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EVALUATION OF THE MASAI LIVESTOCK
AND RANGE MANAGEMENT PROJECT
USAID PROJECT NO. 621-11-130-093

A.I.D.
Reference Center
Room 1655 NS

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PERFORMED BY A UTAH STATE UNIVERSITY
TEAM TOGETHER WITH
OFFICIALS AND REPRESENTATIVES OF USAID/WASHINGTON
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Evaluation of the Masai Livestock and Range Management Project;
USAID Project No. 621-11-130-093

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The purpose of the project was to achieve a high level of net offtake in the Masai District. To date little has been accomplished with respect to attaining the condition expected at the end of the project. There is little evidence that production indices such as increased calf drops, larger animals, younger animals being marketed, and increased net offtake have materialized. This shortfall is due to slower than anticipated progress in physical development, implementation of improved grazing practices, and lag in the cattle improvement program. The assumptions respecting achievement of project purposes have not been borne out. Progress is being made with respect to animal health and disease control, but there has been no evident change in Masai attitudes about development of a market orientation. The evaluators made 21 recommendations including: (1) the contractor for the Masai Team should be changed; (2) the training program should be accelerated; (3) the participant training program should be modified; (4) the range management capability should be expanded to bring it into balance with that of the water component; (5) the sociological inputs should be redirected to provide a means of monitoring progress and change among the Masai; and (6) the hydrogeologist should give priority to identifying promising borehole sites.

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INTRODUCTION

This evaluation was based on eight days spent in the field divided between the Monduli and Kiteto Districts of Masailand; discussions and interviews with USAID personnel, Masai Team members, TanGov officials, and Masai leaders; and reports and documents.

Three Tanzanian officials nominated to the Evaluation Team accompanied us on the field tours and participated in our discussions. Members of USAID/Tanzania were also present throughout. A representative of AID/Washington accompanied us on the tour of South Masailand.

The frame of reference for making our assessments of project requirements and accomplishments was the 1973 Project Paper as subsequently amended, part of which forms Section I of the report and the Scope of Work outlined by USAID. (See Appendix A) USAID documents required under the contract were prepared by USAID officials in consultation with other members of the Evaluation Team.

Part II summarizes the accomplishments and the status of the project. Part III contains the team's evaluation of the project effort and Part IV contains the recommendations for changes in emphasis and improving the project.

I. DESCRIPTION OF PROJECT (Based upon 1973 PP Revision and subsequent amendments.)

A. Statement of the Goal

1. The Goal

To assist the Government of Tanzania achieve its objective of self-sufficiency and an exportable surplus to earn foreign exchange in the livestock subsector.

2. Measurements of Goal Achievement

(a) Imports of livestock meat products are essentially eliminated.

(b) Domestically produced livestock meat products are available in adequate supply and are properly marketed and distributed to meet total national demand.

3. Assumptions of Goal Achievement

(a) Weather and other environmental conditions are favorable.

(b) Tanzanian dietary habits in terms of food variety preferences do not change appreciably.

(c) The Tanzanian Government's goal of self-sufficiency in the livestock subsector remains a high national priority.

(d) The Tanzanian Government provides sufficient budgetary resources required to achieve and maintain self-sufficiency in the livestock subsector.

(e) The system for internal pricing, marketing and distribution of agricultural products functions properly.

(f) Present trade, commerce, and other relevant agreements among the nations of the East African Community remain substantially favorable to goal accomplishment.

(g) The Tanzanian Government's decentralization and other reorganizational efforts are implemented without major adverse interruptions of services essential to the continuance and increase of livestock production.

(h) Credit will be sufficiently available to small farmers to permit maximizing of their livestock production potentials.

(i) Adequate Tanzanian manpower will be available in the livestock subsector.

(j) Other international donors continue to provide adequate budgetary and other resources to the Tanzanian Government to assist not only in the livestock subsector per se but also in those auxiliary areas essential to success in this subsector.

B. Statement of Project Purpose

1. The Purpose

To achieve a sustained high level of livestock offtake in the Masai District consistent with proper resource management and Tanzanian development goals.

2. Conditions Expected at the End of the Project

(a) Annual herd offtake will be increased from 7% in 1970 to 12% in 1980 on fully activated Ranching Associations (R.A.s).

(1) Eight R.A.s will have an annual offtake in their management units of 12% or more.

(2) The management units of the thirteen other R.A.s will be in various stages of development toward a 12% or more offtake level.

(b) Average slaughter steer liveweight increases from 550 pounds in 1970 to 650 pounds in 1980.

(c) Calf drop rises from 50% in 1970 to 60% in 1980.

(d) Calf mortality is reduced from 35% in 1970 to 20% in 1980.

(e) The effective calving rate increases from 35% in 1970 to 50% in 1980.

(f) The average age of slaughter steers at market weight is reduced from six years in 1970 to four years in 1980.

(g) The average age of females at first calf is reduced from five years in 1970 to four years in 1980.

3. Basic Assumptions About Achievement of Purpose

(a) The Tanzanian Government will continue to assign qualified personnel to the project.

(b) Tanzanian Government budgetary and logistical support will continue at satisfactory levels.

(c) The Masai will accept the improved livestock management practices and the better range management techniques developed by this project.

(d) Disease control measures and more available water supplies will increase productivity and cause the Masai to reduce their needs for surplus animals as a hedge against disease outbreaks and drought, thereby improving economic offtake levels.

(e) The Masai will be willing to reorient the use of stock away from milk and toward beef production.

(f) It will be possible to bring the Masai into a cash economy through improving economic offtake levels, providing development credit on a cooperative basis, and by making selected consumer goods available through cooperative shops.

C. Statement of Project Outputs

1. Outputs and Output Indicators

(a) Security of land tenure

(1) Twenty-one Ranching Associations formed with rights of occupancy.

(b) Range Management

(1) By 1980, eight Ranching Associations will be subdivided into an appropriate number of management units and each management unit will have a management plan.

(2) Thirteen other Ranching Associations will be in various stages of development toward this objective.

(3) The management units of the eight Ranching Associations will be complying to annual range condition studies, including stocking quotas and rotation grazing. Thirteen other R.A.s will be in various stages of development toward this objective.

(c) Disease Control

(1) Eight Ranching Associations will dip all animals and follow other disease control practices (e.g. vaccination) on a regular schedule, with thirteen other Ranching Associations in various stages of development toward this objective.

(d) Water Development and Distribution

(1) Eight Ranching Associations have 40% of a management unit covered with permanent water for dry season use and 70% covered with temporary water for wet season use.

(2) Thirteen other Ranching Associations will be in various stages of development toward this objective.

(e) Livestock Improvement

(1) Broad acceptance of breeding and management practices (i.e. improved bulls, castration, selection, disease treatment and control).

(f) Marketing

(1) Masai sell marketable surpluses.

(2) Efficient marketing organization established.

(g) Extension Service

(1) Preparation of livestock extension materials.

(2) Extension service established and accepted by the Masai.

(3) Eight Ranching Associations will have a resident field

(h) **Trained Tanzanians**

(1) Thirty-four Tanzanians will have successfully completed US-financed courses and will be assigned to the Masai project.

(2) Twenty Diploma Range Officers will have received training in East Africa and will be assigned to the project and a further ten will receive in-country or third country training in various fields of specialization related to water development, agricultural mechanics, and cooperative marketing.

(3) An in-country field training program will be organized to support the project's activities.

2. Basic Assumptions About Production of Outputs

(a) Tanzanian manpower will be available.

(b) The Masai will accept new management, breeding, disease control and marketing measures, and will develop the need for a cash economy.

(c) The Ranching Associations will develop sufficient self-interest and stake in investment to take action to exclude outside cultivators and other non-members.

(d) The Government of Tanzania will effectively enforce rights of occupancy and other legal measures to protect the Ranching Associations from outside encroachment.

(e) The Government of Tanzania will provide the necessary financial, logistic and other backing to assure the achievement of output targets.

D. Statement of Project Inputs

I. Inputs

(a) United States

(1) The assignment of one US direct-hire project manager.

(2) Ten US technicians assigned to the project as follows:

1) Project Coordinator

- III) Range Management Specialist
- IV) Water Development Specialist
- V) Extension Sociologist
- VI) Groundwater Hydro-geologist
- VII) Veterinarian
- VIII) Heavy Equipment Specialist
- IX) Rural Training Specialist
- X) Well Driller

2. TDY Assistance

Senior level or specialized temporary duty assistance may be provided as the need arises as the project progresses.

3. US-provided training for thirty-four Tanzanians to replace the US technicians and fill other strategic positions in connection with this project.

4. Provision of twenty-four 4-wheel drive vehicles over the life of project to support the US technicians.

5. Partially repayable credit to build nine housing units for the US technicians.

6. Other costs and commodity elements (e.g. demonstration and training equipment) will be provided in accordance with the budget in Appendix B.

7. Approximately \$500,000 of an Agricultural Projects Support Loan, Phase I, was provided in FY 1972 for the purchase of heavy equipment to be used in water development, bush clearance and road development in connection with this project.

8. Approximately \$1.2 million of an Agricultural Projects Support Loan, Phase II, for the purchase of specialized materials and heavy equipment.

II. Review of Progress Made

A. Inputs

The personnel anticipated by the 1973 revision were recruited. One of the positions, the Livestock Marketing Specialist position was later eliminated and the occupant's duties transferred to another project. The present Livestock Production Specialist was brought on board late in 1975 after a gap of 5 months; the Veterinarian first recruited did not remain and the present occupant did not arrive until early in 1975. The recently authorized Rural Training Specialist has not yet been recruited. The Well Driller arrived in February 1976. All other positions have been staffed and are operative.

TDY assistance was provided by the assignment of a Range Management Specialist for one month and an Audio Visual Expert for six weeks to prepare training materials on dip management.

Equipment items provided through two agricultural support loans have been substantially delivered. Equipment on hand for the project is shown in Table 1. Equipment yet to be delivered as scheduled as of February 1976 include:

- 1 D-7 CAT Tractor
- 1 D-4 CAT Tractor
- 1 D-12 Motor Grader
- 1 Tilt Trailer for D-4
- 1 Dump Truck
- 1 Fuel Tanker Truck (not ordered)

TABLE I

WATER CONSTRUCTION EQUIPMENT
AVAILABLE TO THE MASAI PROJECT
(From January 1976 Report of Water Development Engineer)

<u>ITEM</u>	<u>NUMBER</u>
D-7 Crawler CAT Tractor	2
D-4 Crawler CAT Tractor	1
D-6/7 Size Towed Scraper	2
D-12 Motor Grader	1
High Speed Rotary Drill Rig	1
Small Auger Drill Rig	1
Back Hoe Tractor w/bucket	1
Truck and LoBoy Trailer	1
Dump Trucks, 10 ton	3
Tilt Trailer for D-4	1
Tamping Roller	1
Water Bowser, 400 gal.	4
Fuel Bowser, 400 gal.	3
Tools for Central and Field Workshops	75% of needs

B. Outputs

1. Land Tenure

Eight Ranching Associations are in various stages of being established throughout Masailand, three in the Monduli and five in the Kiteto District. Preliminary base surveys have been made on six additional associations. The status of the Ranching Associations thus far identified is shown in Table 2.

Full village settlement has not been accomplished within these eight associations. Ujamaa village (livestock) settlement has been completed in only the Konyokio and Komolonik Associations. A single village has been settled in the Shambarai Association.

2. Range Management

Thus far range planning and implementation have not progressed far. Four management plans have been written for ranching associations and one bull ranch. These vary in detail and sophistication. Early plans were elaborate and detailed; the last ones have been extremely simple, so much so that they may be ineffective. It will be necessary to follow these simple wet-dry season grazing schemes with more sophisticated ones which incorporate measures which insure the availability of forage for drought periods and provide deferment.

3. Disease Control

Twelve Livestock Development Centers have been established. These have varying capabilities, staffing, and equipment. Half of them are capable of only dispensing drugs and furnishings are minimal, in some cases being limited to a few furniture items and shelves. Six of the centers have vehicles. The status of the Livestock Centers is given in Table 3. These are obviously of limited capability and must be developed further.

TABLE 2

STATUS OF RANCHING ASSOCIATIONS
(From Engle, Scott, January, 1976, Evaluation Report for Range Management
Activities of the Masai Range Project and interviews with Masai team staff)

	<u>Acres</u>	<u>Settlement</u>	<u>Range Surveys</u>	<u>Range Plan</u>
<u>Kiteto District</u>				
Talamai R.A.	280 M	No	Yes	Yes
Amei Bullranch			Yes	Yes
Konyokio	282 M	Yes	Utilization	No
Sunya		No		No
Simanjaro		No	No	No
Oimoti Bullranch		No	No	No
Shambarai	100 M	1 Village		No
<u>Monduli District</u>				
Komolonik	260 M	3 Villages	Yes	Yes
Tarasero Bullranch			No	No
Korongoro	1600 M	Mostly	No	No
Embarwai Bullranch			No	No
Teret	500 M	No	Yes	No
Manyara	113 M	No	Utilization Survey	No

TABLE 3

LIVESTOCK DEVELOPMENT CENTER STATUS - DECEMBER, 1975
 (From the January, 1976, Quarterly Report of the Team Veterinarian
 October to December 1975)

	<u>MONDULI DISTRICT</u>					
	<u>Building</u>	<u>No. of Officers</u>	<u>Vehicle</u>	<u>Furnishings</u>	<u>Water</u>	<u>Service Capabilities</u>
Engaruka	Yes	2	No	T,S,D,C,		DS
Gelai	Yes	1	No	R,T,D,L,C		DS
Loliondo	Yes	3	Yes	R,T,D,L,C	S,O,F	DS
Longido	Yes	3	Yes	R,T,S,D,L,D		DS,M,D,MS
Makuyuni	Yes	3	No	R,T,C,B,		DS
Malambo	Yes	1	No	T,D,C,B	S,O,F	DS
Monduli	Yes	3	No	R,T,D,S,L,B	S,O,F	DS,M,MI,D
Ngorongoro	Yes	3	<u>1/</u>	R,T,S,D,L,C	S,O,F	DS,M,MI,DT

1/ Provided by Conservation Unit

<u>KITETO DISTRICT</u>						
Engasmet	Yes	2	Yes	R,T,S,L,B	S,O,F	DS
Kambi ya Chokaa	No	-	-	-	-	-
Kibaya	Yes	3	No	R,T,S,D,L,C,B	S,O,F	DS,M,D,MI
Kijungu	Yes	3	Yes	R,T,S,D,L,C,B	S,F	DS,M,DT
Simanjiro	Yes	2	Yes	R,T,S,D,L,C,B	S,F,O	DS,D,MS
Makami/Ndedo	No	-	-	-	-	-

Furnishings: R - Refrigerator D - Desk
 T - Worktable or counter L - Lockable cabinet
 S - Shelving C - Chairs
 B - Burglar-proofing (lockable cabinets, wire on windows, etc.)

