF NON CASH PRODUCTS												
Males Slaughtered		770 00	894 00	830 00	782 00	783 00	780 00	758 00	758 00	758 00	758 00	
Females Slaughtered		639 00	769 00	648 00	606 00	622 00	670 00	552 00	552 00	552 00	552 00	
Skins used in household		553 00	544 00	534 00	525 00	516 00	507 00	497 00	497 00	497 00	497 00	
Fallen Males Consumed		333 00	324 00	305 00	303 00	275 00	243 00	209 00	209 00	209 00	209 00	
Fallen Females Consumed		664 00	649 00	609 00	605 00	549 00	486 00	418 00	418 00	418 00	418 00	
PRODUCT PRICES OR IMPUTED PRICES												
Sheep sale price		55 00	55 00	57 20	59 40	59 40	59 40	59 40	59 40	59 40	59 40	maloti
Sheep purchase price		68 75	68 75	68 75	68 75	68 75	68 75	68 75	68 75	68 75	68 75	maloti
Sheep inventory value		41 25	41 25	42 90	44 55	44 55	44 55	44 55	44 55	44 55	44 55	maloti
Sheep cull value		27 5	27 5	28 6	29 7	29 7	29 7	29 7	29 7	29 7	29 7	maloti
Skins sale price		3 85	3 85	3 85	3 85	3 85	3 85	3 85	3 85	3 85	3 85	m/skin
Skin value used in home		1 93	1 93	1 93	1 93	1 93	1 93	1 93	1 93	1 93	1 93	m/skin
Kraal and Cattle Post value		200 00	200 00	200 00	200 00	200 00	200 00	200 00	200 00	200 00	200 00	maloti
Wool value per kilogram		2 63	2 63	2 63	2 63	2 66	2 69	2 71	2 71	2 71	2 71	maloti

CNRM Economic Appraisal With Project

Budget for Sheep Continued	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Unit
INVESTMENT COSTS AND RETURNS											
Investment											
Kraals and Cattle Posts	29 000 00	31 800 00	30 800 00	30 000 00	30 800 00	32 600 00	32 000 00	32 000 00	32 000 00	32 000 00	maloti
Sheep males	206 703 75	203 238 75	214 071 00	224 932 95	227 294 10	229 432 50	231 348 15	231 348 15	231 348 15	231 348 15	maloti
females	419 636 25	412 665 00	415 615 20	417 700 80	404 068 50	390 658 95	377 472 15	377 472 15	377 472 15	377 472 15	maloti
TOTAL INVESTMENT	655 340 00	647 703 75	660 486 20	672 633 75	662 162 60	652 691 45	640 820 30	640 820 30	640 820 30	640 820 30	maloti
Cash Costs											
Hired Labour	24 780 29	24 570 45	24 353 74	24 228 23	24 092 40	23 662 30	23 232 20	23 232 20	23 232 20	23 232 20	maloti
Veterinary supplies and medicine	12 572 35	12 900 38	13 738 61	13 501 80	13 264 99	13 028 18	12 791 38	12 791 38	12 791 38	12 791 38	maloti
Salt	9 575 82	9 416 27	9 256 71	9 097 16	8 937 60	8 778 05	8 618 49	8 618 49	8 618 49	8 618 49	maloti
Purchased fodder	143 64	141 25	138 85	136 46	134 07	131 67	129 28	129 28	129 28	129 28	maloti
Other supplemental feeds	354 09	348 19	342 29	336 39	330 49	324 59	318 69	318 69	318 69	318 69	maloti
Purchased herd recruits	28 737 50	25 410 00	21 401 88	18 755 00	15 805 63	13 083 13	10 360 63	10 360 63	10 360 63	10 360 63	maloti
Shearing expenses	2 125 76	2 150 06	2 172 34	2 178 18	2 182 49	2 185 28	2 186 56	2 186 56	2 186 56	2 186 56	maloti
Breeding fees	0 00	0 00	600 00	600 00	600 00	600 00	600 00	600 00	600 00	600 00	
TOTAL CASH COSTS	78 289 45	74 936 60	72 004 42	68 833 21	65 347 66	61 793 20	58 237 22	58 237 22	58 237 22	58 237 22	maloti
Non-cash costs											
Family herding labour	4 584 81	4 508 42	4 432 02	4 355 63	4 279 24	4 202 84	4 126 45	4 126 45	4 126 45	4 126 45	maloti
Own feeds	1 050 73	1 033 23	1 015 72	998 21	980 70	963 19	945 69	945 69	945 69	945 69	maloti
TOTAL NON CASH COSTS	5 635 54	5 541 64	5 447 74	5 353 84	5 259 94	5 166 04	5 072 14	5 072 14	5 072 14	5 072 14	maloti
Gross cash income											
Male animal sale	24 255 00	25 410 00	29 915 60	34 155 00	36 531 00	39 560 40	45 916 20	45 916 20	45 916 20	45 916 20	maloti
Female animal sale	24 915 00	26 345 00	30 888 00	34 689 60	38 431 80	40 807 80	36 234 00	36 234 00	36 234 00	36 234 00	maloti
Culled males	6 902 50	4 427 50	4 290 00	4 514 40	4 544 10	4 603 50	4 633 20	4 633 20	4 633 20	4 633 20	
Culled females	5 417 50	3 382 50	8 322 60	8 345 70	8 078 40	7 811 10	7 543 80	7 543 80	7 543 80	7 543 80	
Skins sale	427 35	419 65	411 95	404 25	400 40	392 70	385 00	385 00	385 00	385 00	maloti
Wool sale	64 393 35	66 545 43	68 665 53	71 718 59	76 873 21	79 377 43	83 107 47	83 107 47	83 107 47	83 107 47	maloti
TOTAL VALUE OF CASH PRODUCTS	126 310 70	126 530 08	142 493 68	153 827 54	164 858 91	172 552 93	177 819 67	177 819 67	177 819 67	177 819 67	maloti
Gross non-cash income											
Products from											
Slaughtered males	42 350 00	49 170 00	47 476 00	46 450 80	46 510 20	46 332 00	45 025 20	45 025 20	45 025 20	45 025 20	maloti
Slaughtered females	35 145 00	42 295 00	37 065 60	35 996 40	36 946 80	39 798 00	32 788 80	32 788 80	32 788 80	32 788 80	maloti
Fallen males	10 302 19	10 023 75	9 813 38	10 123 99	9 188 44	8 119 24	6 983 21	6 983 21	6 983 21	6 983 21	maloti
Fallen females	20 542 50	20 078 44	19 594 58	20 214 56	18 343 46	16 238 48	13 966 43	13 966 43	13 966 43	13 966 43	maloti
Skins used in household	1 064 53	1 047 20	1 027 95	1 010 63	993 30	975 98	956 73	956 73	956 73	956 73	maloti
TOTAL VALUE OF NON CASH PRODUCTS	109 404 21	122 614 39	114 977 50	113 796 38	111 982 20	111 463 69	99 720 36	99 720 36	99 720 36	99 720 36	maloti
Value of Net Change in Capital Assets											
Male animals	(2 165 63)	(886 88)	1 887 60	2 160 68	2 138 40	1 893 38	0 00	0 00	0 00	0 00	maloti
Female animals	(8 270 63)	(9 549 38)	(12 741 30)	(13 431 83)	(13 409 55)	(13 164 53)	0 00	0 00	0 00	0 00	maloti
TOTAL NET CHANGE IN VALUE OF CAPITAL ASSETS	(10 436 25)	(10 436 25)	(10 853 70)	(11 271 15)	(11 271 15)	(11 271 15)	0 00	0 00	0 00	0 00	maloti

CNRM Economic Appraisal With Project

Budget for Sheep Continued	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Units
SUMMARY FINANCIAL STATISTICS											
Total Income (cash non-cash capital)	225 278 66	238 708 21	246 617 48	256 352 77	265 569 96	272 745 47	277 540 03	277 540 03	277 540 03	277 540 03	maloti
Total Costs (cash and non cash)	83 924 99	80 478 25	77 452 16	74 187 05	70 607 60	66 959 24	63 309 36	63 309 36	63 309 36	63 309 36	maloti
National Grazing Fees Paid M0 25 per head	3 780 82	3 717 82	3 654 82	3 591 83	3 528 83	3 465 83	3 402 83	3 402 83	3 402 83	3 402 83	maloti
RMA Grazing Fees Paid M0 50 per head	7 561 63	7 435 64	7 309 64	7 183 65	7 057 66	6 931 66	6 805 67	6 805 67	6 805 67	6 805 67	maloti
TOTAL NET INCOME FROM SHEEP IN RMA	130 011 22	147 076 51	158 200 86	171 390 24	184 375 87	195 388 74	204 022 17	204 022 17	204 022 17	204 022 17	maloti
RATE OF RETURN ON CAPITAL INVESTMENT	19 84	22 71	23 95	25 48	27 84	29 94	31 84	31 84	31 84	31 84	percent
AVERAGE NET INCOME FROM SHEEP IN RMA											
Average Gross Income per animal	14 84	15 99	16 80	17 77	18 74	19 60	20 31	20 31	20 31	20 31	maloti
Average Cost per animal	5 53	5 39	5 28	5 14	4 98	4 81	4 63	4 63	4 63	4 63	maloti
Grazing Fees per animal	0 75	0 75	0 75	0 75	0 75	0 75	0 75	0 75	0 75	0 75	maloti
AVERAGE NET INCOME PER SHEEP IN RMA	8 56	9 85	10 78	11 88	13 01	14 04	14 93	14 93	14 93	14 93	maloti
AVERAGE NET INCOME FROM SHEEP PER FARMER IN RMA	471 06	487 01	539 93	599 27	627 13	630 29	671 13	671 13	671 13	671 13	maloti
INCOME EARNED PER ANIMAL UNIT	69 36	49 25	53 89	59 41	65 05	70 19	74 65	74 65	74 65	74 65	maloti

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Budget for Goats in an RMA		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Units
Total G A Members in RMA		276	302	293	286	294	310	304	304	304	304	
Goat Owners in RMA		116	127	123	120	123	130	127	127	127	127	
Average Goats/G A Member in RMA		10 2	9 2	9 3	9 4	8 9	8 3	8 3	8 3	8 3	8 3	
Average Goats/Goats Holding Member in RMA		24 3	21 9	22 1	22 3	21 4	19 9	20 0	20 0	20 0	20 0	
Inventory	Bucks	338	258	198	141	112	83	56	56	56	56	
	Kapaters	620	713	756	796	835	872	908	908	908	908	
	Does	1860	1810	1770	1740	1683	1628	1572	1572	1572	1572	
	TOTAL	2818	2781	2724	2677	2630	2583	2536	2536	2536	2536	
Disposition	Males lost or stolen	25	29	27	25	21	18	17	17	17	17	
	Females lost or stolen	15	17	17	13	12	9	9	9	9	9	
	Males died	135	146	142	131	117	100	81	81	81	81	
	Females died	223	208	195	183	168	163	157	157	157	157	
	Males marketed	39	68	83	88	100	107	124	124	124	124	
	Females marketed	77	84	87	109	116	120	83	83	83	83	
	Males slaughtered	39	77	91	78	82	87	93	93	93	93	
	Females slaughtered	71	53	42	54	56	57	39	39	39	39	
	Culled Males	76	32	14	13	12	12	10	10	10	10	
	Culled Females	32	31	30	30	29	28	27	27	27	27	
	TOTAL	732	745	728	724	713	701	640	640	640	640	
Acquisition	Kids surviving	500	516	534	554	566	576	584	584	584	584	
	Males recruited	77	77	73	68	57	45	33	33	33	33	
	Females recruited	118	95	74	55	43	33	23	23	23	23	
	TOTAL	695	688	681	677	666	654	640	640	640	640	
Goats shorn		2170	2141	2098	2061	2025	1989	1953	1953	1953	1953	
Mohair sold per goat shorn		0 8	0 825	0 85	0 875	0 9	0 925	0 95	0 95	0 95	0 95	kg
PRODUCTION OF CASH PRODUCTS												
Males Marketed		39	68	83	88	100	107	124	124	124	124	
Females Marketed		77	84	87	109	116	120	83	83	83	83	
Skins Marketed		5	5	5	5	5	5	5	5	5	5	
Total mohair sales		1736 0	1766 3	1783 3	1803 4	1822 5	1839 8	1855 4	1855 4	1855 4	1855 4	kg
PRODUCTION OF NON CASH PRODUCTS												
Males Slaughtered		39	77	91	78	82	87	93	93	93	93	
Females Slaughtered		71	53	42	54	56	57	39	39	39	39	
Skins used in household		34	36	37	37	37	38	36	36	36	36	
Fallen Males Consumed		108	117	114	105	94	80	65	65	65	65	
Fallen Females Consumed		110	119	115	106	94	82	67	67	67	67	
PRODUCT PRICES OR IMPUTED PRICES												
Goat sale price		44 00	44 00	45 76	47 52	47 52	47 52	47 52	47 52	47 52	47 52	maloti
Goat purchase price		55 00	55 00	55 00	55 00	55 00	55 00	55 00	55 00	55 00	55 00	maloti
Goat inventory value		33 00	33 00	33 00	33 00	33 00	33 00	33 00	33 00	33 00	33 00	maloti
Goat cull value		35 20	35 20	36 61	38 02	38 02	38 02	38 02	38 02	38 02	38 02	maloti
Skins sale price		1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	m/skin
Skin value used in home		0 75	0 75	0 75	0 75	0 75	0 75	0 75	0 75	0 75	0 75	m/skin
Kraal and Cattle Post value		200 00	200 00	200 00	200 00	200 00	200 00	200 00	200 00	200 00	200 00	maloti
Mohair value per kilogram		8 59	8 59	8 59	8 59	8 68	8 77	8 85	8 85	8 85	8 85	maloti

CNRM Economic Appraisal With Project

Budget for Goats Continued	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Unit
INVESTMENT COSTS AND RETURNS											
Investment											
Kraals and Cattle Posts	23 200 00	25 400 00	24 600 00	24 000 00	24 600 00	26 000 00	25 400 00	25 400 00	25 400 00	25 400 00	maloti
Goats males	31 614 00	32 043 00	31 482 00	30 921 00	31 251 00	31 515 00	31 812 00	31 812 00	31 812 00	31 812 00	maloti
females	61 380 00	59 730 00	58 410 00	57 420 00	55 539 00	53 724 00	51 876 00	51 876 00	51 876 00	51 876 00	maloti
TOTAL INVESTMENT	116 194 00	117 173 00	114 492 00	112 341 00	111 390 00	111 239 00	109 088 00	109 088 00	109 088 00	109 088 00	maloti
Cash Costs											
Hired Labour	4 227 00	4 206 26	4 154 10	4 132 62	4 109 38	4 035 94	3 962 50	3 962 50	3 962 50	3 962 50	maloti
Veterinary supplies and medicine	2 138 86	2 202 55	2 247 30	2 296 87	2 256 54	2 216 21	2 175 89	2 175 89	2 175 89	2 175 89	maloti
Salt	1 631 77	1 610 35	1 577 34	1 550 13	1 522 91	1 495 69	1 468 48	1 468 48	1 468 48	1 468 48	maloti
Purchased fodder	34 10	33 65	32 96	32 39	31 82	31 25	30 69	30 69	30 69	30 69	maloti
Other supplemental feeds	102 29	100 95	98 88	97 18	95 47	93 76	92 06	92 06	92 06	92 06	maloti
Purchased herd recruits	11 797 50	10,406 00	8 893 50	7 441 50	6 050 00	4 719 00	3 388 00	3 388 00	3 388 00	3 388 00	maloti
Shearing expenses	434 00	428 20	419 60	412 20	405 00	397 80	390 60	390 60	390 60	390 60	maloti
Breeding fees	0 00	0 00	600 00	600 00	600 00	600 00	600 00	600 00	600 00	600 00	
TOTAL CASH COSTS	20 365 53	18 987 96	18 023 68	16 562 88	15 071 12	13 589 66	12 108 21	12 108 21	12 108 21	12 108 21	maloti
Non-cash costs											
Family herding labour	781 15	770 89	755 09	742 06	729 04	716 01	702 98	702 98	702 98	702 98	maloti
Own feeds	247 98	244 73	239 71	235 58	231 44	227 30	223 17	223 17	223 17	223 17	maloti
TOTAL NON CASH COSTS	1 029 13	1 015 62	994 80	977 64	960 48	943 31	926 15	926 15	926 15	926 15	maloti
Gross cash income											
Male animal sale	1 716 00	2 992 00	3 798 08	4 181 76	4 752 00	5 084 64	5 892 48	5 892 48	5 892 48	5 892 48	maloti
Female animal sale	3 388 00	3 696 00	3 981 12	5 179 68	5 512 32	5 702 40	3 944 16	3 944 16	3 944 16	3 944 16	maloti
Culled males	2 675 20	1 126 40	512 51	494 21	456 19	456 19	380 16	380 16	380 16	380 16	
Culled females	1 126 40	1 091 20	1 098 24	1 140 48	1 102 46	1 064 45	1 026 43	1 026 43	1 026 43	1 026 43	
Skins sale	7 50	7 50	7 50	7 50	7 50	7 50	7 50	7 50	7 50	7 50	maloti
Mohair sale	16 214 24	16 497 48	16 656 02	16 843 52	17 186 18	17 533 53	17 848 47	17 848 47	17 848 47	17 848 47	maloti
TOTAL VALUE OF CASH PRODUCTS	25 127 34	25 410 58	26 053 47	27 847 15	29 016 65	29 848 71	29 099 20	29 099 20	29 099 20	29 099 20	maloti
Gross non-cash income											
Products from											
Slaughtered males	1 716 00	3 388 00	4 164 16	3 706 56	3 896 64	4 134 24	4 419 36	4 419 36	4 419 36	4 419 36	maloti
Slaughtered females	3 124 00	2 332 00	1 921 92	2 566 08	2 661 12	2 708 64	1 853 28	1 853 28	1 853 28	1 853 28	maloti
Fallen males	2 673 00	2 895 75	2 821 50	2 598 75	2 326 50	1 980 00	1 608 75	1 608 75	1 608 75	1 608 75	maloti
Fallen females	2 722 50	2 945 25	2 846 25	2 623 50	2 326 50	2 029 50	1 658 25	1 658 25	1 658 25	1 658 25	maloti
Skins used in household	25 50	27 00	27 75	27 75	27 75	28 50	27 00	27 00	27 00	27 00	maloti
TOTAL VALUE OF NON CASH PRODUCTS	10 261 00	11 588 00	11 781 58	11 522 64	11 238 51	10 880 88	9 566 64	9 566 64	9 566 64	9 566 64	maloti
Value of Net Change in Capital Assets											
Male animals	429 00	(561 00)	(561 00)	330 00	264 00	297 00	0 00	0 00	0 00	0 00	maloti
Female animals	(1 650 00)	(1 320 00)	(990 00)	(1 881 00)	(1 815 00)	(1 848 00)	0 00	0 00	0 00	0 00	maloti
TOTAL NET CHANGE IN VALUE OF CAPITAL ASSETS	(1 221 00)	(1 881 00)	(1 551 00)	(1 551 00)	(1 551 00)	(1 551 00)	0 00	0 00	0 00	0 00	maloti

CNRM Economic Appraisal With Project

Budget for Goats Continued	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	
SUMMARY FINANCIAL STATISTICS											
Total Income (cash non-cash capital)	34 167 34	35 117 58	36 284 05	37 818 79	38 704 16	39 178 59	38 665 84	38 665 84	38 665 84	38 665 84	maloti
Total Costs (cash and non-cash)	21 394 66	20 003 58	19 018 49	17 540 52	16 031 59	14 532 97	13 034 36	13 034 36	13 034 36	13 034 36	maloti
National Grazing Fees Paid MO 25 per unit	0 00	185 51	181 27	180 28	177 54	174 55	159 36	159 36	159 36	159 36	maloti
RMA Grazing Fees Paid MO 50 per unit	0 00	0 00	0 00	0 00	355 07	349 10	318 72	318 72	318 72	318 72	maloti
TOTAL NET INCOME FROM GOATS IN RMA	12 772 68	14 928 49	17 084 29	20 098 00	22 139 96	24 121 97	25 153 40	25 153 40	25 153 40	25 153 40	maloti
RATE OF RETURN ON CAPITAL INVESTMENT	10 99	12 74	14 92	17 89	19 88	21 68	23 06	23 06	23 06	23 06	percen
AVERAGE NET INCOME FROM GOATS IN RMA											
Average Gross Income per animal	12 12	12 63	13 32	14 13	14 72	15 17	15 25	15 25	15 25	15 25	maloti
Average Cost per animal	7 59	7 19	6 98	6 55	6 10	5 63	5 14	5 14	5 14	5 14	maloti
Grazing Fees per animal	0 75	0 75	0 75	0 75	0 75	0 75	0 75	0 75	0 75	0 75	maloti
AVERAGE NET INCOME PER GOAT IN RMA	3 79	4 69	5 59	6 83	7 87	8 79	9 36	9 36	9 36	9 36	maloti
AVERAGE NET INCOME FROM GOATS PER FARMER IN RMA	38 65	43 17	51 98	63 91	70 44	73 28	78 08	78 08	78 08	78 08	maloti
INCOME EARNED PER ANIMAL UNIT	35 96	44 53	53 12	64 87	74 80	83 55	88 92	88 92	88 92	88 92	maloti

CNRM Economic Appraisal With Project

ECONOMIC RETURNS INCLUDING ANNUAL RMA OPERATING COSTS AND ESTABLISHMENT COSTS

MALOTI

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	
TOTAL NET ANNUAL INCOME FROM CATTLE IN RMA		24 074	(25 399)	36 891	46 478	79 487	94 568	73 148	73 148	73 148	73 148	maloti
TOTAL NET ANNUAL INCOME FROM SHEEP IN RMA		130 011	147 077	158 201	171 390	184 376	195 389	204 022	204 022	204 022	204 022	maloti
TOTAL NET ANNUAL INCOME FROM GOATS IN RMA		12 773	14 928	17 084	20 098	22 140	24 122	25 153	25 153	25 153	25 153	maloti
ANNUAL OPERATING COSTS OF AN RMA		17 843	17 843	17 843	17 843	17 843	17 843	17 843	17 843	17 843	17 843	
TOTAL NET ANNUAL INCOME FROM LIVESTOCK IN RMA		184 702	154 449	230 019	255 810	303 846	331 922	320 167	320 167	320 167	320 167	
ASSUMED COST OF EXTENSION WORK		35 059	35 059	35 059	35 059	35 059	35 059	35 059	35 059	35 059	35 059	
EXTERNAL BENEFITS THATCHING GRASS		0	0	0	0	34 657	34 657	34 657	34 657	34 657	34 657	
EXTERNAL COSTS COSTS OF EXCLUSION		2 602	2 602	2 602	2 602	2 602	2 602	2 602	2 602	2 602	2 602	
TOTAL NET ANNUAL BENEFITS	(149 400)	147 041	116 788	192 358	218 149	300 842	328 918	317 163	317 163	317 163	317 163	
AVERAGE ANNUAL INCOME FROM												
CATTLE PER FARMER IN RMA		64	(93)	116	153	270	305	241	241	241	241	maloti
SHEEP PER FARMER IN RMA		471	487	540	599	627	630	671	671	671	671	maloti
GOATS PER FARMER IN RMA		39	43	52	64	70	73	78	78	78	78	maloti
TOTAL AVERAGE ANNUAL INCOME PER FARMER IN RMA		574	437	708	816	968	1 009	990	990	990	990	maloti
ASSOCIATION MEMBERSHIP FEES TO COVER INVESTMENT AND ANNUAL OPERATING COSTS OF AN RMA		0	(80)	(40)	(40)	(40)	(40)	(40)	(40)	(40)	(40)	maloti
TOTAL NET ANNUAL INCOME PER FARMER IN RMA		574	517	748	856	1 008	1 049	1 030	1 030	1 030	1 030	maloti
TOTAL COSTS OF AN RMA	149 400	243 428	391 047	329 776	316 746	273 997	243 551	214 087	214 087	214 087	214 087	
TOTAL INCOME FROM AN RMA	0	398 030	515 272	529 444	542 078	585 071	582 412	540 828	540 828	540 828	540 828	

CNRM ECONOMIC APPRAISAL WITHOUT CASE

Budget for Cattle in an NON-RMA(Equivalent area)		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Unit
Total G A Members in NON-RMA		276	276	276	276	276	276	276	276	276	276	
Cattle Owners in NON-RMA		238	238	238	238	238	238	238	238	238	238	
Average Cattle/G A Member in NON-RMA		8 4	8 4	8 4	8 4	8 4	8 4	8 4	8 4	8 4	8 4	
Average Cattle/Cattle Holding Member in NON-RMA		9 7	9 7	9 7	9 7	9 7	9 7	9 7	9 7	9 7	9 7	
Inventory	Bulls	203	203	203	203	203	203	203	203	203	203	
	Oxen	791	791	791	791	791	791	791	791	791	791	
	Cows	1324	1324	1324	1324	1324	1324	1324	1324	1324	1324	
	TOTAL	2318	2318	2318	2318	2318	2318	2318	2318	2318	2318	
Disposition	Males lost or stolen	20	20	20	20	20	20	20	20	20	20	
	Females lost or stolen	16	16	16	16	16	16	16	16	16	16	
	Males died	69	69	69	69	69	69	69	69	69	69	
	Females died	102	102	102	102	102	102	102	102	102	102	
	Males marketed	50	50	50	50	50	50	50	50	50	50	
	Females marketed	17	17	17	17	17	17	17	17	17	17	
	Males slaughtered	31	31	31	31	31	31	31	31	31	31	
	Females slaughtered	28	28	28	28	28	28	28	28	28	28	
	TOTAL	333	333	333	333	333	333	333	333	333	333	
Acquisition	Calves surviving	256	256	256	256	256	256	256	256	256	256	
	Males recruited	42	42	42	42	42	42	42	42	42	42	
	Females recruited	35	35	35	35	35	35	35	35	35	35	
	TOTAL	333	333	333	333	333	333	333	333	333	333	
Cows milked		206	206	206	206	206	206	206	206	206	206	
Average yearly milk collection per cow		92	92	92	92	92	92	92	92	92	92	litres
Number of Oxen span days	Ploughing	2094	2094	2094	2094	2094	2094	2094	2094	2094	2094	
	Planting	1142	1142	1142	1142	1142	1142	1142	1142	1142	1142	
	Cultivation	1309	1309	1309	1309	1309	1309	1309	1309	1309	1309	
	Harvest Transport	432	432	432	432	432	432	432	432	432	432	
PRODUCTION OF CASH PRODUCTS												
Males marketed		50	50	50	50	50	50	50	50	50	50	
Females marketed		17	17	17	17	17	17	17	17	17	17	
Hides marketed		20	20	20	20	20	20	20	20	20	20	
Milk sold per households selling milk		9476	9476	9476	9476	9476	9476	9476	9476	9476	9476	litres
Dung sold		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Draught sold		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
PRODUCTION OF NON CASH PRODUCTS												
Males slaughtered		31	31	31	31	31	31	31	31	31	31	
Females slaughtered		28	28	28	28	28	28	28	28	28	28	
Hides used in household		167	167	167	167	167	167	167	167	167	167	
Fallen Males consumed		55	55	55	55	55	55	55	55	55	55	
Fallen Females consumed		82	82	82	82	82	82	82	82	82	82	
Dung consumed as fuel		359290	359290	359290	359290	359290	359290	359290	359290	359290	359290	kg
Own milk consumed in household		9476	9476	9476	9476	9476	9476	9476	9476	9476	9476	litres
Oxen span days		4978	4978	4978	4978	4978	4978	4978	4978	4978	4978	days

CNRM ECONOMIC APPRAISAL WITHOUT CASE

Budget for Sheep Continued	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Unit
INVESTMENT COSTS AND RETURNS											
Investment											
Kraals and Cattle Posts	29 000 00	29 000 00	29 000 00	29 000 00	29 000 00	29 000 00	29 000 00	29 000 00	29 000 00	29 000 00	maloti
Sheep males	206 703 75	206 703 75	206 703 75	206 703 75	206 703 75	206 703 75	206 703 75	206 703 75	206 703 75	206 703 75	maloti
females	419 636 25	419 636 25	419 636 25	419 636 25	419 636 25	419 636 25	419 636 25	419 636 25	419 636 25	419 636 25	maloti
TOTAL INVESTMENT	655 340 00	655 340 00	655 340 00	655 340 00	655 340 00	655 340 00	655 340 00	655 340 00	655 340 00	655 340 00	maloti
Cash Costs											
Hired Labour	20 658 91	20 658 91	20 658 91	20 658 91	20 658 91	20 658 91	20 658 91	20 658 91	20 658 91	20 658 91	maloti
Veterinary supplies and medicine	10 932 48	10 932 48	10 932 48	10 932 48	10 932 48	10 932 48	10 932 48	10 932 48	10 932 48	10 932 48	maloti
Salt	8 705 29	8 705 29	8 705 29	8 705 29	8 705 29	8 705 29	8 705 29	8 705 29	8 705 29	8 705 29	maloti
Purchased fodder	131 40	131 40	131 40	131 40	131 40	131 40	131 40	131 40	131 40	131 40	maloti
Other supplemental feeds	321 16	321 16	321 16	321 16	321 16	321 16	321 16	321 16	321 16	321 16	maloti
Purchased herd recruits	16 878 74	16 878 74	16 878 74	16 878 74	16 878 74	16 878 74	16 878 74	16 878 74	16 878 74	16 878 74	maloti
Shearing expenses	2 125 76	2 125 76	2 125 76	2 125 76	2 125 76	2 125 76	2 125 76	2 125 76	2 125 76	2 125 76	maloti
TOTAL CASH COSTS	59 753 74	59 753 74	59 753 74	59 753 74	59 753 74	59 753 74	59 753 74	59 753 74	59 753 74	59 753 74	maloti
Non-cash costs											
Family herding labour	5 093 76	5 093 76	5 093 76	5 093 76	5 093 76	5 093 76	5 093 76	5 093 76	5 093 76	5 093 76	maloti
Own feeds	525 60	525 60	525 60	525 60	525 60	525 60	525 60	525 60	525 60	525 60	maloti
TOTAL NON-CASH COSTS	5 619 36	5 619 36	5 619 36	5 619 36	5 619 36	5 619 38	5 619 36	5 619 36	5 619 36	5 619 36	maloti
Gross cash income											
Male animal sale	16 535 20	16 535 20	16 535 20	16 535 20	16 535 20	16 535 20	16 535 20	16 535 20	16 535 20	16 535 20	maloti
Female animal sale	16 451 60	16 451 60	16 451 60	16 451 60	16 451 60	16 451 60	16 451 60	16 451 60	16 451 60	16 451 60	maloti
Skins sale	427 35	427 35	427 35	427 35	427 35	427 35	427 35	427 35	427 35	427 35	maloti
Wool sale	79 694 74	79 694 74	79 694 74	79 694 74	79 694 74	79 694 74	79 694 74	79 694 74	79 694 74	79 694 74	maloti
TOTAL VALUE OF CASH PRODUCTS	113 108 89	113 108 89	113 108 89	113 108 89	113,108 89	113 108 89	113 108 89	113 108 89	113 108 89	113 108 89	maloti
Gross non-cash income											
Products from											
Slaughtered males	25 471 05	25 471 05	25 471 05	25 471 05	25 471 05	25 471 05	25 471 05	25 471 05	25 471 05	25 471 05	maloti
Slaughtered females	9 937 95	9 937 95	9 937 95	9 937 95	9 937 95	9 937 95	9 937 95	9 937 95	9 937 95	9 937 95	maloti
Fallen males	10 302 19	10 302 19	10 302 19	10 302 19	10 302 19	10 302 19	10 302 19	10 302 19	10 302 19	10 302 19	maloti
Fallen females	20 542 50	20 542 50	20 542 50	20 542 50	20 542 50	20 542 50	20 542 50	20 542 50	20 542 50	20 542 50	maloti
Skins used in household	1 065 40	1 065 40	1 065 40	1 065 40	1 065 40	1 065 40	1 065 40	1 065 40	1 065 40	1 065 40	maloti
TOTAL VALUE OF NON-CASH PRODUCTS	67 319 09	67 319 09	67 319 09	67 319 09	67 319 09	67 319 09	67 319 09	67 319 09	67 319 09	67 319 09	maloti
Value of Net Change in Capital Assets											
Male animals	(2 317 63)	(2 317 63)	(2 317 63)	(2 317 63)	(2 317 63)	(2 317 63)	(2 317 63)	(2 317 63)	(2 317 63)	(2 317 63)	maloti
Female animals	2 317 63	2 317 63	2 317 63	2 317 63	2 317 63	2 317 63	2 317 63	2 317 63	2 317 63	2 317 63	maloti
TOTAL NET CHANGE IN VALUE OF CAPITAL ASSETS	(0 00)	(0 00)	(0 00)	(0 00)	(0 00)	(0 00)	(0 00)	(0 00)	(0 00)	(0 00)	maloti

CNRM ECONOMIC APPRAISAL WITHOUT CASE

Budget for Sheep Continued	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Units
SUMMARY FINANCIAL STATISTICS											
Total Income (cash non-cash capital)	180 427 98	180 427 98	180 427 98	180 427 98	180 427 98	180 427 98	180 427 98	180 427 98	180 427 98	180 427 98	maloti
Total Costs (cash and non cash)	65 373 11	65 373 11	65 373 11	65 373 11	65 373 11	65 373 11	65 373 11	65 373 11	65 373 11	65 373 11	maloti
National Grazing Fees Paid MO 25 per unit	0 00	3 780 82	3 780 82	3 780 82	3 780 82	3 780 82	3 780 82	3 780 82	3 780 82	3 780 82	maloti
TOTAL NET INCOME FROM SHEEP IN NON-RMA	115 054 87	111 274 06	111 274 06	111 274 06	111 274 06	111 274 06	111 274 06	111 274 06	111 274 06	111 274 06	maloti
RATE OF RETURN ON CAPITAL INVESTMENT	17 56	16 98	16 98	16 98	16 98	16 98	16 98	16 98	16 98	16 98	percent
AVERAGE NET INCOME FROM SHEEP IN NON RMA											
Average Gross Income per animal	11 88	11 88	11 88	11 88	11 88	11 88	11 88	11 88	11 88	11 88	maloti
Average Cost per animal	4 31	4 31	4 31	4 31	4 31	4 31	4 31	4 31	4 31	4 31	maloti
National Grazing Fee	0 25	0 25	0 25	0 25	0 25	0 25	0 25	0 25	0 25	0 25	maloti
AVERAGE NET INCOME FROM SHEEP IN NON RMA	7 33	7 33	7 33	7 33	7 33	7 33	7 33	7 33	7 33	7 33	maloti
AVERAGE NET INCOME FROM SHEEP PER FARMER IN NON-RMA	403 17	403 17	403 17	403 17	403 17	403 17	403 17	403 17	403 17	403 17	maloti
INCOME EARNED PER ANIMAL UNIT	59 36	36 64	36 64	36 64	36 64	36 64	36 64	36 64	36 64	36 64	maloti

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CNRM ECONOMIC APPRAISAL WITHOUT CASE