Water:- ST - Storage tank piped to faucet O - Outside drain
 S - Sink F - Faucet

Service Capabilities: M - Microscopy (includes fecal exam for endoparasites and blood exam for infectious disease)
 DS - Drug sales
 EE - Extension education
 DT - Dip fluid strength testing (BHC, toxophene)
 MI - Meat inspection
 D - Diagnostics (material for physical examination and submission of samples to Veterinary Investigation Center)
 MS - Minor surgery (dehorning, castration, dystocia assistance, etc.)

11.B.

a. Surface Water

Early in the project life, prior to the arrival of the heavy equipment and before the first project evaluation in January, 1973, the emphasis in water development was on the construction of pipelines, capture of springs, and building the tanks and pumping devices needed to store and distribute water. From 1970 to January 1973 a total of 32 projects were completed which included 35 miles of pipelines, 2 pump facilities and headworks, 12 storage tanks, numerous control valves, 8 water troughs, 10 dips, 6 range offices and 26 miles of access roads. A more detailed enumeration of this work is found in the 1972 End of Tour Report of the Water Specialist.

Delays were encountered in the arrival of the heavy equipment needed for development of surface water supplies. Work was started using borrowed equipment. In late 1973 some D-8 caterpillar tractors intended for a project in West Tanzania were temporarily diverted to the Masai Project. Two of these were made available in November 1973 and an additional one in April 1974. These remained with the project until August 1974 when much of the project equipment (two D-7's and one D-4) had arrived to continue the construction work. The arrival of the heavy equipment specialist in February 1974 resulted in more effective use of the construction equipment.

From 1972 to January 1976 a total of 43 surface water projects were completed which required moving 583,000 cubic yards of earthwork in widely separated parts of Masailand. These dams increased the available water storage capacity by 2,063 million gallons. To move the heavy equipment and supporting supplies to the sites required the construction of 40 miles of road and the improvement of 163 miles of road. Details of this impressive construction program are found in Table 4.

TABLE 4

MASAI RANGE WATER DEVELOPMENT PROJECTS IMPLEMENTED SINCE 1972

Project Name or Location	Depth (Ft.)	Earthwork (1,000 cu. yd.)	Capacity (Million gal.)	Type of Work
<u>MANYARA</u>				
Mto wa Mbu	-	20	-	Repair
Manyara Dam	10	13	200	Construction
Ngosis Dam No. 1	15	8	10	Construction
Ngosis Dam No. 2	20	10	20	Construction
Changarawe Pit	7	3	3	Construction
Kwa Ku Chinja Dam	25	45	250	Construction
		10		Repair
Manyara Ranch Dams	20	30	300	Repair
<u>KOMOLONIK</u>				
Oi Karla Dam	35	60	50	Construction
Marlete Dam	10	1	4	Repair
Monduli Juu	45	45	150	Construction
Ardal Dams (a)	10	4	4	Construction
(b)	15	5	40	Construction
(c)	8	2	10	"
(d)	6	2		"
Laslane Dam	15	25	150	Construction
		15		Repair
Ardal Charcos (4 seasonal supplies)	15	7	8	Repair
Engegobi Dam	25	10	15	Construction
Essimigor Dam	20	35	24	
Essimigor Chorco	10	3	4	
Burko Dam	16	18	15	
Naibata Dam	25	22	150	Construction
<u>SUNYA</u>				
Kiteto Dam	25	8	167	Rebuilding

TABLE 4 (Continued).

Project Name or Location	Depth (ft.)	Earthwork (1,000 cu. yd.)	Capacity (Million gal.)	Type of Work
<u>KONYOKIO</u>				
Kibaya Dam	25	44	60	Construction
Ndalefa Dam	20	25	20	Construction
Mwitakira Dam No. 1	22	17	17	Construction
Mwitakira Dam No. 2	20	15	17	Construction
Ngokolmash Dam	15	15	60	Construction
Main Feeder Road Improvement - 70 miles - Oboloti - Kibaya - Kijungu				
Main Feeder Road Constructed - 25 miles - Kibaya - Ndedo				
<u>TALAMI</u>				
Amel Dam	20	12	9	Construction
Access Road Improvement - 150 kilometers - Kijungu to Namaluiu				
<u>KORONGORO</u>				
Engeju Ngiro Dam	15	20	50	Rebuilding
Kimona Dam		2	10	Repair
Endulell Dam		7	150	Rebuilding
Endulell Haffir	20	8	56	Construction
		2		Repair
Kakessio Sand River Underground Barrier	15	1	4	Construction
Kisongo Dam	8	5	20	Repair
Nengungu Dam		1	6	Repair
Musa-Loitushula Dam		4	10	Repair
TOTALS: 43 projects		583	2,063	163.2 miles road Improve 39.5 miles road construc

(From August, 1974, End of Tour Report, and January, 1976 Report of Project Water Development Engineer)

In addition to the construction of surface water facilities, much effort has been expended on the necessary surveys and investigations and the design work that precedes the construction phase. Preparation of reports and budgets, ordering of equipment and the planning and coordination of future work has also been accomplished.

b. Ground Water

Activities in the ground water portion of water development has consisted of drilling new boreholes, repairing and cleaning existing boreholes, constructing headworks, developing new headworks and pumps, and making ground water investigations.

Some geophysical surveys and selection of well drilling sites was done by TanGov Crews in January-March 1973 and in April-July 1974. Since the arrival of the project Hydrogeologist in August 1974, the Schramm Drill Rig has worked on eleven boreholes. In addition, three wells have been cleaned or repaired using the smaller rotary drilling rig (Table 5). During the same time period, work has been done on the headworks for six boreholes of which half are completed; the other are nearing completion.

The hydrogeologist has carried on a program of experimentation and development of new headworks equipment adapted to local technology and material. This has included prototypes of a windmill made from local materials, a deep well pump, and a shallow well pump.

The hydrogeologist has done ground water reconnaissance on 20 sites using geophysical investigations, air photo interpretation, and satellite imagery as tools to help select the most promising borehole sites.

The magnitude of progress in water development can be measured by the percentage of the Ranching Associations' areas covered by permanent water in the dry season and by temporary water in the wet season. Table 6 lists the conditions at the start of the project, the current conditions, and the expected condition at the end of the project, assuming full use of project equipment to 1980.

TABLE 5

BOREHOLE DRILLING AND REPAIRING, 1974 - 1975

(From January 1976 Report of the Project Hydrogeologist)

Date of Work	Borehole/Name Location	Depth Ft.	Yield GPH	Remarks
Aug 74	AR.129/74 Amel/Kijungu	70	-	Abandoned crooked hole
Sept 74	AR.189/74 Amel/Kijungu	540	300	On reserve
Nov 74	AR.200/74 Amel/Kijungu	500	660	In Use (Amel Ranch)
Jan 75	AR.25/75 Engasumet	420	2250	Main town supply
Mar 75	AR.25/75 Engasumet	300	300	On reserve
Apr 75	AR.25/75 Engasumet	-	-	Abandoned (collapsing)
May 75	AR.146/75 Oiboloti	-	-	Attempted fishing and repair but had to be abandoned
Jun 75	AR.146/75 Oiboloti	610	No test	On reserve (needs cleaning)
Aug 75	AR.146/75 Oiboloti	653	300	Planned use by hand pump
Oct 75	AR.23/50 Kibaya	-	-	Cleaned and developed
Oct 75	AR. Kihaya (near spring)	255	760	Secnd main supply (will deepen later)
Oct 75	AR.200/74 Amel	-	-	Cleaned
Nov 75	AR.247/75 Kibaya (In town)	185	450	Third town supply
Dec 75	AR. Kijungu	-	-	Cleaned

TABLE 6

MASAILAND WATER AVAILABILITY FROM JANUARY 1976 REPORT OF PROJECT WATER DEVELOPMENT ENGINEER; KAMATZ (1963) REPORT ON MASAILAND EXISTING AND POTENTIAL WATER DEVELOPMENT; AND UNPUBLISHED INFORMATION FROM PROJECT WATER DEVELOPMENT ENGINEER

<u>Ranching association</u>	<u>Percent of area with dry season water*</u>			<u>Percent of area with wet season water</u>		
	<u>1970</u>	<u>1975</u>	<u>1980+</u>	<u>1970</u>	<u>1975</u>	<u>1980+</u>
Teret	>40	>40	>40	>70	>70	>70
Korongoro	30	>40	>40	60	70	>70
Komolonik	20	>40	>40	40	70	>70
Simanjiro	30	30	40	>70	>70	>70
Shambaral	30	30	40	60	60	70
Konyokio	20	>40	>40	>70	>70	>70
Sunya	20	30	>40	60	70	>70
Talamai	25	>40	>40	60	70	>70
Manyara	25	>40	>40	60	70	>70
Kitwai	11	15	30	50	50	60
Makani-Endido	11	15	30	50	50	60
Ngosumet	25	30	40	50	60	70
Naberera/Landanai	25	30	40	50	60	70
Komolonik South	20	40	>40	60	70	>70
Ngaserai	40	>40	>40	70	70	>70
Ngara-Nalbor	35	40	>40	60	70	>70
Gelai-Kitumbeni	30	35	40	50	55	60
Engaruka	35	40	40	50	60	70
Digodigo	35	35	40	50	60	70
Malanbo	25	30	35	40	50	60
Soltisambu	40	40	>40	70	70	>70
All of Masailand	27	37	>40	60	65	>70

*Percentages based on a 5-mile radius around water source.

+The 1980 estimate shows what could be accomplished by the project equipment already on hand or ordered assuming the availability of adequate logistical and financial support and that the equipment is properly maintained. The actual work accomplished will also depend on the organization of Ranching Associations and the preparation of preliminary grazing plans, as well as the extent of Tanzanian support. The Project aim is to bring 15 of 21 R.A. areas over the 40% dry season water availability by 1980.

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TABLE 6 (Continued).

The data show that in the initial eight R.A.s, one exceeded the 40 percent dry season coverage when the project began, five have currently exceeded the 40 percent target, and by 1980 all will have reached or exceeded the goal. A similar pattern is seen for the wet season goal of 70 percent coverage.

In the remaining 13 tentative R.A. areas, only two began the project with 40 percent coverage. At the present time six have reached or exceeded that level and by 1980 only three areas could not reach the goal. It is doubtful that these three can ever achieve 40 percent dry season coverage. The actual work to be done will depend on grazing plans yet to be developed and implemented, and on the resources dedicated to the work.

11.B.

5. Livestock Improvement

Two Associations, the Talamai and the Komolonik, were selected to receive improved bulls in 1971. Of the five Sahiwal-Boran bulls delivered to a member of the Talamai Association none survived more than a few weeks. Of 30 bulls obtained from the Mpwapwa breeding station, one survived. A subsequent shipment of 26 improved bulls were distributed among six bomas in the Talamai Association; about three-fourths of these survived (to 1975) and offspring are being produced from them. Good bull survival is reported from the Konyokio Association which received eleven bulls (Moluche, Kunev and Hatfield, 1975).

A shipment of improved bulls to the Ardal Ranch which were intended to provide a source of improved blood to upgrade Masai cattle proved of little value in consequence of large losses caused by a long period of confinement in railroad cars and failure of water supplies at Ardal Ranch.

Although the Masai are impressed by the improved livestock and the desire to have better cattle, they seem not yet to appreciate the need to give bulls the care that is required if the improvement program is to succeed.

6. Rural Sociology and Extension

Major activities of the extension sociologist and his counterpart officials were directed to conducting the sociological census to provide the basic data needed for determining the project's impact and laying a foundation for developing a basic statistical system in the project area. The census enumerated the families in all bomas in the study area and included items relating to family size and composition, migration patterns, water use, livestock, grazing patterns and others. Censuses were conducted in twelve areas (Table 7). A list of reports and papers developed from these censuses are presented in Appendix E.

TABLE 7

SUMMARY OF PROGRESS OF WORK ON THE SOCIOLOGICAL CENSUS
 (From end of tour report of the Sociologist, July 1975)

<u>CHAMA</u>	<u>SURVEY</u>	<u>ANALYSIS</u>	<u>INITIAL REPORT</u>	<u>FINAL REPORT</u>
Talamai	6/1/73	5/74	none	Sept 1974
Sunya	73	5/74.	July 1975	None
Engasumet-	12/73	-	-	-
Kitwai	1/74			
Engaruka	12/73- 1/74	6/74	Oct. 1974	Dec. 1974
Komolonik	2/74- 8/74	8/74	Aug. 1974	None
Manyara	7/8/74	2/75	None	Feb 1975
Kitendeni	12/74-1/75	3-4/75	Apr 1975	None
TingaTinga	1-2/75	4/75	Apr 1975	None
Longido	2-3/75	5/75	May 1975	None
Naberera	1/75	6/75	June 1975	None
Shambarai	1-3/75	6-7/75	July 1975	None
Namalulu	12/73	6/75	In Naberera report	

In-depth information on Masai family histories including genealogical histories and cultural practices have been collected from some twenty families. This information was collected to supplement the sociological census in data collection and interpretation of the census data.

Support to other team efforts have been provided by collecting information for resettlement planning. Assistance was rendered in the formation of Ranching Associations particularly in determining potential boundaries, providing census and cultural data, and assisting in the public relations oriented meetings with Steering Committees. With the exceptions of the work through other technicians and TanGov officials, no significant work was done on the direct extension work.

7. Training of Tanzanians

The training component is a critical aspect of the program., since the ultimate success of the project will be measured by the ability of the Tanzanians to continue the program after the external assistance is terminated. It is one of the best features of the project. It provides 30 training fellowships abroad of 6 months-4 years duration. This program was aided by TanGov support for in-country training and elsewhere in East Africa at lower levels.

As can be seen from Table 8, nine Tanzanians have completed training at various U.S. institutions and returned. Out of the nine returned trainees, seven are still assigned to the project while two have been transferred to other posts after serving on the project for a short period following their return. The U.S. trained officials are occupying various key positions relating to the project's activities such as: Co-project Manager, Ranch Managers, District Livestock Development Officers, Livestock Marketing Officer, and Heavy Equipment Supervisors. The progress of the fellowship program is

TABLE 8

PROGRESS OF THE U.S.-FINANCED TRAINING PROGRAM
 (Compiled from information in separate reports
 supplied to the evaluation team)

<u>Field of Specialization</u>	<u>Number of Training Fellowships Planned</u>		<u>Number Completed</u>	<u>Implementation Training In Progress</u>
	<u>Number</u>	<u>Man/ Years</u>		
Range Management	8	15	1	3
Livestock Production	6	11	6	4
Livestock Marketing	3	6	1	1
Rural Sociology	3	5	0	0
Rural Extension	2	4	0	0
Veterinary Medicine	2	8	0	0
Water Development	3	6	0	2
Heavy Equipment Mechanic	2	2	1	0
Parasitology	1	1	0	1
TOTAL	30	58	9	11

satisfactory as far as the number of trained personnel are concerned. However, there is a serious shortfall in the distribution of trainees by sub-program areas. For example, there are ten persons either completed or undergoing training in the areas of the livestock compared with six persons allowed while there are no persons being trained in the areas of rural sociology and rural extension in spite of the fact that there are five positions allowed in these areas. Training in range management is below projected levels; training in livestock production exceeds the number planned. This has occurred because of trainees transferring from range to livestock programs once they were in the U.S.

Training support from the TanGov appears to be lagging. Twenty Diploma level range officers and ten specialists trained in water development, agricultural mechanics, and cooperative marketing previously assured for the project should be assigned as soon as feasible. Very little effort has been made for developing in-country training programs -- either formal or informal. It is important that formal training programs, short courses and seminars dealing with Range Management, Animal Husbandry, Ecology, etc. be arranged at the Rural Training Center, Monduli, for Regional, District and Local officials, and leaders of Ranch Associations. Informal field training programs and workshops on Animal Husbandry, Range Management, etc. should be also arranged at each Ranch Association.

III. Evaluation

A. Goals

Goal achievements have not been realized. Meat has been in short supply in the Arusha Region during recent months. There is some indication that this situation is changing, large numbers of animals now being reported

at markets (late February). Whether this will relieve the meat shortage in the area will depend upon who the purchasers were and whether they are sent to slaughter in Tanzania rather than Kenya to obtain Kenya currency which is preferred. Assumptions of goal achievement are realistic, in the main. To this point the weather has not been favorable which has disrupted orderly progress of the project and led to hurried efforts to solve immediate problems. Drought situations should be expected rather than the reverse.

As for the marketing system, impediments still remain to steady uniform flow of animals to slaughter.

B. Project Purpose

The purpose of the project was to achieve a high level of net offtake in the Masai District. To date little has been accomplished with respect to attaining the condition expected at the end of the project. Although statistics are not available, there is little evidence that production indices such as increased calf drops, larger animals, younger animals being marketed, and increased net offtake have materialized. This shortfall is due to slower than anticipated progress in physical development, implementation of improved grazing practices, and lag in the cattle improvement program.

The assumptions respecting achievement of project purposes have not been borne out. Qualified Tanzanian counterparts have not been available at all levels of the project and selection of some of them to participant training posts in the United States further limited their availability to the project. The most obvious overoptimism is in respect to the attitude of the Masai. Progress is being made with respect to animal health and disease control, but there has been no evident change in Masai attitudes about developing a market orientation. Cattle still remain the commodity upon which they place greatest value. Some Masai interviewed even admitted that money received for cattle under the TanGov's 10% offtake program would be used to purchase more cattle, thus

negating the objectives of the program. It is still too early to ascertain whether improved grazing systems will be adopted by the Masai.

In the original project paper (Project paper Ref. M.O. 1025.1, August 30, 1969, pp 4-6) appears this statement: "Technological innovation and improved animal and range management practices are absolute prerequisites for attaining project goals...the primary factors inhibiting change and delaying the transformation are basically cultural and sociological rather than technical." However, in the Revision 2 prepared in 1973 (Project No. 621-11-130-093, April 9, 1973 sociological and cultural aspects of the original project emphasis were dropped from both the conditions expected at the end of the project and outputs and output indicators. The basic premise to introduce technological innovation and improved animal and range management practices to the Masai with a minimum possible disturbance on the existing social system through necessary and adequate education efforts as stated in the original project paper still appears valid. Accordingly, a revised project purpose which reflected this view was developed with the AID team members which appears in the proposed revision of the Logical Framework Matrix (Attachment A, par. c-1).

Subsequently, reviewers of the Draft Report suggested further revisions. A possible broadened statement might be: To assist the Tanzanian Government in its efforts to integrate the Masai people more fully into the national economy through establishing the capability in the Monduli and Kiteto Districts Development Offices for directing, maintaining, and progressively extending integrated livestock programs in Masai and Ranch Association Areas. The material underlined reflects the suggested change to our original formulation in Attachment A, and might be added. However, the statement provide

specific objectives against which to assess the progress made which the suggested statement standing alone does not do.

The suggested indicators for measuring purpose accomplishment are:

1. Completion of the participant training program which ensures at least a basic minimum cadre of trained Tanzanian officials for continuing the program.
2. Establishment of training facilities and viable training programs in the two districts of Masailand.
3. Development of a system of monitoring social change among and acceptance of improved range management programs by the Masai.
4. Development of demonstration areas (such as contemplated in Ardal) where improved livestock are being grazed under improved methods of management.
5. Ranching associations accepting and implementing integrated management programs. A detailed schedule is provided in c-2 of Attachment A.

C. Inputs

1. Validity of Assumptions

The assumptions are valid and are important, although some of them have not been met fully or on schedule. For example, housing availability has been delayed, participant training candidate processing and acceptance slow, commodities delayed, counterparts assigned late and in insufficient numbers, and Tanzanian logistical and financial support sometimes inadequate or delayed. The effect of failure of these assumptions has been to retard certain phases of the project and hampered outputs.

2. Adequacy of Inputs

a. Physical Inputs

Although delayed in arrival, the heavy equipment provided through the two Agricultural Support Loans is sufficient to carry on the water development work to the end of the project if properly maintained. The two drill rigs on

hand will be sufficient for most of the borehole work. A used cable tool rig, if economically available, would speed up the cleaning and reconditioning of old wells.

The vehicles supplied to the technicians, while adequate in number, have not proved sufficiently sturdy. The Jeep Wagoneers and Pickups delivered were designed for lighter duty than is faced regularly on the project. If the Jeep brand continues to be used, more rugged, heavy duty options should be provided. Alternately, a brand of vehicles more serviceable under the difficult conditions of the project should be obtained. Availability of transport must be maintained at present level until the technicians are phased out of the project.

b. Technical Inputs

The Hydrogeologist has not been able to cover all the needs in the groundwater exploration and, at the same time, supervise the drilling operations and headworks installation and development. With the arrival in February 1976 of the Well Driller, this input will be adequate with two technicians assigned to the work. The provision for an Extension Sociologist and a Rural Training Advisor appears to be adequate. However, the position of Rural Training Advisor, which was recently authorized, has not yet been filled. Other technical inputs as they exist at present are adequate for the progress of the project, except in the case of the Range Technician. Given the pressure for water development by TanGov officials and the capabilities of the team for water development, additional capability should be provided in range planning and implementation.

2. Shortfalls in Accomplishment

a. Surface Water

Due to the urgent need for water storage facilities, some parts of many dams have been neglected or completion has been postponed. For safety's sake and to protect the investment already made, the dams should be completed

(1) Where necessary the spillways should be widened or deepened to an adequate capacity to prevent overtopping.

(2) Crest walls should be added if needed to maintain the desired water level in the reservoir and to control the overflow and erosion.

(3) Riprap protection of the spillway channel should be placed as needed where the excavated material is not sound or able to safely resist erosion.

(4) Since most dams have been constructed in a dry state they are particularly vulnerable to surface erosion. The dams should be seeded or sprigged to get grass cover started just before or during the first rainy season after construction. The local "users" of the dam should be mobilized to assist in this effort. This will allow them to contribute in a meaningful way and will let them feel a sense of ownership in the dam because of their work.

(5) During the first season of service and especially during the time the reservoir first fills and the dam becomes saturated, the dam should be inspected frequently so that any possible problems of erosion or incipient embankment failure can be corrected in time to save the structure.

(6) If a source of water, either surface or groundwater, is to be used by people, its quality should be tested to be certain it is suitable for human consumption. The water should be checked for harmful chemicals, for total salts, and for contamination by bacteria, parasites and toxic minerals. Sources not meeting reasonable standards for Tanzania should be abandoned or, if possible, improved.

b. Groundwater

The hydrogeologist has not completed the needed groundwater reconnaissance work because of the necessity to also supervise the borehole drilling and installation of headworks. Now that the Well Driller has arrived

and can take over the latter responsibilities, the Hydrogeologist can get on with his primary tasks which are to conduct geophysical surveys, perform pumping tests, examine water quality of water sources, interpret air photos, and check out and evaluate the satellite imagery of Masailand. Through this effort the most promising drilling sites can be selected and an effective drilling program can be planned.

A complete, up-to-date inventory of all existing boreholes in Masailand is needed. It should show the location, age, present condition, actual and potential production, quality of water, condition of the headworks, need for cleaning, and an estimated timetable for replacement. With such an inventory, district wide programs for cleaning and repair of old boreholes could be prepared.

The development of windmills and pumps adapted to local conditions and technology and utilizing local materials is a laudable program and should be continued. But, it should have secondary priority to other more urgent project work.

c. Sociological

Within the broad areas previously defined as the responsibility of rural sociologist/extension, several phases relative to describing general social and cultural aspects of the Masai have been accomplished, including some statistical documentation. However, there are several other phases falling to the responsibility of rural sociologist and extension specialist which are vital to the success of the project which have been delayed.

There was a clear need of services of both a rural sociologist with considerable experiences in research and social action programs and an extension specialist from the inception of the project. In addition, short term consultants for a duration of three to five months to assist in developing

statistical monitoring and record keeping systems for human and animal populations would have been useful. However, the project enjoyed the services of only one sociologist.

Additional counterpart officials, one from each district, at middle range level from the TanGov (possibly an Extension Officer or Agricultural Education Officer) should have been designated as counterpart officials at the regional level in addition to the Agriculture Officer who was assigned.

In addition, it would have been desirable if a junior level field assistant had been made available in each Ranch Association area. As previously mentioned, the rural sociologist and his counterpart official at the regional level have been primarily engaged in conducting censuses and analyzing these data. No apparent efforts were made to work with the Masai leaders for the formation and efficient operation of the Ranch Association. Furthermore, very little effort has been made to promote improving animal husbandry and range management practices through grassroots extension methods.

Formal professional training in Rural Sociology/Extension for five middle range TanGov officials should have been at an early stage of the project. Furthermore, short-term elementary training in extension techniques was needed for junior level field assistants on a continuing basis.

There has been a substantial financial and personnel input provided by the TanGov toward the project operation. For example, TanGov supported the entire field operation cost of the sociological census and the livestock census. In addition, the TanGov has provided funds for the construction of a Rural Training Center to supplement range training and extension activities.

d. Establishment of a basic statistical system for planning and review

A comprehensive record keeping system for human and animal populations in the impact areas for program monitoring and progress evaluation has not been developed. Although sociological censuses and livestock censuses provide information on the number of people and animals present at the census dates they do not provide mechanisms for continuously updating size and composition of human and animal populations. Information obtained from the censuses will provide "benchmark" information but the progress and change cannot be measured unless another comprehensive census is taken at a later date and the results are compared. Therefore, the usefulness for such a major undertaking as taking a census without building into it a mechanism of updating the information on a continuing basis will be minimal.

A new system of continuous record keeping should be introduced. This record-keeping system should be based on the organizational channels of the Ranch Association and Ujamaa Villages reaching to the Masai families. A simple registration form for each family should be developed to record number of people in the family by broad age group and sex and also to record births and deaths occurring in the family. Under the direction of the sociologist and rural extension personnel, the junior level field officer attached to the Ranch Association can maintain and update such a record system. The record should be updated at least annually at the time when each member pays annual dues.