Budget for Goats in an NON-RMA(Equivalent area)		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Units
Total G A Members in NON RMA		276	276	276	276	276	276	276	276	276	276	
Goat Owners in NON RMA		116	116	116	116	116	116	116	116	116	116	
Average Goats/G A Member in NON-RMA		10 2	10 2	10 2	10 2	10 2	10 2	10 2	10 2	10 2	10 2	
Average Goats/Goats Holding Member in NON-RMA		24 3	24 3	24 3	24 3	24 3	24 3	24 3	24 3	24 3	24 3	
Inventory	Bucks	338	338	338	338	338	338	338	338	338	338	
	Kapaters	620	620	620	620	620	620	620	620	620	620	
	Does	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860	
	TOTAL	2818	2818	2818	2818	2818	2818	2818	2818	2818	2818	
Disposition	Males lost or stolen	24	24	24	24	24	24	24	24	24	24	
	Females lost or stolen	14	14	14	14	14	14	14	14	14	14	
	Males died	97	97	97	97	97	97	97	97	97	97	
	Females died	98	98	98	98	98	98	98	98	98	98	
	Males marketed	30	30	30	30	30	30	30	30	30	30	
	Females marketed	29	29	29	29	29	29	29	29	29	29	
	Males slaughtered	58	58	58	58	58	58	58	58	58	58	
	Females slaughtered	24	24	24	24	24	24	24	24	24	24	
	TOTAL	374	374	374	374	374	374	374	374	374	374	
Acquisition	Kids surviving	343	343	343	343	343	343	343	343	343	343	
	Males recruited	3	3	3	3	3	3	3	3	3	3	
	Females recruited	28	28	28	28	28	28	28	28	28	28	
	TOTAL	374	374	374	374	374	374	374	374	374	374	
Goats shorn		2170	2170	2170	2170	2170	2170	2170	2170	2170	2170	
Mohair sold per goat shorn		0 8	0 8	0 8	0 8	0 8	0 8	0 8	0 8	0 8	0 8	kg
PRODUCTION OF CASH PRODUCTS												
Males Marketed		30	30	30	30	30	30	30	30	30	30	
Females Marketed		29	29	29	29	29	29	29	29	29	29	
Skins Marketed		5	5	5	5	5	5	5	5	5	5	
Total mohair sales		1736 0	1736 0	1736 0	1736 0	1736 0	1736 0	1736 0	1736 0	1736 0	1736 0	kg
PRODUCTION OF NON-CASH PRODUCTS												
Males Slaughtered		58	58	58	58	58	58	58	58	58	58	
Females Slaughtered		24	24	24	24	24	24	24	24	24	24	
Skins used in household		34	34	34	34	34	34	34	34	34	34	
Fallen Males Consumed		108	108	108	108	108	108	108	108	108	108	
Fallen Females Consumed		110	110	110	110	110	110	110	110	110	110	
PRODUCT PRICES OR IMPUTED PRICES												
Goat sale price		44 00	44 00	44 00	44 00	44 00	44 00	44 00	44 00	44 00	44 00	maloti
Goat purchase price		55 00	55 00	55 00	55 00	55 00	55 00	55 00	55 00	55 00	55 00	maloti
Goat inventory value		33 00	33 00	33 00	33 00	33 00	33 00	33 00	33 00	33 00	33 00	maloti
Goat cull value		35 20	35 20	35 20	35 20	35 20	35 20	35 20	35 20	35 20	35 20	maloti
Skins sale price		1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	m/skin
Skin value used in home		0 75	0 75	0 75	0 75	0 75	0 75	0 75	0 75	0 75	0 75	m/skin
Kraal and Cattle Post value		200 00	200 00	200 00	200 00	200 00	200 00	200 00	200 00	200 00	200 00	maloti
Mohair value per kilogram		8 59	8 59	8 59	8 59	8 59	8 59	8 59	8 59	8 59	8 59	maloti

CNRM ECONOMIC APPRAISAL WITHOUT CASE

Budget for Goats Continued	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Units
INVESTMENT COSTS AND RETURNS											
Investment											
Kraals and Cattle Posts	23200 00	23200 00	23200 00	23200 00	23200 00	23200 00	23200 00	23200 00	23200 00	23200 00	maloti
Goats males	31614 00	31614 00	31614 00	31614 00	31614 00	31614 00	31614 00	31614 00	31614 00	31614 00	maloti
females	61380 00	61380 00	61380 00	61380 00	61380 00	61380 00	61380 00	61380 00	61380 00	61380 00	maloti
TOTAL INVESTMENT	116194 00	116194 00	116194 00	116194 00	116194 00	116194 00	116194 00	116194 00	116194 00	116194 00	maloti
Cash Costs											
Hired Labour	3520 68	3520 68	3520 68	3520 68	3520 68	3520 68	3520 68	3520 68	3520 68	3520 68	maloti
Veterinary supplies and medicine	1 863 10	1 863 10	1 863 10	1 863 10	1 863 10	1 863 10	1 863 10	1 863 10	1 863 10	1 863 10	maloti
Salt	1 483 54	1 483 54	1 483 54	1 483 54	1 483 54	1 483 54	1 483 54	1 483 54	1 483 54	1 483 54	maloti
Purchased fodder	30 82	30 82	30 82	30 82	30 82	30 82	30 82	30 82	30 82	30 82	maloti
Other supplemental feeds	92 40	92 40	92 40	92 40	92 40	92 40	92 40	92 40	92 40	92 40	maloti
Purchased herd recruits	1 875 50	1 875 50	1 875 50	1 875 50	1 875 50	1 875 50	1 875 50	1 875 50	1 875 50	1 875 50	maloti
Shearing expenses	434 00	434 00	434 00	434 00	434 00	434 00	434 00	434 00	434 00	434 00	maloti
TOTAL CASH COSTS	9300 04	9300 04	9300 04	9300 04	9300 04	9300 04	9300 04	9300 04	9300 04	9300 04	maloti
Non-cash costs											
Family herding labour	868 08	868 08	868 08	868 08	868 08	868 08	868 08	868 08	868 08	868 08	maloti
Own feeds	123 27	123 27	123 27	123 27	123 27	123 27	123 27	123 27	123 27	123 27	maloti
TOTAL NON CASH COSTS	991 35	991 35	991 35	991 35	991 35	991 35	991 35	991 35	991 35	991 35	maloti
Gross cash income											
Male animal sale	1320 00	1320 00	1320 00	1320 00	1320 00	1320 00	1320 00	1320 00	1320 00	1320 00	maloti
Female animal sale	1276 00	1276 00	1276 00	1276 00	1278 00	1276 00	1278 00	1276 00	1276 00	1276 00	maloti
Skins sale	7 50	7 50	7 50	7 50	7 50	7 50	7 50	7 50	7 50	7 50	maloti
Mohair sale	16214 24	16214 24	16214 24	16214 24	16214 24	16214 24	16214 24	16214 24	16214 24	16214 24	maloti
TOTAL VALUE OF CASH PRODUCTS	18817 74	18817 74	18817 74	18817 74	18817 74	18817 74	18817 74	18817 74	18817 74	18817 74	maloti
Gross non-cash income											
Products from											
Slaughtered males	2552 00	2552 00	2552 00	2552 00	2552 00	2552 00	2552 00	2552 00	2552 00	2552 00	maloti
Slaughtered females	1056 00	1056 00	1056 00	1056 00	1056 00	1056 00	1056 00	1056 00	1056 00	1056 00	maloti
Fallen males	2673 00	2673 00	2673 00	2673 00	2673 00	2673 00	2673 00	2673 00	2673 00	2673 00	maloti
Fallen females	2722 50	2722 50	2722 50	2722 50	2722 50	2722 50	2722 50	2722 50	2722 50	2722 50	maloti
Skins used in household	25 50	25 50	25 50	25 50	25 50	25 50	25 50	25 50	25 50	25 50	maloti
TOTAL VALUE OF NON-CASH PRODUCTS	9029 00	9029 00	9029 00	9029 00	9029 00	9029 00	9029 00	9029 00	9029 00	9029 00	maloti
Value of Net Change in Capital Assets											
Male animals	-1138 50	1138 50	-1138 50	-1138 50	-1138 50	-1138 50	-1138 50	-1138 50	-1138 50	-1138 50	maloti
Female animals	1138 50	1138 50	1138 50	1138 50	1138 50	1138 50	1138 50	1138 50	1138 50	1138 50	maloti
TOTAL NET CHANGE IN VALUE OF CAPITAL ASSETS	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	maloti

CNRM ECONOMIC APPRAISAL WITHOUT CASE

Budget for Goats Continued	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	UNITS
SUMMARY FINANCIAL STATISTICS											
Total Income (cash non-cash capital)	27846 74	27846 74	27846 74	27846 74	27846 74	27846 74	27846 74	27846 74	27846 74	27846 74	maloti
Total Costs (cash and non-cash)	10291 39	10291 39	10291 39	10291 39	10291 39	10291 39	10291 39	10291 39	10291 39	10291 39	maloti
National Grazing Fees Paid M0 25 per unit	0 00	701 68	701 68	701 68	701 68	701 68	701 68	701 68	701 68	701 68	maloti
TOTAL NET INCOME FROM GOATS IN NON-RMA	17555 35	16853 67	16853 67	16853 67	16853 67	16853 67	16853 67	16853 67	16853 67	16853 67	maloti
RATE OF RETURN ON CAPITAL INVESTMENT	15 1	14 5	14 5	14 5	14 5	14 5	14 5	14 5	14 5	14 5	percent
AVERAGE NET INCOME FROM GOATS IN NON-RMA											
Average Gross Income per animal	9 88	9 88	9 88	9 88	9 88	9 88	9 88	9 88	9 88	9 88	maloti
Average Cost per animal	3 65	3 65	3 65	3 65	3 65	3 65	3 65	3 65	3 65	3 65	maloti
National Grazing Fee	0 25	0 25	0 25	0 25	0 25	0 25	0 25	0 25	0 25	0 25	maloti
AVERAGE NET INCOME FROM GOATS IN NON-RMA	5 98	5 98	5 98	5 98	5 98	5 98	5 98	5 98	5 98	5 98	maloti
AVERAGE NET INCOME FROM GOATS PER FARMER IN NON-RMA	61 06	61 06	61 06	61 06	61 06	61 06	61 06	61 06	61 06	61 06	maloti
INCOME EARNED PER ANIMAL UNIT	56 82	56 82	56 82	56 82	56 82	56 82	56 82	56 82	56 82	56 82	maloti

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CNRM ECONOMIC APPRAISAL WITHOUT CASE

ECONOMIC SUMMARY BASED ON 1985 PRICES

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	MALOTI Year 10
TOTAL NET ANNUAL INCOME FROM CATTLE IN NON-RMA	82 455	78 992	78 992	78 992	78 992	78 992	78 992	78 992	78 992	78 992 maloti
TOTAL NET ANNUAL INCOME FROM SHEEP IN NON-RMA	115 055	111 274	111 274	111 274	111 274	111 274	111 274	111 274	111 274	111 274 maloti
TOTAL NET ANNUAL INCOME FROM GOATS IN NON-RMA	17 555	16 854	16 854	16 854	16 854	16 854	16 854	16 854	16 854	16 854 maloti
TOTAL ANNUAL GRAZING FEE	0	0	0	0	0	0	0	0	0	0
COST OF GOVERNMENT EXTENSION SERVICES	35 059	35 059	35 059	35 059	35 059	35 059	35 059	35 059	35 059	35 059
EXTERNAL COSTS FORAGE LOSS	13 453	26 808	40 058	53 211	66 268	79 222	92 081	104 844	117 511	130 083
CROP LOSS	2 205	4 410	6 615	8 820	11 025	13 230	15 435	17 640	19 845	22 050
TOTAL NET ANNUAL INCOME FROM LIVESTOCK IN NON-RMA	164 349	140 845	125 388	110 030	94 770	79 609	64 545	49 577	34 705	19 928 maloti
AVERAGE ANNUAL INCOME FROM										
CATTLE PER FARMER IN NON-RMA	286 20	286 20	286 20	286 20	286 20	286 20	286 20	286 20	286 20	286 20 maloti
SHEEP PER FARMER IN NON-RMA	403 17	403 17	403 17	403 17	403 17	403 17	403 17	403 17	403 17	403 17 maloti
GOATS PER FARMER IN NON RMA	61 06	61 06	61 06	61 06	61 06	61 06	61 06	61 06	61 06	61 06 maloti
TOTAL AVERAGE ANNUAL INCOME PER FARMER IN NON-RMA	750 43	750 43	750 43	750 43	750 43	750 43	750 43	750 43	750 43	750 43 maloti
TOTAL ANNUAL GRAZING FEE	0	0	0	0	0	0 00	0 00	0 00	0 00	0 00 maloti
TOTAL NET ANNUAL INCOME PER FARMER IN NON-RMA	750 43	750 43	750 43	750 43	750 43	750 43	750 43	750 43	750 43	750 43 maloti
TOTAL COSTS WITHOUT RMA	200 266	223 770	239 227	254 585	269 845	285 006	300 070	315 038	329 910	344 687
TOTAL INCOME WITHOUT RMA	364 615	364 615	364 615	364 615	364 615	364 615	364 615	364 615	364 615	364 615

ANNEX G

3 Financial Analysis

A Approach to the Analysis To conduct the financial analysis livestock enterprise budgets were constructed for cattle, sheep and goats using 1985 as the base year for costs and prices (see Attachment A) This base year was used since it was considered to be a typical production year for Lesotho However, an average of wool and mohair prices were used since these particular prices have been volatile in recent years

Due to the lack of accurate long-term data on productivity changes and herd and flock composition, the budgets were formulated around what has actually been achieved in RMAs to date and what experts closest to RMA field operations feel can be realistically obtained The budgets, which were established based upon Sehlabathebe GA membership and livestock ownership levels, were designed to reflect returns to cattle, sheep and goat owners as a group, and also as individual farmers

The analysis of financial profitability of livestock production in an RMA is compared with that in an equivalent non-RMA area to derive incremental impacts of belonging to a GA The main measure of project worth used from the farmers perspective is the Net Present Value (NPV) which determines the ability of the project to earn more than a given rate of return to capital This permits the analysis of sensitivity of project worth to various discount factors since the true opportunity cost of capital in Lesotho has not been quantified

B Production Targets & Assumptions The 'With' Case As a result of belonging to a GA and RMA, it is assumed that livestock owners will participate in range management practices which will lead to increased productivity in the RMA rangeland Sustainable stocking rates can be achieved by reducing herd and flock sizes (by approximately ten percent) and by adopting grazing patterns which allow the range forage to recover As a result, the quality of the range is expected to increase leading to increased animal health and productivity In addition, participation in the GA and RMA is expected to lead to increased use of veterinary services and improved breeding practices which will all contribute to increased animal productivity Further improved management practices are expected to result in improvements in herd and flock composition It is assumed that these production increases will be achieved by Year 7 of the RMA and maintained thereafter for a total of 20 years, the approximate useful life of the capital assets

Some of the specific productivity increases which were assumed to result from improved management practices through membership in an RMA are listed below

1 Cattle
- a Reduction in Bulls (from 9% to 1% of herd),
- b Increase oxen (from 34% to 35% of herd),
- c Increase in cows (from 57% to 63% of herd),
- d Increase in reproduction rate (from 50% to 60%),
- e Increase calf survival rate (from 47% to 65%),
- f Increase in percent of cows milked per herd (from 50% to 60%),
- g Increase in milk production per cow milked by 15%

2 Sheep·
- a Reduction in Rams (from 10% to 2% of flock),
- b Increase in Hamels (from 23% to 36% of flock),
- c Decrease in Ewes (from 67% to 62% of flock),
- d Increase in Reproduction rate (from 80% to 86%),
- e Increase in lamb survival rate (from 64% to 72%),
- f Increase in wool production by 21%,
- g Increase in wool value (quality) by 3%

f Increase in wool production by 21%,
g Increase in wool value (quality) by 3%

3 Goats
a Reduction in Bucks (from 12% to 2% of flock),
b Increase in Kapaters (from 22% to 36% of flock),
c Decrease in Does (from 66% to 62% of flock),
d Increase in Reproduction rate (from 80% to 86%),
e Increase in Kid survival rate (from 42% to 54%),
f Increase in mohair production by 18%,
g Increase in mohair value (quality) by 3%.

In the 'with' situation, it is assumed that when payment of various fees will begin by GA members will depend on the sequencing of activities in establishing the RMA Thus, it is assumed that both the GA membership fee and the national grazing fee will be paid from the second year after starting the RMA while breeding fee payments commence in the third year and GA grazing fees in the fifth Enterprise budgets for livestock production in a typical RMA are shown in Attachment A(1) and the summary financial statistics in Attachment A(2)

C The 'Without' Case The enterprise budgets for an equivalent non-RMA area, given in Attachment A(2), were based on the following assumptions

1 The membership and livestock inventory are the same as in the first year of the project and do not change during the 20-year period Similarly, investment, cash and non-cash costs and product prices are assumed to be same as for the first year of the RMA

2 Livestock productivity parameters remain constant at the base level with no culling, thus, acquisitions match disposals in order to maintain a constant herd inventory However, dispositions are lower than in the with' case

Enterprise budgets for livestock production in an equivalent non-RMA area are shown in Attachment A(3) and the summary financial statistics in Attachment A(4)

D Financial Profitability of Livestock Production The base analysis factored in the costs of self-assessed GA membership fees (M60 in the first year and M10 thereafter annually) and grazing fees (M0 50 per head of cattle and equines and M0 20 per small stock), in addition to the proposed national grazing fees (M3 per head of cattle and equines and M0 50 per head of sheep and goats) Results from the financial analysis indicate that there is financial incentive for farmers to participate in a GA and an RMA Financial returns from increases in productivity easily outweigh the loss livestock owners incur through reducing herd and flock size The average annual incremental net returns to the average livestock owner in a typical RMA, over and above the non-RMA situation, during the first ten years is M448 82 (Attachment B(1)) The NPV of incremental net benefit per farmer in the RMA is M4,629 over the 20-year period For livestock owners as a group, the NPV of incremental net benefit is M1 45 million

The CNRM project aims to institutionalize and expand the concept and practice of GAs and RMAs The crucial issue is the need for simultaneous profitability of livestock production and the financial sustainability of the RMA Thus, in analyzing production profitability, it is important to determine the sustainability of a typical RMA based on the existing level of self-assessed GA membership and grazing fees Analysis (Attachment C(1)) showed that an RMA will not be able to cover its operating expenses with the present level of GA grazing fees Hence, further analysis of production profitability was conducted based on GA grazing fees of M1 0 for large stock and M0 5 for small stock The results are in Attachment B(2) The average annual incremental net income to

livestock owners during the first ten years in the RMA drops marginally to M438 but the NPV of incremental net benefit per farmer is still highly positive at M4,514 over the 20-year period For livestock owners as a group, the NVP of incremental net income is M1 41 million Thus, even with this increase in GA grazing fees, it is still profitable for farmers to participate in a GA and an RMA

The above analysis excludes the initial investment costs of establishing the RMA For the GOL to implement and sustain the RMA program, the RMAs need to be self-sustaining In order to cover initial RMA establishment costs of about M300,000 through amortization, in addition to the operating costs included above, from RMA revenues, the analysis of producer profitability was conducted with the minimum level of additional GA membership and grazing fees needed to make the RMA profitable and sustainable without accruing excessive revenue To achieve this, various membership fee structures were tried From this analysis, it is recommended that the origional GA membership fees be increased to M70 in the first year and M40 per year thereafter, and the annual GA grazing fee raised to M2 00 for large stock and M0 70 for small stock This increase in cash costs will not negate the financial incentive for farmers to belong to a GA in an RMA The average farmer in an RMA will earn an annual incremental net benefit of M403 44 during the first ten years, with the NPV of incremental net benefits being M4160 21 over the 20-year period discounted at eight percent (Attachment B(3)) For livestock owners as a group, the NPV is M1 31 million

D <u>Financial Viability of the RMA</u> In order to assess the financial viability of a typical grazing association a cash flow was prepared (Attachment C, page 1) The income/expenditure statement covers the 20-year period of analysis and includes income generated from breeding, membership and grazing fees; sales of bulls, rams and bucks from the stud stock, wool and mohair receipts from stud animals owned by the association, and income from impoundments of animals found illegally grazing in the RMA Major expenses included in the analysis are payments for the pound master, payments to range riders who look for animals illegally grazing in the RMA, payment of a wool classer, payment of herders who look after animals owned by the association, association field trips, purchase of livestock feed for animals owned by the association, purchases of stud animals, miscellaneous veterinary services, and monthly transportation to Maseru for meetings with livestock officials and to conduct other business (e g , financial matters)

The financial viability of the typical RMA with present grazing association membership fees (M50 first time and M10 per annum) and grazing fees (M0 50 per large stock, M0 20 per small stock) is questionable The cash flow for a typical RMA indicates that, at expected income and expenditure levels, the RMA would encounter cash-flow problems in nine years during the project period (Attachment C(1))

The financial sustainability of the new GAs and RMAs depends on their ability to pick up most of the annual operating costs which in existing RMAs are now being covered by the GOL To do this they must expand their revenue making capabilities (e g , breeding animals for sale, charging marketing fees, renting facilities, fund raising, etc) and make sure that members pay the real cost for services they receive which have a direct impact on animal productivity The GA should be expected to cover annual operating costs including paying for an RMA manager (approximately M7860 per year), range riders and purchasing breeding stock, among other annual operational costs For the GA to absorb these costs entirely from its revenue and insure that its cash-flow is positive over the project period, would require annual grazing fees of M1 00 per cattle and equines and M0 50 per small stock (assuming there are approximately 900 horses and donkeys in the RMA) as shown in Attachment C(2) Furthermore, in order to fully amortize 90 percent of the cost of initial investment in establishing the RMA (approximately M17,520 per year) and earn some extra revenue, the membership fee

will have to increase to M70 in the first year and M40 per year thereafter while the GA grazing fee is increased to M2 00 for large stock and M0 70 for small stock At these levels of fees, the NPV of RMA/GA cash flow, discounted at eight percent over 20 years, is M46,605 and M25,824 at 16 percent (Attachment C(3)) These levels of net worth indicate the profitability of a self-sustaining RMA Of course, any permutation of grazing and membership fees could be adopted to meet the extra costs of establishing and running the RMA, both are increased in the present analysis to pay for amortized investment costs

As illustrated above, internalizing 90 percent of the initial investment and all annual operating costs of the RMA leaves livestock owners with an average annual incremental net income of over M400 However, there are limits to the amount which GA and RMA members would be willing to pay as fees, which is a central issue regarding the sustainability of the GA For members to accept higher fee levels, they must directly associate those payments with financial benefits and increased animal productivity Thus, an essential feature of the CNRM project must be to demonstrate to participants the financial benefits they will realize through their membership in the association

E <u>GOL Budget Considerations</u> The total GOL recurrent budget for 1990/91 was M467 7 million, of which the Ministry of Agriculture is allocated M31 0 million The GOL is programmed to contribute approximately M7 4 million to this project over ten years, amounting to M740,000 per year This constitutes a small share, around 2 4 percent, of the present MOA recurrent budget level Analysis of the GOL budget showed that MOA actual recurrent expenditure is adequate to match the programmed GOL attribution

The Range Management Division (RMD) of the MOA, which will be mainly responsible for GOL participation in the implementation of the project, had a budget for recurrent expenditure in 1990/91 of M511,380 If all of the M700,000 annual expenditure passes through the RMD budget it will result in an increase of almost 45 percent However, other Divisions and Departments within MOA, in addition to other Ministries, will participate in project implementation, thereby expanding GOL's absorptive capacity to handle project funding

Government budgeting also reflects annual costs of managing established RMAs of M80,000 for RMA 1 and M40,000 each for RMAs 2 and 4, averaging M53,000 This assumes that the government continues with present levels of support for RMA operating costs This may not be a big issue in the beginning of the project when there are only four established RMAs However, at project completion there are expected to be 12 RMAs in operation in the country and the government's ability to maintain this level of support to each established RMA is questionable Hence, it is all the more important that most of these costs be absorbed by the GA and the GOL contribution be kept to a minimum as designed under the CNRM project Under this project, MOA direct support for the running cost of an RMA will be largely limited to the salary and vehicle costs for a Range Advisor, salary for a Range Manager for the first two years of RMA formation, provision of power and the cost of farmer training This will amount to about M50,000 annually, but will fall to M40,000 after the second year Also, the current level of support to existing RMAs is expected to be reduced significantly once the RMAs begin to keep their 50 percent share of national grazing fees Furthermore, it is likely that GA fees will be increased in RMA 1 which presently receives the largest share of MOA support

F <u>Sensitivity Analysis</u> The profitability of a livestock enterprises to an individual owner in an RMA is analyzed for sensitivity of the NVP of net annual incremental income of individual livestock owners to changes in the discount factor, wool prices and level of the proposed national grazing fee Results are detailed in Attachment D based on the enterprise budget that incorporates the higher levels of GA grazing and membership fees necessary to cover amortization and operating costs of an RMA

Using higher levels of the economic discount rate of the stream of incremental net benefits to individual livestock owners does not negate the profitability of livestock production Increasing the discount rate from eight percent to 20 percent only lowers the NPV to M1419 73 from M3543 41 without making NPV negative

The product prices which are most subject to world price changes are those for wool and mohair Lesotho produces around 0 16 percent of the world supply of wool and about 2 7 percent of the world supply of mohair Increases in wool and mohair production as a result of the CNRM project are not likely to have much impact on these figures World demand for wool and mohair is significantly affected by such factors as fashion trends, weather conditions (colder weather increases the demand for wool and mohair) and prices of synthetic materials In addition, wool and mohair make up internationally traded commodities and luxury goods for which prices are sensitive to world economic conditions such as economic growth, currency fluctuations, interest rates and economic sanctions These factors result in wool and mohair having a very small market niche which is price inelastic, with the remaining larger volumes being price elastic

As can be seen in Table 1 wool and mohair prices in Lesotho have shown wide fluctuations in the period from 1980 through 1989 These fluctuations are directly attributable to changes in world demand for wool and mohair Since these prices are quite volatile it is important to look at the impact of potential price decreases on the profitability of the CNRM project

In the budgets used to conduct the financial analysis an average price of M3 26 was used for a kg of wool and M9 34/kg was used for mohair These averages were determined by throwing out the highest and lowest prices in the period, averaging the remainder and then deducting a margin for transport and miscellaneous fees

Table 1

Wool & Mohair Prices
Maloti per KG

Year	Wool	Mohair
1980	1 69	5 85
1981	1 45	8 69
1982	1 88	5 54
1983	1 78	10 20
1984	2 22	13 83
1985	3 53	16 44
1986	3 31	12 24
1987	4 40	11 78
1988	10 09	8 61
1989	9 06	8 50

In order to consider the potential impact of these fluctuations on the profitability of the project, sensitivity analysis was conducted on wool and mohair prices by simultaneously lowering both prices by 10, 25 and 50 percent The results are shown in Table 2

Table 2

Sensitivity Analysis
Wool & Mohair Prices

% Change	Wool Prices	Mohair Prices	NPV (Maloti)	
			8%	16%
0	3 26	9.34	4160 21	2200 00
10	2 97	8 41	4130 65	2186 51
25	2 45	7 01	4086 31	2166 26
50	1 63	4 67	4012 42	2132 52

These results indicate that wool and mohair prices would have to drop considerably, and simultaneously, to seriously jeopardize the profitability of the project. Even with a 50 percent decrease in both prices the twenty-year NPV of incremental net income is still positive, even at 16 percent discount rate Over the last ten years, only once (in 1980) were both prices actually close to being that low It should be emphasized that whatever happens to these prices, livestock holders in the GA and RMA will be better off than those who are not members and drops in wool and mohair prices should not affect the financial incentive to join

The GOL is expected to proceed with instituting a grazing fee at the national level The fees are planned to be set at M3 00 per head of cattle and equines and M0 50 per head of small stock Although these levels were used in the analysis, it is likely that the fees could be increased Sensitivity analysis indicates that the profitability of livestock producition in an RMA is robust to changes in the national grazing fee level, even with a 100 percent increase, the twenty-year NPV is still positive at M1,966 at a 16 percent discount rate

Product prices, other than those of wool and mohair, are not as influenced by regional or world prices Since changes in cattle, sheep and goat prices affect both the purchase and sale of animals, fluctuations in these prices are largely netted out, reducing the impact on profitability Other prices such as milk, dung, hides and skins are either imputed or maintain fairly stable levels in rural Lesotho and actually account for only a small portion of total financial returns accruing to livestock holders In addition, the increase in production of these products assumed to be achieved by GA members is small and can be easily absorbed in rural areas having minimal impact on demand for these products

G Conclusions The main purpose of this project is to improve the quality of Lesotho's rangelands It is thought that the best way to achieve this is to assist livestock owners to form Grazing Associations and establish RMAs and to improve their management capabilities The main financial concern is to determine if the financial incentives are sufficient to encourage livestock owners to become members of financially self-sustaining RMAs This analysis indicates that the financial incentive is sufficient and that RMAs can be self-supporting

Although increasing linkages in the domestic economy is an important aspect of economic development, it is envisioned that products such as beef, mutton and the number of hides and skins marketed will increase in such modest numbers that it is not likely to significantly impact local processing capabilities or exports of these products In other areas, such as increasing the local processing of wool and mohair, the evidence is that local production is not of sufficient quantity to render projects based on raising production viable Opportunities

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for the further processing of livestock products are currently limited, however, efforts to identify viable options continue

The main financial questions for the CNRM project are the financial viability and sustainability of the GAs and RMAs In this respect, it is important to get livestock holders to bear as much of the cost of belonging to the GA and RMA as they can Since there will be considerable social benefits which emanate from the environmental improvements resulting from the establishment of RMAs, it is easy to justify GOL contributions However, it is evident that, as the number of RMAs grow, the GOL will be increasingly pressed to meet its commitments to each RMA Hence, the less GAs and RMAs rely upon government support, the greater their chance of sustainability

The success of the project depends upon the ability of the GA members to pay for most of the RMA's annual operating costs To do this they must not only strive to increase GA revenues, but must also increase incomes of individual livestock owners so that they will be willing to pay for more of the GA services they receive Based on the financial analysis, it is evident that the returns from sheep and goats are considerably higher than those from cattle In the different geographic regions where the RMAs are to be established, it is important to determine an appropriate mix between cattle, sheep and goats which will be (1) environmentally suitable for the carrying capacity of the RMA and (2) optimal for the income potential of the individual livestock owner To address this issue the project will include resources to conduct an initial assessment of each RMA to determine optimal sustainable carrying capacities, the optimum animal mix, and the optimal herd and flock structure These determinations would enable each RMA to establish a management strategy with targets to work toward

ANNEX E

3 Financial Analysis

A Approach to the Analysis To conduct the financial analysis livestock enterprise budgets were constructed for cattle, sheep and goats using 1985 as the base year for costs and prices (see Attachment A) This base year was used since it was considered to be a typical production year for Lesotho However, an average of wool and mohair prices were used since these particular prices have been volatile in recent years

Due to the lack of accurate long-term data on productivity changes and herd and flock composition, the budgets were formulated around what has actually been achieved in RMAs to date and what experts closest to RMA field operations feel can be realistically obtained The budgets, which were established based upon Sehlabathebe GA membership and livestock ownership levels, were designed to reflect returns to cattle, sheep and goat owners as a group, and also as individual farmers

The analysis of financial profitability of livestock production in an RMA is compared with that in an equivalent non-RMA area to derive incremental impacts of belonging to a GA The main measure of project worth used from the farmers perspective is the Net Present Value (NPV) which determines the ability of the project to earn more than a given rate of return to capital This permits the analysis of sensitivity of project worth to various discount factors since the true opportunity cost of capital in Lesotho has not been quantified

B Production Targets & Assumptions The 'With' Case As a result of belonging to a GA and RMA, it is assumed that livestock owners will participate in range management practices which will lead to increased productivity in the RMA rangeland Sustainable stocking rates can be achieved by reducing herd and flock sizes (by approximately ten percent) and by adopting grazing patterns which allow the range forage to recover As a result, the quality of the range is expected to increase leading to increased animal health and productivity In addition, participation in the GA and RMA is expected to lead to increased use of veterinary services and improved breeding practices which will all contribute to increased animal productivity Further improved management practices are expected to result in improvements in herd and flock composition It is assumed that these production increases will be achieved by Year 7 of the RMA and maintained thereafter for a total of 20 years, the approximate useful life of the capital assets

Some of the specific productivity increases which were assumed to result from improved management practices through membership in an RMA are listed below

1 Cattle
- a Reduction in Bulls (from 9% to 1% of herd),
- b Increase oxen (from 34% to 35% of herd),
- c Increase in cows (from 57% to 63% of herd),
- d Increase in reproduction rate (from 50% to 60%),
- e Increase calf survival rate (from 47% to 65%),
- f Increase in percent of cows milked per herd (from 50% to 60%),
- g Increase in milk production per cow milked by 15%

2 Sheep
- a Reduction in Rams (from 10% to 2% of flock),
- b Increase in Hamels (from 23% to 36% of flock),
- c Decrease in Ewes (from 67% to 62% of flock),
- d Increase in Reproduction rate (from 80% to 86%),
- e Increase in lamb survival rate (from 64% to 72%),

Budget for Cattle in an RMA	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Units
Total G A Members in RMA	276	302	293	286	294	310	304	304	304	304	
Cattle Owners in RMA	238	250	243	226	246	257	249	249	249	249	
Average Cattle/G A Member in RMA	8 4	6 9	8 2	7 8	7 7	6 9	6 5	6 5	6 5	6 5	
Average Cattle/Cattle Holding Member in RMA	9 7	8 3	9 9	9 9	9 2	8 3	7 9	7 9	7 9	7 9	
Inventory Bulls	203	183	104	56	56	40	38	38	38	38	
Oxen	791	709	922	856	885	782	684	684	684	684	
Cows	1324	1195	1380	1328	1324	1316	1249	1249	1249	1249	
TOTAL	2318	2087	2406	2240	2265	2138	1971	1971	1971	1971	
Disposition Males lost or stolen	19	9	7	5	4	3	3	3	3	3	
Females lost or stolen	14	7	4	3	2	2	1	1	1	1	
Males died	72	60	62	38	35	31	29	29	29	29	
Females died	107	96	87	82	78	76	75	75	75	75	
Males marketed	57	43	141	111	151	133	79	79	79	79	
Females marketed	17	11	48	35	56	79	42	42	42	42	
Males slaughtered	43	30	103	82	112	115	50	50	50	50	
Females slaughtered	45	29	96	59	82	93	35	35	35	35	
Males culled	26	33	55	46	30	13	13	13	13	13	
Females culled	68	23	62	51	27	27	27	27	27	27	
TOTAL	468	341	665	512	577	572	354	354	354	354	
Acquisition Calves surviving	194	253	262	306	310	311	300	300	300	300	
Males recruited	19	188	101	99	58	39	24	24	24	24	
Females recruited	24	219	136	132	82	55	30	30	30	30	
TOTAL	237	660	499	537	450	405	354	354	354	354	
Cows milked	206	253	248	274	275	251	228	228	228	228	
Average yearly milk collection per cow	92	92	92	92	96	98	100	100	100	100	litres
Number of Oxen span days Ploughing	2094	2200	2138	1989	2165	2262	2191	2191	2191	2191	
Planting	1142	1200	1166	1085	1181	1234	1195	1195	1195	1195	
Cultivation	1309	1375	1337	1243	1353	1414	1370	1370	1370	1370	
Harvest Transport	432	454	441	410	447	467	452	452	452	452	
PRODUCTION OF CASH PRODUCTS											
Males marketed	57	43	141	111	151	133	79	79	79	79	
Females marketed	17	11	48	35	56	79	42	42	42	42	
Hides marketed	22	16	57	44	62	64	36	36	36	36	
Milk sold per households selling milk	9476	11638	11408	12604	13200	12299	11400	11400	11400	11400	litres
Dung sold	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Draught sold	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
PRODUCTION OF NON CASH PRODUCTS											
Males slaughtered	43	30	103	82	112	115	50	50	50	50	
Females slaughtered	45	29	96	59	82	93	35	35	35	35	
Hides used in household	234	171	333	256	289	286	177	177	177	177	
Fallen Males consumed	58	48	50	30	28	25	23	23	23	23	
Fallen Females consumed	86	77	70	66	62	61	60	60	60	60	
Dung consumed as fuel	359290	323485	372930	347200	351075	331390	305505	305505	305505	305505	kg
Own milk consumed in household	9476	11638	11408	12604	13200	12299	11400	11400	11400	11400	litres
Oxen span days	4978	5229	5082	4727	5146	5376	5208	5208	5208	5208	days