Information on the number of livestock by various types should also be recorded. The records may be updated periodically through information obtained at the dipping facilities. Livestock numbers could be easily obtained observant dip attendants could be trained to observe apparent age distribution of animals.

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Sample surveys relating to the attitudes of the Masai regarding marketing their surplus cattle, the benefits of the Ranch Association operations and their knowledge on the improved livestock production and range management plans may be conducted. The attitudes of the Masai relative to money, the education of children, improved housing, adequacy of water, health care, etc., may also be obtained through the sample survey.

The role of the sociologist should be devoted to developing and updating the meaningful record system and obtaining cultural, social, psychological, and economic information relating to the Masai. Socio-economic and cultural background as well as the attitudes of the Masai relating to the project activities will provide valuable information for the project.

e. Formation, Registration and Operation of Ranch Associations

Results of the censuses and other reports prepared by the Rural Sociologist appear to have facilitated formation and registration of Ranch Associations already formed or in the process of formation. However several Ranch Associations which are already organized and registered appear to function efficiently. Resettlement program through the "Ujamaa" movement might have hindered activities of the expert in assisting Ranch Association activities. It seems vitally important for the project's success to make sure that these Associations function effectively.

f. Development of Range Management Plans for Ranch Associations

Progress of developing range management plans in each of the Ranch Associations formed has lagged behind other components of the project. The Sociologist, the Range Management Specialist, and the Livestock Production Specialist as well as other technicians should work closely with their counterpart officials in completing these plans and implementing them.

g. Field Extension Program for Ranch Associations

Extension work has lagged badly behind other aspects of the Project's activities. Very little effort has been made: (1) to organize extension workshops for the local field staff, (2) to organize short seminars for TanGov Regional and District Officials and Ranch Association Leaders, (3) to develop training materials, and (4) to train TanGov extension personnel.

h. Other Sociological and Cultural Factors Influencing Project Implementation

Successful execution of the project depends upon maintaining communication links with the Masai so that the impact upon them politically and socially, can be known. Better understanding in the following areas will be particularly useful:

(1) An analysis of factors that lead the Masai to market their cattle, and a documentation of existing use of money;

(2) The nature of group conflicts, if any, that may affect the possibilities of cooperation in certain "problem" areas;

(3) The extent to which the existing social structure can be modified to take on new responsibilities within the Project's own program for livestock improvement;

(4) The existing rate of diffusion of key innovations, and associated leadership or other factors influencing this spread of new technical practices.

It is apparent that a project as complex and as challenging as this requires a concerted effort of a team consisting of several disciplines. Every project activity requires inputs from more than one technical specialty and TanGov officials. Careful planning and close coordination among and between experts, TanGov officials, and local leaders are essential. Regular staff meetings is one way to facilitate teamwork and coordination.

3. Identification of Bottlenecks

a. Logistic support

While the number of vehicles assigned to the project is adequate, their availability and reliability has been a serious handicap at times. The Jeep Wagoneers and Pickups do not hold up under the conditions in Masailand without rather extensive and expensive modifications. Heavy duty options should be provided or another brand of equipment should be selected in the future.

Logistic support from TanGov has been reasonably good especially to keep the heavy equipment working. However, sufficient transport and supplies are often not available for all phases of the work. Specifically four Tanzanian vehicles are needed for water development work (one in each district to support heavy equipment operations, one for surface and groundwater surveys and one for repair and maintenance work) and four vehicles (two in each district) are needed for the range management and livestock programs. Some form of vehicular transportation should exist at each Livestock Development Center.

An overnight facility in Kibaya in Kiteto district would be beneficial for the project. The transportation and communication system available now in the project area requires nearly one full day to travel from Arusha to Kibaya over dirt roads. The trip to the extreme part of Monduli District is equally long. At present two to three working days are required in order to provide a few hours of technical services in the Kibaya area because of difficulties in reaching that point. If such an overnight facility is provided, the technicians could plan on staying longer periods to work with Kiteto area officials involved in the project. It will also be possible from this point to work with leaders of other Range Associations located near this location.

The overnight facility should be well stocked with some basic food items so that technicians could stay without coming back to Arusha as long as work required.

b. Communication and Transportation

The long distances and poor roads in Masailand together make a serious obstacle to efficient operation of the project. For example, if a tractor breaks down, the heavy equipment specialist might have to make one round trip to diagnose the problem and another trip to deliver the parts and make the repair.

A two-way radio system for all project vehicles would greatly increase efficiency. The expense of one extra round trip to south Masailand would pay for installation of a radio in a vehicle. Safety considerations alone would adequately justify such a system in this rough and inconvenient and, in places, dangerous area.

Availability of rapid transportation (by light aircraft) would also help overcome the barriers of distance and terrain. Three members of the present team are pilots. Furthermore, light aircraft (with pilots) belonging to the Ministry of Agriculture are operating in the area. Their availability for use by the project should be investigated. Consider what time could be saved in repair of equipment if the trouble could be reported by radio and the parts and mechanic delivered by air.

c. Clerical Support

Another impediment to efficient project work is the lack of adequate clerical support. Delays in getting letters and reports typed are frustrating to the staff and needlessly waste their time. This situation could be improved.

d. Training for Newly Arrived Technicians

Newly arrived technicians are faced simultaneously with an unfamiliar culture, an unfamiliar governmental structure and a new language. A short period of instruction by other team members in the above items would help new technicians produce more effectively in a shorter time.

e. Imprest Funds (Tanzanian Government Fund)

Parts and materials may be immediately available locally in many instances for cash, but not to Tanzanians using the Government purchasing procedures. An imprest fund for local purchases of parts and supplies would greatly facilitate the work in many cases.

f. Maintenance of Headworks

In traveling through Masailand, we were impressed with the number of existing pumps or boreholes that are not working. While it is understood that many installations are old and need replacement and that spare parts are difficult to get, the fact that so many don't operate means that not enough resources are being invested to keep the borehole pumps running. The Masai project should not take over this responsibility from the Tanzanians, but should encourage the TanGov officials to allocate more resources to this important task so that this "bottleneck" can be overcome.

In one important way the project could assist through the work of the Rural Training Specialist. He could prepare curricular materials for a short course for borehole pump operators. Through training of the operators in better maintenance and repair, the downtime of the pumps should decrease.

g. Construction Site Supervisors

Impressive as the dam construction program has been, it could have been better if qualified supervisors had been available to be placed in charge of the work at the construction sites. These supervisors (one in each

district) would work under the Water Development Engineer and would represent him in looking after the day to day work at the sites as well as seeing to the proper maintenance of equipment and the timely arrival of necessary supplies. This would give the Water Engineer more time for accomplishing the site surveys, selecting the best sites, designing the dams and scheduling the work and allocation of resources. It would also increase the utilization of the equipment and would improve maintenance through better supervision and inspection.

The prospective construction supervisors should be sent to the U. S. for training in a two year program in Civil Engineering Technology (heavy construction). This recommendation is reflected in the proposed schedule for participant training.

h. Administration and Coordination

Administrative shortcomings are evident in the project. To a considerable extent these relate to the regionalization of TanGov which places the major direction of affairs in the regional and district offices while the USAID administrative headquarters is in Dar es Salaam. The project manager is thus far removed from counterpart officials who are most directly concerned with the project.

In consequence of this fact, the duties of the project manager have been assumed by or delegated to the team leader. Since he is not a U.S. official, and is not equivalent in stature to the persons with whom he must deal, he is at a disadvantage in dealing with Tanzanian officials. Some difficulties encountered by the team could have been minimized had the project manager been physically present in Arusha. Better coordination and smoother operations would have been forthcoming through more frequent contacts and discussions among project personnel and TanGov at all levels.

The present arrangement has placed the team coordinator in a difficult position. Having to perform project manager work has limited the effort he could devote to team direction. This problem has been exacerbated by the nature of the contractor and the personalities of the team members. Under the procedures followed by the contractor in which no backstopping, supervision or supplementary benefits are provided, the mechanisms for developing a team spirit is lacking. When, as in this case, there are strong-willed persons involved, the integration of individual expertise into team effort is virtually impossible. The team leader lacks the authority and means for giving direction. These problems would be solved or greatly reduced by an institutional-type contract.

1. Attitudes of TanGov Officials

In general, Tanzanian government officials appear to have provided adequate support to the project. However, some officials who are holding pivotal positions in the government and Ranch Association leaders do not seem to fully understand the ultimate objectives of the project--increased livestock production through efficient range management. Some TanGov officials and Ranch Association leaders have difficulties in accepting the idea that improved range management can increase livestock production without increasing number of cattle. It will be therefore useful for the project to arrange short-term study tours for selected Tanzanian officials and qualified Ranch Association leaders to visit the United States to learn more about improved livestock production methods and range management through seminars and ranch visits. Similar opportunities exist in East Africa as at the Kongwa ranch in Tanzania and at some of the commercial ranches in Kenya. These would be especially suited to tours for elders and Ranch Association Officials among the Masai pending the development of demonstration areas in Masailand.

J. Related Programs

There are other programs within Masailand which though not part of the Masai project have a bearing upon its success -- the Arusha Drought Project and the marketing activities of the Tanzanian Livestock Marketing Company (TLMC). These are important in that they provide the mechanism for effecting access to Masailand and achieving offtake of animals and providing water.

Livestock in Masailand are purchased by private buyers both licensed and unlicensed and the TLMC. The principal function of TLMC is to establish market locations and facilities to provide an alternative to selling to buyers. Thus, if after a period of negotiation between individuals, animals still remain unsold, the auction market is begun. By this means a floor price is established and protection is afforded against too sharp practices by private buyers. Two factors minimize the effect of TLMC in influencing prices and promoting marketing -- controlled meat prices and the lack of facilities and resources for handling large numbers of cattle. The company must show a profit on its operations and holding grounds are insufficient to care for large numbers of animals should they come to market in unexpected numbers.

The Arusha Drought Project, though not under review, should be noted because of its effect on operation of the Masai project. The work planned should improve marketing capabilities by providing water at holding grounds and establishing roads into roadless country which will facilitate the marketing process. Road construction is just now being started. In this connection, it is important that the Drought program not get involved in a crash well drilling and water development program without consideration of the advance of ranch planning and other developments contemplated by the Project. Otherwise the major bargaining chip will

be lost; once water has been supplied, the opportunity for inducing the Masai to go along with improved range and livestock handling practices will be gone. Activities should be limited to improving and establishing holding grounds.

Despite the obstacles that marketing, physical, and economic factors pose, the biggest hinderance lies in the attitude of the Masai. So long as cattle are viewed as their most desirable possession, marketing will be sporadic and unlikely to provide the level of offtake that is required to maintain a balance with forage supplies and to develop a fully productive herd. There is considerable evidence that the Masai tend to sell animals not when forage is ample and animals are in better condition, but rather when they are thin during the dry periods and especially when drought necessitates purchase of food. A much better market orientation must be developed in the Masai than now exists.

The Earth Satellite program provided no useful aids to the development of range management plans. The scale of the coverage was not adequate for this purpose, and the fact no validation procedures were carried out on the ground made it useless for range planning purposes. The work being done under sub-contract by the Soil Scientist does not promise to fill this gap. No vegetation data are being gathered; the data planned are chemical and physical descriptions of soils in a limited area. Although presumably, these will be represented in other areas in Masailand, without vegetation data to accompany them it will not be possible, even tentatively, to extrapolate the information to other areas. If this project is to be of assistance, it should be executed as a combined vegetation-soil enquiry with emphasis being placed on vegetation. The soil analysis contemplated,

while having utility in assessing the suitability of soils for intensive agricultural enterprises, are of little or no value in furthering the project objectives. In any event, the work contemplated should follow extensive reconnaissance type surveys.

k. Tanzanian Government

Although the Tanzanian Government has demonstrated a keen interest in the project and has given it substantial support, some attitudes and procedures give us cause for concern. We see value in the village settlement program involving the Masai. However, settlement requires water development which, in turn, can be disruptive and lead to range deterioration if all other phases of the project are not completed simultaneously with water development. It would be tragic and threaten the entire project if pressure to proceed rapidly with water development in order to settle the Masai unbalanced the orderly development of the project.

Another area of concern is the oft-expressed view of TanGov officials that excess numbers of livestock do not exist in Masailand. While it may be true that there are areas in Masailand that are not being fully utilized because of lack of water or the presence of Tsetse flies, the evidence we saw and were able to gather does not support this contention. There are undoubtedly areas, as government officials contend, that are not being fully used at present because of Tsetse flies which if cleared would increase the available forage. We were given no data on the extent nor location of these areas. But, it seems doubtful that such areas exist in every Ranching Association area. In such cases tsetse clearing does not provide a means of forestalling herd reductions. No district-wide reallocation of livestock is practical.

Estimates contained in a Government report (1963) in which the author undertook to project the full capacity of Masailand if water were fully developed, set the potential capacity at 900 M. livestock units. Government data indicates there were 951 M. units, actual use, in 1967 without full water service. (See Don Morris, Masai Range Management Project Water Development: Past-Present-Future, January, 1976)

Range surveys conducted by project technicians indicate overuse. Animal numbers in excess of carrying capacity are to be found in these reports. Finally, our own judgment based upon the condition (range health as distinct from annual production which is determined by weather) indicates a disproportionate portion of the area we saw was in lower stages of range retrogression.

Unless the fact of too many animals is accepted when it is uncovered in range assessments within individual R.A.s and appropriate measures taken to reduce animal numbers, there is little hope for the ultimate success of the project. The TANU directive that there be a program implemented whereby 10 percent of individual herds be sold each year tacitly acknowledges the presence of too many livestock. TanGov officials have accepted the responsibility for herd reductions and are seriously addressing themselves to developing procedures for carrying out the destocking program. The obstacles to success are great given the uncertainty as to actual livestock numbers and the propensity of the Masai to increase rather than to decrease herd numbers, and unless government officials accept the fact animal populations are too large their efforts could lead to the appearance of compliance without actually attaining the goal. It should be noted in this connection that a 10 percent removal would result in herd reduction only if present low levels of production continue.

If the rates of production projected are achieved, herd numbers will increase even though there is a 10 percent removal. In this event, the 10 percent figure will need to be increased upward just to keep forage and animals in balance.

Another means by which project performance could be improved is with regard to counterpart and their relation to project technicians and their TanGov counterparts. Counterparts were not continuously available in all project phases especially at the field level. In those cases where counterparts existed, there seemed at times to be insufficient bilateral action. It was evident, too, that officials at intermediate and higher levels were not well informed regarding project plans and purposes. We think this is in part due to lack of attention to and emphasis upon the counterpart program. USAID personnel can make their greatest and most long lasting contribution through their training and advisory roles. They can perform these only if they remain in constant touch with counterpart officials. In so far as possible, the field work should be performed by Tanzanian personnel in conjunction with or under the supervision of team technicians.

Despite shortcomings we think the project is conceptionally sound. This does not mean that it will be successful in all respects. The physical constraints are great, and the sociological aspects of the program can give rise to even greater problems. In consequence, progress inevitably will be slow. Projected achievements must be realistic, and it should be recognized that even then success will not be evenly achieved. Unquestionably, some Ranching Associations will be more successful than others.

The technical expertise provided has been realistic. The inclusion of sociological expertise was a particularly appropriate input

to this venture. The staffing has been generally good, the technicians provided having a generally high level of competence.

Weak points of the project are evident in a lack of unity among the team members due to the contract arrangement and the personalities of the team members. Additionally, there was evidence that project personnel were diverted into nonproject, or at least peripheral activities. For example part of the accomplishment of the Water Engineer included flood control activities near a local village; both the Range Management Specialist and Livestock Production Specialist were required to spend a great deal of time in the development of the Ujamaa bull ranches financed by IDA. The bull ranches are worthwhile projects and can contribute to project goals but these activities dilute the efforts of the technicians. There should be formal recognition of the need for assistance and provision for doing so in work plans. This relates to the absence on the ground of a project manager and to the way in which AID personnel are viewed by TanGov. It appears they are regarded as though occupying slots in TanGov and subject to assignment as desired rather than as assisting, through training and advisory roles, Tanzanian officials in the performance of their jobs. Again this relates to the lack of communication and coordination between Tanzanian officials and USAID personnel at all levels.

IV. Recommendations

Although our overall impression of the project and its operation is favorable, there are ways in which we think the chances for success can be greatly improved. These problem areas have been identified in the Evaluation Section, herein are our specific recommendations for correcting the shortcomings we found.

1. The Project Manager should be stationed in Arusha where he will be in constant communication with the Masai Team and TanGov officials. He should be an experienced senior officer of commensurate standing with the Regional and National officials with whom he must deal.

2. We recommend a change in the contractor for the Masai Team. The present contractor does not provide the team with a sense of belonging to an organization and consequently there is no team identity. We have no particular choice between university or contracting firms, but in either case the team members should be considered a part of the parent organization to which they belong thus providing some cohesion among team members.

3. The training program should be accelerated by timely posting of the Rural Training Specialist provided for in the project document. His job would be to work with the other specialists in developing training and instructional materials and programs in all areas affecting the Masai Project. These should be directed to the Masai and TanGov officials at all levels by means of training aids, demonstrations, workshops and on-the-job training. This position should be filled as quickly as possible since his services are critical to the ultimate success of the project.

4. The participant training program should be modified so that Resource Administration is included as a field in which training is received. In Tanzania, as elsewhere in developing countries, persons trained in technical fields find themselves impressed into administrative posts because they can qualify under civil service requirements with no opportunity to utilize their technical skills. This is not the most effective utilization of trained manpower and could be improved by training participants for administrative posts thus releasing those with technical skills to practice their specialties.

Other Tanzanian specialists needed by the project are two construction site supervisors. These persons should have two years of training in a Civil Engineering Technology (heavy construction) program.

We recommend that the number of TanGov participants be increased by four to thirty-four. Since 20 participants are now in the program or have completed training, 14 positions remain to be filled. These should be allocated as follows:

<u>Number</u>	<u>Field of Study</u>	<u>Degree</u>
1	Well drilling equipment maintenance	Non-degree
2	Civil Engineering Technology (Construction)	2 Year Assoc. degr
1	Hydrogeologist	B. Sc.
3	Rural Sociologist	M. Sc.
1	Rural Extension	B. Sc. or M. Sc.
1	Rural Extension/Ag. Education	B. Sc. or M. Sc.
1	Range Management	B. Sc.
2	Resource Administration	M. Sc.
2	To be specified later as needed	

Participants receiving M.Sc. degrees should emphasize practical application rather than research. The Resource Administration candidates should already have B. Sc. degrees in Range Management or Animal Production.

5. There is a danger that water development will outstrip range management planning which will negate the benefits to be expected. The range management capability should be expanded to bring it into balance with that of the water component. This could be accomplished by recruiting an experienced range man as Team Leader to give support to the range technician now provided in the team make-up. No addition to the team

numbers would thus be required. TanGov should be encouraged to similarly place a higher priority on the range management effort.

6. The sociological inputs should be redirected to provide a means of monitoring progress and change among the Masai. This can be achieved by the present sociologist, but we think it desirable to provide for a consultant to assist in the development of continuous record keeping systems for human and animal populations for accomplishing a satisfactory monitoring program.

7. The Hydrogeologist should make his priority tasks the identification of promising borehole sites, verifying the satellite imagery indications of water, and making an inventory of all existing boreholes and their condition and quality of water. Developing water pumping technology should be a secondary effort to ground water exploration. The Hydrogeologist position could be phased out by June, 1978.

8. We recommend that the veterinarian position not be continued beyond the term of the present occupant. Throughout the remainder of his tour he should devote his time to further developing with district officials programs for control and animal health so that there will be a viable ongoing program mounted. This should include the upgrading of the capabilities of the Livestock Development Centers (LDC); many of them now can provide no other service than drug sales. Only six have vehicles, and only two are equipped to test the strength of dip fluids. Additional job assignments should be directed toward the training of counterpart officials and the development of training programs and materials in his special field in conjunction with the Rural Training Specialist. This recommendation is made in view of the fact there is evidence that Tanzania

has sufficient trained veterinarians to carry out an animal disease program were they utilized in their specialties rather than in administrative posts. It is our view that USAID should not be providing services in fields in which Tanzanians are capable.

9. We recommend that efforts be made to develop a radio communication capability within the Masai Team. Distances are such and the quality of roads so poor that a great deal of time is lost in travel, much of which would be unnecessary if ready communication existed. Occasional use of light aircraft transportation is also recommended if it can be done.

10. The soil and land capability survey as now being pursued does not offer to provide data which are useful to the success of the Masai Project. Unless this program can be redirected so as to be useful, we think it should be terminated.

11. Due to the drought conditions and urgent need for water, some dams have been built without adequate spillways and protective measures. These should be brought up to an adequate standard as soon as possible and vegetation established on present dams and on the new dams during the first wet season following construction. Local users of water from the dam should be given the opportunity to help with this work.

12. More attention should be given by TanGov to the maintenance of all water installations, especially the headworks of boreholes. It is recommended that more resources be made available by TanGov to maintenance programs including a more vigorous program of replacement of wornout headworks, so as to improve the reliability and the quality of water available to the people.

13. We recommend that the level of transport supplied by TanGov to the water development program be increased from the two vehicles supplied in the past to four vehicles. This would provide one vehicle for the construction work in each district, one for use on surface and groundwater investigations, and one for maintenance and repair of heavy equipment. In addition, two vehicles should be available to each district for the other project activities such as range management, livestock services, etc.

14. Communication relating to project specialist activities and the activities of the TanGov at Regional, District, and Local levels needs to be improved. General objectives of the project as well as objectives of specific programs must be clearly understood by all persons concerned. Progress of each phase of the project must be reviewed in regular staff meetings of team members and less frequently in meetings between the team and TanGov officials at which the technical and logistic problems relating to work performance should be discussed and resolved. We recommend greater efforts be made to meet formally and informally with TanGov officials. There was a notable lack of understanding among many of the officials we contacted with respect to the objectives of the project and its operation. It appeared that the mechanism existed for becoming informed, annual meetings and review of work plans; they seemed not to have been fully effective.

15. More emphasis should be given by all project specialists to the training of their counterparts so that, as much as possible, their skills will have been imparted to the Tanzanians by the end of the project.

16. Near the end of the project (1979) a follow-up sample survey should be conducted to measure the changes that have occurred in the social system and life style of the Masai.

17. Permanent range vegetation plots should be established within the area covered by each range management plan in order that range condition and trend can be continuously monitored. One of the recurring shortcomings in projects of this sort is the failure to document and assess range condition changes.

18. Short-term study and observation tours to the U.S. should be considered for key regional and district officials and qualified leaders of Ranch Associations.

19. The project specialists have from time to time been required to devote substantial amounts of time to non-project activities such as the Ujamaa Bull Ranches financed by a World Bank Loan. Such diversions from their primary effort should be kept to a minimum or the effort should be recognized as part of the project design.

20. It is recommended that an overnight facility for project personnel with adequate bedrooms, refrigerator and cooking utensils together with reasonable food supplies be made available at Kibaya in Kiteto district. Providing such facilities will make it possible for technicians and project personnel to stay more than a few hours or one or two days in the Kiteto district which is located one day's travel distance.

21. The livestock improvement program should be pursued more aggressively. In addition to the programs in connection with the Ujamaa bull ranches, the Ardal Ranch should be developed to provide a place for producing improved quality of breeding stock and as a demonstration area. If the obstacles to developing this area prove insurmountable, another area should be sought to provide a model for integrated range livestock development programs. With the Livestock Production Specialist position again filled greater success should be attained than in earlier efforts.

ATTACHMENT I

PROPOSED REVISION FOR LOGICAL FRAMEWORK MATRIX

A. Statement of the Goal

1. The Goal

To assist the Government of Tanzania achieve its objective of self-sufficiency in livestock and an exportable surplus to earn foreign exchange in the livestock subsector.

2. Measurements of Goal Achievement

(a) Imports of livestock meat products are essentially eliminated.

(b) Domestically produced livestock meat products are available in adequate supply and are properly marketed and distributed to meet total national demand.

3. Assumptions of Goal Achievement

(a) Weather and other environmental conditions are favorable.

(b) Tanzanian dietary habits in terms of food variety preferences do not change appreciably.

(c) The Tanzanian Government provides sufficient budgetary resources required to achieve and maintain self-sufficiency in the livestock subsector.

(e) The system for internal pricing, marketing and distribution of agricultural products functions properly.

(f) Present trade, commerce, and other relevant agreements among the member nations of the East African Community remain substantially favorable to goal accomplishment.

(g) The Tanzanian Government's decentralization and other

reorganizational efforts are implemented without major adverse interruptions of services essential to the continuance and increase of livestock production.

(h) Credit will be sufficiently available to small farmers to permit maximizing of their livestock production potentials.

(i) Adequate Tanzanian manpower will be available in the livestock subsector.

(j) Other international donors continue to provide adequate budgetary and other resources to the Tanzanian Government to assist not only in the livestock subsector per se but also in those auxiliary areas essential to success in this subsector.

B. Statement of Subsector Goal

1. The Subsector Goal

To achieve a sustained high level of livestock offtake in Masai Districts consistent with proper resource management.

2. Measures of Subsector Goal Achievement

(a) Annual herd offtake will be increased from 7% in 1970 to 10% in 1980.

(b) Average slaughter steer liveweight increased from 550 pounds in 1970 to 650 pounds in 1980 on eleven fully activated R.A.s.

(c) The effective calving rate increases from 35% in 1970 to 50% in 1980 on eleven fully activated R.A.s.

(d) The average age of slaughter steers at market weight is reduced from six years in 1970 to four years in 1980 on eleven R.A.s.

3. Assumptions of Subsector Goal Achievement

(a) TanGov national campaign for 10% livestock offtake each year will be effectively applied in Masai Districts.

(b) Marketing mechanisms will facilitate other activities contributing to higher sustained offtake.

(c) TanGov villagization program in Masai Districts will reinforce rather than retard movement of Masai into the cash economy.

C. Statement of Project Purpose

1. The Purpose

Proposed revision of purpose is: To establish the capability in Monduli and Kiteto District DD Offices for directing maintaining and progressively extending integrated livestock programs in Masailand Ranch Association (R.A.) areas.

2. Conditions Expected at the End of the Project

(a) One priority R.A. begins implementing integrated programs (water, grazing, dipping, extension) by December, 1976, and continued operation at satisfactory levels for one year 12/76 - 12/77. A second R.A. begins implementing in June, 1977 and is monitored for one year.

(b) Two additional R.A.s implementing integrated programs by June, 1978, and continued in operation at satisfactory level for one year 6/78 - 6/79.

(c) Three additional R.A.s begin implementing integrated programs by June, 1979, and continued in operation at satisfactory level for one year 6/79 - 6/80.

(d) Four additional R.A.s begin implementing plans by January, 1980. Monitoring done entirely by TanGov.

(e) Two additional R.A. plans totally developed by TanGov by January, 1980.

(f) Preliminary range planning completed for the water

development schemes in the remaining Masailand areas.

Note: In meeting the above targets TanGov services will demonstrate and indicate the training and staffing to maintain, monitor, and improve range management plans after 1960 and implement integrated livestock programs in other registered R.A.s.