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Budget for Cattle Continued PRODUCT PRICES OR IMPUTED PRICES	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Units
Male Cattle sale price	392 00	392 00	410 62	429 24	429 24	429 24	429 24	429 24	429 24	429 24	maloti
Female Cattle sale price	266 00	266 00	278 64	291 27	291 27	291 27	291 27	291 27	291 27	291 27	maloti
Male Cattle purchase price	522 54	522 54	522 54	522 54	522 54	522 54	522 54	522 54	522 54	522 54	maloti
Female Cattle purchase price	354 58	354 58	354 58	354 58	354 58	354 58	354 58	354 58	354 58	354 58	maloti
Male Cattle inventory value	294 00	294 00	294 00	294 00	294 00	294 00	294 00	294 00	294 00	294 00	maloti
Female Cattle inventory value	199 50	199 50	199 50	199 50	199 50	199 50	199 50	199 50	199 50	199 50	maloti
Male Cattle culled value	313 60	313 60	328 50	343 39	343 39	343 39	343 39	343 39	343 39	343 39	maloti
Female Cattle culled value	212 80	212 80	222 91	233 02	233 02	233 02	233 02	233 02	233 02	233 02	maloti
Milk sales price	0 35	0 35	0 35	0 35	0 35	0 35	0 35	0 35	0 35	0 35	M/litre
Dung value	0 10	0 10	0 10	0 10	0 10	0 10	0 10	0 10	0 10	0 10	M/kg
Hides value	60 00	60 00	60 00	60 00	60 00	60 00	60 00	60 00	60 00	60 00	M/hide
Oxen span draught value	7 93	7 93	7 93	7 93	7 93	7 93	7 93	7 93	7 93	7 93	M/day
Kraal and Cattle Post value	400 00	400 00	400 00	400 00	400 00	400 00	400 00	400 00	400 00	400 00	maloti
INVESTMENT COSTS AND RETURNS											
Investment											
Kraals and Cattle Posts	95200 00	100000 00	97200 00	90400 00	98400 00	102800 00	99600 00	99600 00	99600 00	99600 00	maloti
Cattle Bulls	59682 00	53802 00	30576 00	16464 00	16464 00	11760 00	11172 00	11172 00	11172 00	11172 00	maloti
Oxen	232554 00	208446 00	271068 00	251664 00	260190 00	229908 00	201096 00	201096 00	201096 00	201096 00	maloti
Cows	264138 00	238402 50	275310 00	264936 00	264138 00	262542 00	249175 50	249175 50	249175 50	249175 50	maloti
TOTAL INVESTMENT	651574 00	600650 50	674154 00	623464 00	639192 00	607010 00	561043 50	561043 50	561043 50	561043 50	maloti
Cash Costs											
Hired Labour	35604 48	32323 46	37572 10	35409 92	36240 00	34208 00	31536 00	31536 00	31536 00	31536 00	maloti
Veterinary supplies and medicine	13701 70	12872 62	15458 55	14967 68	15134 73	14286 12	13170 22	13170 22	13170 22	13170 22	maloti
Salt	12468 52	11225 97	12941 87	12048 96	12183 44	11500 30	10602 01	10602 01	10602 01	10602 01	maloti
Purchased fodder	1096 41	987 15	1138 04	1059 52	1071 35	1011 27	932 28	932 28	932 28	932 28	maloti
Other supplemental feeds	3008 76	2708 93	3122 99	2907 52	2939 97	2775 12	2558 36	2558 36	2558 36	2558 36	maloti
Purchased herd recruits	18438 06	175889 35	100998 74	98535 36	59382 48	39880 69	23178 20	23178 20	23178 20	23178 20	maloti
Breeding fees	0 00	0 00	2250 00	2250 00	2250 00	2250 00	2250 00	2250 00	2250 00	2250 00	maloti
TOTAL CASH COSTS	84317 93	236007 47	173482 29	167178 96	129201 96	105911 51	84227 08	84227 08	84227 08	84227 08	maloti
Non-cash costs											
Family herding labour	65923 92	59354 28	68426 64	63705 60	64416 60	60804 72	56055 24	56055 24	56055 24	56055 24	maloti
Own feeds	6119 52	5509 68	6351 84	5913 60	5979 60	5644 32	5203 44	5203 44	5203 44	5203 44	maloti
TOTAL NON-CASH COSTS	72043 44	64863 96	74778 48	69619 20	70396 20	66449 04	61258 68	61258 68	61258 68	61258 68	maloti
Gross cash income											
Male animal sale	22344 00	16856 00	57897 42	47645 64	64815 24	57088 92	33909 96	33909 96	33909 96	33909 96	maloti
Female animal sale	4522 00	2926 00	13374 48	10194 45	16311 12	23010 33	12233 34	12233 34	12233 34	12233 34	maloti
Culled males	8153 6	10348 8	18067 28	15796 032	10301 76	4464 096	4464 096	4464 096	4464 096	4464 096	maloti
Culled females	14470 4	4894 4	13820 296	11883 816	6291 432	6291 432	6291 432	6291 432	6291 432	6291 432	maloti
Milk sale	3316 60	4073 30	3992 80	4411 40	4620 00	4304 65	3990 00	3990 00	3990 00	3990 00	maloti
Draught rental	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Hides sale	1332 00	972 00	3402 00	2628 00	3726 00	3816 00	2178 00	2178 00	2178 00	2178 00	maloti
TOTAL VALUE OF CASH PRODUCTS	54138 60	40070 50	110554 28	92559 34	106065 55	98975 43	63066 83	63066 83	63066 83	63066 83	maloti

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Budget for Cattle Continued	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Units
Gross non-cash income											
Slaughtered males	16856 00	11760 00	42293 86	35197 68	48074 88	49362 60	21462 00	21462 00	21462 00	21462 00	maloti
Slaughtered females	11970 00	7714 00	26748 96	17184 93	23884 14	27088 11	10194 45	10194 45	10194 45	10194 45	maloti
Fallen males	12700 80	10584 00	10936 80	6703 20	6174 00	5468 40	5115 60	5115 60	5115 60	5115 60	maloti
Fallen females	12807 90	11491 20	10413 90	9815 40	9336 60	9097 20	8977 50	8977 50	8977 50	8977 50	maloti
Hides used in household	7020 00	5115 00	9975 00	7680 00	8655 00	8580 00	5310 00	5310 00	5310 00	5310 00	maloti
Own milk consumed in household	3316 60	4073 30	3992 80	4411 40	4620 00	4304 65	3990 00	3990 00	3990 00	3990 00	maloti
Oxen draught power	39473 95	41465 97	40302 64	37481 94	40804 61	42629 30	41298 65	41298 65	41298 65	41298 65	maloti
Kraal dung consumed in household	35929 00	32348 50	37293 00	34720 00	35107 50	33139 00	30550 50	30550 50	30550 50	30550 50	maloti
TOTAL VALUE OF NON-CASH PRODUCTS	140074 25	124551 97	181956 96	153194 55	176656 73	179669 26	126898 70	126898 70	126898 70	126898 70	maloti
Value of Net Change in Capital Assets											
Male animals	-29694 00	41013 00	-39984 00	-8820 00	-34986 00	-29547 00	0 00	0 00	0 00	0 00	maloti
Female animals	-25935 00	35810 25	-5985 00	10972 50	-1596 00	-13266 75	0 00	0 00	0 00	0 00	maloti
TOTAL NET CHANGE IN VALUE OF CAPITAL ASSETS	-55629 00	76823 25	-45969 00	2152 50	-36582 00	-42813 75	0 00	0 00	0 00	0 00	maloti
SUMMARY FINANCIAL STATISTICS											
Total Income (cash non-cash capital)	138583 85	241445 72	246542 24	247906 39	246140 28	235830 94	189965 53	189965 53	189965 53	189965 53	maloti
Total Costs (cash and non-cash)	156361 37	300871 43	248260 77	236798 16	199598 16	172360 55	145485 76	145485 76	145485 76	145485 76	maloti
G A Grazing Fees	0 00	0 00	0 00	0 00	1132 50	1069 00	985 50	985 50	985 50	985 50	maloti
National grazing fees	0 00	6261 00	7218 00	6720 00	6795 00	6414 00	5913 00	5913 00	5913 00	5913 00	
TOTAL NET INCOME FROM CATTLE IN RMA	-17777 52	-65686 71	-8936 53	4388 23	38614 62	55987 39	37581 27	37581 27	37581 27	37581 27	maloti
RATE OF RETURN ON CAPITAL INVESTMENT	-2 7	-10 9	-1 3	0 7	6 0	9 2	6 7	6 7	6 7	6 7	percent
AVERAGE GROSS INCOME PER ANIMAL	59 79	115 69	102 47	110 67	108 67	110 30	96 38	96 38	96 38	96 38	maloti
AVERAGE COST PER ANIMAL	67 46	147 16	106 18	108 71	91 62	84 12	77 31	77 31	77 31	77 31	maloti
AVERAGE NET INCOME FROM CATTLE IN RMA	-7 67	-31 47	-3 71	1 96	17 05	26 19	19 07	19 07	19 07	19 07	maloti
AVERAGE NET INCOME FROM CATTLE PER FARMER IN RMA	-64 41	-217 51	-30 50	15 34	131 34	180 60	123 62	123 62	123 62	123 62	maloti
INCOME EARNED PER ANIMAL UNIT	-64 41	-217 51	-30 50	15 34	131 34	180 60	123 62	123 62	123 62	123 62	maloti

Budget for Sheep in an RMA	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Units
Total G A Members in RMA	276	302	293	286	294	310	304	304	304	304	
Sheep Owners in RMA	145	159	154	150	154	163	160	160	160	160	
Average Sheep/G A Member in RMA	55 0	49 4	50 1	50 4	48 2	44 9	45 0	45 0	45 0	45 0	
Average Sheep/Sheep Holding Member in RMA	104 7	93 9	95 3	96 2	92 0	85 4	85 4	85 4	85 4	85 4	
Inventory Rams	1519	1094	827	666	509	407	260	260	260	260	
Hamels	3492	3833	4163	4383	4593	4743	4933	4933	4933	4933	
Ewes	10173	10004	9688	9376	9070	8769	8473	8473	8473	8473	
TOTAL	15184	14931	14678	14425	14172	13919	13666	13666	13666	13666	
Disposition Males lost or stolen	310	293	274	248	208	165	124	124	124	124	
Females lost or stolen	330	314	294	268	226	181	132	132	132	132	
Males died	386	368	346	344	312	276	237	237	237	237	
Females died	763	737	692	688	624	552	475	475	475	475	
Males marketed	441	462	523	575	615	666	773	773	773	773	
Females marketed	453	479	540	584	647	687	610	610	610	610	
Males slaughtered	770	894	830	782	783	780	758	758	758	758	
Females slaughtered	639	769	648	606	622	670	552	552	552	552	
Males Culled	251	161	150	152	153	155	156	156	156	156	
Females Culled	197	123	291	281	272	263	254	254	254	254	
TOTAL	4540	4600	4588	4528	4462	4395	4071	4071	4071	4071	
Acquisition Lambs surviving	3907	4011	4052	4027	4000	3969	3934	3934	3934	3934	
Males recruited	152	151	141	136	119	100	81	81	81	81	
Females recruited	228	185	142	112	90	73	56	56	56	56	
TOTAL	4287	4347	4335	4275	4209	4142	4071	4071	4071	4071	
Sheep Shorn	10629	10750	10862	10891	10912	10926	10933	10933	10933	10933	
Wool sold per sheep shorn	2 3	2 35	2 4	2 5	2 65	2 7	2 8	2 8	2 8	2 8	kg
PRODUCTION OF CASH PRODUCTS											
Males Marketed	441	462	523	575	615	666	773	773	773	773	
Females Marketed	453	479	540	584	647	687	610	610	610	610	
Skins Marketed	111	109	107	105	104	102	100	100	100	100	
Total wool sales	24446	25263	26068	27227	28918	29501	30612	30612	30612	30612	kg
PRODUCTION OF NON-CASH PRODUCTS											
Males Slaughtered	770	894	830	782	783	780	758	758	758	758	
Females Slaughtered	639	769	648	606	622	670	552	552	552	552	
Skins used in household	553	544	534	525	516	507	497	497	497	497	
Fallen Males Consumed	333	324	305	303	275	243	209	209	209	209	
Fallen Females Consumed	664	649	609	605	549	486	418	418	418	418	
PRODUCT PRICES OR IMPUTED PRICES											
Sheep sale price	55 00	55 00	57 20	59 40	59 40	59 40	59 40	59 40	59 40	59 40	maloti
Sheep purchase price	68 75	68 75	68 75	68 75	68 75	68 75	68 75	68 75	68 75	68 75	maloti
Sheep inventory value	41 25	41 25	42 90	44 55	44 55	44 55	44 55	44 55	44 55	44 55	maloti
Sheep cull value	27 5	27 5	28 6	29 7	29 7	29 7	29 7	29 7	29 7	29 7	maloti
Skins sale price	3 85	3 85	3 85	3 85	3 85	3 85	3 85	3 85	3 85	3 85	m/skin
Skin value used in home	1 93	1 93	1 93	1 93	1 93	1 93	1 93	1 93	1 93	1 93	m/skin
Kraal and Cattle Post value	200 00	200 00	200 00	200 00	200 00	200 00	200 00	200 00	200 00	200 00	maloti
Wool value per kilogram	3 26	3 26	3 26	3 26	3 29	3 33	3 36	3 36	3 36	3 36	maloti

Budget for Sheep Continued INVESTMENT COSTS AND RETURNS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Units
Investment											
Kraals and Cattle Posts	29000 00	31800 00	30800 00	30000 00	30800 00	32600 00	32000 00	32000 00	32000 00	32000 00	maloti
Sheep males	206703 75	203238 75	214071 00	224932 95	227294 10	229432 50	231348 15	231348 15	231348 15	231348 15	maloti
females	419636 25	412665 00	415615 20	417700 80	404068 50	390658 95	377472 15	377472 15	377472 15	377472 15	maloti
TOTAL INVESTMENT	655340 00	647703 75	660486 20	672633 75	662162 60	652691 45	640820 30	640820 30	640820 30	640820 30	maloti
Cash Costs											
Hired Labour	24780 29	24570 45	24353 74	24228 23	24092 40	23662 30	23232 20	23232 20	23232 20	23232 20	maloti
Veterinary supplies and medicine	6286 18	6450 19	6869 30	6750 90	6632 50	6514 09	6395 69	6395 69	6395 69	6395 69	maloti
Salt	7349 06	7226 60	7104 15	6981 70	6859 25	6736 80	6614 34	6614 34	6614 34	6614 34	maloti
Purchased fodder	143 64	141 25	138 85	136 46	134 07	131 67	129 28	129 28	129 28	129 28	maloti
Other supplemental feeds	354 09	348 19	342 29	336 39	330 49	324 59	318 69	318 69	318 69	318 69	maloti
Purchased herd recruits	26125 00	23100 00	19456 25	17050 00	14368 75	11893 75	9418 75	9418 75	9418 75	9418 75	maloti
Shearing expenses	2125 76	2150 06	2172 34	2178 18	2182 49	2185 28	2186 56	2186 56	2186 56	2186 56	maloti
Breeding fees	0 00	0 00	600 00	600 00	600 00	600 00	600 00	600 00	600 00	600 00	maloti
TOTAL CASH COSTS	67164 01	63986 75	61036 93	58261 86	55199 94	52048 49	48895 51	48895 51	48895 51	48895 51	maloti
Non-cash costs											
Family herding labour	45848 09	45084 15	44320 22	43556 29	42792 35	42028 42	41264 49	41264 49	41264 49	41264 49	maloti
Own feeds	1050 73	1033 23	1015 72	998 21	980 70	963 19	945 69	945 69	945 69	945 69	maloti
TOTAL NON-CASH COSTS	46898 82	46117 38	45335 94	44554 50	43773 06	42991 62	42210 17	42210 17	42210 17	42210 17	maloti
Gross cash income											
Male animal sale	24255 00	25410 00	29915 60	34155 00	36531 00	39560 40	45916 20	45916 20	45916 20	45916 20	maloti
Female animal sale	24915 00	26345 00	30888 00	34689 60	38431 80	40807 80	36234 00	36234 00	36234 00	36234 00	maloti
Culled males	6902 50	4427 50	4290 00	4514 40	4544 10	4603 50	4633 20	4633 20	4633 20	4633 20	maloti
Culled females	5417 50	3382 50	8322 60	8345 70	8078 40	7811 10	7543 80	7543 80	7543 80	7543 80	maloti
Skins sale	427 35	419 65	411 95	404 25	400 40	392 70	385 00	385 00	385 00	385 00	maloti
Wool sale	79694 74	82358 20	84982 10	88760 63	95140 11	98239 40	102855 78	102855 78	102855 78	102855 78	maloti
TOTAL VALUE OF CASH PRODUCTS	141612 09	142342 85	158810 25	170869 58	183125 81	191414 90	197567 98	197567 98	197567 98	197567 98	maloti
Gross non-cash income											
Products from											
Slaughtered males	42350 00	49170 00	47476 00	46450 80	46510 20	46332 00	45025 20	45025 20	45025 20	45025 20	maloti
Slaughtered females	35145 00	42295 00	37065 60	35996 40	36946 80	39798 00	32788 80	32788 80	32788 80	32788 80	maloti
Fallen males	10302 19	10023 75	9813 38	10123 99	9188 44	8119 24	6983 21	6983 21	6983 21	6983 21	maloti
Fallen females	20542 50	20078 44	19594 58	20214 56	18343 46	16238 48	13966 43	13966 43	13966 43	13966 43	maloti
Skins used in household	1034 53	1047 20	1027 95	1010 63	993 30	975 98	956 73	956 73	956 73	956 73	maloti
TOTAL VALUE OF NON-CASH PRODUCTS	109404 21	122614 39	114977 50	113796 38	111982 20	111463 69	99720 36	99720 36	99720 36	99720 36	maloti
Value of Net Change in Capital Assets											
Male animals	-2165 63	-886 88	1887 60	2160 68	2138 40	1893 38	0 00	0 00	0 00	0 00	maloti
Female animals	-8270 63	-9549 38	-12741 30	-13431 83	-13409 55	-13164 53	0 00	0 00	0 00	0 00	maloti
TOTAL NET CHANGE IN VALUE OF CAPITAL ASSETS	-10436 25	-10436 25	-10853 70	-11271 15	-11271 15	-11271 15	0 00	0 00	0 00	0 00	maloti

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Budget for Sheep Continued
SUMMARY FINANCIAL STATISTICS

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Units
Total Income (cash non-cash capital)	240580 05	254520 99	262934 05	273394 81	283836 86	291607 43	297288 34	297288 34	297288 34	297288 34	maloti
Total Costs (cash and non cash)	114062 83	110104 13	106372 87	102816 35	98973 00	95040 10	91105 69	91105 69	91105 69	91105 69	maloti
G A Grazing Fees Paid	0 00	0 00	0 00	0 00	2834 40	2783 80	2733 20	2733 20	2733 20	2733 20	maloti
National grazing fees	0 00	7592 00	7465 50	7339 00	7212 50	7086 00	6959 50	6833 00	6833 00	6833 00	
TOTAL NET INCOME FROM SHEEP IN RMA	126517 22	136824 86	149095 68	163239 45	174816 96	186697 53	196489 96	196616 46	196616 46	196616 46	maloti
RATE OF RETURN ON CAPITAL INVESTMENT	19 3	21 1	22 6	24 3	26 4	28 6	30 7	30 7	30 7	30 7	percent
AVERAGE GROSS INCOME PER ANIMAL	15 84	17 05	17 91	18 95	20 03	20 95	21 75	21 75	21 75	21 75	maloti
AVERAGE COST PER ANIMAL	7 51	7 88	7 76	7 64	7 69	7 54	7 38	7 37	7 37	7 37	maloti
AVERAGE NET INCOME FROM SHEEP IN RMA	8 33	9 16	10 16	11 32	12 34	13 41	14 38	14 39	14 39	14 39	maloti
AVERAGE NET INCOME FROM SHEEP PER FARMER IN RMA	458 40	453 06	508 86	570 77	594 62	602 25	646 35	646 76	646 76	646 76	maloti
INCOME EARNED PER ANIMAL UNIT	67 49	45 82	50 79	56 58	61 68	67 07	71 89	71 94	71 94	71 94	maloti

Subject for Goats in an RMA	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Units
Total G A Members in RMA	276	302	293	286	294	310	304	304	304	304	
Goat Owners in RMA	116	127	123	120	123	130	127	127	127	127	
Average Goats/G A Member in RMA	10 2	9 2	9 3	9 4	8 9	8 3	8 3	8 3	8 3	8 3	
Average Goats/Goats Holding Member in RMA	24 3	21 9	22 1	22 3	21 4	19 9	20 0	20 0	20 0	20 0	
Inventory Bucks	338	258	198	141	112	83	56	56	56	56	
Kapaters	620	713	756	796	835	872	908	908	908	908	
Does	1860	1810	1770	1740	1683	1628	1572	1572	1572	1572	
TOTAL	2818	2781	2724	2677	2630	2583	2536	2536	2536	2536	
Disposition Males lost or stolen	25	29	27	25	21	18	17	17	17	17	
Females lost or stolen	15	17	17	13	12	9	9	9	9	9	
Males died	135	146	142	131	117	100	81	81	81	81	
Females died	223	208	195	183	168	163	157	157	157	157	
Males marketed	39	68	83	88	100	107	124	124	124	124	
Females marketed	77	84	87	109	116	120	83	83	83	83	
Males slaughtered	39	77	91	78	82	87	93	93	93	93	
Females slaughtered	71	53	42	54	56	57	39	39	39	39	
Culled Males	76	32	14	13	12	12	10	10	10	10	
Culled Females	32	31	30	30	29	28	27	27	27	27	
TOTAL	732	745	728	724	713	701	640	640	640	640	
Acquisition Kids surviving	500	516	534	554	566	576	584	584	584	584	
Males recruited	77	77	73	68	57	45	33	33	33	33	
Females recruited	118	95	74	55	43	33	23	23	23	23	
TOTAL	695	688	681	677	666	654	640	640	640	640	
Goats shorn	2170	2141	2098	2061	2025	1989	1953	1953	1953	1953	
Mohair sold per goat shorn	0 8	0 825	0 85	0 875	0 9	0 925	0 95	0 95	0 95	0 95	kg
PRODUCTION OF CASH PRODUCTS											
Males Marketed	39	68	83	88	100	107	124	124	124	124	
Females Marketed	77	84	87	109	116	120	83	83	83	83	
Skins Marketed	5	5	5	5	5	5	5	5	5	5	
Total mohair sales	1736 0	1766 3	1783 3	1803 4	1822 5	1839 8	1855 4	1855 4	1855 4	1855 4	kg
PRODUCTION OF NON CASH PRODUCTS											
Males Slaughtered	39	77	91	78	82	87	93	93	93	93	
Females Slaughtered	71	53	42	54	56	57	39	39	39	39	
Skins used in household	34	36	37	37	37	38	36	36	36	36	
Fallen Males Consumed	108	117	114	105	94	80	65	65	65	65	
Fallen Females Consumed	110	119	115	106	94	82	67	67	67	67	
PRODUCT PRICES OR IMPUTED PRICES											
Goat sale price	44 00	44 00	45 76	47 52	47 52	47 52	47 52	47 52	47 52	47 52	maloti
Goat purchase price	55 00	55 00	55 00	55 00	55 00	55 00	55 00	55 00	55 00	55 00	maloti
Goat inventory value	33 00	33 00	33 00	33 00	33 00	33 00	33 00	33 00	33 00	33 00	maloti
Cull cull value	35 20	35 20	36 61	38 02	38 02	38 02	38 02	38 02	38 02	38 02	maloti
Skins sale price	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	m/skin
Skin value used in home	0 75	0 75	0 75	0 75	0 75	0 75	0 75	0 75	0 75	0 75	m/skin
Kraal and Cattle Post value	200 00	200 00	200 00	200 00	200 00	200 00	200 00	200 00	200 00	200 00	maloti
Mohair value per kilogram	9 34	9 34	9 34	9 34	9 43	9 53	9 62	9 62	9 62	9 62	maloti

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Project for Goats Continued INVESTMENT COSTS AND RETURNS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Unit
Investment											
Kraals and Cattle Posts	23200 00	25400 00	24600 00	24000 00	24600 00	26000 00	25400 00	25400 00	25400 00	25400 00	maloti
Goats males	31614 00	32043 00	31482 00	30921 00	31251 00	31515 00	31812 00	31812 00	31812 00	31812 00	maloti
females	61380 00	59730 00	58410 00	57420 00	55539 00	53724 00	51876 00	51876 00	51876 00	51876 00	maloti
TOTAL INVESTMENT	116194 00	117173 00	114492 00	112341 00	111390 00	111239 00	109088 00	109088 00	109088 00	109088 00	maloti
Cash Costs											
Hired Labour	1098 00	1126 81	1110 20	1117 68	1114 06	1095 31	1000 00	1000 00	1000 00	1000 00	maloti
Veterinary supplies and medicine	277 79	295 02	300 30	310 60	305 88	300 73	274 56	274 56	274 56	274 56	maloti
Salt	325 30	331 08	323 52	321 75	316 86	311 52	284 42	284 42	284 42	284 42	maloti
Purchased fodder	8 86	9 01	8 81	8 76	8 63	8 48	7 74	7 74	7 74	7 74	maloti
Other supplemental feeds	26 57	27 04	26 43	26 28	25 88	25 45	23 23	23 23	23 23	23 23	maloti
Purchased herd recruits	10725 00	9460 00	8085 00	6765 00	5500 00	4290 00	3080 00	3080 00	3080 00	3080 00	maloti
Shearing expenses	434 00	428 20	419 60	412 20	405 00	397 80	390 60	390 60	390 60	390 60	maloti
Breeding fees	0 00	0 00	600 00	600 00	600 00	600 00	600 00	600 00	600 00	600 00	maloti
TOTAL CASH COSTS	12895 52	11677 17	10873 86	9562 26	8276 31	7029 29	5660 55	5660 55	5660 55	5660 55	maloti
Non cash costs											
Family herding labour	2029 10	2065 14	2018 02	2006 93	1976 44	1943 17	1774 08	1774 08	1774 08	1774 08	maloti
Own feeds	64 42	65 56	64 06	63 71	62 74	61 69	56 32	56 32	56 32	56 32	maloti
TOTAL NON CASH COSTS	2093 52	2130 70	2082 08	2070 64	2039 18	2004 86	1830 40	1830 40	1830 40	1830 40	maloti
Gross cash income											
Male animal sale	1716 00	2992 00	3798 08	4181 76	4752 00	5084 64	5892 48	5892 48	5892 48	5892 48	maloti
Female animal sale	3388 00	3696 00	3981 12	5179 68	5512 32	5702 40	3944 16	3944 16	3944 16	3944 16	maloti
Culled males	2675 20	1126 40	512 51	494 21	456 19	456 19	380 16	380 16	380 16	380 16	maloti
Culled females	1126 40	1091 20	1098 24	1140 48	1102 46	1064 45	1026 43	1026 43	1026 43	1026 43	maloti
Skins sale	7 50	7 50	7 50	7 50	7 50	7 50	7 50	7 50	7 50	7 50	maloti
Mohair sale	16214 24	16497 48	16656 02	16843 52	17186 18	17533 53	17848 47	17848 47	17848 47	17848 47	maloti
TOTAL VALUE OF CASH PRODUCTS	25127 34	25410 58	26053 47	27847 15	29016 65	29848 71	29099 20	29099 20	29099 20	29099 20	maloti
Gross non-cash income											
Products from											
Slaughtered males	1716 00	3388 00	4164 16	3706 56	3896 64	4134 24	4419 36	4419 36	4419 36	4419 36	maloti
Slaughtered females	3124 00	2332 00	1921 92	2566 08	2661 12	2708 64	1853 28	1853 28	1853 28	1853 28	maloti
Fallen males	2673 00	2895 75	2821 50	2598 75	2326 50	1980 00	1608 75	1608 75	1608 75	1608 75	maloti
Fallen females	2722 50	2945 25	2846 25	2623 50	2326 50	2029 50	1658 25	1658 25	1658 25	1658 25	maloti
Skins used in household	25 50	27 00	27 75	27 75	27 75	28 50	27 00	27 00	27 00	27 00	maloti
TOTAL VALUE OF NON CASH PRODUCTS	10261 00	11588 00	11781 58	11522 64	11238 51	10880 88	9566 64	9566 64	9566 64	9566 64	maloti
Value of Net Change in Capital Assets											
Male animals	429 00	-561 00	561 00	330 00	264 00	297 00	0 00	0 00	0 00	0 00	maloti
Female animals	-1650 00	-1320 00	-990 00	1881 00	-1815 00	-1848 00	0 00	0 00	0 00	0 00	maloti
TOTAL NET CHANGE IN VALUE OF CAPITAL ASSETS	1221 00	-1881 00	-1551 00	1551 00	1551 00	-1551 00	0 00	0 00	0 00	0 00	maloti

Budget for Goats Continued SUMMARY FINANCIAL STATISTICS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Units
Total Income (cash non cash capital)	34167 34	35117 58	36284 05	37818 79	38704 16	39178 59	38665 84	38665 84	38665 84	38665 84	maloti
Total Costs (cash and non cash)	14989 04	13807 87	12955 94	11632 90	10315 49	9034 15	7490 95	7490 95	7490 95	7490 95	maloti
G A Grazing Fees	0 00	0 00	0 00	0 00	142 60	140 20	128 00	128 00	128 00	128 00	maloti
National Grazing Fees	0 00	372 50	364 00	362 00	356 50	350 50	320 00	320 00	320 00	320 00	
TOTAL NET INCOME FROM GOATS IN RMA	19178 30	20937 21	22964 12	25823 89	27889 58	29653 74	30726 89	30726 89	30726 89	30726 89	maloti
RATE OF RETURN ON CAPITAL INVESTMENT	16 5	17 9	20 1	23 0	25 0	26 7	28 2	28 2	28 2	28 2	percent
AVERAGE GROSS INCOME PER ANIMAL	12 12	12 63	13 32	14 13	14 72	15 17	15 25	15 25	15 25	15 25	maloti
AVERAGE COST PER ANIMAL	5 32	5 10	4 89	4 48	4 11	3 69	3 13	3 13	3 13	3 13	maloti
AVERAGE NET INCOME FROM GOATS IN RMA	6 81	7 53	8 43	9 65	10 60	11 48	12 12	12 12	12 12	12 12	maloti
AVERAGE NET INCOME FROM GOATS PER FARMER IN RMA	69 49	69 33	78 38	90 29	94 86	95 66	101 08	101 08	101 08	101 08	maloti
INCOME EARNED PER ANIMAL UNIT	64 65	71 52	80 09	91 64	100 74	109 06	115 10	115 10	115 10	115 10	maloti

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SUMMARY FINANCIAL STATISTICS WITHIN RMA
(Existing GA fees and national grazing fee)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	
TOTAL NET ANNUAL INCOME FROM CATTLE	-17777 52	65686 71	8936 53	4388 23	38614 62	55987 39	37581 27	37581 27	37581 27	37581 27	maloti
TOTAL NET ANNUAL INCOME FROM SHEEP	126517 22	136824 86	149095 68	163239 45	174816 96	186697 53	196489 96	196616 46	196616 46	196616 46	maloti
TOTAL NET ANNUAL INCOME FROM GOATS	19178 30	20937 21	22964 12	25823 89	27889 58	29653 74	30726 89	30726 89	30726 89	30726 89	maloti
TOTAL NET ANNUAL INCOME FROM LIVESTOCK	127918 00	92075 35	163123 26	193451 57	241321 15	272338 66	264798 11	264924 61	264924 61	264924 61	maloti
AVERAGE ANNUAL INCOME FROM											
CATTLE PER FARMER	64 41	-217 51	-30 50	15 34	131 34	180 60	123 62	123 62	123 62	123 62	maloti
SHEEP PER FARMER	458 40	453 06	508 86	570 77	594 62	602 25	646 35	646 76	646 76	646 76	maloti
GOATS PER FARMER	69 49	69 33	78 38	90 29	94 86	95 66	101 08	101 08	101 08	101 08	maloti
TOTAL AVERAGE ANNUAL INCOME PER FARMER IN RMA	463 47	304 89	556 73	676 40	820 82	878 51	871 05	871 46	871 46	871 46	maloti
ANNUAL ASSOCIATION MEMBERSHIP FEES	0	60	10	10	10	10	10	10	10	10	maloti
TOTAL NET ANNUAL INCOME PER FARMER IN RMA	463 47	244 89	546 73	666 40	810 82	868 51	861 05	861 46	861 46	861 46	maloti

ENTERPRISE BUDGETS FOR NON RMA AREA

Project for Cattle in a non RMA	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Unit
Total G A Members in equivalent non RMA area	276	276	276	276	276	276	276	276	276	276	
Cattle Owners	238	238	238	238	238	238	238	238	238	238	
Average Cattle/Member	8 4	8 4	8 4	8 4	8 4	8 4	8 4	8 4	8 4	8 4	
Average Cattle/Cattle Holding Member	9 7	9 7	9 7	9 7	9 7	9 7	9 7	9 7	9 7	9 7	
Inventory Bulls	203	203	203	203	203	203	203	203	203	203	
Oxen	791	791	791	791	791	791	791	791	791	791	
Cows	1324	1324	1324	1324	1324	1324	1324	1324	1324	1324	
TOTAL	2318	2318	2318	2318	2318	2318	2318	2318	2318	2318	
Disposition Males lost or stolen	20	20	20	20	20	20	20	20	20	20	
Females lost or stolen	16	16	16	16	16	16	16	16	16	16	
Males died	69	69	69	69	69	69	69	69	69	69	
Females died	102	102	102	102	102	102	102	102	102	102	
Males marketed	50	50	50	50	50	50	50	50	50	50	
Females marketed	17	17	17	17	17	17	17	17	17	17	
Males slaughtered	31	31	31	31	31	31	31	31	31	31	
Females slaughtered	28	28	28	28	28	28	28	28	28	28	
TOTAL	333	333	333	333	333	333	333	333	333	333	
Acquisition Calves surviving	256	256	256	256	256	256	256	256	256	256	
Males recruited	42	42	42	42	42	42	42	42	42	42	
Females recruited	35	35	35	35	35	35	35	35	35	35	
TOTAL	333	333	333	333	333	333	333	333	333	333	
Cows milked	206	206	206	206	206	206	206	206	206	206	
Average yearly milk collection per cow	92	92	92	92	92	92	92	92	92	92	litres
Number of Oxen span days Ploughing	2094	2094	2094	2094	2094	2094	2094	2094	2094	2094	
Planting	1142	1142	1142	1142	1142	1142	1142	1142	1142	1142	
Cultivation	1309	1309	1309	1309	1309	1309	1309	1309	1309	1309	
Harvest Transport	432	432	432	432	432	432	432	432	432	432	
PRODUCTION OF CASH PRODUCTS											
Males marketed	50	50	50	50	50	50	50	50	50	50	
Females marketed	17	17	17	17	17	17	17	17	17	17	
Hides marketed	20	20	20	20	20	20	20	20	20	20	
Milk sold per households selling milk	9476	9476	9476	9476	9476	9476	9476	9476	9476	9476	litres
Dung sold	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Draught sold	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
PRODUCTION OF NON CASH PRODUCTS											
Males slaughtered	31	31	31	31	31	31	31	31	31	31	
Females slaughtered	28	28	28	28	28	28	28	28	28	28	
Hides used in household	167	167	167	167	167	167	167	167	167	167	
Fallen Males consumed	55	55	55	55	55	55	55	55	55	55	
Fallen females consumed	82	82	82	82	82	82	82	82	82	82	
Dung consumed as fuel	359290	359290	359290	359290	359290	359290	359290	359290	359290	359290	kg
Own milk consumed in household	9476	9476	9476	9476	9476	9476	9476	9476	9476	9476	litres
Oxen span days	4978	4978	4978	4978	4978	4978	4978	4978	4978	4978	days

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Budget for Cattle Continued	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Units
PRODUCT PRICES OR IMPUTED PRICES											
Male Cattle sale price	392 00	392 00	392 00	392 00	392 00	392 00	392 00	392 00	392 00	392 00	maloti
Female cattle sale price	266 00	266 00	266 00	266 00	266 00	266 00	266 00	266 00	266 00	266 00	maloti
Male Cattle purchase price	522 54	522 54	522 54	522 54	522 54	522 54	522 54	522 54	522 54	522 54	maloti
Female Cattle purchase price	354 58	354 58	354 58	354 58	354 58	354 58	354 58	354 58	354 58	354 58	maloti
Male Cattle inventory value	294 00	294 00	294 00	294 00	294 00	294 00	294 00	294 00	294 00	294 00	maloti
Female Cattle inventory value	199 50	199 50	199 50	199 50	199 50	199 50	199 50	199 50	199 50	199 50	maloti
Milk sales price	0 35	0 35	0 35	0 35	0 35	0 35	0 35	0 35	0 35	0 35	M/litre
Dung value	0 10	0 10	0 10	0 10	0 10	0 10	0 10	0 10	0 10	0 10	M/kg
Hides value	60 00	60 00	60 00	60 00	60 00	60 00	60 00	60 00	60 00	60 00	M/hide
Oxen span draught value	7 93	7 93	7 93	7 93	7 93	7 93	7 93	7 93	7 93	7 93	M/day
Kraal and Cattle Post value	400 00	400 00	400 00	400 00	400 00	400 00	400 00	400 00	400 00	400 00	maloti
INVESTMENT COSTS AND RETURNS											
Investment											
Kraals and Cattle Posts	95200 00	95200 00	95200 00	95200 00	95200 00	95200 00	95200 00	95200 00	95200 00	95200 00	maloti
Cattle Bulls	59682 00	59682 00	59682 00	59682 00	59682 00	59682 00	59682 00	59682 00	59682 00	59682 00	maloti
Oxen	232554 00	232554 00	232554 00	232554 00	232554 00	232554 00	232554 00	232554 00	232554 00	232554 00	maloti
Cows	264138 00	264138 00	264138 00	264138 00	264138 00	264138 00	264138 00	264138 00	264138 00	264138 00	maloti
TOTAL INVESTMENT	651574 00	651574 00	651574 00	651574 00	651574 00	651574 00	651574 00	651574 00	651574 00	651574 00	maloti
Cash Costs											
Hired labour	35604 48	35604 48	35604 48	35604 48	35604 48	35604 48	35604 48	35604 48	35604 48	35604 48	maloti
Veterinary supplies and medicine	13701 70	13701 70	13701 70	13701 70	13701 70	13701 70	13701 70	13701 70	13701 70	13701 70	maloti
Salt	12468 52	12468 52	12468 52	12468 52	12468 52	12468 52	12468 52	12468 52	12468 52	12468 52	maloti
Purchased fodder	1096 41	1096 41	1096 41	1096 41	1096 41	1096 41	1096 41	1096 41	1096 41	1096 41	maloti
Other supplemental feeds	3008 76	3008 76	3008 76	3008 76	3008 76	3008 76	3008 76	3008 76	3008 76	3008 76	maloti
Purchased herd recruits	34356 74	34356 74	34356 74	34356 74	34356 74	34356 74	34356 74	34356 74	34356 74	34356 74	maloti
TOTAL CASH COSTS	100236 62	100236 62	100236 62	100236 62	100236 62	100236 62	100236 62	100236 62	100236 62	100236 62	maloti
Non cash costs											
Family herding labour	65923 92	65923 92	65923 92	65923 92	65923 92	65923 92	65923 92	65923 92	65923 92	65923 92	maloti
Own feeds	6119 52	6119 52	6119 52	6119 52	6119 52	6119 52	6119 52	6119 52	6119 52	6119 52	maloti
TOTAL NON CASH COSTS	72043 44	72043 44	72043 44	72043 44	72043 44	72043 44	72043 44	72043 44	72043 44	72043 44	maloti
Gross cash income											
Male animal sale	19600 00	19600 00	19600 00	19600 00	19600 00	19600 00	19600 00	19600 00	19600 00	19600 00	maloti
Female animal sale	4522 00	4522 00	4522 00	4522 00	4522 00	4522 00	4522 00	4522 00	4522 00	4522 00	maloti
Milk sale	3316 60	3316 60	3316 60	3316 60	3316 60	3316 60	3316 60	3316 60	3316 60	3316 60	maloti
Draught rental	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Hides sale	1206 00	1206 00	1206 00	1206 00	1206 00	1206 00	1206 00	1206 00	1206 00	1206 00	maloti
TOTAL VALUE OF CASH PRODUCTS	28644 60	28644 60	28644 60	28644 60	28644 60	28644 60	28644 60	28644 60	28644 60	28644 60	maloti

Budget for Cattle Continued	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Units
Gross non cash income											
Products from											
Slaughtered males	12152 00	12152 00	12152 00	12152 00	12152 00	12152 00	12152 00	12152 00	12152 00	12152 00	maloti
Slaughtered females	7448 00	7448 00	7448 00	7448 00	7448 00	7448 00	7448 00	7448 00	7448 00	7448 00	maloti
Fallen males	12171 60	12171 60	12171 60	12171 60	12171 60	12171 60	12171 60	12171 60	12171 60	12171 60	maloti
Fallen females	12209 40	12209 40	12209 40	12209 40	12209 40	12209 40	12209 40	12209 40	12209 40	12209 40	maloti
Hides used in household	4995 00	4995 00	4995 00	4995 00	4995 00	4995 00	4995 00	4995 00	4995 00	4995 00	maloti
Own milk consumed in household	3316 60	3316 60	3316 60	3316 60	3316 60	3316 60	3316 60	3316 60	3316 60	3316 60	maloti
Oxen draught power	39473 95	39473 95	39473 95	39473 95	39473 95	39473 95	39473 95	39473 95	39473 95	39473 95	maloti
Kraal dung consumed in household	35929 00	35929 00	35929 00	35929 00	35929 00	35929 00	35929 00	35929 00	35929 00	35929 00	maloti
TOTAL VALUE OF NON CASH PRODUCTS	127695 55	127695 55	127695 55	127695 55	127695 55	127695 55	127695 55	127695 55	127695 55	127695 55	maloti
Value of Net Change in Capital Assets											
Male animals	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	maloti
Female animals	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	maloti
TOTAL NET CHANGE IN VALUE OF CAPITAL ASSETS	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	maloti
SUMMARY FINANCIAL STATISTICS											
Total Income (cash non cash capital)	156340 15	156340 15	156340 15	156340 15	156340 15	156340 15	156340 15	156340 15	156340 15	156340 15	maloti
Total Costs (cash and non cash)	172280 06	172280 06	172280 06	172280 06	172280 06	172280 06	172280 06	172280 06	172280 06	172280 06	maloti
National grazing fee	0 00	6954 00	6954 00	6954 00	6954 00	6954 00	6954 00	6954 00	6954 00	6954 00	maloti
TOTAL NET INCOME FROM CATTLE	15939 91	22893 91	22893 91	22893 91	-22893 91	22893 91	22893 91	-22893 91	22893 91	22893 91	maloti
RATE OF RETURN ON CAPITAL INVESTMENT	2 4	3 5	3 5	-3 5	3 5	3 5	-3 5	3 5	3 5	-3 5	percent
AVERAGE NET INCOME FROM CATTLE											
Average Gross Income per animal	67 45	67 45	67 45	67 45	67 45	67 45	67 45	67 45	67 45	67 45	maloti
Average Cost per animal	74 32	74 32	74 32	74 32	74 32	74 32	74 32	74 32	74 32	74 32	maloti
National grazing fee	0 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	3 00	maloti
AVERAGE NET INCOME FROM CATTLE	6 88	-9 88	9 88	9 88	-9 88	9 88	9 88	9 88	9 88	9 88	maloti
AVERAGE NET INCOME FROM CATTLE PER FARMER	57 75	82 95	82 95	82 95	-82 95	82 95	-82 95	82 95	82 95	82 95	maloti
INCOME EARNED PER ANIMAL UNIT	57 75	82 95	82 95	82 95	-82 95	82 95	82 95	82 95	82 95	82 95	maloti

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Project for Sheep in a non RMA	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Unit
Total G A members in equivalent non RMA area	276	276	276	276	276	276	276	276	276	276	
Sheep Owners in RMA	145	145	145	145	145	145	145	145	145	145	
Average Sheep/G A Member	55 0	55 0	55 0	55 0	55 0	55 0	55 0	55 0	55 0	55 0	
Average Sheep/Sheep Holding Member	104 7	104 7	104 7	104 7	104 7	104 7	104 7	104 7	104 7	104 7	
Inventory Rams	1519	1519	1519	1519	1519	1519	1519	1519	1519	1519	
Hamels	3492	3492	3492	3492	3492	3492	3492	3492	3492	3492	
Ewes	10173	10173	10173	10173	10173	10173	10173	10173	10173	10173	
TOTAL	15184	15184	15184	15184	15184	15184	15184	15184	15184	15184	
Disposition Males lost or stolen	263	263	263	263	263	263	263	263	263	263	
Females lost or stolen	281	281	281	281	281	281	281	281	281	281	
Males died	255	255	255	255	255	255	255	255	255	255	
Females died	522	522	522	522	522	522	522	522	522	522	
Males marketed	301	301	301	301	301	301	301	301	301	301	
Females marketed	299	299	299	299	299	299	299	299	299	299	
Males slaughtered	463	463	463	463	463	463	463	463	463	463	
Females slaughtered	181	181	181	181	181	181	181	181	181	181	
TOTAL	2565	2565	2565	2565	2565	2565	2565	2565	2565	2565	
Acquisition Lambs surviving	2341	2341	2341	2341	2341	2341	2341	2341	2341	2341	
Males recruited	55	55	55	55	55	55	55	55	55	55	
Females recruited	169	169	169	169	169	169	169	169	169	169	
TOTAL	2565	2565	2565	2565	2565	2565	2565	2565	2565	2565	
Sheep Shorn	10629	10629	10629	10629	10629	10629	10629	10629	10629	10629	
Wool sold per sheep shorn	2 3	2 3	2 3	2 3	2 3	2 3	2 3	2 3	2 3	2 3	kg
PRODUCTION OF CASH PRODUCTS											
Males Marketed	301	301	301	301	301	301	301	301	301	301	
Females Marketed	299	299	299	299	299	299	299	299	299	299	
Skins Marketed	111	111	111	111	111	111	111	111	111	111	
Total wool sales	24446	24446	24446	24446	24446	24446	24446	24446	24446	24446	kg
PRODUCTION OF NON CASH PRODUCTS											
Males Slaughtered	463	463	463	463	463	463	463	463	463	463	
Females Slaughtered	181	181	181	181	181	181	181	181	181	181	
Skins used in household	553	553	553	553	553	553	553	553	553	553	
Fallen Males Consumed	333	333	333	333	333	333	333	333	333	333	
Fallen Females Consumed	664	664	664	664	664	664	664	664	664	664	
PRODUCT PRICES OR IMPUTED PRICES											
Sheep sale price	55 00	55 00	55 00	55 00	55 00	55 00	55 00	55 00	55 00	55 00	maloti
Sheep purchase price	68 75	68 75	68 75	68 75	68 75	68 75	68 75	68 75	68 75	68 75	maloti
Sheep inventory value	41 25	41 25	41 25	41 25	41 25	41 25	41 25	41 25	41 25	41 25	maloti
Skins sale price	3 85	3 85	3 85	3 85	3 85	3 85	3 85	3 85	3 85	3 85	m/skin
Skin value used in home	1 93	1 93	1 93	1 93	1 93	1 93	1 93	1 93	1 93	1 93	m/skin
Kraal and Cattle Post value	200 00	200 00	200 00	200 00	200 00	200 00	200 00	200 00	200 00	200 00	maloti
Wool value per kilogram	3 26	3 26	3 26	3 26	3 26	3 26	3 26	3 26	3 26	3 26	maloti

Budget for Sheep Continued INVESTMENT COSTS AND RETURNS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Unit
Investment											
Kraals and Cattle Posts	29000 00	29000 00	29000 00	29000 00	29000 00	29000 00	29000 00	29000 00	29000 00	29000 00	maloti
Sheep males	206703 75	206703 75	206703 75	206703 75	206703 75	206703 75	206703 75	206703 75	206703 75	206703 75	maloti
females	419636 25	419636 25	419636 25	419636 25	419636 25	419636 25	419636 25	419636 25	419636 25	419636 25	maloti
TOTAL INVESTMENT	655340 00	655340 00	655340 00	655340 00	655340 00	655340 00	655340 00	655340 00	655340 00	655340 00	maloti
Cash Costs											
Hired Labour	24780 29	24780 29	24780 29	24780 29	24780 29	24780 29	24780 29	24780 29	24780 29	24780 29	maloti
Veterinary supplies and medicine	6286 18	6286 18	6286 18	6286 18	6286 18	6286 18	6286 18	6286 18	6286 18	6286 18	maloti
Salt	7349 06	7349 06	7349 06	7349 06	7349 06	7349 06	7349 06	7349 06	7349 06	7349 06	maloti
Purchased fodder	143 64	143 64	143 64	143 64	143 64	143 64	143 64	143 64	143 64	143 64	maloti
Other supplemental feeds	354 09	354 09	354 09	354 09	354 09	354 09	354 09	354 09	354 09	354 09	maloti
Purchased herd recruits	15400 00	15400 00	15400 00	15400 00	15400 00	15400 00	15400 00	15400 00	15400 00	15400 00	maloti
Shearing expenses	2125 76	2125 76	2125 76	2125 76	2125 76	2125 76	2125 76	2125 76	2125 76	2125 76	maloti
TOTAL CASH COSTS	56439 01	56439 01	56439 01	56439 01	56439 01	56439 01	56439 01	56439 01	56439 01	56439 01	maloti
Non cash costs											
Family herding labour	45848 09	45848 09	45848 09	45848 09	45848 09	45848 09	45848 09	45848 09	45848 09	45848 09	maloti
Own feeds	1050 73	1050 73	1050 73	1050 73	1050 73	1050 73	1050 73	1050 73	1050 73	1050 73	maloti
TOTAL NON CASH COSTS	46898 82	46898 82	46898 82	46898 82	46898 82	46898 82	46898 82	46898 82	46898 82	46898 82	maloti
Gross cash income											
Male animal sale	16555 00	16555 00	16555 00	16555 00	16555 00	16555 00	16555 00	16555 00	16555 00	16555 00	maloti
Female animal sale	16445 00	16445 00	16445 00	16445 00	16445 00	16445 00	16445 00	16445 00	16445 00	16445 00	maloti
Skins sale	427 35	427 35	427 35	427 35	427 35	427 35	427 35	427 35	427 35	427 35	maloti
Wool sale	79694 74	79694 74	79694 74	79694 74	79694 74	79694 74	79694 74	79694 74	79694 74	79694 74	maloti
TOTAL VALUE OF CASH PRODUCTS	113122 09	113122 09	113122 09	113122 09	113122 09	113122 09	113122 09	113122 09	113122 09	113122 09	maloti
Gross non cash income											
Products from											
Slaughtered males	25465 00	25465 00	25465 00	25465 00	25465 00	25465 00	25465 00	25465 00	25465 00	25465 00	maloti
Slaughtered females	9955 00	9955 00	9955 00	9955 00	9955 00	9955 00	9955 00	9955 00	9955 00	9955 00	maloti
Fallen males	10302 19	10302 19	10302 19	10302 19	10302 19	10302 19	10302 19	10302 19	10302 19	10302 19	maloti
Fallen females	20542 50	20542 50	20542 50	20542 50	20542 50	20542 50	20542 50	20542 50	20542 50	20542 50	maloti
Skins used in household	1064 53	1064 53	1064 53	1064 53	1064 53	1064 53	1064 53	1064 53	1064 53	1064 53	maloti
TOTAL VALUE OF NON CASH PRODUCTS	67329 21	67329 21	67329 21	67329 21	67329 21	67329 21	67329 21	67329 21	67329 21	67329 21	maloti
Value of Net Change in Capital Assets											
Male animals	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	maloti
Female animals	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	maloti
	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	
TOTAL NET CHANGE IN VALUE OF CAPITAL ASSETS	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	maloti

Budget for Sheep Continued SUMMARY FINANCIAL STATISTICS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Units
Total Income (cash non cash capital)	180451 30	180451 30	180451 30	180451 30	180451 30	180451 30	180451 30	180451 30	180451 30	180451 30	maloti
Total Costs (cash and non cash)	103337 83	103337 83	103337 83	103337 83	103337 83	103337 83	103337 83	103337 83	103337 83	103337 83	maloti
National grazing fee	0 00	7592 00	7592 00	7592 00	7592 00	7592 00	7592 00	7592 00	7592 00	7592 00	maloti
TOTAL NET INCOME FROM SHEEP	77113 47	69521 47	69521 47	69521 47	69521 47	69521 47	69521 47	69521 47	69521 47	69521 47	maloti
RATE OF RETURN ON CAPITAL INVESTMENT	11 8	10 6	10 6	10 6	10 6	10 6	10 6	10 6	10 6	10 6	percent
AVERAGE NET INCOME FROM SHEEP											
Average Gross Income per animal	11 88	11 88	11 88	11 88	11 88	11 88	11 88	11 88	11 88	11 88	maloti
Average Cost per animal	6 81	6 81	6 81	6 81	6 81	6 81	6 81	6 81	6 81	6 81	maloti
National grazing fee	0 00	0 50	0 50	0 50	0 50	0 50	0 50	0 50	0 50	0 50	
AVERAGE NET INCOME FROM SHEEP	5 08	4 58	4 58	4 58	4 58	4 58	4 58	4 58	4 58	4 58	maloti
AVERAGE NET INCOME FROM SHEEP PER FARMER	279 40	251 89	251 89	251 89	251 89	251 89	251 89	251 89	251 89	251 89	maloti
INCOME EARNED PER ANIMAL UNIT	41 14	22 89	22 89	22 89	22 89	22 89	22 89	22 89	22 89	22 89	maloti

Budget for Goats in a non RMA	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Unit
Total G A Members in equivalent non RMA area	276	276	276	276	276	276	276	276	276	276	
Goat Owners	116	116	116	116	116	116	116	116	116	116	
Average Goats/G A Member	10 2	10 2	10 2	10 2	10 2	10 2	10 2	10 2	10 2	10 2	
Average Goats/Goats Holding Member	24 3	24 3	24 3	24 3	24 3	24 3	24 3	24 3	24 3	24 3	
Inventory Bucks	338	338	338	338	338	338	338	338	338	338	
Kapaters	620	620	620	620	620	620	620	620	620	620	
Does	1860	1860	1860	1860	1860	1860	1860	1860	1860	1860	
TOTAL	2818	2818	2818	2818	2818	2818	2818	2818	2818	2818	
Disposition Males lost or stolen	24	24	24	24	24	24	24	24	24	24	
Females lost or stolen	14	14	14	14	14	14	14	14	14	14	
Males died	97	97	97	97	97	97	97	97	97	97	
Females died	98	98	98	98	98	98	98	98	98	98	
Males marketed	30	30	30	30	30	30	30	30	30	30	
Females marketed	29	29	29	29	29	29	29	29	29	29	
Males slaughtered	58	58	58	58	58	58	58	58	58	58	
Females slaughtered	24	24	24	24	24	24	24	24	24	24	
TOTAL	374	374	374	374	374	374	374	374	374	374	
Acquisition Kids surviving	343	343	343	343	343	343	343	343	343	343	
Males recruited	3	3	3	3	3	3	3	3	3	3	
Females recruited	28	28	28	28	28	28	28	28	28	28	
TOTAL	374	374	374	374	374	374	374	374	374	374	
Goats shorn	2170	2170	2170	2170	2170	2170	2170	2170	2170	2170	
Mohair sold per goat shorn	0 8	0 8	0 8	0 8	0 8	0 8	0 8	0 8	0 8	0 8	kg
PRODUCTION OF CASH PRODUCTS											
Males Marketed	30	30	30	30	30	30	30	30	30	30	
Females Marketed	29	29	29	29	29	29	29	29	29	29	
Skins Marketed	5	5	5	5	5	5	5	5	5	5	
Total mohair sales	1736 0	1736 0	1736 0	1736 0	1736 0	1736 0	1736 0	1736 0	1736 0	1736 0	kg
PRODUCTION OF NON CASH PRODUCTS											
Males Slaughtered	58	58	58	58	58	58	58	58	58	58	
Females Slaughtered	24	24	24	24	24	24	24	24	24	24	
Skins used in household	34	34	34	34	34	34	34	34	34	34	
Fallen Males Consumed	108	108	108	108	108	108	108	108	108	108	
Fallen Females Consumed	110	110	110	110	110	110	110	110	110	110	
PRODUCT PRICES OR IMPUTED PRICES											
Goat sale price	44 00	44 00	44 00	44 00	44 00	44 00	44 00	44 00	44 00	44 00	maloti
Goat purchase price	55 00	55 00	55 00	55 00	55 00	55 00	55 00	55 00	55 00	55 00	maloti
Goat inventory value	33 00	33 00	33 00	33 00	33 00	33 00	33 00	33 00	33 00	33 00	maloti
Skins sale price	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	1 50	m/skin
Skin value used in home	0 75	0 75	0 75	0 75	0 75	0 75	0 75	0 75	0 75	0 75	m/skin
Kraal and Cattle Post value	200 00	200 00	200 00	200 00	200 00	200 00	200 00	200 00	200 00	200 00	maloti
Mohair value per kilogram	9 34	9 34	9 34	9 34	9 34	9 34	9 34	9 34	9 34	9 34	maloti

Budget for Goats Continued INVESTMENT COSTS AND RETURNS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Units
Investment											
Kraals and Cattle Posts	23200 00	23200 00	23200 00	23200 00	23200 00	23200 00	23200 00	23200 00	23200 00	23200 00	maloti
Goats males	31614 00	31614 00	31614 00	31614 00	31614 00	31614 00	31614 00	31614 00	31614 00	31614 00	maloti
females	61380 00	61380 00	61380 00	61380 00	61380 00	61380 00	61380 00	61380 00	61380 00	61380 00	maloti
TOTAL INVESTMENT	116194 00	116194 00	116194 00	116194 00	116194 00	116194 00	116194 00	116194 00	116194 00	116194 00	maloti
Cash Costs											
Hired Labour	561 00	561 00	561 00	561 00	561 00	561 00	561 00	561 00	561 00	561 00	maloti
Veterinary supplies and medicine	135 76	135 76	135 76	135 76	135 76	135 76	135 76	135 76	135 76	135 76	maloti
Salt	166 21	166 21	166 21	166 21	166 21	166 21	166 21	166 21	166 21	166 21	maloti
Purchased fodder	4 53	4 53	4 53	4 53	4 53	4 53	4 53	4 53	4 53	4 53	maloti
Other supplemental feeds	13 58	13 58	13 58	13 58	13 58	13 58	13 58	13 58	13 58	13 58	maloti
Purchased herd recruits	1705 00	1705 00	1705 00	1705 00	1705 00	1705 00	1705 00	1705 00	1705 00	1705 00	maloti
Shearing expenses	434 00	434 00	434 00	434 00	434 00	434 00	434 00	434 00	434 00	434 00	maloti
TOTAL CASH COSTS	2586 07	2586 07	2586 07	2586 07	2586 07	2586 07	2586 07	2586 07	2586 07	2586 07	maloti
Non cash costs											
Family herding labour	1439 90	1439 90	1439 90	1439 90	1439 90	1439 90	1439 90	1439 90	1439 90	1439 90	maloti
Own feeds	32 91	32 91	32 91	32 91	32 91	32 91	32 91	32 91	32 91	32 91	maloti
TOTAL NON CASH COSTS	1472 81	1472 81	1472 81	1472 81	1472 81	1472 81	1472 81	1472 81	1472 81	1472 81	maloti
Gross cash income											
Male animal sale	1320 00	1320 00	1320 00	1320 00	1320 00	1320 00	1320 00	1320 00	1320 00	1320 00	maloti
Female animal sale	1276 00	1276 00	1276 00	1276 00	1276 00	1276 00	1276 00	1276 00	1276 00	1276 00	maloti
Skins sale	7 50	7 50	7 50	7 50	7 50	7 50	7 50	7 50	7 50	7 50	maloti
Mohair ale	16214 24	16214 24	16214 24	16214 24	16214 24	16214 24	16214 24	16214 24	16214 24	16214 24	maloti
TOTAL VALUE OF CASH PRODUCTS	18817 74	18817 74	18817 74	18817 74	18817 74	18817 74	18817 74	18817 74	18817 74	18817 74	maloti
Gross non cash income											
Products from											
Slaughtered males	2552 00	2552 00	2552 00	2552 00	2552 00	2552 00	2552 00	2552 00	2552 00	2552 00	maloti
Slaughtered females	1056 00	1056 00	1056 00	1056 00	1056 00	1056 00	1056 00	1056 00	1056 00	1056 00	maloti
Fallen males	2673 00	2673 00	2673 00	2673 00	2673 00	2673 00	2673 00	2673 00	2673 00	2673 00	maloti
Fallen females	2722 50	2722 50	2722 50	2722 50	2722 50	2722 50	2722 50	2722 50	2722 50	2722 50	maloti
Skins used in household	25 50	25 50	25 50	25 50	25 50	25 50	25 50	25 50	25 50	25 50	maloti
TOTAL VALUE OF NON CASH PRODUCTS	9029 00	9029 00	9029 00	9029 00	9029 00	9029 00	9029 00	9029 00	9029 00	9029 00	maloti
Value of Net Change in Capital Assets											
Male animals	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	maloti
female animals	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	maloti
TOTAL NET CHANGE IN VALUE OF CAPITAL ASSETS	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00	maloti

Budget for Goats Continued SUMMARY FINANCIAL STATISTICS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Units
Total Income (cash non-cash capital)	27846 74	27846 74	27846 74	27846 74	27846 74	27846 74	27846 74	27846 74	27846 74	27846 74	maloti
Total Costs (cash and non cash)	4058 88	4058 88	4058 88	4058 88	4058 88	4058 88	4058 88	4058 88	4058 88	4058 88	maloti
National grazing fees	0 00	1409 00	1409 00	1409 00	1409 00	1409 00	1409 00	1409 00	1409 00	1409 00	maloti
TOTAL NET INCOME FROM GOATS IN RMA	23787 86	22378 86	22378 86	22378 86	22378 86	22378 86	22378 86	22378 86	22378 86	22378 86	maloti
RATE OF RETURN ON CAPITAL INVESTMENT	20 5	19 3	19 3	19 3	19 3	19 3	19 3	19 3	19 3	19 3	percent
AVERAGE NET INCOME FROM GOATS											
Average Gross Income per animal	9 88	9 88	9 88	9 88	9 88	9 88	9 88	9 88	9 88	9 88	maloti
Average Cost per animal	1 44	1 44	1 44	1 44	1 44	1 44	1 44	1 44	1 44	1 44	maloti
National grazing Fee	0 00	0 50	0 50	0 50	0 50	0 50	0 50	0 50	0 50	0 50	maloti
AVERAGE NET INCOME FROM GOATS	8 44	7 94	7 94	7 94	7 94	7 94	7 94	7 94	7 94	7 94	maloti
AVERAGE NET INCOME FROM GOATS PER FARMER	86 19	81 08	81 08	81 08	81 08	81 08	81 08	81 08	81 08	81 08	maloti
INCOME EARNED PER ANIMAL UNIT	80 19	75 44	75 44	75 44	75 44	75 44	75 44	75 44	75 44	75 44	maloti

SUMMARY FINANCIAL STATISTICS WITHOUT RMA

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	
TOTAL NET ANNUAL INCOME FORM CATTLE	15939 91	22893 91	22893 91	22893 91	-22893 91	22893 91	22893 91	22893 91	22893 91	22893 91	maloti
TOTAL NET ANNUAL INCOME FROM SHEEP	77113 47	69521 47	69521 47	69521 47	69521 47	69521 47	69521 47	69521 47	69521 47	69521 47	maloti
TOTAL NET ANNUAL INCOME FROM GOATS	23787 86	22378 86	22378 86	22378 86	22378 86	22378 86	22378 86	22378 86	22378 86	22378 86	maloti
TOTAL NET ANNUAL INCOME FROM LIVESTOCK	84961 43	69006 43	69006 43	69006 43	69006 43	69006 43	69006 43	69006 43	69006 43	69006 43	maloti
AVERAGE ANNUAL NET INCOME FROM											
CATTLE PER FARMER	57 75	82 95	82 95	82 95	-82 95	82 95	-82 95	82 95	82 95	82 95	maloti
SHEEP PER FARMER	279 40	251 89	251 89	251 89	251 89	251 89	251 89	251 89	251 89	251 89	maloti
GOATS PER FARMER	86 19	81 08	81 08	81 08	81 08	81 08	81 08	81 08	81 08	81 08	maloti
TOTAL AVERAGE ANNUAL NET INCOME PER FARMER	307 83	250 02	250 02	250 02	250 02	250 02	250 02	250 02	250 02	250 02	maloti

FINANCIAL ANALYSIS LIVESTOCK FARMERS
(Current GA fees and national grazing fee)

TOTAL NET ANNUAL INCOME PER FARMER (RMA)	463 47	244 89	546 73	666 40	810 82	868 51	861 05	861 46	861 46	861 46
TOTAL NET ANNUAL INCOME PER FARMER (NON RMA)	307 83	250 02	250 02	250 02	250 02	250 02	250 02	250 02	250 02	250 02
INCREMENTAL NET ANNUAL INCOME PER FARMER	155 64	5 14	296 71	416 38	560 80	618 49	611 02	611 44	611 44	611 44
AVERAGE INCREMENTAL NET ANNUAL INCOME (10 YEARS)	448 82									
NPV (20 YEARS @ 8/) INCREMENTAL NET INCOME	4629 07									

FINANCIAL ANALYSIS FARMER GROUP

TOTAL NET ANNUAL INCOME FROM LIVESTOCK IN RMA	127918 00	73955 35	160193 26	190591 57	238381 15	269238 66	261758 11	261884 61	261884 61	261884 61
TOTAL NET ANNUAL INCOME IN NON RMA AREA	84961 43	69006 43	69006 43	69006 43	69006 43	69006 43	69006 43	69006 43	69006 43	69006 43
INCREMENTAL NET ANNUAL INCOME	42956 57	4948 93	91186 83	121585 15	169374 73	200232 24	192751 69	192878 19	192878 19	192878 19
NPV (20 YEARS @ 8/) INCREMENTAL NET INCOME	1449207 15									

FINANCIAL ANALYSIS LIVESTOCK FARMERS
(With new grazing fees needed to cover RMA operating expenses)

TOTAL NET ANNUAL INCOME PER FARMER (RMA)	463 47	244 89	546 73	666 40	791 78	850 92	843 69	844 10	844 10	844 10
TOTAL NET ANNUAL INCOME PER FARMER (NON RMA)	307 83	250 02	250 02	250 02	250 02	250 02	250 02	250 02	250 02	250 02
INCREMENTAL NET ANNUAL INCOME PER FARMER	155 64	5 14	296 71	416 38	541 76	600 89	593 66	594 08	594 08	594 08
AVERAGE INCREMENTAL NET ANNUAL INCOME (10 YEARS)	438 21									
NPV (20 YEARS @ 8/) INCREMENTAL NET INCOME	4514 83									

FINANCIAL ANALYSIS FARMER GROUP

TOTAL NET ANNUAL INCOME FROM LIVESTOCK IN RMA	127918 00	73955 35	160193 26	190591 57	232783 15	263783 66	256480 81	256607 31	256607 31	256607 31
TOTAL NET ANNUAL INCOME IN NON RMA AREA	84961 43	69006 43	69006 43	69006 43	69006 43	69006 43	69006 43	69006 43	69006 43	69006 43
INCREMENTAL NET ANNUAL INCOME	42956 57	4948 93	91186 83	121585 15	163776 73	194777 24	187474 39	187600 89	187600 89	187600 89
NPV (20 YEARS @ 8/) INCREMENTAL NET INCOME	1414542 69									

FINANCIAL ANALYSIS LIVESTOCK FARMERS
(With new GA grazing and membership fees to cover investment cost and operating expenses of RMAs)

TOTAL NET ANNUAL INCOME PER FARMER (RMA)	463 47	234 89	516 73	636 40	743 95	804 59	797 79	798 21	798 21	798 21
TOTAL NET ANNUAL INCOME PER FARMER (NON RMA)	307 83	250 02	250 02	250 02	250 02	250 02	250 02	250 02	250 02	250 02
INCREMENTAL NET ANNUAL INCOME PER FARMER	155 64	15 14	266 71	386 38	493 93	554 56	547 77	548 18	548 18	548 18
AVERAGE INCREMENTAL NET ANNUAL INCOME (10 YEARS)	403 44									
NPV (20 YEARS @ 8/) INCREMENTAL NET INCOME	4160 21									

FINANCIAL ANALYSIS FARMER GROUP

TOTAL NET ANNUAL INCOME FROM LIVESTOCK IN RMA	127918 00	70935 35	151403 26	182011 57	218721 15	249421 66	242528 61	242655 11	242655 11	242655 11
TOTAL NET ANNUAL INCOME IN NON RMA AREA	84961 43	69006 43	69006 43	69006 43	69006 43	69006 43	69006 43	69006 43	69006 43	69006 43
INCREMENTAL NET ANNUAL INCOME	42956 57	1928 93	82396 83	113005 15	149714 73	180415 24	173522 19	173648 69	173648 69	173648 69
NPV (20 YEARS @ 8/) INCREMENTAL NET INCOME	1307562 91									

Cash Flow of the Range Management Area Existing GA grazing fees
(Maloti)

	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10
Income										
Breeding fees			3450	3450	3450	3450	3450	3450	3450	3450
Membership fees 1/		16560	4320	2930	2860	3340	3900	3040	3040	3040
Grazing fees										
50% Natl Grz Fee 2/		9328	8909	9310	8986	8948	8683	8357	8357	8357
GA Grz Fee 3/					4943	4819	4676	4676	4676	4676
Sale of bulls					1600	1600	1600	1600	1600	1600
Sale of rams					500	500	500	500	500	500
Sale of bucks					350	350	350	350	350	350
Wool payments				190	190	190	190	190	190	190
Mohair payments			8	183	183	183	183	183	183	183
Impoundments			4000	4000	4000	4000	4000	4000	4000	4000
Subtotal income	0	25888	20687	20063	27061	27380	27531	26346	26346	26346
Expenses										
Pound master			400	400	400	400	400	400	400	400
Range riders			2000	2000	2000	2000	2000	2000	2000	2000
Wool classer			1725	1725	1725	1725	1725	1725	1725	1725
Herders			2300	2300	2300	2300	2300	2300	2300	2300
Association trip		180	180	180	180	180	180	180	180	180
Livestock feed			2000	2000	2000	2000	2000	2000	2000	2000
Bulls		5037		5037		5037		5037		5037
Rams		2000		2000		2000		2000		2000
Bucks		2000		2000		2000		2000		2000
Veterinary services			600	600	600	600	600	600	600	600
Transportation				720	720	720	720	720	720	720
RMA Manager				7860	7860	7860	7860	7860	7860	7860
Misc expenses		1800	1800	1800	1800	1800	1800	1800	1800	1800
Subtotal expenses	0	11017	11005	28622	19585	28622	19585	28622	19585	28622
Net income	0	14871	9682	-8560	7476	-1242	7946	-2276	6761	-2276
Cumulative net income	0	14871	24552	15993	23469	22227	30174	27898	34659	32382

	Yr 11	Yr 12	Yr 13	Yr 14	Yr 15	Yr 16	Yr 17	Yr 18	Yr 19	Yr 20
Income										
Breeding fees	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
Membership fees 1/	3040	3040	3040	3040	3040	3040	3040	3040	3040	3040
Grazing fees										
50% Natl Grz Fee 2/	8357	8357	8357	8357	8357	8357	8357	8357	8357	8357
GA Grz Fee 3/	4676	4676	4676	4676	4676	4676	4676	4676	4676	4676
Sale of bulls	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Sale of rams	500	500	500	500	500	500	500	500	500	500
Sale of bucks	350	350	350	350	350	350	350	350	350	350
Wool payments	190	190	190	190	190	190	190	190	190	190
Mohair payments	183	183	183	183	183	183	183	183	183	183
Impoundments	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000
Subtotal-income	26346	26346	26346	26346	26346	26346	26346	26346	26346	26346
Expenses										
Pound master	400	400	400	400	400	400	400	400	400	400
Range riders	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Wool classer	1725	1725	1725	1725	1725	1725	1725	1725	1725	1725
Herders	2300	2300	2300	2300	2300	2300	2300	2300	2300	2300
Association trip	180	180	180	180	180	180	180	180	180	180
Livestock feed	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Bulls		5037		5037		5037		5037		5037
Rams		2000		2000		2000		2000		2000
Bucks		2000		2000		2000		2000		2000
Veterinary services	600	600	600	600	600	600	600	600	600	600
Transportation	720	720	720	720	720	720	720	720	720	720
RMA Manager	7860	7860	7860	7860	7860	7860	7860	7860	7860	7860
Misc expenses	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Subtotal-expenses	19585	28622	19585	28622	19585	28622	19585	28622	19585	28622
Net income	6761	2276	6761	2276	6761	-2276	6761	-2276	6761	2276
Cumulative net income	39143	36867	43628	41352	48113	45837	52598	50322	57083	54806

NPV of net income (8/ 20yrs) 31693 -
NPV of net income (10 20yrs) 28486 3
NPV of net income (16/ 20yrs) 21779 1

Cash Flow of the Range Management Area New GA grazing fees to cover RMA operating expenses
Malpti

	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10
ncome										
Breeding fees			3450	3450	3450	3450	3450	3450	3450	3450
Membership fees 1/		16560	4320	2930	2860	3340	3900	3040	3040	3040
Grazing fees										
50% Natl Grz Fee 2/		9328	8909	9310	8986	8948	8683	8357	8357	8357
GA Grz Fee 3/					11566	11289	10972	10972	10972	10972
ale of bulls					1600	1600	1600	1600	1600	1600
ale of rams					500	500	500	500	500	500
ale of bucks					350	350	350	350	350	350
Wool payments				190	190	190	190	190	190	190
Mohair payments			8	183	183	183	183	183	183	183
Impoundments			4000	4000	4000	4000	4000	4000	4000	4000
Subtotal income	0	25888	20687	20063	33685	33850	33828	32642	32642	32642
Expenses										
Pound master			400	400	400	400	400	400	400	400
Range riders			2000	2000	2000	2000	2000	2000	2000	2000
Wool classer			1725	1725	1725	1725	1725	1725	1725	1725
Herders			2300	2300	2300	2300	2300	2300	2300	2300
Association trip		180	180	180	180	180	180	180	180	180
L vestock feed			2000	2000	2000	2000	2000	2000	2000	2000
bulls		5037		5037		5037		5037		5037
Rams		2000		2000		2000		2000		2000
Bucks		2000		2000		2000		2000		2000
Veterinary services			600	600	600	600	600	600	600	600
Transportation				720	720	720	720	720	720	720
RMA Manager				7860	7860	7860	7860	7860	7860	7860
Misc expenses		1800	1800	1800	1800	1800	1800	1800	1800	1800
Subtotal-expenses	0	11017	11005	28622	19585	28622	19585	28622	19585	28622
Net income	0	14871	9682	-8560	14100	5228	14243	4020	13057	4020
Cumulative net income	0	14871	24552	15993	30092	35320	49563	53583	66640	70660