3. Basic Assumptions About Achievement of Purpose

(a) The Tanzanian Government will continue to assign qualified personnel to the project.

(b) Tanzanian Government budgetary and logistical support will continue at satisfactory levels.

(c) The Masai will accept the improved livestock management practices and the better range management techniques developed by this project.

(d) Disease control measures and more available water supplies will increase productivity and cause the Masai to reduce their needs for surplus animals as a hedge against disease outbreaks and drought, thereby improving economic offtake levels.

(e) The Masai will be willing to reorient the use of stock away from milk and toward beef production.

(f) It will be possible to bring the Masai into a cash economy through improving economic offtake levels, providing development credit on a cooperative basis, and by making selected consumer goods available through cooperative shops.

D. Statement of Project Outputs

1. Outputs and Output Indicators

(a) Security of land tenure

(1) 15 Ranching Associations registered with rights of

occupancy for 11 R.A.s.

(b) Range Management

(1) By 1980, 11 R.A.s will be fully covered by management plans.

(2) Preliminary range planning will be completed for water development schemes in remaining Masailand areas.

(3) Management units of 11 R.A.s will be complying with stocking quotas adjusted to range condition studies.

(c) Disease Control

(1) 11 R.A.s will dip all animals and follow other practices (e.g. vaccination) on a regular schedule.

(d) Water Development and Distribution

(1) 15 R.A.s with at least 40% water coverage for dry grazing areas and 70% covered with temporary water for wet season use. Other R.A.s with less coverage.

(e) Livestock Improvement

(1) Broad acceptance of breeding and management practices (i.e. improved bulls, castration, selection, disease treatment and control).

(f) Marketing

(1) Masai sell marketable surpluses.

(2) Efficient marketing organization established.

(g) Extension Service

(1) Preparation of livestock extension materials.

(2) Extension service established and accepted by the Masai.

(3) Eleven Ranching Associations will have a resident

field officer with transport.

(h) Trained Tanzanians

(1) Thirty-four Tanzanians will have successfully completed U.S.-financed courses and will be assigned to the Masai Project.

(2) Twenty Diploma Range Officers will have received training in East Africa and will be assigned to the project and a further ten will receive in-country or third country training in various fields of specialization related to water development and agricultural mechanics.

(3) An in-country field training program will be organized to support the project's activities.

(i) Surveys

Toward the end of the project period (around 1979) a sample survey should be conducted in selected areas to measure changes in the Masai social structure and living patterns compared with the information already collected from Sociological/Livestock Censuses in early project periods.

2. Basic Assumptions About Production of Outputs

(a) Tanzanian manpower will be available.

(b) The Masai will accept new management, breeding, disease control and marketing measures, and will develop the need for a cash economy.

(c) The Ranching Associations will develop sufficient self-interest and stake in investment to take action to exclude outside cultivators and other non-members.

(d) The Government of Tanzania will effectively enforce rights

of occupancy and other legal measures to protect the Ranching Associations from outside encroachment.

(e) The Government of Tanzania will provide the necessary financial logistic and other backing to assure the achievement of output targets.

E. Statement of Project Inputs

1. Inputs

(a) United States.

(1) The assignment of one US direct-hire project manager.

(2) Ten US technicians assigned to the project as follows;

- i) Project Coordinator (Senior Range Management Specialist)
- ii) Animal Production Specialist
- iii) Range Management Specialist
- iv) Water Development Specialist
- v) Extension Sociologist
- vi) Groundwater Hydro-geologist (tour to end 6/78)
- vii) Veterinarian (tour to end early 1977)
- viii) Heavy Equipment Specialist
- ix) Rural Training Specialist
- x) Well Driller (tour to end early 1979)

2. TDY Assistance

Senior level or specialized temporary duty assistance may be provided as the need arises as the project progresses.

3. US-provided training for thirty-four Tanzanians to replace the US technicians and fill other strategic positions in connection with this project.

4. The contractor will likely direct any in-country, or follow-up training activities towards the end of project, as may be appropriate.

1. PROJECT NO. 621-11-130-093	2. PAR FOR PERIOD 1 - 75 TO 1 - 76	3. COUNTRY Tanzania	4. PAR SERIAL NO. 76 - 1
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PROJECT TITLE

Masai Livestock and Range Management

5. PROJECT DURATION: Report FY 1970 Ends FY 1980	7. DATE LATEST PROP June 1973/	8. DATE LATEST PIP 1-25-74	9. DATE PRIOR PAR 5-25-75
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10. U.S. FUNDING	a. Cumulative Obligation Thru P for FY: \$ 2,452,000	b. Current FY Estimated Budget: \$ 825,000	c. Estimated Budget to completion After Current FY: \$ 1,915,000/
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11. KEY ACTION AGENTS (Contractor, Participating Agency or Voluntary Agency)

a. NAME	b. CONTRACT, PASA OR VOL. AG. NO.
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Near East Foundation (NEF)

AID/ACC - 193

1. NEW ACTIONS PROPOSED AND REQUESTED AS A RESULT OF THIS EVALUATION

A. ACTION (X)			C. PROPOSED ACTION COMPLETION DATE
USAID	AID/W	HOST	

1. This PAR 76-1 is a portion of the comprehensive, in-depth review and evaluation under the Utah State University Contract No. AID-afr-C-1207. Summary recommendations and details are contained in the evaluation report.

2. Another similar in-depth evaluation is anticipated about November/December 1978.

B. List of Actions

- | USAID | AID/W | HOST | Action |
|-------|-------|------|---|
| X | X | | 1. Present contract regulating Masai team be changed to a regular employer - employee type contract. |
| X | X | | 2. Revision of participant training program reflecting recommendation of evaluation report as much as possible |
| X | X | X | 3. Study additional range management T.A. for team. |
| X | | X | 4. Development of permanent and continuous record keeping system for human and animal populations. |
| X | | X | 5. Develop a satisfactory monitoring program to support activities of sociologist which are being redirected to monitoring progress and change among the Masai. |
| X | | X | 6. Redefine the priority tasks of the Hydrogeologist to conform to evaluation recommendations. |

D. REPLANNING REQUIRES

REVISED OR NEW: PROP PIP PRO AG PID/T PID/C PID/P

E. DATE OF MISSION REVIEW

PROJECT MANAGER: TYPED NAME, SIGNED INITIALS AND DATE Jack M. Cornelius <i>J.M.C.</i>	MISSION DIRECTOR: TYPED NAME, SIGNED INITIALS AND DATE Acting Director: Richard L. Podol <i>R.L.P.</i>
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1/ Date of latest approved PROP. Estimated budget figure however based on PROP submitted dated August 1975 but not approved by AID/Washington.

PROJECT APPRAISAL REPORT (PAR)

1. PROJECT NO 621-11-130-093	2. PAR FOR PERIOD 1 - 75 TO 1 - 76	3. COUNTRY Tanzania	4. PAR SERIAL NO. 76 - 1
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5. PROJECT TITLE
Masai Livestock and Range Management

6. PROJECT DURATION: Began FY 1970 Ends FY 1980	7. DATE LATEST PROP 1-25-74	8. DATE PRIOR PAR 5-25-75
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10. U.S. FUNDING	a. Cumulative Obligation Thru Prior FY: \$	b. Current FY Estimated Budget: \$	c. Estimated Budget to completion After Current FY: \$
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11. KEY ACTION AGENTS (Contractor, Participating Agency or Voluntary Agency)	
a. NAME Bear East Foundation (NEF)	b. CONTRACT, PASA OR VOL. AG. NO. AID/AFF - 193

I. NEW ACTIONS PROPOSED AND REQUESTED AS A RESULT OF THIS EVALUATION

A. ACTION (X)			B. LIST OF ACTIONS	C. PROPOSED ACTION COMPLETION DATE
USAID	AID/W	HOST		
X		X	7. Veterinarian advisor position should be reviewed for relevancy and adjustments made in job description if needed.	
X		X	8. Two way radio communication explored with TanGov and installed if approval can be obtained.	
X		X	9. Improvement in dam design should be initiated and dams under designed should be brought up to standard in 1976 and 1977.	
X		X	10. Tanzania Government should give more attention to the maintenance and repair of existing water installation including headworks of boreholes.	
X		X	11. USAID Project Manager, Tanzania Government officials, and Masai contract team personnel should agree on new policy of USAID participation and training of Tanzanian officers for professional positions. This agreement and understanding should focus on the switch of USAID personnel from OPEX to the advisory role and should be done with the view and assumption of US personnel phasing out of the project by 1979/1980.	
X		X	12. An adequate overnight facility fully equipped for week safaris should be built in south Kiteto district because of extremely long distance from regional residences of technicians.	

D. REPLANNING REQUIRES	REVISED OR NEW: <input checked="" type="checkbox"/> PROP <input type="checkbox"/> PIP <input checked="" type="checkbox"/> PRO AG <input type="checkbox"/> PIO/T <input type="checkbox"/> PIO/C <input type="checkbox"/> PIO/P	E. DATE OF MISSION REVIEW
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PROJECT MANAGER: TYPED NAME, SIGNED INITIALS AND DATE	MISSION DIRECTOR: TYPED NAME, SIGNED INITIALS AND DATE
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PROJECT APPRAISAL REPORT (PAR)

PAGE 1 B

621-11-130-095	2. PAR FOR PERIOD 1 - 75 TO 1 - 76	3. COUNTRY Tanzania	4. PAR SERIAL NO. 76 - 1
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Kasai Livestock and Range Management

6. PROJECT DURATION: Begins FY <u>1970</u> Ends FY <u>1980</u>	7. DATE LATEST PROP	8. DATE LATEST PIP 1-25-74	9. DATE PRIOR PAR 5-25-73
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10. U.S. FUNDING	c. Cumulative Obligation Through Prior FY: \$	b. Current FY Estimated Budget: \$	c. Estimated Budget to completion After Current FY: \$
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11. KEY ACTION AGENTS (Contractor, Participating Agency or Voluntary Agency)

a. NAME Near East Foundation (NEF)	b. CONTRACT, PASA OR VOL. AG. NO. AID/Afr-193
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I. NEW ACTIONS PROPOSED AND REQUESTED AS A RESULT OF THIS EVALUATION

A. ACTION (X)			B. LIST OF ACTIONS	C. PROPOSED ACTION COMPLETION DATE
USAID	AID W	HOST		
X		X	13. Livestock improvement program should be aggressively pursued in connection with the Ujamaa bull ranches - (See recommendation 21 in evaluation)	

D. REPLANNING REQUIRES

REVISED OR NEW: PROP PIP PRO AG PIO/T PIO/C PIO/P

E. DATE OF MISSION REVIEW

PROJECT MANAGER: TYPED NAME SIGNED INITIALS AND DATE

MISSION DIRECTOR: TYPED NAME, SIGNED INITIALS AND DATE

II. PERFORMANCE OF KEY INPUTS AND ACTION AGENTS

A. INPUT OR ACTION AGENT	B. PERFORMANCE AGAINST PLAN							C. IMPORTANCE FOR ACHIEVING PROJECT PURPOSE (X)				
	UNSATISFACTORY		SATISFACTORY			OUTSTANDING		LOW		MEDIUM		HIGH
	1	2	3	4	5	6	7	1	2	3	4	5
1. Near East Foundation (NEF)												
a. Field Staff				X								X
b. Home Office		X									X	

Comment on key factors determining rating
 (a. and b.) NEF field performance is rated satisfactory since important outputs, particularly water development and animal health, were largely accomplished, to the satisfaction of the TanGov. Team efforts can be credited with this success, despite the formidable obstacles to implementation such as widely dispersed project sites in an area over 25,000 sq. miles, almost impossible terrain, and poor logistical support. The USAID Project Manager stationed in Dar es Salaam is also the Food and Ag. Officer responsible for the total Ag. sector program and thus cannot now provide the required, regular support for the team and project. NEF head office support is rated as unsatisfactory. NEF has tended to create low morale among team members by their (see continuation)

4. PARTICIPANT TRAINING	1	2	3	4	5	6	7	1	2	3	4	5
				X								X

Comment on key factors determining rating
 The previous PAR 75-4 of 5/25/75 indicated that the expanded participant program was proceeding smoothly except for difficulty in finding candidates for two Veterinary Medicine slots and some tension among returned participants who did not work closely enough with technicians and thus felt not used adequately in (see continuation)

5. COMMODITIES	a. Grant											
	1	2	3	4	5	6	7	1	2	3	4	5
b. Loan				X								X

Comment on key factors determining rating
 Commodity support improved markedly during the last year with major equipment deliveries under Ag. Support loans H-015 and H-017; better port clearances through help of AID procurement specialist; acquisition of workshop and maintenance capability; and sufficient vehicles for all NEF team technicians. However, the division of (see continuation)

6. COOPERATING COUNTRY	c. PERSONNEL											
	1	2	3	4	5	6	7	1	2	3	4	5
d. FINANCES			X									X

Comment on key factors determining rating
 a. Some problems with counterparts were noted above in 11.A.4. In addition, there have been difficulties in communications between MinAg, RDD and DD Offices because many decisions and matters discussed or resolved at higher levels were not transmitted in proper fashion to DD operating staffs in the Districts. Further, close working relations and cooperation between the NEF team and DD staffs has been unsatisfactory particularly regarding work plans, annual evaluations, (although TanGov cooperation and assistance during this in-depth evaluation has been excellent), and related activities. Key Project documents are not readily available in files at any level, MinAg, MinPlan, RDD or DDOs. Stationing an AID Project Manager or Development Officer (RDO) in Arusha should help to improve communications immensely. In addition, TanGov spokesmen (Prime Minister's Office) have instructed RDD to work out a systematic management plan for operating staff, covering counterparts, remuneration, incentives, working relations (see continuation)

OTHER DONORS	None											
	1	2	3	4	5	6	7	1	2	3	4	5

Item:

II.A.1.a. and b. employment methods. This has also been responsible for a high turnover rate and frequent replacements.