	Yr 11	Yr 12	Yr 13	Yr 14	Yr 15	Yr 16	Yr 17	Yr 18	Yr 19	Yr 20
me										
reeding fees	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
Membership fees 1/	3040	3040	3040	3040	3040	3040	3040	3040	3040	3040
rz ng fees										
Natl Grz Fee 2/	8357	8357	8357	8357	8357	8357	8357	8357	8357	8357
GA Grz Fee /	10972	10972	10972	10972	10972	10972	10972	10972	10972	10972
a e of bulls	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
a e of rams	500	500	500	500	500	500	500	500	500	500
a e of bucks	350	350	350	350	350	350	350	350	350	350
wool payments	190	190	190	190	190	190	190	190	190	190
Mohair payments	183	183	183	183	183	183	183	183	183	183
mpoundments	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000
ubtotal income	32642	32642	32642	32642	32642	32642	32642	32642	32642	32642
Expenses										
ound master	400	400	400	400	400	400	400	400	400	400
ange riders	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Wool classer	1725	1725	1725	1725	1725	1725	1725	1725	1725	1725
erders	2300	2300	2300	2300	2300	2300	2300	2300	2300	2300
ssocia on rip	180	180	180	180	180	180	180	180	180	180
L vestock feed	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Bu s		5037		5037		5037		5037		5037
Rams		2000		2000		2000		2000		2000
ucks		2000		2000		2000		2000		2000
eterinary services	600	600	600	600	600	600	600	600	600	600
ansportation	720	720	720	720	720	720	720	720	720	720
MA Manager	7860	7860	7860	7860	7860	7860	7860	7860	7860	7860
Mi c expenses	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
ubtotal expenses	19585	28622	19585	28622	19585	28622	19585	28622	19585	28622
Net ncome	13057	4020	13057	4020	13057	4020	13057	4020	13057	4020
Cumu ative net income	83717	87737	100794	104814	117871	121891	134948	138968	152025	156045

NPV o net income (8/ 20yrs) 72987 8
NPV of net income (10 20yrs) 62431 7
NPV f net income (16/ 20yrs) 41717 0

1 ecommended membership fees M60 first year of membership M10/year hereafter
2 at onal graz ng ees M3/head cattle and equines M0 50/head small stock
ecommended GA fees (in addition to rational grazing fee) M1 head le and equines M head small stock

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Financial Viability of the Range Management Area - New GA grazing and recommended membership fees to cover investment amortization and operating expenses (Maloti)

	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10
Income										
Breeding fees			3450	3450	3450	3450	3450	3450	3450	3450
Membership fees 1/		19320	12860	11720	11440	12000	12880	12160	12160	12160
Grazing fees										
0% Natl Grz Fee 2/		9328	8909	9310	8986	8948	8683	8357	8357	8357
GA Grz Fee 3/					18091	17627	17083	17083	17083	17083
Sale of bulls					1600	1600	1600	1600	1600	1600
Sale of rams					500	500	500	500	500	500
Sale of bucks					350	350	350	350	350	350
Wool payments				190	190	190	190	190	190	190
Mohair payments			8	183	183	183	183	183	183	183
Impoundments			4000	4000	4000	4000	4000	4000	4000	4000
Subtotal-income	0	28648	29227	28853	48790	48848	48919	47873	47873	47873
Costs										
Pound master			400	400	400	400	400	400	400	400
Range riders			2000	2000	2000	2000	2000	2000	2000	2000
Wool classer			1725	1725	1725	1725	1725	1725	1725	1725
Herders			2300	2300	2300	2300	2300	2300	2300	2300
Association trip		180	180	180	180	180	180	180	180	180
Livestock feed			2000	2000	2000	2000	2000	2000	2000	2000
Bulls		5037		5037		5037		5037		5037
Rams		2000		2000		2000		2000		2000
Bucks		2000		2000		2000		2000		2000
Veterinary services			600	600	600	600	600	600	600	600
Transportation				720	720	720	720	720	720	720
RMA Manager				7860	7860	7860	7860	7860	7860	7860
Amortization 4/			17520	17520	17520	17520	17520	17520	17520	17520
Misc expenses		1800	1800	1800	1800	1800	1800	1800	1800	1800
Subtotal Costs	0	11017	28525	46142	37105	46142	37105	46142	37105	46142
Net income	0	17631	702	-17290	11685	2706	11814	1731	10768	1731
Cumulative net income	0	14871	15573	1717	9968	12674	24488	26220	36988	38719

	Yr 11	Yr 12	Yr 13	Yr 14	Yr 15	Yr 16	Yr 17	Yr 18	Yr 19	Yr 20
Income										
Breeding fees	3450	3450	3450	3450	3450	3450	3450	3450	3450	3450
Membership fees 1/	12160	12160	12160	12160	12160	12160	12160	12160	12160	12160
Grazing fees										
50% Natl Grz Fee 2/	8357	8357	8357	8357	8357	8357	8357	8357	8357	8357
GA Grz Fee 3/	17083	17083	17083	17083	17083	17083	17083	17083	17083	17083
Sale of bulls	1600	1600	1600	1600	1600	1600	1600	1600	1600	1600
Sale of rams	500	500	500	500	500	500	500	500	500	500
Sale of bucks	350	350	350	350	350	350	350	350	350	350
Wool payments	190	190	190	190	190	190	190	190	190	190
Mohair payments	183	183	183	183	183	183	183	183	183	183
Impoundments	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000
Subtotal-income	47873	47873	47873	47873	47873	47873	47873	47873	47873	47873
Costs										
Pound master	400	400	400	400	400	400	400	400	400	400
Range riders	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Wool classer	1725	1725	1725	1725	1725	1725	1725	1725	1725	1725
Herders	2300	2300	2300	2300	2300	2300	2300	2300	2300	2300
Association trip	180	180	180	180	180	180	180	180	180	180
Livestock feed	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000
Bulls		5037		5037		5037		5037		5037
Rams		2000		2000		2000		2000		2000
Bucks		2000		2000		2000		2000		2000
Veterinary services	600	600	600	600	600	600	600	600	600	600
Transportation	720	720	720	720	720	720	720	720	720	720
RMA Manager	7860	7860	7860	7860	7860	7860	7860	7860	7860	7860
Amortization 4/	17520	17520	17520	17520	17520	17520	17520	17520	17520	17520
Misc expenses	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Subtotal Costs	37105	46142	37105	46142	37105	46142	37105	46142	37105	46142
Net income	10768	1731	10768	1731	10768	1731	10768	1731	10768	1731
Cumulative net income	49488	51219	61988	63719	74487	76219	86987	88719	99487	101218

Total undiscounted benefit (20 yrs)	103978
NPV (8% 20 years)	46605
NPV (0% 20 years)	39492
IRR (16/ 20 years)	25824

1/ Recommended membership fees M70 first year of membership M40/year thereafter
Natl grazing fees M3/head cattle and equines M0.50/head small stock
2/ Recommended GA fees (in addition to national grazing fees) M1.0 head cattle and equines M0.5 head small stock
3/ Begin year 1 and increase monthly to 100 of the value of physical structures

Sensitivity Analyses

NPV of Incremental Net Annual Income per farmer (20 years)

(New GA grazing and membership fees to cover all RMA costs)

A Increased discount rates
10%= 3492 30
12%= 2964 15
16%= 2200 00
20%= 1690 41

B Simultaneous decrease in wool & mohair prices
10% decrease, 8% discount= 4130 65, 16% discount= 2186 51
25% decrease, 8% discount= 4086 31, 16% discount= 2166 26
50% decrease, 8% discount= 4012 42, 16% discount= 2132 52

C Increased National Grazing Fee
30% increase, 8% discount= 4039 26, 16% discount= 2129 82
50% increase, 8% discount= 3960 41, 16% discount= 2084 01
100% increase, 8% discount= 3757 05, 16% discount= 1966 05

ANNEX G

4 Social Soundness Analysis[1]

A Introduction Lesotho is a small mountainous country with 3,035,000 ha of land of which 70% is used for livestock grazing The land is the property of the nation and the King and is allocated to individuals by Chiefs Rangelands are communally used and the Chieftainships have management responsibility Over time since the Basotho first grazed their animals, there have been large increases in livestock numbers grazing Lesotho s rangelands and increases in the number of people who own livestock (Weaver, 1986) The rangelands are being grazed by over 1,000,000 Animal Units The estimated carrying capacity is 330,000 AUs Due to extensive overgrazing, the rangelands are no longer highly productive Soil erosion, decline in forage production and changes in vegetative and faunal diversity are evident Livestock productivity and quality have declined due to poor nutrition from poor rangeland conditions and weak genetic pools

The RMA programs have been developed to improve rangeland and livestock production through better management practices To accomplish this it essential to understand people s priorities and responses to changes in their traditions To fully comprehend the people that are being dealt with, it is necessary to recognize their cultural differences (when there are more than one tribe present), customs and practices

B Methodology For a ten-day period at the end of January and beginning of February in 1991 a field survey was conducted at three of the existing RMA s (Sehlabethebe, Ha Moshebi & Ramatseliso and Pelaneng/Bokong) A questionnaire was administered to 55 persons, including Chiefs, Grazing Association Officers, Grazing Association members, people residing within the RMA who were not GA members, herdboys and outsiders The numbers in each category are shown in Table 1 A summary of the questions asked in the survey is presented as Attachment A to this analysis

Table 1 Description of Respondents to RMA Survey January/February 1991

	Chief	GA Officers	GA Members	Herd-boys	Herd-Members	Non-siders	Out-Total
Sehlabathebe							
male	1	2	5	2	1	1	12
female	0	0	5	0	1	0	6
Rama s Gate							
male	2	4	4	2	0	1	13
female	0	1	1	0	0	0	2
Pelaneng							
male	1	2	5	4	2	2	16
female	1	0	4	0	1	0	6
Total							
male	4	8	14	8	3	4	41
female	1	1	10	0	2	0	14
	5	9	24	8	5	4	55

[1] See also Annex E 8 **Gender Considerations**

Questionnaires were administered, using an interpretor, in a variety of locations in or near houses of RMA members and nonmembers in the villages, near cattleposts on the rangelands, inside the pickup if raining, in or near a general store or eating place, at RMA headquarters On rare occasions more than one person at a time, but no more than three, was interviewed

Other people interviewed were two GOL Range Management Division (RMS) staff, two RMA Managers, three LAPIS Project technicians, an FAO Wool and Mohair Specialist, an Agricultual Economist from Swedeforest, and two Lesotho Highlands Development Authority (LHDA) personnel

C Descriptions of Three of the Existing RMA s Three existing RMA s were reviewed Mokhotlong, the fourth RMA has been identified but not yet organized As a result, insufficient data exist to characterize it Descriptions of the others follow

1 **Sehlabethebe RMA**, located in the southeast part of Lesotho in the Qacha s Nek District, began operations in late 1982 The Principal Chief of the district is Theko Makhoala There is an Area Chief and four Headmen The estimated population and number of households (1988) are 3700 and 615, respectively There are 11 villages and 33 village representatives (three from each village) with a total of 279 members in the Grazing Association (GA) The RMA is 33,000 ha with 20,035 ha of cattlepost grazing and 10,685 ha of winter grazing area There are about 19,914 head of livestock (1,661 cattle, 14,603 sheep, 2,884 goats, 526 horses, 239 donkeys, and one mule)

2 **Ramatseliso s (Rama s) Gate RMA** was officially designated on October 18, 1986 and lies in Qacha s Nek District The Principal Chief of the area (Ratsoleli and Mashai) is Morena Makotoko Theko There are two Area Chiefs and seven Headmen The estimated population and number of households in 1987 were 3309 and 517, respectively The RMA covers 10,000 ha with 8,400 ha total grazeable area There are about 11,258 head of livestock (1,597 cattle, 7,181 sheep, 1,781 goats, 391 horses and 308 donkeys) The GA, with 317 members, has 27 Representatives (including Chiefs and Headmen) from ten villages

3 **Pelaneng RMA**, registered September, 1990, is located in the Leribe District and falls under the jurisdiction of the Principal Chief of Leribe, Morena Bolokoe Letsie The entire area lies within Phase IA of the Lesotho Highlands Water Project There are four Area Chiefs (one *de facto* and three *de jure*) The area has 17 major villages with an estimated population and number of households of 5548 and 1034, respectively The RMA has 36,500 ha with cattlepost and village/winter grazing areas of 12,201 and 19,500 ha, respectively There are 29,054 head of livestock (3,562 cattle, 640 calves, 13,888 sheep, 9,146 goats, 711 horses, 57 mules, and 1,050 donkeys) The GA has 57 village representatives, including 17 Chiefs and Headmen Total membership is 558

D Characteristics of Rural Households Based on several studies of mountain areas, including RMA's, some important characteristics can be established Lawry (1986) described several types of rural households

- The "beginning family' has usually not received land allocation for farming The husband is generally at the mines earning money to invest in livestock The wife will work for others if able

- The "maturing household has been allocated land which the wife farms under the husband s direction even though the husband will

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still be working in the mines The wife will earn petty cash in other ways such as joining a beer/credit association and food-for-work programs She will be responsible for the care of her children, farm and home

- In the "senior family" the husband is no longer working in the mines but is now managing his family resources In some cases, these men are injured or disabled in some way and are not very good at farming Others do make farming profitable and use their off-farm wages to invest in their farms

- "Women heads of household" are widows, divorcees or deserted women These women are often participants in food-for-work programs and in village committees

- The "professional farmers" are men who never worked in the mines or disabled men who are frequently the poorest villagers Others started with enough holdings to make a living and continued with some success

In Lawry's study of Sehlabethebe several factors were evident Male-headed households, regardless of age of the male, were more apt to own cattle, sheep and goats in larger numbers than female-headed households Male-headed households increased the average size of their livestock holdings and livestock ownership as the male increased in age Resident males usually have larger livestock operations than households with absentee males As family size increases so do average cattle holdings (Lawry, 1986)

E <u>Community Organizational Structures</u> The 1991 RMA survey respondents reported a number of types of community organizations found in the villages in the RMA s Twenty-five mentioned the Burial Association, 21, church groups, 18, Credit Union, 14, Village Water Supply, 13, Wool and Mohair Association, 12, Village Health Association, 8, Agricultural and Communal Garden Committees, 6, handicraft organizations, 3, Village Development Committee, 2, Land Allocation Committee, and 2, Nursery Association It is clear that Basotho are accustomed to participating in community groups Thus, forming an association of mutual interest (and gain) to manage rangelands does not go against any cultural barriers to collaborating in organizations

F <u>Economic and Social Importance of Livestock</u> Livestock are of great economic and social importance to the Basotho Cattle are important for use as draft power, dung, milk and meat They are a source of both non-cash and cash income households A sample survey of over half the households in the community 380/615) conducted at Sehlabethebe in 1985 showed that respondents primary reasons for owning cattle were draft power (44 2%), milk (34 9%) and sale (10 8%) (Lawry, 1988)

Lawry also found that small stock, such as sheep and goats, are a source of meat, milk and cash income from the sale of wool and mohair When asked their primary reason for owning sheep 49 2 per cent of Sehlabethebe residents said for wool production versus 23 per cent for meat and 20 per cent for cash sales This same survey showed that 20 8 per cent of livestock owners (16 1 per cent of total households) said that livestock provided the principal source of cash income, 24 6 per cent (18 9 per cent of total households) said that livestock provided some income, and 54 6 per cent (42 1 per cent of total households) said livestock provided no cash income (op cit)

Ownership of livestock is a symbol of status, wealth and authority Lawry s Sehlabathebe study showed that, for many livestock-owning households, the principle source of income is not from livestock production Livestock

production for most households is for subsistence production which is characterized by low input costs and low productivity People put their labor and capital into labor migration The principal source of income is remittances from those working in South Africa or elsewhere Lawry s survey also found that the primary reason male-headed households which receive miner s remittances keep cattle is not for draft power Those households with mine workers are more able to get their food requirements through cash purchases, while those households less financially secure relied more on the use of draft animals in order to plant crops (op cit)

Lawry found differences in livestock ownership by age and sex of household heads Those households headed by younger male heads are less likely to own cattle and sheep than households headed by older males, and younger households have smaller holdings Average size of female holdings at all ages tends to be smaller than those of males Over all age classes, average female holdings remain the same while average holdings for males increase with age of the male (op cit)

The importance of livestock to household cash income varies depending on heads-of-household For example, Lawry s Sehlabethebe survey indicated that livestock was the primary source of income for male-headed households with no mine workers, and those headed by resident males with at least one mine worker [2] His study also compared the importance to household income of miners cash remittances vs livestock, and related that to membership in the GA About three-quarters of those who were receiving cash income from livestock (primary or secondary cash) in 1984 were members of the GA On the other hand, less than one-half of livestock owners who were getting non-cash income from livestock were members(Lawry,1988)

In the same study, Lawry categorized female-headed households as those headed by women who are either widowed, divorced or unmarried He goes on to note that "female headed households are not the same thing as households *managed* by women in the absence of working males " Female-headed households with a mine worker cite milk as the primary reason for keeping cattle, followed by draft power Female-headed households without a mine worker most often indicated sale" as the primary reason for keeping cattle These households are more likely to sell livestock for cash probably, because of a lack of other cash income (op cit)

Lawry found that the primary reasons male-headed households without a mine worker kept sheep were (1) wool production, (2) sale, and (3) meat for home food needs Those households also counted the sale of sheep as more important than did male-headed households with mine workers The sale of sheep is a much more ready source of needed cash than wool sales, which are seasonal and often involve delays in payment The primary reason that female-headed households kept sheep was for wool production and sale (1986)

In a study on range use in Lesotho by Allen Dobbs, he cited the following social value of livestock to the Basotho Livestock play an important social role when young men pay "*bohali*" or "*lobola*" (bride price), which legalize marriage Large and small stock are also used for ceremonial purposes Animals are slaughtered for consumption at weddings and funerals Horses and donkeys are utilized as transport animals Livestock are socially important when the benefits of ownership are distributed through social institutions such as

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[2] He categorized household heads as (1) male present, no miner, (2) male present, 1+ miner, (3) male absent in mine, (4) female, no miner, and (5) female 1+ miner

"*mafisa*" *Mafisa* is an arrangement by which an animal is loaned by the owner to another person The arrangement has no time limitation The owner gets free herding and return of all his animals including offspring The person to whom the animals are loaned may get all wool and milk, draft power and meat and skins (if any animals die) Other social institutions are plowing and sharecropping arrangements using draft animals (Dobbs, 1985)

G Livestock Use Rights and Labor Allocation The following responses were given in Hennessy s survey of RMAs in 1991, when community members were asked to describe the rights to use of livestock Respondents said that owners of livestock have the rights to the animals They said there are no differences in rights between the different types of households They reported that the owner is usually the oldest male member in the family but can be a female if she is widowed, divorced, deserted or does not have a son old enough to manage the animals Unmarried women have no rights to livestock Males gain rights to livestock as early as 15 years old, but most get livestock rights between the ages of 20 and 29

The 1991 RMA survey found that labor allocated for livestock management is provided by males starting as herdboys at 12 years old or younger, and continuing to old age As described in section 5 0, women rarely have much to do with the physical management of livestock except for milking

H Absentee Ownership Table 2 shows responses to the 1991 survey when RMA residents were asked about what management decisions people who care for stock can make when they are not owners Responses from male and female responses were the same

Table 2 Management Decisions described by Respondents (N=34) to RMA Survey - January/February 1991

Use of Animal	Management Decision Made by Owner	*Mafisa*
Draft	8	20
Dip	7	25
Dose	7	24
Clip	2	29
Slaughter	32	0
Sell	32	0
Cull	21	11

Animals that are out on loan (*mafisa*) are usually those belonging to female-headed households or those with migrant wage earners These animals are loaned to reduce the labor requirements of the household When animals are *mafisa* d, owners are paid a certain fee depending on arrangement If the owner is gone for a long time and his wife can not first contact him by writing, she can make the decision to slaughter, sell or cull However, in many cases, the wife will go to a male relative to request his help in making the final decision (Hennessy, 1991)

Lawry provides additional information about absentee ownership He found that the benefit gained by an absentee owner (usually a miner) will be an increase in status as he accumulates wealth which he can invest in livestock for bride fee or for private ownership Caretakers benefit through increased income which allows better management for their animals and increased respect and status People who have *mafisa* d animals can manage them as their own, however, they have no right to sell the animals Depending on the arrangements made, they are able to use milk, dung and even offspring There can be two types of *mafisa* Smallholders *mafisa* their animals to larger holders, and largeholders loan some of their herds to those with few or no animals For many people who lack herding

resources this enables them to gain access to cattle post grazing It also puts livestock into the care of those who can provide better management

I Livestock Grazing According to Lawry, grazing is communal in Lesotho with no individual rights to rangeland There are two different types of grazing lands, village and cattlepost rangelands, which have temporal restrictions on their use Village rangelands are administered by the Chief or village Headman and are lands not used for cultivation or other uses Traditionally, usually during the summer months, certain areas of the village rangelands are closed to grazing in order to protect thatching grass and to provide feed for animals kraaled in the villages during winter It is possible to obtain permission from the Chief or Headmen to use this restricted area to graze milk cows, work animals, oxen and transport animals A cause of much conflict had been when Chiefs and Headmen claim special privileges over these areas in order to graze their own animals (1988)

Dobbs adds that cattlepost areas are under the authority of the Principal Chief A livestock owner must get permission from the Chief to build a cattlepost To maintain rights to the cattlepost a person must own stock and build a shelter The use rights to the shelter, kraals and sheep's resting place outside the kraal are exclusive As long as the owner and his children occupy the cattlepost and have stock, it belongs to them and can only be reallocated by the chief if abandoned (1984) Dobbs also found that there are no limits on the number of livestock an individual has on the rangelands Owners may have summer and winter grazing areas

In winter, cattle are returned to the village There are variable dates as to when animals are taken to cattleposts, but median dates for outward movement and homeward movements of animals are mid-November and early May, respectively (Dobbs, 1985)

Lawry reported that livestock owners rotate their animals between the village grazing areas and the cattle post for a number of reasons Village grazing areas become overgrazed by the end of the winter and livestock cause damage to crops and thus are moved to other areas Sheep and goats can withstand colder winter temperatures than cattle and are easier to move than cattle Sheep and goats can graze on bushy vegetation found in the mountains Therefore, in summer they can be taken to higher areas in the mountains and kraaled at night at the cattle post Although most of the cattle stay in the village during the summer the rotational patterns used probably help the village grazing areas the most (1988)

Each livestock owner makes grazing pattern decisions based on what they have and what they want For example, Lawry states that the arrangements for using cattle posts can be individual ownership, shared ownership, shared use , or mafisa' stock to cattle post owners Individual ownership is found mostly among the largest stockholders, whereas shared owners have much smaller herds and people who practice shared use are those owning only cattle or few sheep or goats The majority of those practicing mafisa are small-stock (sheep and goat) holders who want management on a year round basis Those that keep animals at home are very small holders Thus, grazing patterns and management are determined differently depending on whether one is a largeholder or smallholder, what types of animals one has, and for what use (op cit)

J Grazing Associations Since 1975 several grazing association schemes have been instituted in various parts of the country Many of these had serious problems and most have gone through radical changes in structure, function and membership Some have gone defunct A brief overview of some of these projects follows (Lawry, 1986)

1 Thaba Tseka had a low level of participation by farmers with no commitment or interest in the grazing association The idea for the Association came from the project funded by CIDA and Government of Lesotho Before initial large-scale investment in fencing or special grazing privileges were granted, other group activities should have been initiated which would have required farmer participation to identify interest and commitment in the Grazing Association As the Association membership was drawn from the Wool and Mohair Growers Association, it was exclusively for large-flock holders, which made up a very small membership base Giving exclusive land rights to land which was previously communal led to the downfall of the Association There was also no proper constitution which meant that land claims were not legitimized by any formal land allocation

2 At the Ongeluk s Nek GA farmers joined the GA because livestock that grazed in Association pastures were in better condition than village livestock Members had no interest in the daily management of the Association or concepts of range management and conservation Farmers and the Project had different objectives Farmers keep cattle for milk, draft, fuel, and investment Unless there is a need for quick cash cattle are not usually sold, though older animals may be sold so younger ones can be bought However, the Project wanted farmers to increase beef cattle off-take while decreasing animal numbers to carrying capacity

3 From the very beginning, the Sehlabethebe GA gave strict attention to several important issues, an agreed constitution, registration of the group, and acceptance and support of local authorities and communities For a more detailed description of administrative structures see the Technical Analysis The implementation of an improved grazing rotation was the most important accomplishment However, Chiefs were not able to carry out enforcement so the Association and the Project had to take over this responsibility

K <u>Leadership</u> Good leadership of the grazing association is crucial LAPIS technical assistance personnel and RMA managers reported that members of the executive committee must be motivated to do their jobs well The chairman s position is very important as it can be time-consuming and highly demanding Since executive committee members are not paid it is not always easy to get the best people to fill these positions In some instances, the people who would be ideal to fill these roles are already leaders on other committees and can not afford the time to participate in other things The support and participation, of Principal, area and village Chiefs and Headmen are necessary in order for the acceptance, enforcement and communication to other Association members and non-members to be taken seriously The leadership and quality of guidance by the RMA manager is important, as being respected and listened to by members is necessary The managers are often considered neutral in regard to local politics and in-fighting Their ability to be good mediators in tenure disputes or on-going quarrels between people or villages is helpful in many instances There are also natural leaders, behind the scenes people, who are respected and can be very beneficial

The 1991 survey asked 39 people in the RMA's (RMA members, chiefs and GA officers) about how important it is to have good quality leaders All but one said it was very important The RMA s have had problems with quality of leadership in many of the above mentioned positions and members know the consequences when there is a lack of good leadership (Hennessy)

RMA members were asked in the same survey why some people had become volunteer managers and whether they should be paid for their work Twenty-nine of the 38 respondents said that these people had been elected by the members

Only two remembered any GA discussions about payment to officers, but ten said officers should be paid They felt payment would encourage people to do better work No one said that officers should not be paid Executive committee members said, depending on the issue at hand, the time they spent working was quite variable but worthwhile

L Fees and Fines Out of 40 persons asked in the 1991 RMA survey, all 40 responded that fees are fair, are paid regularly and they could directly experience the benefits from the fees paid Information gathered from interviews with others concerned supported this Fees include initial membership subscription fees, annual membership fees, livestock breeding fees and grazing fees Money is also collected from the sale of grazing association livestock and livestock products The incentive is that people know the money is used to fulfill the objectives of the Association Table 3 shows survey respondents reports of how GA funds are used

The type and levels of fees charged are different in each grazing association, so the amount of income generated varies from one GA to another However, the need to generate income is crucial as it is expensive to take care of all the annual costs such as paying herders and range riders, maintaining structures, building new cattlepost huts and kraals, and buying new improvements Table 3 shows that only Sehlabathebe residents seemed to be aware of personnel costs Infrastructure has not yet been an expense for which RMA residents are responible

In Hennessy s RMA survey she asked nine Grazing Association officers what they thought about collection of fees and fines They all said there are no problems in collecting fees and fines However, her review of records of GA operations kept by the GA treasurer and RMA manager, which present membership accounts, fees and fines and other services paid, showed that people do not pay on time She concluded that the system of collection might work better if changed One suggestion is that one person, who could be trusted and trained in bookkeeping, should go to each member and collect the fees This would alleviate payment delays due to distances and lack of transport

M Problems and Constraints In interviews with the RMA manager, LAPIS technicians, GA officers, and RMA members, Hennessy was told that enforcing

Table 3 Uses of GA Funds reported by RMA members and GA officers (N=33) - RMA Survey, January/February 1991

Use of Funds	RMA Rama s Gate	Pelaneng	Sehlabathebe
Buy bull	8	7	7
Buy fodder, seed	0	2	0
Buy feed	4	0	4
Buy salt	2	0	0
Buy vet medicine	2	0	2
Pay range riders	0	1	4
Pay herdboys	0	0	2
Repay bank loan	2	0	0
Don t know	0	3	5

restrictions on grazing and impounding have been difficult at Sehlabethebe RMA Outsiders continue to trespass and graze their animals on the improved RMA grazing areas, due to overgrazing and crowded conditions in their own areas When Range Riders try to impound the outsider s animals, there are often violent reactions from the outsiders The people living in some of these areas have

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originally come from outside and are related to outsiders and, therefore, are reluctant to impound This has made it harder to get members to be Range Riders Range Riders also face problems when trying to impound members animals The Riders have been known to send out word before they went out to let others know that they would be coming through an area Thus, those who were grazing in restricted areas have had time to avoid impoundment This has had a negative effect on the grazing association at Sehlabethebe as the impoundment fees are one of the major means of producing needed income

When asked at the three RMA s what people (members, nonmembers, chiefs, and GA officers) think about the setting and collecting of fees and fines and if GA s are able to collect from everyone, 40/40 respondents answered that most people pay their fees every year, because if they do not pay their animals are impounded They feel it is a good set up because the money is used for buying improvements This has encouraged people to become members People who have few or no livestock feel the fees charged are fair Hennessy believes their response on the fairness of fees makes sense as long as membership fees and grazing fees are low and charged per animal head

Lawry (1988) showed in his study that Chiefs have also been unable to perform enforcement effectively due to decreased legal and social authority, reluctance, and their partiality As previously mentioned, due to this inability the project and the GA have had to take over enforcement responsibilities in some areas (LAPIS Quarterly Reports)

Communications between people have been problematic For example, Hennesy was told by GA members and the RMA manager that there are some village representatives in the Sehlabethebe RMA who have not been reporting back to the people in their villages about what has gone on in the GA Thus not all the people in the RMA are notified of changes in regulations, events in which they would be interested in participating, or other things about which they they be aware Communication between villages is poor At Sehlabethebe part of this may be due to the presence of two tribes whose relationship is sometimes strained This hinders the development of community unity and involvement which is needed if the Association is to continue to exist and run smoothly

Sheila Woods (1988) reported that jealousies arise between owners who have many animals and those who have few or none Owners have been known to hide the true number of their animals, not wanting their neighbors or government authorities to know This can be a problem when trying to effectively manage the range

Thirty-three of the 40 people Hennessy questioned in her 1991 survey of RMA s about whether people adhere to the regulations and why said that all people paid the fees because, not only have they been ordered to do so, but they do not want to pay impoundment fees (two people said that not everyone pays, while five did not know whether people paid) The acceptance of the RMA s has been positive as the driving force has been the allocation of exclusive grazing rights for summer cattlepost grazing areas This has made livestock holders feel a sense of ownership and control over the rangeland in their area

Enforcing restriction on grazing and impounding have been very difficult for the GA s Outsiders continue to trespass and graze their animals on the improved RMA grazing areas, due to overgrazing and crowded conditions in their own areas When Range Riders try to impound the outsider s animals, there are often violent reactions from the outsiders The people living in some of these areas have originally come from outside and are related to outsiders and, therefore, are reluctant to impound This has made it harder to get members to be Range Riders Range Riders also face problems when trying to impound members animals The Riders have been known to send out word before they went out to

let others know that they would be coming through an area Thus, those who were grazing in restricted areas have had time to avoid impoundment This has had a negative effect on the grazing association as the impoundment fees are one of the major means of producing needed income

When asked about the motivation to pay membership fees and the effect when collection was enforced, as noted above is 13 0 respondents answered that most people pay every year, because if they do not pay their animals were impounded This has encouraged people to become members Poor people feel the fees charged are fair This response makes sense as long as membership fees are low and grazing fees are low and charged per animal head

Chiefs have also been unable to be effective in enforcement due to decreased legal and social authority, reluctance, and their partiality As previously mentioned, due to this inability the project and Grazing Association has had to take over enforcement responsibilities in some areas

There are variations in acceptance among individuals Better operators are more in favor of the RMA than those that are less successful as operators When asked to describe good and bad results in their households and on the rangeland from the RMA, respondents clearly saw mostly benefits Table 4 presents their responses The majority of those people who saw no benefits to the household were from the Pelaneng RMA which has only been operating since 1990

Table 4 Household and Rangeland Benefits according to Respondents (N = 38 Chiefs, GA Officers and RMA Members) - RMA Survey, January/February 1991

Benefits to	Rama's	Gate M	Pelaneng F	Pelaneng M	Sehlabathebe F	Sehlabathebe M	Sehlabathebe F
Household							
Improved animals	5	1	1	4		3	3
More income from sale of animals	6	0	0	2		5	0
More income from wool and mohair	6	0	0	0		6	0
More milk	6	0	0	0		8	3
No benefits	2	2	7	1		0	2
Rangeland							
More grass	10	2	9	4		8	5
Less soil erosion	5	1	3	3		8	0
No benefits	0	0	0	0		0	0

People interviewed at the RMA s say the positive effects on household due to the grazing changes have been higher income as prices for animals have improved The condition of their animals is better and they have better meat and more milk The quality of the wool and mohair has improved Everyone responded that the rangeland has more grass due to better management and exclusion of outsiders

The only specifically negative response was that too few milk cows were allowed to stay in the village area diminishing the amount of sour and fresh milk available for consumption and sale This problem has special impact on women because milk isone of the only benefits from livestock which accrues to women

vested interests somewhere else (outsiders), may have had animals impounded, or may be very small holders who have yet to benefit from the breeding improvement program Others may be too poor to pay GA fees and, because they have no grazing permit, must keep their livestock at home, which involves obtaining feed for the animals

When delineating group grazing areas historical use patterns should be utilized Those people who are displaced and have no satisfactory grazing elsewhere can cause problems such as burning pastures, cutting fences and trespassing These are continuing problems that are affecting the GA s, particularly Sehlabethebe and Rama s Gate The problems of these outsiders must be considered in the future

N Costs of RMA's In addition to financial costs for livestock producers in the development and participation in the Grazing Association, additional costs accrue (Weaver, nd) Management changes force the livestock owner to understand the new system and intensify their management so they can avoid impoundment of their animals and thus additional financial costs Attendance at committee meetings and *pitsos* can be time consuming and require lengthy travel Those with busy schedules can be affected especially as there is no payment for participation There are land costs when grazing areas and croplands are reduced, due to land allocation for an RMA headquarters site and livestock breeding pastures There are various opportunity costs tied to the above mentioned costs, such as the use of time and money

Access to grazing for RMA residents is effectively open to all members of the community due to the low grazing fees If fees increase due to the Grazing Association and/or the National Grazing Fee system, the poorer households will not be able to afford to be members This is one of the social costs of RMA s

There are already social costs to graziers outside the RMA who used to have open access to the area of the RMA There are some ways to minimize social costs to outsiders Some of the outsiders have moved into the RMA s and, as long as they are allocated land by the Chief, they are allowed to join the GA In one RMA, outsiders are allowed to join if they pay GA fees, follow regulations and leave their livestock within the RMA using the winter/summer grazing lands There is not much opportunity for alternative employment in these areas and, therefore, people will continue to invest their money and labor into livestock Opportunity for employment in South Africa is becoming more and more difficult and this will increase the number of people and animals in the mountain areas, which will, in turn, effect management of the GA s

Other costs include those of the Government of Lesotho, which has contributed to the RMA programs in a number of ways From interviews with LAPIS personnel it seems that among government officials who have donated considerable amounts of staff time have been the Ministry of Agriculture, especially the RMD, and the Permanent Secretary The District Livestock and Agricultural Officers have not been as involved There has been good rapport with the Ministry of Interior and Chieftainship Affairs

Government has constructed and maintained new facilities, funded the RMA manager and his transport and helped with extension and education How much the government will help with future RMA s will depend on government budgets and how they prioritize the RMA s

O Benefits of RMA s Since the establishment of the RMA at Sehlabethebe there have been improvements in the rangeland condition and productivity which are seen in the condition of the livestock and, which in turn, have increased price in animals marketed For example, in 1985, one year after the initiation of the

grazing management system in Sehlabethebe, the average offered price for non-RMA oxen was R371 versus RMA oxen at R385 In the last year of the drought, 1986, RMA oxen had a value of 19 4 per cent higher than those from outside In 1987/88 and 1988/99, due to good rains, the price difference was reduced to 14 4 per cent and 9 7 per cent, respectively (Weaver) In periods of stress conditions such as drought, RMA livestock may continue to stay in better condition and bring in high prices whereas the non-RMA animals may respond quicker to both good and bad weather conditions and this will then be reflected in their market price

Benefits mentioned by people from most households types include income from impoundments of animals which provides funds to pay for expenses incurred for improvements As noted in 13 0, when people were asked if they thought the price charged for fees and fines were fair, all said they were and that they would continue to pay However, these fees are quite low, except at Pelaneng

As shown in Table 4, many felt that they were getting better prices for their wool and mohair This, they thought, was due to breeding with improved animals and improved condition of their animals because of better grazing People said the same about their cattle They felt they were getting better prices due to improved animals and better grazing People also thought they could take better advantage of needed medicines and dipping and dosing as it was now easier and nearer for them

P <u>Benefits and Costs of Proposed CNRM</u> An objective of the future CNRM project will be to improve management of natural resources The aim is to restore and improve the rangelands to support sustained livestock levels The purpose of the project is to organize constructive community Grazing Associations These Grazing Associations will manage the rangelands at sustainable carrying capacities for livestock In the existing Grazing Associations, the members have accepted the objectives and feel the goals are reasonable

The proposed Grazing Associations under the CNRM Project will directly benefit mountain communities of approximately 51,300 persons (10,500 households) The area covered by the RMA s will be 360,000 ha Those expected to benefit will be livestock owners and managers Benefits will derive from a) reduced soil erosion and degradation of rangelands, b) improved animals through breeding, veterinary services, and animal nutrition, c) increased offspring survival rate, d) better milk production, e) improved wool and mohair quantity and quality, f) increased opportunities for livestock auctions and animal product marketing and, g) better protection against losses and theft

The project will fund training for 160 males and 100 females which will include executive committee officers, other GA members, herdboys and Ministry of Agriculture's RMD

Spouses and family members of livestock holders will benefit indirectly from higher incomes from improved animals and livestock products There will be more wool and milk and better draft power The GA will plan non-grazing areas to provide thatching grass With the growth of more grass, the number of wild fowl for consumption will increase Herbs and medicinal plants will become more available because of controlled grazing

Interviews with LAPIS technicians indicate that those adversely affected will be the people who will not be allowed to graze inside the RMA area and will be negatively affected by the loss of grazing rights Chiefs' power will be eroded even more by giving people a voice The money the Chief currently receives will decrease The diminution of power and income of chiefs is a phenomenon more widespread than simply in RMA s For example, the support to establishing Development Councils nationwide affects chiefs in the same way As Lesotho moves toward democracy the traditional role and responsibilities of

chiefs has to be rethought in order to make as smooth a transition as possible toward community participation in decision making

Q Recommendations In considering the initiation and future of new RMA s, a look at Sehlabethebe, the oldest RMA to date (started in 1982) should give an idea of what can happen over time Unfortunately, the sociological effects encountered in changing a traditional system were not taken seriously enough when this RMA started Sehlabethebe continues to have problems with leadership, mismanagement of funds, enforcement and impoundment, and two-way communication These factors affect the sustainability of the Association

> **Recommendation No 1** Baseline data should be obtained in the areas where the new RMA s are proposed Data should be collected throughout the establishment period and beyond

Unfortunately, the sociological effects encountered in changing a traditional system were not taken seriously enough when Sehlabathebe RMA started Baseline data, collected before Association start-up, are not available Social studies of the area prior to organizing the RMA could have anticipated sources of potential conflict and planned how to minimize them At Sehlabathebe now, people from all sides are blaming each other for the problems they are facing This is causing serious alienation The lack of community spirit and unity is evident and it makes GA operations difficult, at best The lack may be especially evident at Sehlabethebe because this GA has been in operation much longer than the others At Pelaneng, the newest RMA, there are fewer problems

> **Recommendation No 2** In the future, members must participate and work on all aspects of the Association to ensure their interest Members must take more responsibility for the care and proper operation of their program from the beginning

Many of the tasks in which the GA at Sehlabathebe is now engaged were previously handled by the project without much assistance from the members With the termination of project personnel assistance at the RMA in the past year, the problem of effective and efficient management has been a focal point Some services, such as the use of the vehicles to take people to the clinic and the use of the tractor for field preparation, have ceased since the technical assistance team has pulled out GA members will not pay for fuel or maintenance due to financial constraints This has affected many people, especially those who do not have livestock, but have paid membership fees because of these services Given the constraints on the Government's ability to support all RMA s and the relatively short-term support from donors, the capability of the RMA s to generate enough money to maintain themselves and to offer benefits which will keep members interested, is essential

Maintaining high membership levels is also vital Membership numbers at Sehlabathebe have fluctuated over the eight years from a low of 201 to a high of 338 This year, there are 279 members Benefits, either economic or subsistence, must be important to the whole community or else participation will decline This could lead to the downfall of the RMA due to disinterest Furthermore, in order to motivate participation, yields of the Association s efforts must be shared with all the members so they see what they are getting from the new system Management efforts must recognize and deal with the needs of all groups of people to avoid non-participation or competition between groups

> **Recommendation No 3** The approach of future projects should be to put the responsibility and control for managing grazing areas on the livestock owners

The community needs to play a significant role in the management of its own resources Unless the community realizes how important their objectives are to their own well being and interests, the sustainability of the Association will be drastically reduced The members of the community must determine the management objectives and clearly understand them so they know they have imposed upon themselves, not others (government or donors), the requirements needed to obtain the goals they have set The inabilities to impound or to manage GA funds has a strong negative effect on solvency

Recommendation No 4 The rangeland improvement costs should be paid by those who derive benefits from the use of the resource

In Hennessy's 1991 survey at the three RMA's, people said they have had benefits from the GA and would not want to return to the "old" ways Table 5 shows the responses to her question whether there is a need for RMA s

However, the financial costs of the GA are not comprehended Sustainability of the RMA s is closely related to continued membership and payment of fees and fines If membership numbers decline, this can have a negative effect on the economic viability of the Grazing Association Improving ways of collecting money owed is an important issue to be faced and solved Grazing Associations have multiple costs, and with the current levels of income paying any additional costs will not be possible GA s must operate in an economically sound manner, in order to pay for the costs required

Table 5 Responses About Whether There Is A Need for RMA s reported by Chiefs, GA Officers, Non-Members and Outsiders (N=22), RMA Survey January-February 1991

	Yes	No	Don t Know	No Comment
Chiefs (N=5)	5	0	0	0
GA Officers (N=8)	8	0	0	0
Non-RMA Members (N=5)	3	1	0	1
Outsiders (N=4)	2	1	1	0
Total	18	2	1	1

Recommendation No 5 Particular attention should be paid to improving communication, both in the design and implementation of new RMA s

In the RMA's, which are located in rough mountain environments, there are many limitations on communication and it is therefore crucial to make any contact as effective as possible There must be a flow of communication and understanding in two directions Discussion and agreement must be conducted between all parties involved RMA s members, nonmembers, outsiders, herdboys, project personnel and the RMA manager should understand and either agree on or know the objectives, rules and regulations, actions and activities of the Association, such as the breeding program and auction sales Management changes force the livestock owner to understand the new system and intensify their management so they can avoid impoundment of their animals and thus additional financial costs

Table 6 Community Responses to "Are *Pitsos* Helpful" (n=43) asked in RMA Survey, January-February 1991

	Yes	No	Don t Know	No Comment
GA Officers (N=8)	4	0	0	4
RMA Members (N=25)	23	0	2	0
Herdboys (N=8)	4	0	4	0
Outsiders (N=2)[3]	2	0	0	0
Total	33	0	6	4

Table 6 shows community response when Hennessy asked whether *pitsos* are helpful Attendance at committee meetings and *pitsos* can be time consuming and require lengthy travel Those with busy schedules can be affected especially as there is no payment for participation At *pitsos* the benefits the people are receiving and the costs of the benefits should be presented The problems which effect the Association and other communities ought to be openly discussed *Pitsos* held for women, which would increase their awareness of the GA and how women can be beneficial to the GA and visa versa, would open up to women a better understanding of the importance of their link with the GA

Currently, members of the association meet at least once a month The executive committee also meets at least once a month *Pitsos* are called by the Chiefs in the villages and are used to inform people about current events that are happening in the GA or elsewhere This is the time for members to voice their opinions about GA policies, thus allowing feedback and exchange of ideas and feelings Many people recently interviewed said the *pitsos* were helpful, as they provided them a way to gain information that was useful and interesting

Recommendation No 6 In organizing communities into Grazing Associations, technicians need to inculcate the recognition that rangelands are a limited resource in order for the community to accept the need for conservation efforts which will be of long term benefit

In Hennessy s 1991 survey at the three RMA's, the majority of the people felt there was a need for the GA They wanted the GA to continue and felt it might last "forever" People said they have had benefits from the GA and would not want to return to the "old" ways However, there is no concept of ever needing to reduce animal numbers Perhaps for "others", but not for the individual respondent People said they thought that the exclusion of outsiders was enough to keep animal numbers down The idea that not everyone will be able to raise livestock is a very non-traditional concept which none can envision Reduction of animal numbers has not been dealt with in the existing RMA s and many people who do not sense a crisis situation will not agree to a reduction This message must be reiterated by the technical assistance and government technicians, then incorporated into the training GA members give one another

[3] Although outsiders were not asked specifically whether *pitsos* were helpful, two of them volunteered that they wanted to attend the RMA *pitsos* because they had heard that they gave useful information

Recommendation No 7 The project needs to communicate to outsiders the availability of resources outside the RMA s as alternatives to the grazing land to which they no longer have access

Those people negatively affected by the project can seek assistance from other programs and projects which are helping people intensify their livestock management and/or other agricultural practices

- The Lesotho Agricultural Policy Support Program has set aside funding which is to be used for this purpose
- STABEX funds are used for livestock improvement and marketing of Angora goats
- CIDA has a Dairy Project which financially supports the improvement of the dairy industry
- The Matalile Project funded by the FRG is assisting intensive livestock production in local areas and has started the Basic Animal Health Service
- The Mphaki Project supported by the EEC is improving local livestock facilities and introducing improved rangeland and livestock management techniques
- The ODA is providing improvement and maintenance of woolshed and livestock improvement centers
- The poultry industry is being assisted by FAO/FGR with the establishment of pullet rearing houses
- Possible fodder crop/browse species which can be used to feed livestock is being researched by IFAD and USAID/LAPIS
- The ADB is working on a Master Plan development for the pig and poultry industries
- VDC development and training is being assisted by the World Bank s Land Conservation and Development Project

These projects and programs can be contacted for ideas and possible assistance

Recommendation No 8 The CNRM approach should focus on grass-roots level training and extension to develop within the community the ability necessary to sustain a range management program

Experience in the RMA's which have pointed out some principles which have helped the success and sustainability of the Association Project personnel feel that training and extension will be extremely important in the next project Leadership training, for example, would be helpful Members of the executive committee should receive training They, in turn, could train people in villages This would aid in motivating people to take on more responsibility The business aspects of the RMA's should be highlighted Training of herdboys and owners in practical matters dealing with livestock should be a part of any new GA and should continue over the long term

Extension, for example, should focus on benefits the members are receiving by informing people of cattle weights and prices, calving rates, and vegetation improvements A video in Sesotho could be made and presented to people inside and outside the RMA This means of extension would be very meaningful to people

who would not otherwise have the opportunity to learn about the GA Farmers who are successfully using improved livestock and grazing practices ought to be utilized to communicate to others the potentials and problems they might encounter People from the area could be used to extend ideas and use their knowledge to improve the system Such people can often relate to others in the same area better than people who are from outside Involving people in decision-making can help foster the feeling of "for the people, by the people"

Recommendation No 9 The RMA manager should be given a significant "package" of benefits

The RMA manager is a very important element to the success of the GA s and being able to keep high quality personnel depends on how well they are paid Their jobs are demanding with long hours and harsh living conditions If they do not get some benefits, it will be increasingly difficult to maintain good people Training prospective managers will be necessary to support future RMA s

RMA staffing and transport require funding Both could become constraints in initiating new RMA's At Sehlabethebe and Rama's Gate, since the project personnel have moved out, the RMA managers have already been constrained by the lack of necessary funds to run vehicles and tractors they had previously used The government can play a supportive role, which should take into consideration recurrent costs of the RMA's when donors-backing ends Levels of support to current government-sponsored programs such as extensive education and extension and training programs for GA livestock owners and committee members will have to be reduced

R <u>Conclusions</u> The likelihood of project elements or approaches being adopted in other areas of Lesotho depends on the success of the existing RMA s Each area will have to be tailored to its individual situation The area will need to be evaluated on a sociological and technical basis and the structure adjusted to that area The needs and views of people change depending on the area Their interests and needs will determine the elements, approaches and sustainability of a grazing association

The development and management of the GA's must be done with the acceptance and participation of RMA residents Residents must be involved in all decision-making aspects Project personnel and RMD staff should be advisors and assist in the development and management, but they should not take a lead role

Enforcement of rules and regulations and impoundment of animals must be effective and efficient

Collection of fees must be handled so as to minimize inconveniences The importance of collecting fees and fines as a means for the GA to continue to increase benefits for its members, should be well understood

Good communications between all members, project personnel, RMD staff, executive committee and villages are essential to insure a smooth operation and to minimize misunderstandings and disputes

The relevance of animal numbers in relation to acheiving the objective of improving the rangeland must finally be recognized by livestock owners If the effects of animal numbers are not dealt with, the GA s, in the long term, will likely fail

Problems between outsiders and existing GA s are common The problems faced by outsiders must be addressed concurrently with GA development to ensure benefits for all area residents

Training of herdboys and owners in practical matters dealing with livestock should be a part of any new GA and should continue over the long term

Extension of new ideas, and concepts to people inside and outside the RMA's is necessary to foster changes in views and behavior related to livestock production

In short, before any new GA s become operational, thorough community organization work must be carried out in order to guarantee the highest level of community motivation and participation

ANNEX E 5 **Social Soundness Analysis** Attachment A

CNRM SOCIAL SOUNDNESS QUESTIONNAIRE

Questions asked to CHIEF

1 What types of groups can be found in your area? (church groups, clans, etc)?

2 Current Grazing Practices in non-GA s

a What are the types of rights people have to use land in your area? Which do women have?

b What are the types of rights to livestock which people have in your area? Do men have different rights than women? What about heads of households? Does age make a difference in what rights someone has?

c What types of rights does the grazing association have over land use? Over livestock?

3 Current Grazing Associations

a What do you see as the role of the RMA manager? How about officers of the grazing association? Have these people been good leaders? Does their quality of leadership matter?

b What do you think about the setting and collecting of fees and fines by the GA's? Are they able to collect from everyone?

c Have you seen any problems since the RMA was established with enforcing exclusive use of the RMA by members, or enforcing fines, or anything?

d What kinds of decisions does the person who cares for livestock have to make about their management (selling, culling, breeding, etc) When the person caring for the stock is not the stock owner, who makes these decisions? What if the owner is gone for a long time?

e What sort of comments have you heard from people in your area about the RMA and the association? Do people think there is really a need for such an association? Have people in general accepted the association and the RMA?

f Do the herdboys understand and abide by all the RMA/GA rules? Why do they follow the rules? Why don't they follow others? What would you suggest could be done to encourage them to participate better?

g In the future, do you think people will remain interested in the association and the RMA? Will they continue to pay fees? If not, what could be done to encourage continued participation?

4 Evaluation of current GA
a Have you seen any good results in the households in your area because of the RMA and the Grazing Association? What?

b Have you seen bad results from the RMA and/or the association? What are those?

Questions asked to CHIEF - continued

c What about good results in the land itself as a result of the RMA and the GA? Have you seen any? What? rangelands?

d Have you seen negative effects on the rangeland due to the RMA or association? What?

5 AID is interested in helping other Basotho chiefs establish RMAs and grazing associations in their areas

a Do you agree with the plan of establishing community grazing associations to manage rangelands at sustainable carrying capacities for livestock?

b How long do you think the RMA s and Grazing Associations will last? Do you think they will continue to be needed? Do you think the way the RMA in your area was formed would be better if it were changed? How?

Questions asked to Grazing Association Officials

1 a What types of groups can be found in your area? (church groups, clans, etc)?

b Are women members of these groups? Are there any women l aders of the groups? If not, why?

2 Current Grazing Practices in non-GA's

a What are the types of rights people have to use land in y ur area? Which do women have?

b What are the types of rights to livestock which people hav in your area? Do men have different rights than women? What about heads of households? Does age make a difference in what rights someor has?

c What types of rights does the grazing association have over land use? Over livestock?

3 Current Grazing Associations

a How many people are members of the grazing association this year? How many are women?

b What do you think owners of lots of livestock want from the Grazing Association? What about those who don t own very many livestock? What about those who don't have any livestock--do they want anything from the Grazing Association? Do women want the same thing as men?

c What do you see as the role of the RMA manager? Has this person been a good leader? Does the quality of leadership matter?

d What do you think about the setting and collecting of fees and fines by the Association? Are you able to collect from everyone?

e How does the Association use the funds they collect? Who decided to use them like that?

f Have all the members benefited from these funds? For example, have they all bred their animals to the improved stock you purchased? If not, why?

Questions asked to Grazing Association Officials - continued

g Has the association had problems since the RMA was established with enforcing restriction of grazing in the RMA to members only? How about fines - do they cause problems? How? Other problems with enforcement?

h Do the herdboys understand and abide by all the RMA rules? Why do they follow the rules? Why don't they follow others? What would you suggest could be done to encourage them to participate better?

i What sort of comments have you heard from people in your area about the RMA and the association? Do people think there is really a need for such an association? Have people in general accepted the association and the RMA?

j In the future, do you think people will remain interested in the association and the RMA? Will they continue to pay fees? If not, what could be done to encourage continued participation?

4 Communication, Participation and Motivation

a How often do members of the association meet? How do they find out when and where meetings are to be held? When was the last meeting? How many people came?

b What is the best way to get all the members involved? Does everyone get a chance to give their ideas? Does everyone have good ideas?

c Are there people who refuse to participate? How are they different from those who do participate? Is there any way to include those who don t? What are the consequences if they never participate?

d Do people in your area follow the association rules? If so, why? If not, why?

e Why did you become a volunteer GA officer?

(1) How much of your time does being a GA officer take?

(2) Is it worthwhile to you to do this work?

(3) Has the GA ever considered paying its officers?

f What are the membership and grazing fees for the GA?

(1) Do people pay their fees? Every year?

(2) What do you do if people don t pay their fees? Does this encourage or discourage membership?

- - -

(Instructions to Interviewer if you determine that either the membership fee or the grazing fee structure is regressive, ask these questions)

Do the poorer households feel this fee structure is fair? What do you think of the structure--should it be changed?

- - -

5 Evaluation of current GA

a Have you seen any good results in the households in your area because of the RMA and the Grazing Association? What?

Questions asked to Grazing Association Officials - continued

b Have you seen bad results from the RMA and/or the association? What are those?

c What about good results in the land itself as a result of the RMA and the GA? Have you seen any? What? rangelands?

d Have you seen negative effects on the rangeland due to the RMA or association? What?

6 AID is interested in helping other communities form RMAs and grazing associations

a Do you think it's a good idea to establish community grazing association to manage rangelands at sustainable carrying capacities for livestock?

b How long do you think the RMA s and Grazing Associations will last? Do you think they will continue to be needed? Do you think the way the RMA in your area was formed would be better if it were changed? How?

Questions asked of RMA Members

1 Type of Member No No of Livestock

☐ ___ Woman Largeholder (____ ____ ____)
☐ ___ Woman Smallholder (____ ____ ____)
☐ ___ Man Largeholder (____ ____ ____)
☐ ___ Man Small holder (____ ____ ____)
☐ ___ Herdboy (____ ____ ____)

2 a What types of groups can be found in your area? (church groups, clans, etc)?

b Are women members of these groups? Are there any women leaders of the groups? If not, why?

3 Has the way you manage your animals changed since you joined the grazing association? What did you used to do?

4 a Did you sell any livestock last year? How many?

b Did you slaughter any yourself? How many?

c Why do you keep livestock?
Smallholder Largeholder

5 a What are the types of rights to livestock which people have in your area? Do men have different rights than women? What about heads of households? Does age make a difference in what rights someone has?

b What types of rights does the grazing association have over land use? Over livestock?

c What kinds of decisions does the person who cares for livestock have to make about their management (selling, culling, breeding, etc)? When the person caring for the stock is not the stock owner, who makes these decisions? What if the owner is gone for a long time?

d Are you the owner or caretaker for an owner of livestock?
☐ Owner ☐ Caretaker

Questions asked to RMA Members - continued

e Is the owner living here now or absent for a long time?
☐ Present ☐ Absent ☐ DK or Not applic

f If the respondent is not owner, which decisions can you make about the livestock on your own? ☐ Sell ☐ Slaughter ☐ Other-specify

6 a How often does the grazing association meet? When was the last meeting you attended? How did you find out when and where meetings are to be held?

b Are the meetings interesting or useful to you? In what way?

c Are there people who refuse to participate in the association? How are they different from the ones who do participate? Is there any way to include those who don t? What are the consequences if they never participate?

d Do people in your area follow the association rules? If so, why? If not, why?

e What do you see as the role of the RMA manager? Of the grazing association officers? Have these people been good leaders? Does the quality of leadership matter?

f Has the GA ever considered paying the manager or the Association officers?

g What do you think about how the Association sets up and collects fees and fines? Is the association able to collect from everyone?

h How does the Association use the funds they collect? Who decided to use them like that?

i Have you benefited from these funds? For example, have you bred your animals to the improved stock purchased by the Association? If not, why?
Smallholder Largeholder

j Has the association had problems since the RMA was established with enforcing restriction of grazing in the RMA to members only? How about fines - do they cause problems? How? Other problems with enforcement?

k Do the herdboys understand and abide by all the RMA rules? Why do they follow the rules? Why don't they follow others? What would you suggest could be done to encourage them to participate better?

7 Evaluation of current GA
a Have you experienced any good results in your household because of the RMA and the Grazing Association? What?
Smallholder Largeholder

b Have you had bad results in your household from the RMA and/or the association? What are those?
Smallholder Largeholder

c What about good results in the land itself as a result of the RMA and the GA? Have you seen any? What?

d Have you seen negative effects on the rangeland due to the RMA or association? What?

(Interviewer comments regarding her estimate of the reliability of these responses)

Questions asked of Herdboys

1 Has the way you manage your animals changed since you joined the grazing association? What did you used to do?

2 Are there rules for the GA which you must follow? Many? What do you think of the rules - good? bad? Are the rules complicated? Could they make easier rules?

3 Do you have a grazing plan to follow? Do you think it is good? Is it hard to follow? Is it too complicated?

4 Are you treated better now than before the GA's started? Do you like herding better now than before?

5 Are you a relative of the owner of the animals you herd?

6 What do the owners pay you? Do they pay you in animals/year, cash or other?

7 What decisions can you make about livestock on your own? What decisions are made by owners?

8 a How often does the grazing association meet? When was the last meeting you attended? How did you find out when and where meetings are to be held?

b Are the meetings interesting or useful to you? In what way?c Do people in your area follow the association rules? If so, why? If not, why?

9 Evaluation of current GA

a Have you experienced any good results in your household because of the RMA and the Grazing Association? What?
Smallholder Largeholder

b Have you had bad results in your household from the RMA and/or the association? What are those?
Smallholder Largeholder

c What about good results in the land itself as a result of the RMA and the GA? Have you seen any? What?

d Have you seen negative effects on the rangeland due to the RMA or association? What?

Questions asked of Non-RMA Members

No		No of Livestock
☐ ___	Woman	(____ ____ ____)
		(____ ____ ____)
☐ ___	Man	(____ ____ ____)

1 What types of groups can be found in your area? (church groups, clans, etc)?

2 a Are you the owner or caretaker for an owner of livestock? ☐ Owner ☐ Caretaker

b Is the owner living here now or absent for a long time?
☐ Present ☐ Absent ☐ DK or Not applic

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Questions asked of Non-RMA Members

c If the respondent is not owner, which decisions can you make about the livestock on your own? ☐ Sell ☐ Slaughter
☐ Other-specify

d Has the way you manage your animals changed the RMA was established? What did you used to do? What do you do now?

e Did you sell any livestock last year? How many?

f Did you slaughter any yourself? How many?

g Why do you keep livestock?
Smallholder Largeholder

3 a What types of rights does the grazing association have over land use? Over livestock?

b Do people in your area follow the association rules? If so, why? If not, why?

c What do you think about how the Association sets up and collects fees and fines?

d Have you bred your animals to the improved stock purchased by the Association? If not, why?
Smallholder Largeholder

e Why did you decide not to become a member of the association? Would you become a member of something changed--what?

4 Evaluation of current GA

a Have you experienced any good results in your household because of the RMA and the Grazing Association? What?
Smallholder Largeholder

b Have you had bad results in your household from the RMA and/or the association? What are those?
Smallholder Largeholder

c What about good results in the land itself as a result of the RMA and the GA? Have you seen any? What?

d Have you seen negative effects on the rangeland due to the RMA or association? What?

(Interviewer comments regarding her estimate of the reliability of these responses)

Questions asked of Outsiders

No		No of Livestock
☐ ___	Woman	(____ ____ ____)
		(____ ____ ____)
☐ ___	Man	(____ ____ ____)

1 a Did you sell any livestock last year? How many?

Questions asked of Outsiders

b Did you slaughter any yourself? How many?

c Why do you keep livestock?
Smallholder Largeholder

2 What are the types of rights to livestock which people have in your area? Do men have different rights than women? What about heads of households? Does age make a difference in what rights someone has?

3 What kinds of decisions does the person who cares for livestock have to make about their management (selling, culling, breeding, etc)? When the person caring for the stock is not the stock owner, who makes these decisions? What if the owner is gone for a long time?

4 Do you manage your livestock differently from how members of the Grazing Association in the RMA manage theirs? How?

5 Are you aware that the adjacent RMA restricts grazing in the RMA to members only? Do you know anyone who has been fined for grazing in the RMA? What do you think about the grazing restrictions?

6 Do the herdboys understand and abide by all the RMA rules? Why do they follow the rules? Why don't they follow others?

7 a Do you think your household would benefit if your community formed an RMA and a grazing association? Would you join the Grazing Association? Why/why not?
Smallholder. Largeholder

b What bad results would occur in your household if there was an RMA and grazing association in your community?
Smallholder Largeholder

c Do you think the rangeland itself would benefit from an RMA in your area? What kinds of good results might occur? Have you seen any good results in the adjacent RMA? What?

d Have you seen negative effects on your rangeland due to the adjacent RMA or association? What?

e What about negative effects on the RMA's rangeland--have you seen any bad results from the way their Grazing Association manages grazing in its RMA? What?

8 AID is interested in helping other Basotho chiefs establish RMAs and grazing associations in their areas

a Do you agree with the plan of establishing community grazing associations to manage rangelands at sustainable carrying capacities for livestock?

b How long do you think the RMA's and Grazing Associations will last? Do you think they will continue to be needed? Do you think the way the RMA in your area was formed would be better if it were changed? How?

(Interviewer comments regarding her estimate of the reliability of these responses)

ANNEX E 5 **Social Soundness Analysis** **Attachment B**

REFERENCE MATERIALS

References Cited

Dobb, Allen J 1985 The organization of range use in Lesotho, Southern Africa A review of attempted modifications and case study

Hennessy, Gillian (Unpublished) Field Survey conducted at three RMA S, January/February, 1991 - Pelaneng, Rama s Gate, and Sehlabethebe

Lawry, Steven W 1988 Private herds and common land Issues in management of communal grazing land in Lesotho, Southern Africa

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Weaver, Chris L Management of communal natural resources through community based grazing associations (no date)

Weaver, Chris L 1986 Planning for grazing associations in Lesotho

Woods, Sheila K 1988 Report on the effects of Sesotho culture, traditions and attitudes on agricultural development in Lesotho

Other reference material

Gay, Judith S 1982 Women and development in Lesotho

LAPIS Project/Ministry of Agriculture Quarterly Reports

The Lesotho National Livestock Task Force 1990 National livestock policy implementation plan

USAID/Lesotho 1980 Land Conservation and Range Development Project Paper

USAID/Lesotho 1990 Community Natural Resource Management Project Identification Document

ANNEX G

5 Gender Considerations

This analysis was completed as part of the Social Soundness Analysis, with review by the Women in Development Coordinator for USAID/Lesotho It is divided into two sections Women in Development, and Other Gender Considerations The latter section considers the particular case of Basotho herdboys

A Women in Development Basotho women are known to be active in community groups and hold leadership positions In existing RMA s there are women who are acting Chiefs and on the executive committee Although they are not physically involved in the care and management of livestock, they do interact in livestock matters Often women (female-headed households or women with husbands away for extended periods of time) will find themselves making decisions about livestock Due to their own lack of knowledge and experience they are obliged to ask male advice on livestock matters The opportunity for women to be trained in livestock affairs in which they do play a role would be helpful

Studies[1] have shown that female-headed households keep cattle for three important needs-milk, draft power and sale while sheep are kept for wool production and sale Extended knowledge of livestock management and products would benefit women in their decision-making

Female-headed households, due to the labor requirement of caring for livestock, will mafisa their animals Making good arrangements and insuring that agreements are honored is essential for women However, this is not always easy

Women do not attend *pitsos*, which conduct business about livestockmatters or GA activities, in large numbers *Pitsos* held for women, which would increase their awareness of the GA and how women can be beneficial to the GA and visa versa, would open up to women a better understanding of the importance of their link with the GA This may show them additional ways in which they could participate more fully

The GA can be beneficial to itself and others if it can help women feel they are needed and have a role to play in assisting their husbands and/or themselves in improving the management and improvement of livestock Increased livestock productivity will provide more family income Milk production should improve, which will help women have an adequate supply of milk for their children and possibly more to sell to others With a livestock breeding program there will be improved animals which will provide a better quality of animal for sale, use for draft power or for social requirements (weddings, ceremonial purposes and funerals) With improved veterinary services and animal nutrition, those animals used for meat will be fatter and of better value

Female members will be offered opportunities to participate in training courses Improved range management will reduce soil erosion which lowers silt yields and improves water quality This will increase the productivity of fish in rivers which will yield more food Higher quality drinking and washing water will be another result of decreased soil erosion Non-grazing areas put aside by the GA for thatching grass will provide more grass for family homes

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[1] Hennessy s 1991 study of three RMAs collected data which has been disaggregated by sex during its analysis See Annex G 4 **Social Soundness Analysis** for some of the breakouts

B Other Gender Considerations Based on studies of RMA s done by Lawry, Dobbs, and Woods, and on her own survey with members and herdboys, Hennessy concludes that the important role the herdboy could play in improving range and livestock management has never been considered seriously enough by the Association members Most of the work involved in livestock management is done by herdboys Many herdboys have little choice in their occupation as they are sent to herd by their parents who consider herding a family obligation and duty Other herdboys, who are not related to the people they herd for, are poor, do not have other opportunities for employment and no other source of income Most herdboys will be paid in cash or a certain number of animals Herdboys are usually instructed by the owner as to what they must do and many will follow the orders given as they fear they will be beaten if they do not do well However, there are herdboys who do not follow orders These boys tend to be very young, with little education or understanding of Association rules and regulations Boys are unable to attend school because of their herding responsibilities (Hennessy, 1991)

When Hennessy asked GA members about herdboys understanding and abiding by RMA rules and if a training program would help them, people agreed that herdboys would benefit with training courses which would explain the Association objectives, rules and regulations and why they are being told to do things in a certain way (op cit)

Hennessy states there is a need for herdboys and owners to understand how they can help each other Increased training and educational opportunities for owners and herdboys would benefit both these individuals and the Association

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TAGS
SUBJECT LESOTHO COMMUNITY NATURAL RESOURCE MANAGEMENT
PID (632-0228) IEE

REF. (A) STATE 387278 (B) MASERU 00435

1. BUREAU ENVIRONMENTAL OFFICER, JOHN GAUDET, HAS REVIEWED SUBJECT IEE AS PER REFS A AND B.

2. IEE IS WELL DONE AND ADEQUATELY DISCUSSES THE MOST OBVIOUS ENVIRONMENTAL IMPACTS. BEO THEREFORE HAS NO PROBLEM WITH NEGATIVE DETERMINATION. HOWEVER, NO MENTION IS MADE IN DOCUMENT REGARDING THE NATIONAL ENVIRONMENTAL ACTION PLAN (NEAP). WOULD SUGGEST THAT IN THE PP THAT THE REGIONAL ENVIRONMENTAL OFFICER INCLUDE SOME DISCUSSION OF HOW THE RELATIONSHIP OF THE PROJECT TO THE NEAP.

3. REGARDING THE MONITORING PROGRAM MENTIONED ON PAGE 14 OF THE IEE, PRESUME THE ENVIRONMENTAL UNIT OF THE APPROPRIATE MINISTRY WILL BE INVOLVED IN THIS PROGRAM AS SUGGESTED IN THE NEAP. WILL THIS UNIT BE INTERACTING WITH THE NATIONAL ENVIRONMENTAL SECRETARIAT ALSO MENTIONED IN THE NEAP, AND IF NOT, CAN THE PP HELP TO FOSTER THIS INTERACTION?

REC'D AG DIVISION
DATE 4/2/91
ACTION DUE BY 4/7/91

NEED FOR INTERSECTORAL COORDINATION, IT STRIKES US THAT REPRESENTATIVES WITH VARIOUS SECTORAL SKILLS ARE NEEDED IN PLANNING AS WELL AS EXECUTION. IN ADDITION TO THE MORE TRADITIONAL MALARIOLOGY DISCIPLINES (VECTOR BIOLOGY AND CONTROL, EPIDEMIOLOGY, CLINICAL MEDICINE. AND PARASITE BIOLOGY), REPRESENTATION FROM THE FIELDS OF ECONOMICS, SOCIOLOGY, AND DRUG DEVELOPMENT/PHARMACOLOGY WOULD BE APPROPRIATE. THE CROSS-SECTORAL IMPACT OF DEVELOPMENT ON THE SPREAD OF MALARIA MIGHT ALSO BE ADDRESSED THROUGH THE PARTICIPATION OF REPRESENTATIVES FROM AGRICULTURE, WATER RESOURCE MANAGEMENT. FORESTRY ETC. THIS WOULD REPRESENT AN EXCELLENT FORUM FOR THE PARTICIPATION OF THE PANEL FOR EXPERT ENVIRONMENTAL MANAGEMENT (PEEM).