The negative factors reflected in the ratings, which have limited team effectiveness and therefore should, if possible, be remedied in the future, are mostly contributable to the comments relating to the NET home office. The team is large and multi-disciplinary, and efforts are not highly coordinated or very cohesive. Team leadership, which was weak in the initial periods, has improved recently to the point of providing effective administrative and logistical support, but the Project Coordinator cannot now provide technical substantive guidance or direction as would be more probable if they were a part of an institution.

While there was improvement last year in the recruitment of replacements; team time in the field and closer team coordination and liaison of technician activities; and higher morale from adequate housing, furnishings and transport arrangements, serious difficulties remained. Project Coordinator has a heavy burden in management, logistical, and project support activities, some of which are best performed by USAID Project Manager if stationed in Arusha, and thus he now provides only negligible substantive or technical direction to the team which is still more in groups of individual, technical specialists than a cohesive unit. Lack of local language skill hampers technician effectiveness. Activities are not in balance because range management plans are lagging, a situation aggravated also by drought conditions. Some team activities (extension and livestock development) lagged because about 30% of total time was spent on important baseline data collection on livestock numbers, herd composition, grazing patterns and human population. Difficult transport conditions and poor communications still require wide team travel, generally with inefficient and unproductive use of the time spent. At this juncture, a shift in priorities among activities or outputs is in order; the contract Veterinarian (6/77) and Hydrogeologist (6/78) are approaching the phase-out stage and greater implementation responsibilities should shortly be assumed by counterparts or other indigenous staff. Also, the Well Driller should complete his work by 6/79.

11.4. the "counterpart" role. At that time, all livestock related technicians had counterparts and assignment of TanGov personnel was almost on target. The increased number of trained manpower provided enough officers for two full counterpart teams at Monduli and Kiteto DDO livestock staffs, and the NET team was working well under the general guidance of the Regional Livestock Development Department.

As of this date, however, there are problems. Two important technician counterparts are lacking - Water Engineer and Heavy Equipment Specialist. An established counterpart was recently transferred to an important post in the TanGov field service, but outside the project's responsibility.

Item:

II.A.4. This attrition is normal, understandable, and in the future needs to be anticipated. Also, the evaluation report is recommending certain key changes in contract staffing. Therefore, the participant program should be systematically revised to support the requisite capacity within the region to maintain and extend Masailand program operations during and after project phase-out. (See major recommendations in the final report)

II.A.5. Masailand into two districts with separate management for funds and equipment has slowed operations. Major obstacles persist - such as lack of spare parts in Tanzania generally (and even in Kenya) and some shortages of diesel fuel.

The seriousness of spare parts problems necessitates prompt action. One suggestion is that future loans (if any) allow procurement periods longer for spare parts than for basic equipment items. The spare parts allowances ratio should also increase, under loans or grants, from about 10% to 25 or 30%. USAID/Tanzania and the contractor should consider these and other suitable remedies for this critical problem.

II.A.6.a. and related matters.

II.A.6.b. Finances: Funds for livestock and water capital development have been rising and the project could expend them only with difficulty because of equipment and diesel fuel shortages. However, there has been some recurrent cost constraints because of inadequate allocation to the two Masai Districts for livestock and veterinary field services, particularly for transport. Problem is mainly due to the current practice of basing allocations on an area/per capita basis. USAID should try to raise this issue with appropriate TanGov officials, perhaps also in relation to the need for devoting greater resources to renovation, repair and maintenance for existing water, veterinary and livestock facilities.

11.7. Continued. Comment on key factors determining rating of Other Donors

III. KEY OUTPUT INDICATORS AND TARGETS

A. QUANTITATIVE INDICATORS FOR MAJOR OUTPUTS		TARGETS (Percentage/Rate/Amount)					END OF PROJECT
		CUMU- LATIVE PRIOR FY	CURRENT FY 76		FY 77	FY 78	
			TO DATE	TO END			
R.A.s with tick control requirements met by at least 75% of the livestock.	PLANNED	7	8	9	11	14	21
	ACTUAL PERFORMANCE	6	6	-	-	-	
	REPLANNED	-	-	7	8	9	11 ^{1/2}
R.A.s with at least 40% water coverage for dry grazing areas.	PLANNED	4	5	7	9	11	17
	ACTUAL PERFORMANCE	4	6	-	-	-	
	REPLANNED	-	-	6	8	10	15 ^{1/2}
Participant Training long-term U.S.	PLANNED	8	14	14	16	23	30
	ACTUAL PERFORMANCE	8	13				
	REPLANNED	-	-	13	16	25	34
	PLANNED						
	ACTUAL PERFORMANCE						
	REPLANNED						
B. QUALITATIVE INDICATORS FOR MAJOR OUTPUTS	COMMENT:						
1. R.A.s organized functioning as independent & self governing entities with basic facilities.	<u>Target:</u>	11 R.A.s organized and functioning by end of project.					
	<u>Status:</u>	9 in various stages of organization and operation.					
2. Broad acceptance of selective breeding using improved bulls, castration and culling.	COMMENT:						
	<u>Target:</u>	15 R.A.s by end of project.					
	<u>Status:</u>	Activity now under four Ujamaa Bull Ranches of the IBRD Loan Program. R.A.s agreeing to participate will use bulls of Ranches and trade with heifer offspring.					
3. Collective sales by R.A.s that ultimately are processed or exported. These are sold at maturity.	COMMENT:						
	<u>Target:</u>	11 R.A.s selling by end of project.					
	<u>Status:</u>	Collective sales increased dramatically during recent drought but now appear returned to previous levels. Evidence of considerable overstocking and numerous surplus animals.					

Outreach component established Target: Program fully staffed and functioning by

III.a. - Footnote:

- 1 It has been necessary to adjust the end of project Quantative Indicators to better reflect a more realistic accomplishment based on four years of experience in the project. Registering R.A.'s is a slow and cumbersome legal procedure that requires from ten months to eighteen months to complete. After the R.A. has been registered another lengthy legal process is necessary to acquire the rights of occupancy for each R.A. These cannot be done simultaneously as the definite R.A. boundaries have to be considered in the right of occupancy. After a declaration that R.A. has acquired the rights of occupancy, the range management plans are prepared for each association and the implementation process to comply with stocking quotas, grazing seasons, etc., is begun.

The replanned figures better represent the realistic targets which the project will be able to accomplish by FY 1980. If for any reason the project termination date is extended, the end of project status will be adjusted. Project purposes will still be achieved with these revised figures.

IV. PROJECT PURPOSE

A. 1. Statement of purpose as currently envisaged.

2. Same as in PROPOS YES NO

Project Purpose: To assist the Tanzanian Government in its efforts to integrate the Masai people more fully into the national economy through establishing the capability in the Masailand and Kitulo District Development Offices for directing, maintaining, and progressively, extending integrated livestock programs in Masailand Ranch Association Areas.

B. 1. Conditions which will exist when above purpose is achieved.

2. Evidence to date of progress toward these conditions.

a. One priority R.A. begins implementing integrated programs (water, grazing, dipping, extension) by December, 1976, and continued operation at satisfactory levels for one year 12/76-12/77. 1
 second R.A. begins implementing in June, 1977 and is monitored for one year. 1

b. Two additional R.A.s implementing integrated programs by June, 1978, and continued operation at satisfactory level for one year 6/78 - 6/79. 1

c. Three additional R.A.s begin implementing integrated programs by June, 1979, and continued operation at satisfactory level for one year 6/79 - 6/80. 1

(see continuation sheet)

Currently, project water development has advanced well ahead of other aspects, particularly range planning and extension/training. Range management lagged because previous techniques were too detailed and elaborate. Extension and livestock activities were slowed by the time consumed in the important baseline study; including collection of stock statistics, and uncertainties in the TanGov settlement program. Both the Veterinary and Livestock Specialist have been absent from post long periods.

It is planned to accelerate the implementation of integrated R.A. programs thusly! The new contract chief is to be a Range Management Specialist, simplified techniques will be emphasized and counterpart staff will be more deeply involved in planning, field work and monitoring. A Contract Extension/Training Specialist is to be recruited. The contract group will make concerted efforts to intensify integration by cooperative team action. Maintaining the balance among these activities will necessitate rapid technician replacement and recruitment when needed.

V. PROGRAMMING GOAL

A. Statement of Programming Goal

To assist the TanGov achieve its objective of self-sufficiency and exportable surplus in the livestock subsector.

E. Will the achievement of the project purpose make a significant contribution to the programming goal, given the magnitude of the national problem? Cite evidence. YES

As seen, the project purpose has been shifted from a strictly production of livestock offtake orientation to a focus on the Masai people and their integration into the Tanzanian economy. However, if purpose targets are met there should be a meaningful contribution to the Sector Goal through increased production. TanGov has recently initiated a serious national campaign to achieve 10% offtake each year, thus helping to reinforce project activities to control overstocking, reduce surplus animals on the ranges and stimulate R.A. sales. It therefore appears reasonable to project a 10% level of offtake in 1980 in Masailand compared to the estimated 7% figure in 1970 at project inception. The evaluation report is recommending a simplified recordkeeping system to help monitor and evaluate project progress. If implemented satisfactorily, this should also provide useful indicators of project economic and social impact, including effective offtake, at least over the 1977-80 period.

1 This one year operation will be intensively monitored by AID contract team.

Block B-1

d. Four additional R.A.s begin implementing plans by January, 1980. Monitoring done entirely by TanGov.

e. Two additional R.A. plans totally developed by TanGov by January, 1980.

f. Preliminary range planning completed for the water development schemes in the remaining Masailand areas.

Note: In meeting the above targets TanGov services will demonstrate and indicate the training and staffing to improve range management plans after 1980 and implement integrated livestock programs in other registered R.A.s.

g. A noticeable documentable attitude change on the part of the Masai toward entering modern Tanzanian society, particularly in terms of economic values but also in regard to social mores.

ATTACHMENT III

NETWORK MODEL

This attachment contains a network model of the Masai Project based on the recommended modifications contained in the February, 1976 Evaluation and PAR. CPI reporting is indicated by a triangle next to each event.

The network should not be considered definitive. Modification may be useful or necessary as the project continues. Greater detail may be desirable. Amendment should then be made.

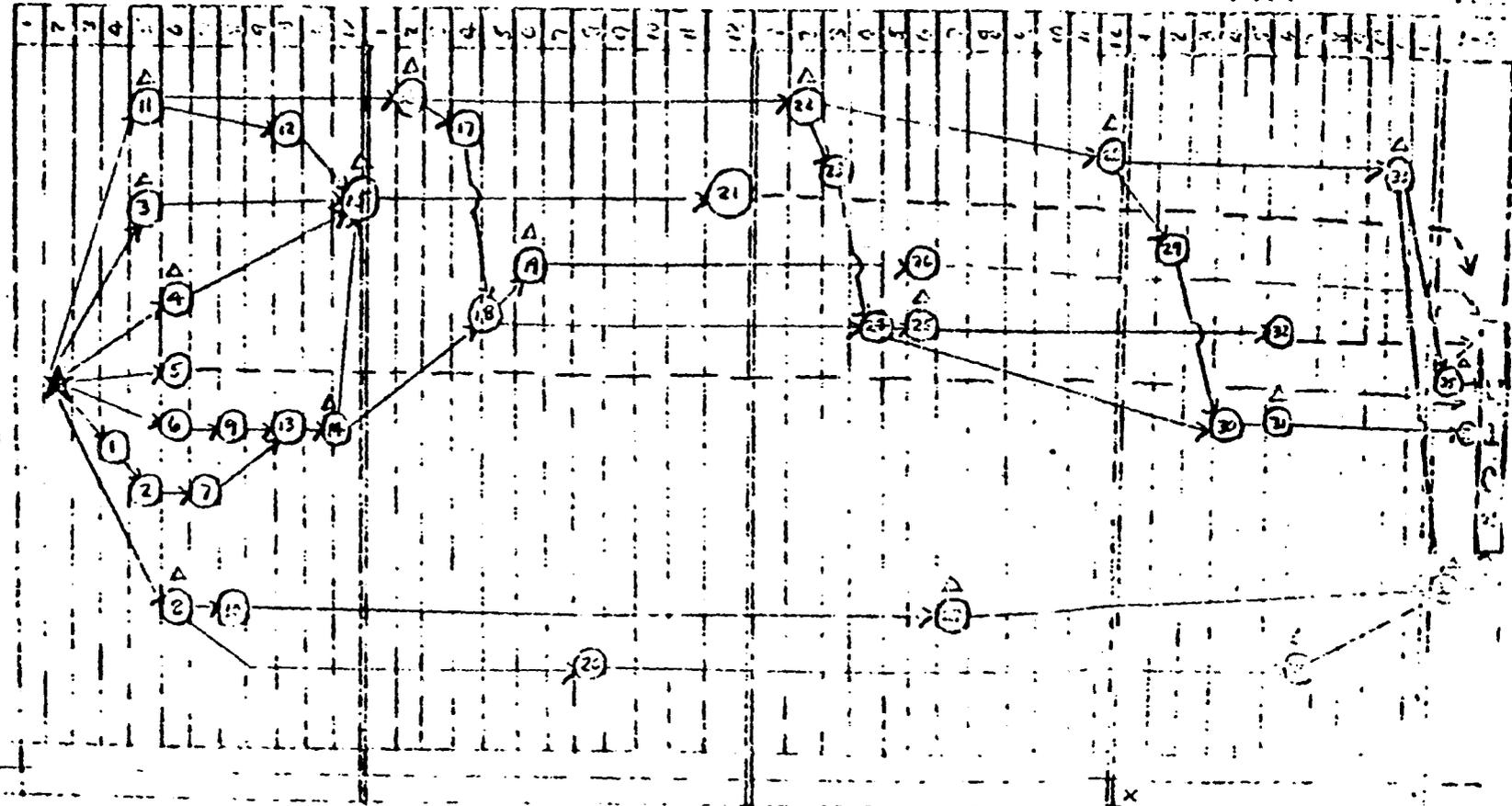
COUNTRY: TANZANIA	PROJECT NO.: 621-II-130-93	PROJECT TITLE: MASHAI LIVESTOCK AND RANGE MANAGEMENT	DATE: 21/19/75	ORGANIZATION: (X) FAO () C
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CY: 1976 1977 1978 1979 1980

ORDER ACTIONS

Project evaluation completed.
 Recommendation accepted.
 Consultant arrives.
 Director Hire Project Manager assigned.