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2. ACHIEVING CONSENSUS. SINCE FINAL DECLARATION IS EXPECTED TO ADDRESS NATIONAL PRIORITIES AND ALLOCATION

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INITIAL ENVIRONMENTAL EXAMINATION

1 PROJECT DATA

Project Location	Lesotho
Project Title	Community Natural Resource Management Project
Funding	$US 16,000,000
Life of Project	10 Years
IEE Prepared By	Robert G. Rose REDSO/ESA Environmental Officer
Environmental Action Recommended	Negative Determination
Concurrence	**F Gary Towery, Director** **USAID/Lesotho**
Date	**February 7, 1991**

Concurrence

Bureau Environmental Officer	Approved Disapproved	**JOHN GAUDET (STATE 100657)**
	Date	**April 3, 1991**

Clearances

Greg Wittala RE SO/FRO	Date	Jan 25 1991
Tim Reidler USAID/Swaziland REA	Date	6 FEB 1991
Paul Andre DeGeorges, REDSO RE	Date	January 11, 1991

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II PROJECT GOAL AND PURPOSE

The goal of the Community Natural Resources Management Project (CNRM) is restoration and improvement of rangelands The purpose is to assist community grazing associations to manage range lands at sustainable levels

III PROJECT PROBLEM

The current population of Lesotho is estimated at 1 6 million people with an annual growth rate of 2 6% Over 80% of the population lives in rural areas Agriculture remains a key sector in Lesotho Livestock contributes approximately 10 % to the Gross Domestic Product (GDP) Livestock products are the second leading export accounting for approximately 20% of the value of all exports Sheep are raised for their wool and Angora goats are raised for their mohair

Over 75% of Lesotho is range land for which extensive livestock production is the only viable agricultural activity A significant portion of the population rely on livestock for income, employment and food Household consumption accounts for 38% of livestock offtake Cattle are used as draught animals, as a traditional sign of wealth, their dung is an important source of energy (due to the natural scarcity of fuelwood) and milk, and to a minor degree they serve as a source of meat Horse and donkey are important sources of transport

The 1987 livestock census indicated that in Lesotho there were 639,000 head of cattle, 1 7 million sheep and 1 2 million goats Productivity levels of the cattle herds are low with an estimated calving rate of 50% for mature cows Lambing rates for sheep and goats are even lower at an estimated 27 % and 33 %, respectively

The problem that Lesotho faces is the persistent imbalance, at current management levels, between the amount of livestock held and the inherent productivity of the country's grazing resources This is due to

- The "Tragedy of the Commons , that is access to free grazing lands for which no one is responsible

- The tendency for livestock numbers, rather than other investments to be seen as a sign of wealth and as security

This has led to very serious overgrazing, resulting in large scale soil erosion, depletion of good grazing vegetation, encroachment of bush and growth of unpalatable plant species Furthermore, there has been a reduction in vegetative and faunal diversity including wildlife consumed for food (e g quail) and shrubs used as firewood The net result is general and wide spread environmental degradation and a decline in livestock productivity as livestock owners attempt to maintain their herds on a deteriorating resource base

IV PROJECT OUTLINE AND STRATEGY

The project will take place in the highlands of Lesotho, the center of the Basotho culture This project will build upon nine years of USAID experience in clxmunal rangeland malxgement in Lesotho This mlxagement system, deviates from "free grazing" by creation of Range Management Areas (RMA s), a designated parcel of land under community management for the purpose of improving land conservation through controlled grazing governed by a Grazing Association (GA) made up of livestock owners from the community This group, with technical input from the Range Management Division from the Ministry of Agriculture, determines where livestock should be grazed, the carrying capacity for a given range, provides stud service of superior quality sires to upgrade herd quality, aids in marketing, improved veterinary care and controls illegal access to the community range by outsiders In essence, the stewardship of this range is given over to the people for their control for the purpose of sustainable range management today and for future generations

Thus the community has a vested economic interested in improving upon and conserving these range lands

The expected achievements from this project will be to

- Reverse degradation of range lands through improved management on designated RMA s
- Support the formation of broad-based community organizations to assume responsibility for managing range resources
- Increase the number of RMA s from 4 to 10 and the amount of range land under RMA management
- Expand livestock marketing opportunities through regular scheduled auctions on RMA s, thus getting away from the traditional large unproductive herds to the principle of smaller but more productive herds with a higher offtake rate
- Improve livestock productivity on existing and new RMA s
- Support the development of host country professionals to establish and manage RMA s
- Increase the capability and capacity of the MOA to identify and address policy constraints impacting on conservation and range resource management

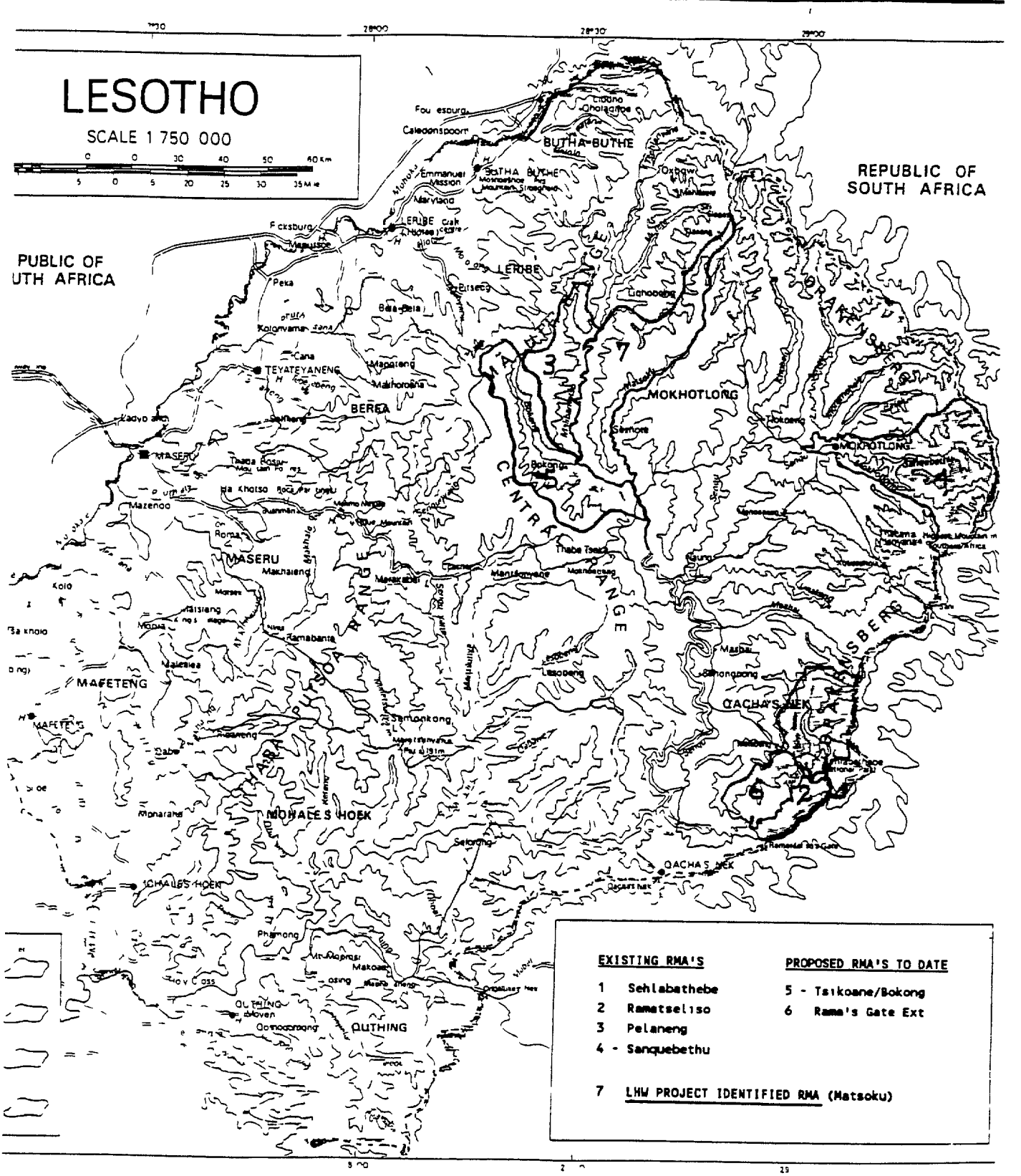
V CURRENT SETTING/POTENTIAL ENVIRONMENTAL IMPACTS

A <u>USAID/Lesotho's Experience With Range Management</u> Range management is not a new concept to USAID in Lesotho From 1981 until 1988, USAID funded the Land Conservation and Range Development Project (LCRD) This was subsequently absorbed in October 1988 under the USAID funded the Lesotho Agriculture Production and Institutional Support Project (LAPIS) Project through the Ministry of Agriculture, Marketing and Cooperatives To date, four RMA's are under various stages of development (see Figure) They have the following characteristics

RMA	Size of RMA (ha)	Cattlepost* Grazing (ha)	Winter* Grazing (ha)	#House-holds	Head Livestock
Sehlaba-thebe	33,000	20,035	10,685	615	19,913
Pelaneng/ Bokong	36,500	12,201	19,500	>1,000	29,000
Moshebi/ Ramatseliso	10,000	**	**	517	10,870
Sanqebethu/ Mohotlong	52,000	32,133	19,867	>1,000	38,833

* Cattlepost = Highlands = Summer Grazing Land = Nov/Dec to April
** Total grazable area = 8,500 ha, rotate, no cattlepost

The project has used the traditional line of authority, the chieftainship structure, to help organize the Range Management Areas The RMA s and RMA boundaries are established through surveys that specify homogeneous boundaries The Division of Range Management under the Ministry of Agriculture has an inventory team that establishes a community information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MOKHOTLONG
BEREA
MASERU
MAFETENG
MOHALE'S HOEK
QACHA'S NEK
QUTHING
CENTRAL RANGE
EXISTING RMA'S
1 Sehlabathebe
2 Ramatseliso
3 Pelaneng
4 - Sanquebethu
PROPOSED RMA'S TO DATE
5 - Tsikoane/Bokong
6 Rama's Gate Ext
7 LHW PROJECT IDENTIFIED RMA (Matsoku)

data base for each potential RMA including information on the number of users of pasture, number of livestock, how long each user grazes livestock, the geographical origin of each user/livestock

Based on this data base and other factors, a homogeneous cluster of villages is selected to work together as a cooperative, the Grazing Association (GA) Land is parceled up for exclusive use by the GA, which attempts to keep outsiders off land and to control grazing pressure on subdivided parcels Land within the RMA boundaries is allocated to the GA, rather than to individuals

It has been USAID s experience that it normally takes three years on average to organize an RMA during which time they must elect their grazing association representatives (ward chief plus two elected officials per village), draft a constitution, develop breeding programs, and systematic planning of where to graze in cattle posts and in winter grazing areas

Transhumance is part of grazing tradition Cattle are grazed in winter grazing lowland areas from April to November From Mid-November/December to April, cattle posts or summer grazing lands are used in the uplands at an average altitude of between 2,800 to 3,000 meters MSL The project builds on and refines traditional grazing, giving herders true range management skills and empowerment For example based upon range management surveys to determine the carrying capacity for livestock, cattle posts are rotated over the summer period in order to avoid their being overgrazed Pasture areas are periodically rested, which along with controlled fires helps to increase the number of palatable and nutritious grasses and to diminish the number of shrubs having poor conversion rates

This not only helps to improve livestock production, but results in important range improvements For example range transects run at Sehlabatahebe in June 1983, prior to application of improved range management practices and afterwards in July 1990, showed the following contrasts

1 **Total Ground Cover** is composed of vegetative ground cover, litter and stones This parameter is utilized as a monitoring indice because of its relationship to erosion Also increased cover results in greater organic matter available for reincorporation into soil thus all of this contributes to soil fertility and stability In 1983 the average cover for 6 transects was 73 2%, in 1990, 79 7 % This is a reduction of 24 3 % of soil surface exposed to rainfall impact Soil erosion is a geometric progression of the amount of soil surface exposed to rainfall

2 **Plant Composition** Species composition is determined by the palatability and nutritious quality of the plants Desirable Species plant species are both palatable and nutritious to livestock and wildlife Intermediate Desirable Species have nutritional value but because they exhibit low palatability are not preferred by livestock and wildlife Undesirable Species are those which invade plant community when desirable and inter-mediate species are subjected to prolonged intense overuse or overgrazing The percent desirable species increased by 6 0%, intermediate desirable by 2 9% and undesirable decrease by 8 4 % between 1983 and 1990

3 **Range Condition Scores** These ratings and data are generated from the vegetative analysis process used to develop numerical range condition scoring system, key factors included species composition of plant community and total ground cover Condition classes include the following numerical breakdowns

Excellent	188-250	Poor	0-62
Good	125-187	Very Poor	Less than 0
Fair	63-124		

In 1983 range scores for 6 transects ranged from 22 (poor) to 203 (excellent), averaging 139 (fair to good) In 1990, the average increased to 161 Those in poorest condition in 1983, improved the most

4 **Range Trends** This is the direction rangeland conditions are moving in relation to ecological successional stages Uptrend successional stages are moving towards climax vegetation Down trends are regressing towards a lower level of succession A Stable Ecosystem is maintaining the current level of plant succession

Range trends are directly affected by management practices For example downward trends may result from overstocking or continuous heavy grazing Proper stocking and periodic rest periods for forage species may result in upward trends In 1983, 2 of 6 transects had downward trends, 4 were stable while in 1990, 5 transects exhibit upward trends and one was stable

5 **Species Composition** Forbs and grasses increased from 81% in 1983 to 90% in 1990, while shrubs decreased from 19% in 1983 to 10% in 1984 In 3 of 6 transects there was no change, 100% forbes and grasses In degraded habitats Transect 1 forbs and grasses increased from 25 3 to 52 7 %, while shrubs decreased from 74 7 to 47 7 In transect 9, forbes and grasses increased from 64 4 % to 88 4, while shrubs decrease from 35 6 to 11 6

Not only has this resulted in improved pasturage, but increases in livestock production are being observed Between 1983 to 1989, cattle weight inside the RMA versus outside the RMA has increased by an average of 11-12 percent The average cow is 51 kg heavier inside the RMA versus outside This has resulted in cattle from the RMA having a 19 4 % higher market value inside versus outside the RMA

Furthermore, Major Long Term Beneficial Environmental Impacts are being observed from improved vegetational cover on the Sehlathebe range Due to improved habitat, there has been a 10 to 15 percent increase in the density of ground nesting birds between 1983 and 1990, especially for species of francolin, the African quail, and the Orange Throated Long Claw The quail and francolin are an important source of protein, especially for local herd boys living off of the land

The rivers in the area are running cleaner and rainbow trout production appears to be up due to decreased silting-in of gravel beds, trout breeding habitat critical to their reproductive success and the population dynamics of the trout Likewise, decreased siltation improves water quality, especially oxygen levels, resulting in more active better fighting fish, and in improved habitat for stone flies and may flies, the major food source for the trout In rivers with appropriate water quality and food source, trout may reach length of 12-14 inches and attain a weight of up to one pound in a season This is considerably higher than any American stream where the average year old trout may reach a length of only 9-10 inches and half a pound This may be especially critical for tourism which some of the RMA's are beginning to consider as a means of community development through diversification, taking advantage of this important untapped resource

The Highlands Water Development Project, which proposes dams on a number of Lesotho s rivers for the purpose of hydroelectricity generation and potable water, is so impressed with the results that they wish to expand the RMA system in the watersheds draining their impoundments in order to insure the lifespan of the dams in this system

In addition to range management, RMA s are also contributing in other critical areas

* Improved breeding programs

* Better animal health

* Marketing

In one of the four RMA s, conflicts have been caused by those who have not been allowed to graze on RMA These are mostly people from adjacent areas The major problem with outsiders coming into an RMA, is that for the RMA to evolve there is a need for intensive extension work with herders and for control of range carrying capacity Individuals coming from 30km away that are temporary visitors are hard to reach, to sensitize to management plan issues, and to help in improved breeding, disease control, marketing, etc Range Riders for each RMA try and control illegal grazing However, this works only if the majority of people buy into the program

In order to mitigate the potential for these displaced herders to concentrate and possibly overgraze range in other areas, the following mitigative measures have been undertaken by USAID, and or the individual RMA s In certain RMA's outsiders have been given the option to join the GA However, they are required to join the RMA, pay grazing association dues, abide by all RMA regulations and leave their livestock permanently within the RMA, using only the winter/summer grazing lands of the RMA In essence, they become a permanent part of the total livestock population that is managed not to exceed the carrying capacity of the RMA s range land In some of the existing RMA's, displaced herders in adjacent areas have approached the Ministry of Agriculture and requested assistance to form their own RMA In fact, one of the CNRM project s first two RMA's to be initiated was identified in just that fashion

USAID is financing the Lesotho Ag Policy Support Program which is promoting policy reform for improving the marketing of livestock The AID-funded LAPIS project and programs of other donors are developing the potential in Lesotho s Lowlands for intensive livestock management including feedlot or stall feeding of cattle, piggeries, dairy, broiler and egg layers, and production of mutton breeds of sheep for meat Furthermore, the MOA is in the process of inventorying herds at all the cattleposts in the country Through the cattlepost inventories, the government will assign all herders to particular locations near their home areas Soon, then, stockowners will no longer have total freedom to graze anywhere in the country This process is the policy on which Lesotho will base rational and sustainable use of its nationally-owned rangelands

All new RMA s will take into account nine years of USAID and Government of Lesotho experience Built into all of them will be the methodologies referred to above which mitigate potential social and environmental problems

B <u>Construction Activities</u> The original construction component as built at the Sehlabathebe RMA has been systematically reduced in scope at the other three RMA sites The most recent site development program at Pelaneng RMA represents the absolute minimum construction component possible Using Pelaneng as a standard, the proposed construction element for the six new proposed RMA's will include the following components with environmental enhancement and mitigative actions as a part of their design

1 **Fencing** will be installed to enclose breeding and holding areas at one or more locations at each RMA (approximately 500 hectares in total area) The finished fence will consist of 6 6' H-Section posts driven into the ground at five meter intervals with intermediate 1/2" diameter painted reinforcing steel rods spaced one meter apart Six strands of tensioned galvanized barbed-wire will be installed, tied to each post and to diagonally braced frames at corners, gates and at major changes in elevation The fence will be installed by day laborers under the direction of RMA advisors The finished fence appears to be very effective, long lasting and the most economical Steel posts have the advantage over wooden posts in that they can be driven where wood posts must have post holes dug, demanding more labor and time Wood being

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scarce, wooden posts are often stolen Likewise, the steel posts appear to be more durable than wood Similar steel fences are still standing in the area, having been erected in the 1890's to control the southern movement of rinderpest

2 **Staff Housing** will consist of two 6 4 meter diameter by 6 meter high cavity-wall brick rondavals with gas heating, lighting and hot water systems The units include a bedroom, dining/living area, kitchen and bath All interior and exterior surfaces are painted plaster Total living area amounts to 330 square feet All appliances are purchased locally and can be maintained/replaced by local supplies These units are the absolute minimum reasonable size that should be constructed to house RMA advisors in order to assure an acceptable quality of life As previewed these accommodations will provide a major beneficial impact to the man-made environment

3 **Water Supplies** for the residences and for other site operations will come from a horizontally drilled collection "well" installed below a spring and which is an important consideration in the selection of the site A small storage tank unit will be installed at the well and subsurface small diameter piping installed to the holdings The water sources are pure and require no treatment They are critical since surface waters tend to be contaminated by parasites which use livestock as an intermediate host (e g giardia) Even, adjacent or lower elevation villages do not use open channel flows but traditionally obtain their potable water at hillside springs This capability has been institutionalized at the Ministry of Agriculture, a horizontal well drilling team being in place There is a major beneficial impact on the man-made environment from this activity In the case of Sehlabathebe, this team also drilled a horizontal well for the community and installed a galvanized storage tank This activity could result in major beneficial impacts to the local communities if such activities become a part of the RMA community development package

4 The **Wastewater** disposal system will consist of flush toilets and a septic tank with a downhill seepage field Care will be taken to avoid contamination of surface waters in locating the system well away from rivers and streams As designed, this is believed to minimize the risk of an adverse negative environmental impact

5 The limited amount of **Solid Waste** generated by the staff will be burned and buried at the site and has an insignificant environmental impact

6 **Office/Storage** at each site will consist of a one room brick office building and a 6 meter by 12 meter prefabricated steel storage shed The office will be provided with a battery/solar charged radio/telephone system tied in to the other RMA s and the Ministry of Agriculture in order to permit day to day business communications and to hasten the reactive time in the case of an emergency to one of the RMA personnel or someone in the local community This radio system will offer a major beneficial impact to the RMA and community in these remote isolated mountainous areas where there is little or no communication with the outside world

7 **Access Roads** will be gravel designed so as to minimize maintenance and to facilitate site drainage A concrete apron will also be provided at the entrance to the storage shed where vehicles can be parked and off-loaded Narrow concrete walls and stone lined drainage pits will be provided between the various structures and minimal landscaping will be undertaken resulting in an insignificant impact to the natural environment and a major beneficial impact to the quality of life of the RMA advisors

8 **Sale Yards** will consist of movable modular steel enclosures, or wooden posts set in concrete, to be employed at annual livestock sales In certain instances, enclosures may be made permanent using essentially the same steel materials as noted above The livestock yard will be graded and properly drained to minimize erosion Care will be taken to place these facilities so that runoff does not contaminate adjacent surface water courses or impact adjacent areas At permanent facilities, drinking troughs and water storage tanks will be placed that are fed by the horizontal well As designed, these facilities will result in an insignificant impact on the natural environment and are designed to be as humanely as possible for the livestock

The overall construction element to be provided at each RMA represents the minimum physical plant necessary to generate an RMA and will have minimal adverse impacts on the natural/man-made environments as the result of the proposed mitigative measures during both construction and operational phases In many instances it will result in a major beneficial impact to the man-made environment

VI ENVIRONMENTAL ACTION RECOMMENDED

It should be noted that there will be some construction related activities but these will have a minimal adverse impact on the natural and man made environments Construction of operational headquarters will take place on six RMA's As noted above, this will consist of staff housing, an office building, a storage shed, a cattle sale yard and weighing station Steel and barb wire fencing will be constructed around the breeding and cattle yards A horizontal well will supply limited volumes of water to a tank both for drinking water and to supply the cattle yard while the cattle are actually in the holding pens The location of the site will be determined in collaboration with the Range Management Division of the Ministry Of Agriculture to assure that it is environmentally sound Care will be taken to assure that sewage and solid waste disposal and potable water supplies are adequate The cattle yard will be located in such a manner that direct runoff from the yard does not contaminate surface waters and/or potable ground waters

Based upon the goals and objectives of this project and the nine years of experience with this type of activity that demonstrates how communal management of range lands can improve livestock production to the benefit of the rural community, the economy, and of the government while ameliorating environmental degradation, it is recommended that this project be accorded a Negative Determination both for the range management and construction segments of this project based upon Regulation 22 CFR, Part 216, Section 216 3 (a) (2) (iii) since the proposed actions under these activities will not have a significant effect on the environment if all mitigative measures noted in Section V of the IEE are carried out to the fullest extent possible The Mission will ensure that such mitigative measures are carried out and, as necessary, will draw upon the environmental expertise of REDSO, local engineers and environmental specialists as project activities are undertaken

It is recommended that the existing monitoring program be continued to collect simple baseline trend data that will allow the success/failure of this project to be determined including the change over time in the quality of rangeland vegetation, the quality and quantity of livestock marketed from the RMA s and the number of requests from the rural communities for new RMA s Monitoring the quality of water in streams is very costly, it may be possible to share the costs of water quality measurements in some RMA s with the LHW Project

A Categorical Exclusion is recommended for the Technical Assistance and Training components of the project based upon 22 CFR, Part 216, Section 216 2 (c)(2)(i)

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ANNEX G

6 Administrative/Institutional Analysis

A Scope of Analysis The focus of this analysis is an assessment of (1) the institutional capacity and administrative capability of the Ministry of Agri culture (MOA) to provide requisite services in support of Community Natural Resource Management Project (CNRM) implementation, (2) USAID/Lesotho's adminis trative relationships with the GOL/MOA relative to project implementation, (3) the role of the Peace Corps Volunteers in project implementation, and (4) the contractual modality for procurement of technical assistance and other project services Matters related to institutional capability and administrative relationships between the Range Management Area/Grazing Association (RMA/GA) and the GOL/MOA, and/or with other technical assistance component of the project are addressed in the Technical Analysis

B Background to the Analysis This assessment draws largely from the experience of USAID/Lesotho with implementation of the USAID-funded Lesotho Land Conservation and Range Development Project (1982-1988) and the continuation of range lands development activities under the range management component of the Lesotho Agricultural Production and Institutional Support Project (LAPIS) which is scheduled for completion in 1992 The Community Natural Resource Management Project (CNRM) will be a follow-on to the range management component of LAPIS using a lower cost approach for RMA/GA replication CNRM will continue to provide limited support to existing RMAs/GAs CNRM will be implemented through the Ministry of Agriculture Primary operational responsibility, on the part of the GOL/MOA, will be vested in the Range Management Division

USAID has played a major role in supporting efforts to strengthen the institutional capacity of the MOA to undertake major agricultural de elopment activities The USAID-funded Land Conservation and Range Development Project (LCRD) strengthened the MOA's implementation capability in the areas of land conservation and range management The Lesotho Agricultural Production and Institutional Support Project (LAPIS) continued this support upon completion of LCRD LAPIS also contributes to improving MOA's capacity to undertake agri cultural training and research related to conservation, range management, and livestock production

Through these USAID-funded projects 28 Basotho have acquired overseas training in the areas directly related to range improvement and natural resource management (of which 14 received long-term training) Currently 21 of these former trainees (six of those who received long-term training) are employed in the Range Management Division LAPIS currently supports three technical assistance positions assigned to the Range Management Division, by May 1991 one position will remain These positions are being replaced by counterparts, all of whom received long-term training under LAPIS LAPIS has also provided assistance to the Lesotho Agricultural College (LAC) This assistance has significantly increased the capacity of LAC to provide training at the certificate and diploma level Several other donors have also offered degree-level training for MOA staff during the past decade USAID also funded an agricultural planning project and a farming system research projects in Lesotho These four USAID-funded agricultural projects have greatly improved MOA's ability to undertake agricultural development projects

The Lesotho Agricultural Policy Support Program (LAPSP) is designed to strengthen MOA capability for policy analysis and reform This program is scheduled to continue through May of 1993 Among other activities, LAPSP assists MOA to review and revise policies related to (a) livestock destocking (b) incentives for increasing private sector participation in livestock marketing and (c) community adjudication of disputes on grazing rights and land usage Engaging

the MOA and other GOL ministries in policy dialogue on constraints such as those noted above is indicative of the progress being made in improving the host country s institutional capability to undertake policy reform The MOA formulated a National Livestock Policy Implementation Plan in February 1990 which specified continued RMA development as a high priority activity in natural resource management The GOL have been willing to make an increasing commitment of real resources for RMA development

Experience gained through implementation of the two range development projects, LAPIS and LCRD, have provided USAID/Lesotho with an excellent opportunity to assess GOL implementation capability relative to donor projects in general, and specifically those of the MOA Evaluations of these projects have identified implementation constraints and issues Many of these issues and constraints would impede CNRM implementation if not resolved The MOA has demonstrated that it will take the necessary corrective action such as those actions required for the realignment of LAPIS Furthermore, the day-to-day interaction between USAID and MOA officials with LAPIS and LAPSP provides excellent opportunities to identify and resolve administrative issues The process has helped to establish a good working environment which will benefit CNRM project implementation

C <u>Authority to Commit GOL Resources/Project Agreement</u> A Project Agreement (ProAg) between the Kingdom of Lesotho and the United States of America will be negotiated This agreement will constitute the formal acknowledgement and acceptance of the terms and conditions governing CNRM project implementation, financing and other responsibilities of the respective governments The Minister of Finance, Economic Planning and Manpower will sign on behalf of the GOL and the United States Ambassador to Lesotho will sign on behalf of the Government of the United States

Project implementation documents, such as Project Implementation Letters (PILs) and Project Implementation Orders (PIOs) will be drafted by USAID/Lesotho mission staff and reviewed by appropriate technical staff in the MOA Approval will be by the MOA Principal Secretary Past experience with the MOA indicates that project implementation documents receive prompt attention from MOA officials During CNRM PP design, MOA technical offices demonstrated active interest in CNRM and have contributed more than four weeks of staff time for the design efforts It is anticipated that this high level of interest will continue during CNRM implementation

D <u>Government of Lesotho/Ministry of Agriculture</u>

1 **Government Organizational Structure** The Ministry of Agriculture (MOA) will be responsible for overall project implementation on behalf of the GOL While various MOA Departments will interface with the CNRM project, most of the project related implementation activity will be with the Department of Livestock Services (DLS) The DLS consists of three Divisions - Range Management, Animal Production, and Veterinary Services The Range Management Division has been responsible for developing RMAs/GAs since 1983, and thus it will be the principal contact for the CNRM Project See attached organizational chart

The Range Management Division is headed by a Chief Range Management Officer who supervises four offices Range Inventory, Range Development, Grazing Management, and Field Operations (RMAs) Two additional offices, Data Management and Grazing Fee Administration, are expected to be established shortly to assist with the administration of the National Grazing Fee Program The Lesotho Agricultural Policy Support Program will in part be supporting this expansion The Division

currently has a staff of 23 This will increase to approximately 30 with an estimated seven new positions created to staff the Data Management and Grazing Fee Administration offices

The management responsibilities of the Chief Range Management Officer will increase with the addition of these two offices Budgetary obligations will also increase with this expansion While LAPSP will initially support these positions, the GOL will have to assume full responsibility for recurrent costs following completion of LAPSP

2 **Project Oversight and Monitoring** With a large portfolio of ongoing projects, considerable demand is placed on senior MOA officers to participate in project reviews The option of combining oversight of the CNRM project with the review process for an ongoing program or project was discussed with senior MOA officials It was the Ministry's opinion that none of the existing committees would be appropriate for this task Furthermore, given the long period for CNRM project implementation, a separate project review structure be more appropriate

The CNRM Review Committee (CRC) membership would include representation of MOA offices directly involved with CNRM implementation Membership would include representatives from Range Management, Livestock Production, Veterinary, Marketing and Conservation USAID/Lesotho would be represented by the Agricultural Development Office Representation from the Ministry of Economic Planning and the Ministry of Interior and Chieftaincy Affairs would also be desirable The committee should be chaired by the Director of Livestock Services Should other agencies, such as the European Economic Community (EEC) or the Lesotho Highlands Development Authority (LHDA), pursue development of RMAs/GAs in their target geographic areas, they should participate in the committee in the interest of efficient use of MOA resources

The CNRM Review Committee would review the project relative to overall project performance, address policy issues not resolved at the operational level, and facilitate coordination of CNRM Project activities with other development projects and programs The CRC would (1) monitor CNRM implementation, (2) identify and help resolve issues and problems that arise during the normal course of project implementation, (3) review implementation reports and evaluations, and (4) provide the formal GOL review of annual work plans The CRC would meet at a minimum twice annually The Chief of Party of the CNRM technical assistance team should attend these committee meetings as a resource person

3 **GOL/MOA Staffing** At least eight new RMAs/GAs (6 under CNRM, 2 with LHDA, and possibly 2 more with the EEC), ongoing services to 4 existing RMAs/GAs, and the start-up of the National Grazing Fee Program will significantly increase the workload for MOA/DLS personnel The IMF Structural Adjustment Facility Agreement (SAFA), under which Lesotho now operates, has stringent conditionality relative to GOL discretion to increase recurrent expenditures Any projected increases in positions at the MOA as a result of CNRM project activity will need consider the impact on the GOL budget and the government's ability to sustain the position To reduce the potential negative impact of increasing recurrent costs as a result of CNRM implementation, the responsibility for funding on-site management at the RMA/GA will be progressively assumed by the by the grazing association

Most of the staff in the DLS and particularly those in Range Management have technical backgrounds in livestock production and range management In addition to these skill areas, the approach proposed under CNRM to replicating RMAs/GAs requires considerable expertise and experience with community organization and developing local leadership Few DLS staff have training in these technical skill areas While CNRM will initially provide support in this skill area through the technical assistance team, MOA/DLS will need to develop an in-house capability in this skill area as community organization and leadership development skills are clearly needed if this model is to be continued following completion of CNRM

The MOA does not have adquate staff resources to properly analyse all the monitoring data that will be collected under the project Additional staff will be trained under the project in computer skills and data analysis During this interim period, the project will fund one technical assistance position with this skills The position will be filled with a PSC hired by the Mission to ensure that objectivity is maintained in monitoring project progress

An assessment MOA/DLS training needs indicates that a limited amount of degree level training will be required to upgrade current RMD staff and to fill new positions resulting from the increased number of RMAs Further details on specific requirements for training can be found in the training section Project resources should also be used to train managers at the National Range Management Training Centre for placement in RMAs/GAs These managers would work directly for the GAs rather than being seconded personnel from the civil service Training a cadre of non-government RMA/GA managers would contribute to the long-term sustainability of the RMAs/GAs and would not be an additional burden on the GOL budget

E <u>USAID/Lesotho</u> USAID\Lesotho management responsibility will reside with the Mission's Agricultural Development Office This office is staffed by two U S direct hire staff One Agricultural Development Officer will be designated as the Project Officer This office also has three FSN professional staff who will be called upon to assist with specific implementation tasks The designated Project Officer for CNRM will have primary responsibility for routine project monitoring and management including review of project reports and vouchers, participating in site visits and reviews of project activities, and review of and concurrence with the annual budgets and work plan

It is anticipated that the Mission will have substantial involvement with project implementation through regular monitoring of project frequent contact with relevant GOL officials, an ongoing dialogue with the contractor, and site visits Because of the long life of CNRM (10 years) it would be difficult to plan in detail all project activities during this period Major changes during CNRM implementation are likely to be required based on the experience gained with implementation, recommendations from evaluations, and as a result of external influences This process is best managed through the preparation of medium term (3-5 year) strategies and detailed annual work plans by the technical assistance organization USAID is responsible for reviewing strategy statements and plans to ensure that proposed changes in activities or project focus are consistent with stated project goals and objectives

The Mission has a long institutional relationship with the MOA For the past decade two or more major AID-funded agricultural projects have been implemented concurrently CNRM is scheduled to start during the final months of LAPIS which will provide a limited amount of desired overlap

Other USAID/Lesotho offices that will provide support for CNRM implementation include the Controller the Project Development Office and General Development Office Supporting USAID resources are also available from regional offices which include the Regional Legal and Contracting Officers from USAID/Swaziland and the staff of the Regional Economic Development Services Office for East and Southern Africa (REDSO/ESA)

F Peace Corps Participation Preliminary discussions were held with the Peace Corps concerning the appropriateness of using Peace Corps Volunteers in CNRM The rationale for using volunteers is the need during the initiation of new RMAs/GAs for specific technical skill to be available on-site Peace Corps volunteers have in the past provided qualified volunteers for similar assignments Peace Corps have expressed an interest in participating in CNRM implementation Peace Corps requires a formal request from government to initiate recruitment of volunteers for CNRM

Discussions were also held with the MOA concerning Peace Corps participation The MOA indicated an interest in pursuing this matter However, the MOA would want volunteers assigned to CNRM to have training and experience appropriate to the assigned task The Ministry would require assurance that the volunteers were technically qualified for their assigned positions

There are four areas for which Peace Corps volunteers would be appropriate community organization, non-formal education, business skills, and water resource development The use of volunteers in these situations is contingent upon the volunteers being integrated into overall project implementation and working in a structured environment with clear channels of reporting Because the successful development of new RMAs and GAs under the CNRM project will depend largely on how well prospective communities understand the RMA/GA concept and demonstrate their commitment to this concept, Peace Corps volunteers with good community organization and leadership development skills could play a key role in formation of the grazing associations This activity is a key prerequisite to legally establishing the RMA and the subsequent physical developments of the RMA It is estimated that 3-4 volunteers would be required for these activities

The second area would be that of a volunteer specialist in non-formal/adult education to work with the Training Centre Executive committees and members of new GAs will undergo short term training at this facility This position may be ideal for a PCV couple if the spouse had good organizational skills that could used in training centre administration and logistics management Third, business and management skills appropriate for the grazing associations would also be taught on-the-job to the GA committees and employees and in the training centre Forth, one volunteer would be required for water resource development, specifically operation of the horizontal drilling rig A Peace Corps volunteer is currently working in this capacity with LAPIS

The maximum number of volunteers required would be five-seven at any one time over a period of six-seven years which is the planned period for starting all new RMAs/GAs under the CNRM project As with the contract technical assistance, Peace Corps Volunteers should be view as interim technical specialist to be employed in these positions until host country staff can be identified and trained to fill these positions The replacement of PCVs will be phased over the life of CNRM It is anticipated that the National RMA Training Centre would become fully operational and the PCVs replaced within five years and the water resource technician position filled by year four of CNRM The need for PCVs to be assigned

to community organization and business training activities should be complete as the last RMA becomes operational (estimated to be year eight of the project)

Provision will be made in the CNRM Project to fund the local costs of the volunteer related to housing, local transportation and training workshops Project technical assistance advisors and officers from RMD would be included in the initial in-country training for these volunteers and their supervisor Therefore, should the use of Peace Corps volunteers be deemed appropriate and desirable the GOL would need to make a formal request for volunteers to Peace Corps/Lesotho This should be done by April of 1991 to enable Peace Corps participation to be included in the project paper Furthermore, Peace Corps would require the formal government request to facilitate forward programming, recruitment, and training to have volunteers on-site by late 1992

G <u>Contracting Modality for Technical Assistance</u> The approach to project implementation proposed for the CNRM project is somewhat different from previous RMA/GA development projects In the early RMAs/GAs, technical livestock production and resource management constraints were given high priority Because of limited personnel resources within the MOA, early RMA/GA development was characterized by a high input of expatriate technical assistance Members of the first grazing associations received considerable benefits from their participating in the RMA but were not required to cover much of the recurrent RMA operational costs Thus the RMA/GA operations were heavily subsidized by both the project (donor) and the MOA More recent RMAs/GAs established under the LAPIS project have evolved with much more community participation The approach being proposed in CNRM calls for an even greater degree of direct beneficiary participation and particularly financial support from the GA This approach will require more involvement of prospective members during the initial development phase as well as a demonstrated commitment to cover the recurrent operating costs

Analyses undertaken as part of the PP design have indicated that the project objective, successful replication of the RMA model, will primarily require technical expertise in the area of grass roots community organization and rural leadership development this will be a key factor in achieving sustainability for the grazing associatins Therefore the technical assistance contractor must have clearly demonstrated capability in the areas of effective community organization and leadership development work

This is an important change in the strategy of the CNRM as compared to the AID-funded range management projects which precede it While there is considerable institutional capability in the GOL in the technical aspects of range management, community organizational skills are minimal Therefore it will be necessary to procure outside assistance for CNRM which can expand the community organizational and leadership skills in the country to make the RAM approach sustainable As such, the organization selected as the technical assistance contractor will require considerable experience and expertise in grass roots community organization activities

Effective implementation of CNRM will require a contractor that is committed to as well as experienced in grass roots organization development Successful implementation of the project demands this organizational character for its leading implementation agent This requirement may make Private Voluntary Organizations (PVOs) likely candidates for the provision of technical assistance, although some for profit firms have also demonstrated experience in community organization

While several U S PVOs have notable experience in grass roots community organization and leadership development which would be applicable in the formative stages of GA development, only a limited number of PVOs have range management experience Thus to be able to offer this expertise in their proposal, PVOs without development experience in range management and livestock production would have to recruit in the open market to fill these positions or enter into a partnership or sub contracting arrangement with firms possessing this expertise Discussion with PVO consortium groups indicate that this is now common practice among U S PVOs that undertake direct project implementation on behalf of donors in the PVO's traditional area of interest

Many PVOs have developed considerable institutional capability to support community organization efforts and grass roots leadership development This is due in part to retaining their experienced professional staff for redeployment to new programs In comparison to for-profit firms, PVOs more often rely on host country professionals to fill key managerial and technical positions and thus have developed personnel policies to attract host country professionals The use of host country professionals in senior positions can provide a better understanding of cultural issues and improve communications when the knowledge of the local language is important

While for profit firms often have the corporate structure and a core group of technical staff, they also recruit on the open market for the specific technical expertise required by the project This is because specialized technical staff positions are generally contractual for the duration of a specific project Thus when projects require these specialized skills, they seek to identify and recruit candidates for these positions If they require skills such as community organization and leadership development, they either recruited on the open market or seek to sub-contract with an organization (often a PVO) to provide the required skills

H <u>Conclusion</u> In the interest of obtaining the best possible combination of responses from for-profit firms and PVOs, the contracting modality most appropriate would be free and open direct competition The terms of reference for proposal solicitation will require prospective bidders to demonstrate experience with project implementation activities directly related to community organization and leadership/management training in developing countries Experience with livestock and range management projects will also be part of the selection criteria Proposers will be required to include host country professionals as part of the technical assistance team

The use of a cooperative agreement was considered as an alternative contracting mechanism for procuring technical assistance However, the cooperative agreement mode was not selected as it would likely restrict competition to a limited number of PVOs and it would provide less control over the implementation process than a contract

GOL responsibility for project administration will largely reside in the MOA with the DLS/RMD being the principal administrative unit Certain aspects of CNRM implementation will also involve the Ministry of the Interior and Chieftainship Affairs As CNRM is largely an effort to replicate RMAs/GAs, prior project implementation experience under LAPIS has demonstrated that the DLS/RMD have sufficient technical capability and administrative resources so support further replication of RMAs

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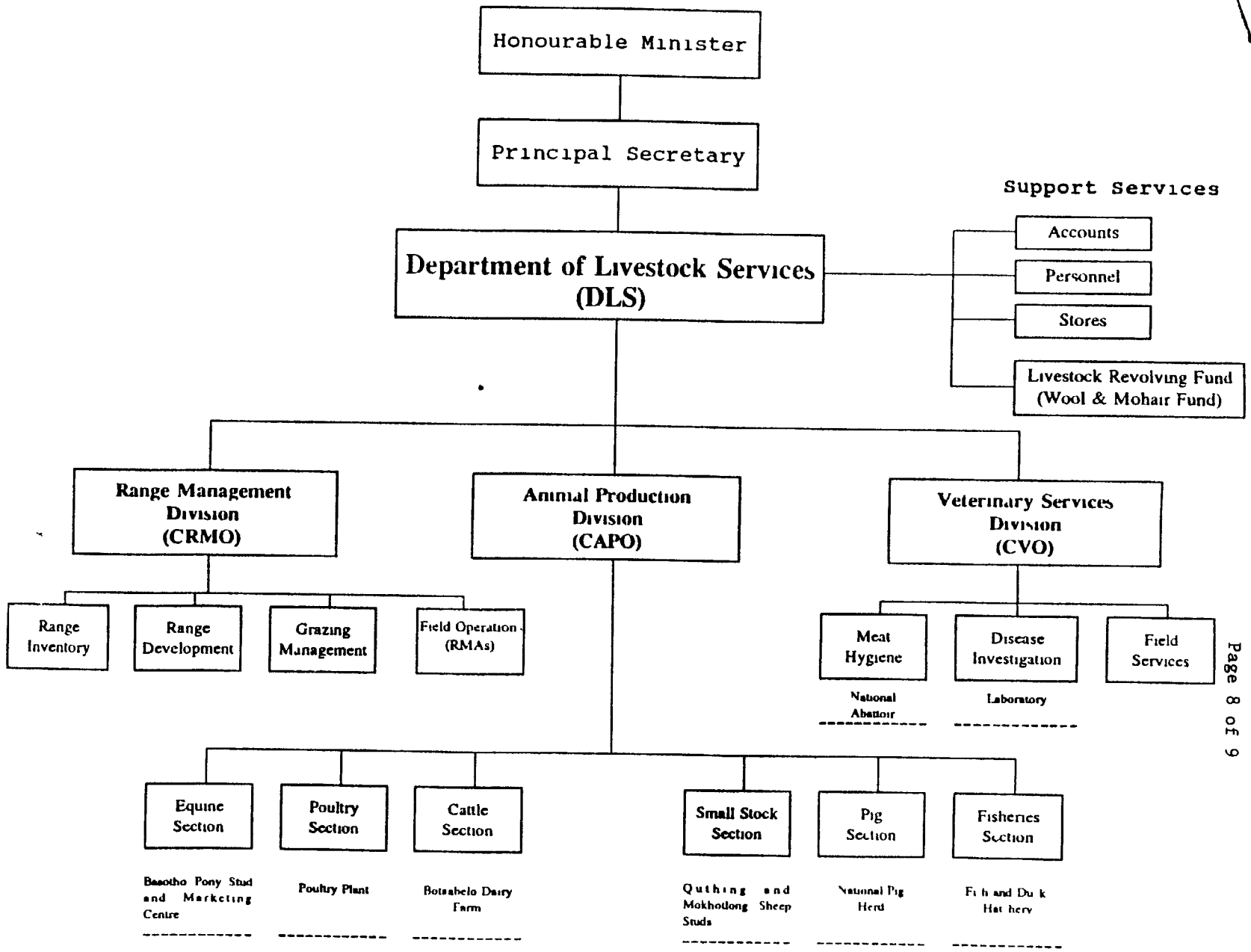
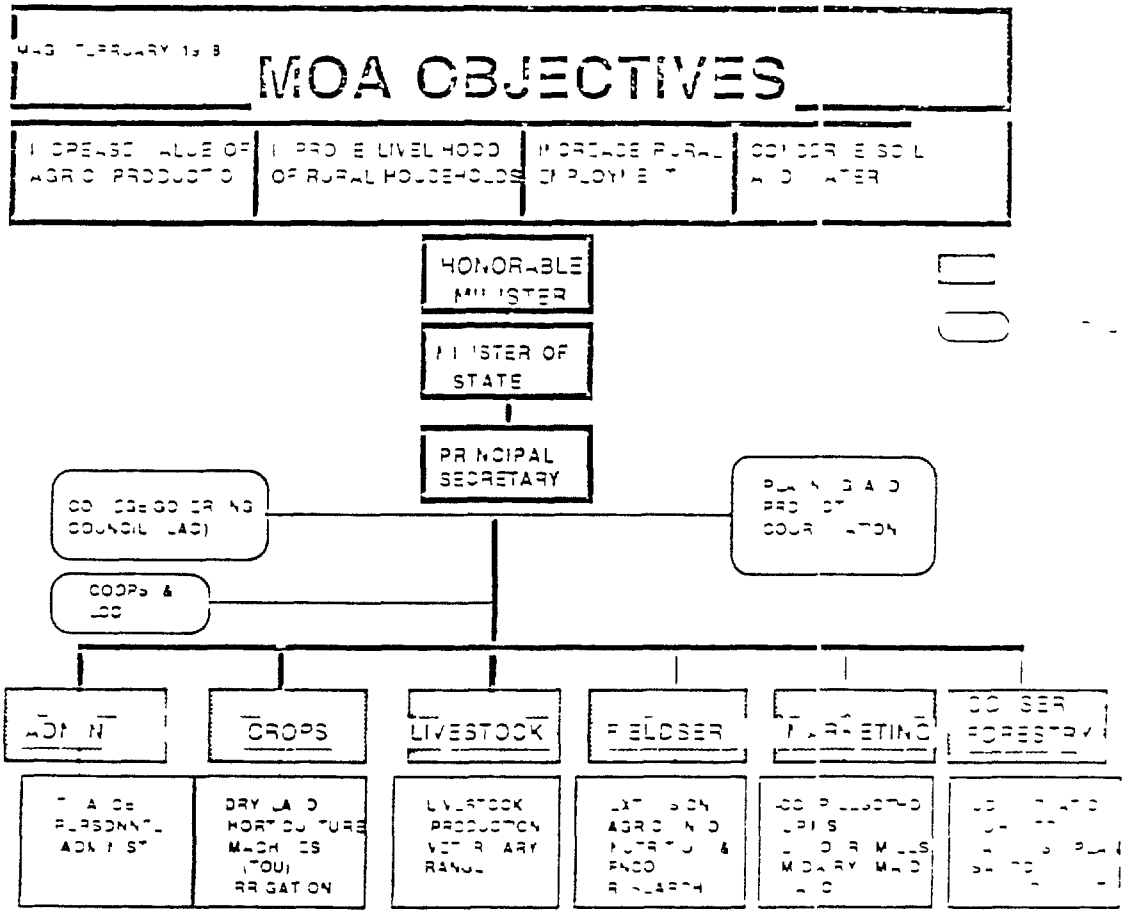
The expertise that the DLS/RMD lacks is sufficient staff to organize grazing associations in such a manner that they are socially viable and financially self sustaining These skills will be provided by an outside contractor through the CNRM project Prior projects (LCRD and LAPIS) focused on institutional strengthening and provided resident technical assistance in the MOA The MOA is capable of providing from it's own resources required technical personnel for RMA replication as proposed in CNRM The project will fund a one technical position, a data analyst, for the initial five years after which a returning project-funded trainee will fill this position The levels of technical assistance and annual project funding are lower than those for the current RMA/GA activities under the LAPIS project

STRUCTURE OF DEPARTMENT OF LIVESTOCK SERVICES



Note: Support Institutions are underlined by dashed line



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ANNEX G

8 Training Cost Analysis

The training cost analysis examines long- and short-term training planned under the Community Natural Resource Management project It includes a discussion of the National RMA Training Center, and a budget for training by project year The costs of long-term training are based upon an analysis provided by the Training Cost Analysis System

A Long-term training As discussed in the Technical Analysis, there are two areas of need for long-term training The first is to maintain the current level of technical skill in range management at the RMD throughout the ten years of the project To this end, two master's level participants will be trained in range management in the U S

The second need is to add skills which are not currently available in the RMD, but which are required in order to sustain a nation-wide RMA program These skills are (1) socio-economic analysis and community organization (rural sociology) and (2) geographic information systems One participant will be trained in rural sociology in the U S to the master s level, a second participant will be trained to the B S level in rural sociology

The geographic information system technology is essential for processing cattlepost inventory data collected by RMD in order to assign users to the nearest appropriate cattlepost The analysis of cattlepost inventory data is part of the adjudication process, one of the first steps in establishing an RMA There are only two technicians, trained to the diploma level, who are processing and analyzing these data at RMD Their skills are highly in demand on the local market In order to upgrade and retain these skills at the RMD, CNRM proposes to train two participants to the B S level in a discipline which includes GIS training (e g , geography or range science)

A I D training policy prefers (1) graduate training, and (2) academic training limited to three calendar years in U S institutions The justification for B S level training under the CNRM Project is that rural sociology and geographic information systems are specialized skills, not general undergraduate training Furthermore, USAID/Lesotho proposes that the participants receive third country training (TCT) in order to reduce the duration of training below what might be required for U S degrees (such as additional coursework to meet the entry level specified by U S universities) The TCT instititutions being considered are the Universities of Zimbabwe, Botswana, or Kenya These institutions have been developed in part with A I D funds, and their English-speaking environs share common resource management problems with Lesotho

The technical assistance contractor for CNRM will be responsible for coordinating long- and short-term training In addition, USAID/Lesotho has begun to explore the following TCT concerns with USAIDs in Nairobi, Gabarone and Harare

Supervision for current TCT participants in those countries,

Choice of currency for payment of training,

Availability and quality of training in the targeted disciplines, and

Possibilities for linkages to RMD for practical, short-term research projects in Lesotho as part of LT training package

B Short-term training The bulk of short-term training will be given by the project on-site at the RMAs or at the National RMA Training Center in

Sehlabathebe (see C below)[1] Courses include GA management, range and livestock, animal health, livestock marketing, and fodder development Specific courses will be developed in livestock husbandry and management skills for women and herdboys, in order to improve their contribution to, and the benefits they receive from, the project

Other short-term training planned includes courses at regional training institutions such as the Mananga Agricultural Management Center in Swaziland and the International Livestock Center for Africa (ILCA) in Addis Ababa For example, funds will be programmed for two persons per year to participate in four-week courses in resource policy analysis and resource economics at ILCA The ILCA participants will be GOL staff in policy making positions in resource management departments (RMD, soil conservation, forestry, land use planning) and/or faculty from the Lesotho Agricultural College (LAC) or the National University of Lesotho (NUL) who are engaged in policy analysis and advise

Finally, some funds will be available for in-country seminars and workshops on special topics related to natural resource management and planning These training activities will be designed for middle- and senior-le el GOL officials, as well as nongovernment organization and private participants

C <u>National RMA Training Center</u> Construction of the National RMA Training Center began in March 1991 at Sehlabathebe, where the first RMA was established in 1983 Training sessions have been held at this RMA for several years The sessions at Sehlabathebe have been particularly effective because the improvements in range quality due to the RMA/GA are observable and convincing The previous facilities were not sufficient to adequately house, feed and train groups of 30-40 people For example, there was no warm place which could be darkened in order to show a training video to a large group, only eight bunks were available, and the kitchen and lavatory facilities were inadequate for groups of more than six-eight people

At the instigation of USAID, funding was set aside from earlier PL480 wheat monitization local currency to construct a larger training facility at Sehlabathebe The cost of the final construction contract was more than had been forecast, as a result, staffing and equipment were cut from the budget

The Center, when it is constructed, equipped and staffed, will be used for the following purposes

- Regular training sessions of all established GAs in the country--at least five specific training sessions of an average length of three days will be held for each GA (estimated total number of trainees 600/year),

- Farmer courses Farmer training center students (usually referred to as "pioneers") will take practical range management sessions at the Center (approximately 50 students for fourteen days each year),

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[1] CNRM will provide training funds for new RMAs to receive all, and for existing GAs to receive whatever they have not yet received from, the complete set of training courses In addition, follow-up training will be provided each year for a few GA representatives from each RMA who have been chosen as potential trainers They, in turn, will then train their GA members The following is an estimate of numbers of trainees for each of the seven training courses given each year (most trainees will receive more than one training course)

Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Total
60	120	60	40	100	40	40	100	40	40	560

- Village Development Council courses, such as those offered by the MOI, funded by the World Bank,

- Courses conducted by private organizations and ministries other than MOA (such as Health),

- Student training sessions (LAC, NUL and U S "sister' university) As a field school, the Center will provide "hands on" experience to an estimated 50 participants per year

Two similar training centers have been developed by the MOA in Quacha s Nek and Quthing Both are not only self-sustaining, but also consistently generate considerable income which is returned to the GOL treasury Therefore, CNRM funding in the total amount of about $60,000 is planned for equipment[2], staff and operating costs for the Center during its first three and one-half years of operation After that, the Center is expected to be self-supporting CNRM funding includes training for a Center manager at a local hotel-management course and support costs for Peace Corps volunteers, who will provide additional training for the Center manager on-site

D Budget for Training Costs Attachment A is an estimated budget for the cost of long- and short-term training, and the National RMA Training Center The total cost for training is estimated to be $972,540

[2] Generator, appliances, furniture, bedding, dishes, utensils and cutlery

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Training Costs Budget	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Total
Long term Training											
MS-Rural Range (U S)		55 000									55 000
MS-Rural Soc (U S)			57 750								57 750
MS-Range (U S)			57 750								57 750
BS-Rural Soc (TCT)			18 400	21 160	24 340	28 530					92 430
BS GIS (TCT)			18 400	21 160	24 340	28 540					92 440
BS-GIS (TCT)			18 400	21 160	24 340	28 540					92 440
Subtotal-LT trng	0	55 000	170 700	63 480	73 020	85 610	0	0	0	0	447 810
Short-term Training											
GA mgmt @ $769/course	1 538	2 653	2 499	1 115	3 076	1 346	1 461	3 941	1 692	1 807	21 128
Animal health @ $769	1 538	2 653	2 499	1 115	3 076	1 346	1 461	3 941	1 692	1 807	21 128
Range & livestock @ $161	3 230	5 572	5 249	2 342	6 460	2 826	3 069	8 277	3 553	3 795	44 372
Livestock mrktg @ $1615	3 230	5 572	5 249	2 342	6 460	2 826	3 069	8 277	3 553	3 795	44 372
Fodder @ $692	1 384	2 387	2 249	1 003	2 768	1 211	1 315	3 547	1 522	1 626	19 013
Herdboys @ $692	1 384	2 387	2 249	1 003	2 768	1 211	1 315	3 547	1 522	1 626	19 013
Women @ $692	1 384	2 387	2 249	1 003	2 768	1 211	1 315	3 547	1 522	1 626	19 013
ILCA Nat Res courses	6 000	6 000	6 000	6 900	6 900	7 935	7 935	7 935	9 082	9 130	73 817
Other short-term trng	997	7 463	13 250	15 236	17 524	20 153	23 171	26 705	30 501	36 997	191 997
Subtotal-ST trng	20 685	37 075	41 493	32 060	51 800	40 065	44 110	69 715	54 640	62 210	453 853
Nat l RMA Trng Ctr											
Equipment *	20 770	23 886	0	0	0	0	0	0	0	0	44 656
Manager s wages	2 500	2 875	3 306	3 802	0	0	0	0	0	0	12 483
Peace Corps	1 731	0	0	0	0	0	0	0	0	0	1 731
Manager s training	1 923	0	0	0	0	0	0	0	0	0	1 923
Cooks wages **	173	346	398	460	0	0	0	0	0	0	1 377
Fuel ***	769	1 538	1 769	2 035	0	0	0	0	0	0	6 112
Generator service	288	664	764	878	0	0	0	0	0	0	2 594
Subtotal Nat RMA T C	28 155	29 310	6 237	7 175	0	0	0	0	0	0	70 876
TOTAL Training Costs	48 840	121 385	218 430	102 715	124 820	125 675	44 110	69 715	54 640	62 210	972 539

* Stove refrigerator freezer water heaters curtains furniture bedding utensils
** $3 per day for three cooks for 30 days/year
*** Propane wood diesel and coal for light heat and generator

LESOTHO

Department of Livestock Services
Ministry of Agriculture, Cooperatives & Marketing
Private Bag A82
Maseru, 100
15 May, 1991

L/DEV/42

The Director
U S Peace Corps
P O Box 554
Maseru 100

Dear Sir,

Request for seven Peace Corp Trainees

The Government of Lesotho, with the assistance of USAID through the Land Conservation and Range Development Project (LCRD, 1980-1988) and the LAPIS Project(1988-1992), initiated the Range Management Area (RMA) programme in 1982 The aims of RMAs are to

(a Improve rangeland productivity
(b) Improve livestock productivity
(c) Increase animal offtake through better marketing and
(d Increase income of households

This programme has made a notable progress with a high degree of success, there are now four RMAs covering an area of [illegible] ha It is pleasing to report that two Peace Corps contributed to the success of the first RMA in Sehlabathebe, Qacha s Nek district

The USAID has pledged further support to continue on the expansion of RMAs by assisting to establish six more over a ten-year period A new project design, Community Natural Resource Management, is currently being finalized You are, therefore, requested to recruit Peace Corps for the project in the following professional areas and according to the enclosed terms of reference -

- Rural Development (2 positions)
- Business Skills Training (2 positions)
- Community Extension/Training (2 positions)
- Water Resources Development (1 position)

All the trainees will be expected to be in Lesotho in late 199[illegible]

Your urgent assistance will be highly appreciated

Yours faithfully

L Lehloba
Director of Livestock Services

BEST AVAILABLE COPY

Peace Corps Volunteer Job Description
Rural Development Specialist

I Trainees requested 2
The initial assignments will begin in late 1992

II **Minimum Required to be accepted for this position**

A Three years farm experience or BA/BS social science and farm background,

AND

B Two years experience in leadership roles in associations such as rural farm organizations (e g , 4-H, FFA or FHA), soil conservation committees, or rural service organizations

Additional Information

Willingness to learn a foreign language is required Experience in learning a foreign language is much preferred, although not absolutely required

A U S driver's license and experience driving is absolutely required for this assignment

Narrative Description

The Community Natural Resource Management (CNRM) project will assist in setting up several new Range Management Areas (RMA s) There are four existing RMA s Pelenang/Bokong, Ha Moshebi/Ramatseliso, Sehlabethebe and Mokhotlong

The Range Management Area Program (RMA) aims are to increase the productivity of livestock and the income of livestock owners, to provide better systems of marketing livestock, to foster better management of the natural resources, and to accomplish these goals in a manner which is sustainable and socially acceptable to the people of the area

The aims will be achieved by organizing the villages in the RMA into a grazing association (GA) with a management committee, a constitution and by-laws, a grazing management plan and enforcement powers, and means to obtain income, through fees and sales, to run the GA

The RMA's have had success in some areas and problems in others Previous experience with GA's and RMA's forms the basis fo further development of new GA s The social impact of the GA's on the community is substantial The degree of community participation has largely determined the social sustainability of the existing GA s

The existing GA's have had problems dealing with members and outsiders not following the rules and regulations of the GA Impoundment of animals, which is necessary if people do not obey specified procedures, has been difficult An effective method of collecting fees and fines, needed for improvement objectives and operational costs, must be developed

Local participation in all aspects of the development of the GA s is indispensable In the first RMA, where "grassroots" involvement was not a priority, serious problems have emerged, especially when project personnel were withdrawn and the community itself had to handle the GA Graziers should not be led to expect the project either to manage the GA or be a continual source of funds

Motivation of GA members is a key aim of the project Good communications, extension and training are essential The concept of a sustainable stocking rate and conservation awareness must be communicated effectively to the GA members or overgrazing will continue to be a long-term problem

Peace Corps Volunteers assigned to the Community Natural Resource Management (CNRM) Project will operate within the overall implementation plan for the project Volunteers will occupy staff positions and report to designated supervisors All positions require living and working on site in a remote, rural setting

Rural Development Specialist - continued

Volunteers will live on site at the proposed RMA Housing, furnishing, (horse) transportation, training supplies and part of the volunteer s training costs will be provided through the CNRM technical assistance contractor

Volunteers will be assigned to locations identified as potential Range Management Areas (RMA s) Each volunteer will help develop a Grazing Association (GA) made up of representatives of 10-20 villages, focusing on communication and leadership training Specific tasks include

- Helping to increase the level of understanding of the Range Management Area and the Grazing Association concepts by the community,
- Assisting in formation of committees and groups which will form the basis of the Grazing Association,
- Developing community leadership for the purpose of establishing the Grazing Association,
- Providing organizational training, including defining the functions and responsibilities for members of the Grazing Association Executive and Management Committees, and
- Collaborating with MOA and CNRM staff in preliminary planning for new Range Management Areas

Note The volunteers will work under the direction of CNRM community organization staff and in close collaboration with Ministry of Agriculture (MOA) range management field staff

Peace Corps Volunteer Job Description
Business Skills Training

I Trainees requested 2
The initial assignments will begin in late 1992

II **Minimum Required to be accepted for this position**

A Five years experience as manager of a business,
OR
B AA any business discipline (not including economics) with two years experience as the manager of a business,
OR
C BA/BS any business discipline (not including economics)
AND
D Two years recent experience working in farm communities or in associations such as rural farm organizations (e g , 4-H, FFA or FHA), soil conservation committees, or rural service organizations

Additional Information

Willingness to learn a foreign language is required Experience in learning a foreign language is much preferred, although not absolutely required

A U S driver s license and experience driving is absolutely required for this assignment

Narrative Description

The Community Natural Resource Management (CNRM) project will assist in setting up several new Range Management Areas (RMA's) There are four existing RMA s Pelenang/Bokong, Ha Moshebi/Ramatseliso, Sehlabethebe and Mokhotlong

The Range Management Area Program (RMA) aims are to increase the productivity of livestock and the income of livestock owners, to provide

Business Skills Training - continued

better systems of marketing livestock, to foster better management of the natural resources, and to accomplish these goals in a manner which is sustainable and socially acceptable to the people of the area

The aims will be achieved by organizing the villages in the RMA into a grazing association with a management committee, a constitution and by-laws, a grazing management plan and enforce-ment powers, and means to obtain income, through fees and sales, to run the GA

The RMA's have had success in some areas and problems in others Previous experience with GA's and RMA's forms the basis for development of new GA's The social impact of the GA's on the community is substantial The degree of community participation has largely determined the social sustainability of the existing GA s

The existing GA s have had problems dealing with members and outsiders not following the rules and regulations of the GA Impoundment of animals, which is necessary if people do not obey specified procedures, has been difficult An effective method of collecting fees and fines, needed for improvement objectives and operational costs, must be developed

Local participation in all aspects of the development of the GA s is indispensable In the first RMA, where "grassroots" involvement was not a priority, serious problems have emerged, especially when project personnel were withdrawn and the community itself had to handle the GA Graziers should not be led to expect the project either to manage the GA or be a continual source of funds

Motivation of GA members is a key aim of the project Good communications, extension and training are essential The concept of a sustainable stocking rate and conservation awareness must be communicated effectively to the GA members or overgrazing will continue to be a long-term problem

Peace Corps Volunteers assigned to the Community Natural Resource Management (CNRM) Project will operate within the overall implementation plan for the project Volunteers will occupy staff positions and report to designated supervisors All positions require living and working on site in a remote, rural setting

Volunteers will live on site at the proposed RMA Housing, furnishing, (horse) transportation, training supplies and part of the volunteer's training costs will be provided through the CNRM technical assistance contractor

Volunteers will be assigned to RMA's where GA s are already organized (Pelaneng, Mokhotlong, or Rama s Gate are probable initial sites) Each volunteer will train GA Management and Executive Committees to operate their association as a business Specific tasks include

- Advising grazing association executive and management committees on record keeping, simple accounting, projection planning, budgeting and systematic reporting systems to association members,
- Assisting in identifying financial assistance, advising on banking, loan and repayment systems,
- Developing in-service workshops in record keeping, and simple accounting, and
- Providing training to rank and file grazing association members in understanding for-profit business operations

<u>Note</u> The volunteers will work under the direction of CNRM community organization staff and in close collaboration with Ministry of Agriculture (MOA) range management field staff

Peace Corps Volunteer Job Description
Community Extension/Training Specialist

I Trainees requested 2 positions, couple preferred
The assignment will begin in late 1992

II **Minimum Required to be accepted for this position**

Part A and Part B could be met by each partner of a couple, if only one volunteer can be found for the job, part A is more important

PART A

1 Five years experience as the manager of a farm or business,
OR
2 AA any business discipline (not including economics) with two years experience as the manager of a farm or business,
OR
3 BA/BS any business or agriculture discipline (not including economics),

AND
4 Three years experience in leadership or training roles in rural associations (such as 4-H, FFA or FHA, soil conservation committees, or rural service organizations)

PART B

1 Demonstrated ability in planning, organizing, counseling or leadership within the past four years
AND
2 BA/BS Social Work, Social Services, or Community Development,
OR
2 BA in any field with demonstrated ability in planning, organizing, counseling, or leadership within the last four years,
AND
3 One year teaching experience

Additional Information

Willingness to learn a foreign language is required Experience in learning a foreign language is much preferred, although not absolutely required

Experience in motel management would be highly preferred in this position--the logistics (communications, housing, feeding, and transporting trainees to this remote training center are one of the major challenges of getting the center operational

Experience managing a business or at least two consecutive years of business related work, especially in developing and facilitating in-service workshops would be an alternative

A U S driver's license and experience driving is absolutely required for this assignment

Narrative Description

The Community Natural Resource Management (CNRM) project will assist in setting up several new Range Management Areas (RMA s) There are four existing RMA s Pelenang/Bokong, Ha Moshebi/Ramatseliso, Sehlabethebe and Mokhotlong

The Range Management Area Program (RMA) aims are to increase the productivity of livestock and the income of livestock owners, to provide better systems of marketing livestock, to foster better management of the natural resources, and to accomplish these goals in a manner which is sustainable and socially acceptable to the people of the area

Community Extension/Training Specialist - continued

The aims will be achieved by organizing the villages in the RMA into a grazing association with a management committee, a constitution and by-laws, a grazing management plan and enforce-ment powers, and means to obtain income, through fees and sales, to run the GA

The RMA's have had success in some areas and problems in others The years of experience with GA s and RMA's considerably aids the development of new GA s The social impact of the GA s on the community is substantial The degree of community participation has largely determined the social sustainability of the existing GA's

The existing GA's have had problems dealing with members and outsiders not following the rules and regulations of the GA Impoundment of animals, which is necessary if people do not obey specified procedures, has been difficult An effective method of collecting fees and fines, needed for improvement objectives and operational costs, must be developed

Local participation in all aspects of the development of the GA s is indispensable In the first RMA, where "grassroots" involvement was not a priority, serious problems have emerged, especially when project personnel were withdrawn and the community itself had to handle the GA Graziers should not be led to expect the project either to manage the GA or be a continual source of funds

Motivation of GA members is a key aim of the project Good communications, extension and training are essential The concept of a sustainable stocking rate and conservation awareness must be communicated effectively to the GA members or overgrazing will continue to be a long-term problem

The Sehlabathebe Training Center will train Grazing Association officers, RMA managers, and GA members in groups of 5-20 so that their RMA s will be socially sustainable and financially viable

Peace Corps Volunteers assigned to the Community Natural Resource Management (CNRM) Project will operate within the CNRM overall implementation plan for the project Volunteers will occupy staff positions and report to designated supervisors All positions require living and working on site in a remote, rural setting

Housing, furnishing, (horse) transportation, training supplies and part of the volunteer s training costs will be provided through the CNRM technical assistance contractor

The volunteer will be assigned to the National Range Management Area Training Center at Sehlabathebe The Center is expected to be finished construction in 1992 It is located in one of the most beautiful, but also the most remote areas in Lesotho It is adjacent to the only national park in the country The volunteer will collaborate with other CNRM and MOA staff from Range Management Areas throughout the country, including other Peace Corps volunteers specializing in community education, business skills training and agriculture extension/hydrology

The volunteer/volunteer couple will train a Mosotho diploma level person to operate the training center as a self-sustaining or profit-making operation A nearby Sheep/Goat Training Center in Qacha s Nek is a model which can be adapted in developing operations at the RMA Training Center The volunteer/volunteer couple will establish logistical arrangements of the training center Specific tasks include

- Establishing logistical arrangements (transportation, housing, communications, field studies) for groups of trainees
- Assisting with training materials development for Sehlabathebe Training Center,
- Developing short-term training course preparation in range management, livestock production and marketing, organizational development and management, and

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Note The volunteer/volunteer couple will work under the direction of CNRM training staff and in close collaboration with Ministry of Agriculture (MOA) range management field staff

Peace Corps Volunteer Job Description
Water Resources Development Specialist

I Trainees requested 1 position[1]
The initial assignment will begin in late 1992

II **Minimum Required to be accepted for this position**

A AA/AS Civil, Structural, or Environmental Tenineer Technician with two years experience in designing and building rural water systems,

OR

B BA/BS Civil, Structural, Sanitary, Environmental or Mechanical Engineering,

OR

C BA/BS Geology and expressed interest in designing and building water/sanitation systems

Additional Information

Willingness to learn a foreign langauge is required Experience in learning a foreign language is much preferred, although not essential

The Horizontal Well Drilling position requires mechanical skills such as small-engine troubleshooting and welding Experience or a course in well drilling would be very useful for this work Design work is much less important than having practical common sense about working with equipment

Candidate should have a background in geology to be able to access potential drilling sites University course work in geology would be quite useful in this position

Hands on experience in all or some of the above mentioned skills is a requirement

A U S driver s license and experience driving is absolutely required for this assignment

Narrative Description

The Community Natural Resource Management (CNRM) project will assist in setting up several new Range Management Areas (RMA's) There are four existing RMA s Pelenang/Bokong, Ha Moshebi/Ramatseliso, Sehlabethebe and Mokhotlong

The Range Management Area Program (RMA) aims are to increase the productivity of livestock and the income of livestock owners, to provide better systems of marketing livestock, to foster better management of the natural resources, and to accomplish these goals in a manner which is sustainable and socially acceptable to the people of the area

The RMA s have had success in some areas and problems in others The years of experience with GA s and RMA s considerably aids the development of new GA s The social impact of the GA s on the community is substantial The degree of community participation has largely determined the social sustainability of the existing GA s One of the most environmentally beneficial impacts of the RMA program to date has been the development of horizontal wells for livestock watering and village water supply

Local participation in all aspects of the development of the GA s is indispensable In the first RMA, where "grassroots" involvement was not a priority, serious problems have emerged, especially when project personnel were withdrawn and the community itself had to handle the GA Graziers should not be led to expect the project either to manage the GA or be a continual

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[1] The volunteer will be one of two horizontal well-drilling specialists The volunteer described herein works with the RMA program under the Community Natural Resource Management Project, a similar volunteer will work under the Home Gardens Project Both will be located in the same government office, MOA/DLS/RMD, with the previously-trained counterpart there A separate job description will be forthcoming under the AID grant to Peace Corps for continuation of Home Gardens

Water Resources Development Specialist - continued

source of funds Villagers will be expected to assist in construction of and to maintain the water developments which are constructed as part of the RMA development

Rural villages in Lesotho have great difficulty in finding clean water for domestic use, livestock, and small-scale irrigation Women often have to walk long distances to fetch water from streams or unprotected springs During Lesotho s long dry season (up to four months), many springs dry up and villages run short of water Livestock often pollute water supplies, and make it difficult for villagers to have access to safe drinking water and clean water for other uses The interest in vegetable production has significantly increased due to agricultural projects which emphasize more vegetable production for home consumption as well as for income generation Lack of water for irrigation is in most cases a constraint to increased production of vegetables As Grazing Association fees increase in the Range Management Area program, poorer stock holders will not be able to afford to participate in the association and, as a result will have to keep their stock near homes They will need water for their livestock and to irrigate fodder crops

PROJECT OBJECTIVES AND VOLUNTEER DUTIES[2]

A Identifying actual drilling locations, once the general area is identified via requests from the RMA
B Planning the logistics of equipment movement to sites and set-up
C Obtaining necessary local labor support from the community through Village Chiefs, Headmen, etc to assist in the water development process
D Cooperating with Village Water Supply re installation of water storage and delivery once wells are developed
E Working with Village Development Committeees and/or Grazing Associations in planning proper uses and control of the developed water supply
F Training Basotho counterparts in the operations and maintenance of the equipment
G Training Basotho counterparts in the water drilling process
H Training Basotho counterparts in the installation and control of the well and external plumbing
I As additional counterparts are trained, increasing areas of development on a priority basis as determined by the MOA

VOLUNTEER LIVING CONDITIONS same as previous This volunteer will be one of two horizontal well-drilling specialists The other will be described by the home gardens project co-funded by AID and Peace Corps

[2] The USAID-funded Community Natural Resource Management Project will provide resource support to the PcV, the Ministry of Agriculture(MOA) will provide direction and supervision

ANNEX I

611 (a) Certification

CERTIFICATION PURSUANT TO SEC 611(a) OF THE FOREIGN ASSISTANCE ACT OF 1961, AS AMENDED

This is to certify that adequate planning has been carried out and sufficient engineering and architectural plans developed to define the scope of the construction components of the Community Natural Resource Management project, and that the projections of probable construction costs over the life of the project represent reasonably firm estimates of the cost to USAID

Robert G. Rose, P.E.
Chief Engineer REDSO/ESA

Date· January 11, 1991