LEGEND:
 Triangles next to an event indicate a CPI. If they are not achieved on time or in adequate amounts, they are to be reported to AID/M.



FINAL REPORT
 SUBMITTED

BY: [Signature] PROJECT COORDINATOR WITH ASSISTANCE OF: [Signature] FORMERLY AND PROJECT MANAGER

COUNTRY	PROJECT NO.	PROJECT TITLE	DATE	ORIGINAL (X) REVISION ()	PAGE
PARAGUAY	621-11-130-093	RANGEL LIVE LIPS AND RANGE MANAGEMENT	2/16/75		
<p><u>NARRATIVE:</u></p> <ol style="list-style-type: none"> 1. Funds for Kibaya Facility identified. 2. Contractor chosen. 3. Extension technician arrives. 4. Range Management technician arrives. 5. 2-way radios w/frequency assignments received. 6. Institutional contract negotiated and budget adjustments made. 7. Kibaya facility completed. 8. Participant training program modified in light of evaluation, PIU/T's processed. 		<ol style="list-style-type: none"> 9. Team Leader (Senior Range Management Expert) arrives. 10. Participants leave for training. 11. Water developed for first R.A. 12. Range Management Plan for first R.A. completed. 13. TDY assignment for assistance in developing <u>procedurally and substantively appropriate</u> record-keeping system to implement range plans. 14. Record-keeping system developed. 15. First R.A. begins to implement Range Management Plan. 16. Water developed for second R.A. 		<ol style="list-style-type: none"> 17. Plan approved. 18. Training in plan implementation completed. 19. Second R.A. begins implementing plan. 20. Participants leave for training. 21. First R.A. completes one year of project monitored operation. 22. Water developed in areas of next two R.A.s to implement plans. 23. Plan approved. 24. Training in plan implementation completed. 25. Two R.A.s begin implementing plan. 	

NOTES AND COMMENTS:

1. In keeping with evaluation or recommendations, water development should include the following:
 - A. Training in facility maintenance.
 - B. Sprigging of dam trees during each rainy season.
2. More detailed development of participant training schedule may be required.

COUNTRY: TANZANIA	PROJECT NO: 62-11-130-193	PROJECT TITLE: WATER DEVELOPMENT AND RIVER MANAGEMENT	DATE: 2/19/75	ORIGINAL (X) REVISION ()	PPT NO: 494
<p><u>NARRATIVE:</u> (Continued)</p> <p>26. Second R.A. completes one year of project monitored operation.</p> <p>27. Participants return.</p> <p>28. Water developed for three R.A.s to begin implementation 6/75.</p> <p>29. Plans approved.</p> <p>30. Training in plan implementation completed.</p> <p>31. Three R.A.s begin implementing plans.</p> <p>32. Two R.A.s complete one year of project monitored operation.</p>		<p>33. Water fully developed for remaining R.A.s.</p> <p>34. Participants return.</p> <p>35. Four R.A.s begin implementing plans.</p> <p>36. Two plans developed by Tanzanians.</p> <p>37. Three R.A.s complete one year of project monitored operation.</p> <p><u>EOP:</u> End of Project Status Achieved</p>			

NOTES AND COMMENTS:

APPENDIX A.

SCOPE OF WORK FOR THE SECOND MASAI LIVESTOCK AND
RANGE MANAGEMENT EVALUATION

A. TEAM COMPOSITION:

- Team Leader/Evaluation Officer
- Rural Sociologist
- Water Engineer
- Range Management Specialist with academic or practical background in Animal Production
- Senior Tanzanian Official from the Ministry of Agriculture
- Senior Tanzanian Official from Arusha Region

B. GENERAL PURPOSE:

The original project paper setting forth the bounds and guidelines of the project provide for an outside evaluation in 1973 and 1976. This will be the second such evaluation and should focus on the degree of progress being made toward targets and goals, and to recommend any changes in these and also any changes in the method of operation of the team, as well as changes or alterations in the composition of the team's make-up. These recommendations should be subject to review with Arusha regional officials, and Ministry officials before they are finalized as a positive recommendation.

C. SPECIFIC OBJECTIVES:

The evaluation Team should approach this assessment by considering the total performance of the Masai Project to date (1970-1975) with emphasis on:

1. The Contractor (NEF)
2. The Contract Team in the field
3. The USAID Mission
4. AID/Washington
5. Tanzanian Government

This should include:

1. Identifying bottlenecks limiting project performance and advising possible means of overcoming these;
2. Reviewing the project outputs by deciding if they are realistic or should they be changed;
3. Decide if the project purpose is still realistic, and if not, what changes are necessary;
4. Set up a series of implementation indicators from now through the end of the project which will tell us where we are, where we are going, and when we have reached the end of the project;
5. Comment on their assessment of what effect the project is having on the Masai, such as:
 - a. Changes in nomadic practices
 - b. Marketing attitudes
 - c. Herd sizes and composition
 - d. Range Management activities
 - e. Social structure (how are the Masai using their money)
6. Consider the physical changes taking place (such as formation of villages, water development, and range management implementation) because of the project, and assess this in terms of ecology changes (good or bad);
7. Review the cost of the project in relation to the expected results;
8. Consider this project's relationship with the Arusha Drought Project and the Livestock Marketing system as it functions in the Arusha Region considering the fact that the functions of the Livestock Marketing project have, until just recently, been performed by a member of the Masai Team;
9. Determine if the baseline data are adequate, appropriate and realistic.

D. MODE OF OPERATION AND ITINERARY

It is suggested that the team assemble in Arusha and plan to spend two weeks in the field about evenly split between the Monduli and Kiteto Districts. It is anticipated it will take about three or four days to prepare a draft report and this can be done either in Arusha or Dar es Salaam. Transportation will be furnished by the Masai Team, and USAID will provide per diem for the Tanzanian officials on the team.

APPENDIX B.

ITINERARY FOR EVALUATION TEAM

January 28, 1976	Travel Logan to Washington, D.C.
January 29 - 30	Briefing in Washington. Travel to New York.
January 31 - February 1	Travel to Dar es Salaam
February 2 - 3	Briefing in Dar es Salaam. Travel to Arusha.
February 4 - 5	Briefing by Masai Team. Meeting Government officials in Arusha and Monduli. Tour of Komolonik Grazing Association Area.
February 6 - 8	Travel through Monduli District, Longido, Gelai, Engaruka, Ngorongoro, Endulin, Tsetse Clearing area, Ujamaa Bull Ranch, Endulin Manyara Association, NAFCO Ranch.
February 10	Meeting with Government officials, Arusha. Setting up office.
February 11 - 14	Travel through Kiteto District, Kibaya, Mpwapwa, Kongwa Ranch, Kijungu, Engasumet.
February 16	Meeting with Tanzanian officials in Arusha. Begin report writing.
February 18	Meeting with Defense Minister, Mr. E. Sokoine
February 20	Briefing the Ambassador, Mr. Spain.
February 17 - 22	Writing report

APPENDIX C.

PERSONS MAKING FIELD TRIPS THROUGH MASAILAND

MONDULI DISTRICT

Arthur D. Smith	Utah State University*
Calvin G. Clyde	Utah State University*
Yun Kim	Utah State University*
Jon Moris	Project Coordinator
Scott Engle	Range Management Specialist
Steve Salk	Veterinary Specialist
Joyce Stanley	Volunteer, Media Specialist
Jim Fisher	Animal Production Specialist
Dr. A.K. Baluhi	District Development Director*
Dr. I. Mpelumbe	Assistant Director, Livestock Development Division, Min. of Agriculture, Dar es Salaam*
Mr. E.P. Mazalla	Stand-in for Regional Planning Officer, Arusha
Don Moris	Water Development Specialist
Richard L. Podol	Assistant Director, USAID/Dar es Salaam
Walter A. Kane	Auditor, USAID/Nairobi

APPENDIX C. CONTINUED

KITETO DISTRICT

Arthur D. Smith	Utah State University, Range Management*
Calvin G. Clyde	Utah State University, Water Engineer*
Yun Kim	Utah State University, Sociologist*
Jon Moris	Project Coordinator
Don Moris	Water Development Specialist
Scott Engle	Range Management Specialist
Steve Salk	Veterinary Specialist
Richard Stanley	Hydro-geologist
Jim Fisher	Animal Production Specialist
Dr. A. K. Baluhi	District Development Director, Monduli*
Dr. I. Mpelumbe	Assistant Director, L.D., Ministry of Agriculture, Dar es Salaam
E. P. Mazalla	Regional Planning Officer, Arusha*
Walter A. Kane	USAID Auditor, Nairobi
George Honadle	USAID Planning Consultant, Washington*
Jack Cornelius	USAID, Project Manager, Dar es Salaam

*Evaluation Team Members

APPENDIX D.

TANZANIA GOVERNMENT OFFICIALS SEEN BY EVALUATION TEAM

Mr. E. Sokolne	Member of Parliament for Monduli District, Minister of Defense
Mr. Neema	Principal Secretary, Office of the Prime Minister & Second Vice President
Mr. Ongara	Commissioner for Planning, Office of the Prime Minister
Mr. J. L. Angwazi	Assistant Commissioner for Planning, Office of the Prime Minister
Mr. W. Snelukindo	Regional Development Director, Arusha Region
Mr. E. P. Mazalla	Regional Planning Officer, Arusha Region
Mr. I. Ole-Karyongi	Regional Livestock Development Officer, Arusha Region
Mr. Khanna	Regional Water Engineer, Arusha Region
Mr. James Sekerot	Tanu Secretary & Area Commissioner, Monduli District
Dr. A. K. Baluhi	District Development Director, Monduli District
Mr. P. Parshuku	Tanu Chairman, Monduli District
Mr. I. Isae	District Livestock Development Officer, Monduli District
Mr. S. Kisipan	Field Officer i/c Longido Division
Mr. G. Mbusule	Agricultural Officer i/c Ngorongoro Division
Dr. Komba	District Development Director, Kiteto District
Mr. S. Kone	Tanu Chairman, Kiteto District
Mr. G. Itangare	District Livestock Development Officer Kiteto District

APPENDIX D. CONTINUED

Mr. G. Mkumbo	Field Officer i/c Kijungu Division
Mr. M. LoMasai	Assistant Field Officer i/c Sunya Ranching Association
Mr. Mbuli	District Planning Officer Kiteto District
Dr. Mosha	District Development Director Mpwapwa District
Mr. H. M. Mwangula	Manager, Kongwa Ranch Deputy Director, Research & Training Institute, Mpwapwa

MASAI LEADERS AND GROUPS

Chairman, Monduli Ranching Association

Chairman, Steering Committee and 45 members of Korongoro R.A.

Chairman, Steering Committee and 60 members of Talamai R.A.

Six Members of Konyokio R.A.

APPENDIX E.

REPORTS AND PAPERS PREPARED BY EXTENSION SOCIOLOGIST

1. Preliminary Survey of Sonjo and Malambo Boundaries. October October 10, 1973.
2. Report on Sociological Findings on the Proposed Ujamaa Bull Ranch at Talamai (March 17-23). April 1, 1974.
3. Family Composition in Masailand Based on Figures from Talamai, Koniolonik and Namalulu. March 14, 1974. (for DDD Monduli)
4. Suggested Procedure for Arranging the Distribution of Improved Bulls in Masailand. August 14, 1974.
4. Initial Report of the Sociological Census of the Koniolonik Ranching Association. August 29, 1974.
6. Report of the Sociological Census of the Talamai Ranching Association. (Kijungu). September 27, 1974.
7. Preliminary Report of the Proposed Engaruka Ranching Association. October 12, 1974.
8. Proposed Procedures for the Introduction of Ujamaa Bull Ranches into Masailand. October 31, 1974.
9. Report of the Sociological Census of the Proposed Ranching Association. April 9, 1975.
10. Initial Report of the Kitendonl (Olmolog) Proposed Ranching Association. April 9, 1975.
11. Initial Report of the TingaTinga Area as a Proposed Ranching Association. April 29, 1975.
12. Introduction of Improved Stock into Masailand: An Initial Assessment. For Tanzania Society for Animal Production Second Conference: Arusha May 19-21, 1975, with E. Moluche and R. Ole Kunej.
13. Population Figures for Longido Division Based on the Sociological Census: Masai Range Project. May 27, 1975.
14. Report on Ranching Association and Kata (Ward) Boundaries in Monduli District. (May 29, 1975). for DDD Monduli.
15. Initial Report of the Nabenera Area as a Proposed Ranching Association. June 18, 1975.

APPENDIX E. CONTINUED

16. Initial Report of the Shamburui Ranching Association. July 5, 1975.
17. Current Trends in Masai Development: A Baseline Survey.