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DEPARTMENT OF STATE

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FROM - ADDIS ABABA

SUBJECT - Non-Capital Project Paper (PROP)

REFERENCE -
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NONCAPITAL PROJECT PAPER (PROP)

Country Ethiopia Project No. 663-11-130-112

Submission Date 11 July 1968 Original X Revision No. ____

Project Title: Regional Livestock Development

U.S. Obligation Span: FY 65 through FY 72

Gross life-of-project financial requirements:

U.S. dollars $1,726,000 plus $1,000,000 ~~[illegible]~~ DL
(for food projects show CCC value including estimated ocean freight)

U.S. owned local currency $170,000 Loan

Cooperating country cash contribution $2,900,000
(in $ equivalent, current exch. rate)

Other donor None
(for food projects, including voluntary agency contribution)

Totals $5,796,000

For food projects show total tons None

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AID AND OTHER CLEARANCES
PRG:~~[illegible]~~Gould
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SUMMARY DESCRIPTION

1. The justification for this project is basically as follows:

a. In certain parts of Ethiopia, especially Southern Ethiopia, large areas with very good livestock production potential are not contributing significantly to Ethiopia's economy. These areas, populated by nomadic cattle producers and their herds, have an abundance of good grass and a very limited supply of water. Cattle in these southern areas are of the Borana breed and have the best beef producing qualities of any indigenous beef cattle in Africa.

Cattle numbers are presently less than half the number that these areas are potentially capable of supporting provided that an adequate water supply is made available, that proper animal health programs are carried out and that suitable land utilization programs are developed and put into effect.

b. The project goals are to plan and implement a program including necessary land development and utilization practices, supporting animal health programs, and improved marketing systems and practices. These goals will increase the number of cattle marketed for these areas from two to three times the number presently marketed and would greatly increase the economic return from the area.

These programs would also lead eventually to settling the nomadic livestock producers, provide a stable land tenure, and open the way for IEC to provide health and educational programs to these livestock producers and their families.

c. In order for the U.S. to continue its technical assistance and to give consideration to further financial assistance to this program, it is expected that IEC will continue to provide funds for the pilot development stage of this project through 1972; that they will provide suitable personnel for training to staff this project; and that they will effect the enactment of suitable proclamations and land utilization regulations required to implement and carry through the project.

d. USAID has and will continue to provide (depending upon availability of funds) US technicians through 1972 to assist in planning and guiding the implementation of the project; [redacted] training for staff members both abroad and on-the-job; and [redacted] a modest amount of funds for commodities needed for the project. It is anticipated that by the beginning of FY 70 the Ministry of Agriculture will be ready to begin expansion of development operations considerably beyond this initial pilot plan. Additional construction equipment, support and transportation equipment, pumps and other off-shore procured equipment will be required. Depending upon availability of funds, USAID should make available to IEC on loan basis up to U.S. $1,000,000 for this [redacted] procurement. [redacted]

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Table 1 NONCAPITAL PROJECT FUNDING (OBLIGATIONS IN $000) PROP DATE Mo/Day/Year
Page 1 of 2 Original 7/11/68
COUNTRY: ETHIOPIA Rev. No.
Project No. 663-11-130-112

Fiscal Years	Ap	L/G	Total	Cont 1/	Personnel Serv. AID	Personnel Serv. PASA	Personnel Serv. CONT	Participants U.S. Agencies	Participants CONT	Commodities DIR US Ag	Commodities CONT	Other Costs Dir & U.S.Ag	Other Costs CONT
Prior through Act.FY 68	TC	G	729	9	298	28	9	161	-	210	-	23	-
Oper. FY 69	TC	G	297	15	132	30	15	78	-	25	-	19	-
Budg. FY 70	TC	G	297	15	162	30	15	55	-	15	-	20	
	DL	L	1000							1000			
B + 1 FY 71	TC	G	250	15	160	-	15	55				20	
B + 2 FY 72	TC	G	225	15	165	-	15	25	-	-	-	20	
B + 3 FY													
All Subs.													
Total	DL	L	1000							1000			
Life	TC	G	1798	69	917	88	69	372		250		102	

1/ Memorandum (nonadd) column
Note that format of this page is same as E-1a.

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Table 1
Page 2 of 2 Exch. rate $1 2/ Project No. 663-11-130-112

Fiscal Years	AID-Controlled Local Currency U.S.-owned 3/	AID-Controlled Local Currency Country-owned 4/	Other Cash Contribution Cooperating Country 5/	Other Donor Funds 6/ ($ Equiv.)	Food for Freedom Commodities Metric Tons (000)	Food for Freedom Commodities CCC Value & Freight ($000)	Food for Freedom Commodities World Market Price ($000)
Prior through Act. FY 68	170		324	-	-		
Oper. FY 69			324	-	-		
Budg. FY 70		240	444	-	-		
B + 1 FY 71		400	444	-	-		
B + 2 FY 72		300	444	-	-		
B + 3 FY 73							
All Subs.							
Total Life	170	940	1980				

2/ As of preparation date US $1.00 = Eth $2.50

3/ US-owned local currency generated by Title 1, Section 104 (g) in the amount of Eth $425,000 (US $170,000) was loaned to the Ministry of Finance who in turn granted the funds to the Ministry of Agriculture to be used in the Water Development phase of the Regional Livestock Program.

4/ Country-owned AID controlled local currency generated from the sale of U.S. owned cotton under PL 480 Title I agreement agreements.

5/ N.A.

6/ N.A.

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SETTING OR ENVIRONMENT

The total land area of Ethiopia is 1,221,900 square kilometers, or 122,190,000 hectares. There are no official figures available regarding land use and distribution, but estimates indicate the following breakdown to be a good approximation. Total agricultural land is 84.1 million hectares or 68.8%. Grasslands comprise 66.8 million hectares or 54%. In addition, an estimated 50% of the 25.4 million hectares devoted to cropland, fallow, forest, and swampland is utilized for livestock forage production, or about 12.7 million additional hectares. This means that a total of 79.5 million hectares, or 64.5% of the total land area is used for grazing livestock. An additional 29.3 million hectares (24%) is considered barren desert or water, but undoubtedly furnishes a limited amount of grazing for livestock.

The systems of grazing used on this tremendous area can be broken down as follows: (a) nomadic - Bale 12,258,500 hectares; Harrar 24,425,100 hectares; Sidamo 10,538,300 hectares; Shoa 6,511,800 hectares; Tigre 5,139,000 hectares; Wollega 5,913,200 hectares; Wollo 6,451,300 hectares. The majority of the 29,300,000 hectares of barren land is located in Eritrea, Tigre and Harrar Provinces. The other grazing lands are utilized by sedentary livestock owners. Thus, approximately 59,043,200 hectares are devoted to nomadic type livestock production, 34,603,400 hectares to semi-nomadic livestock production, and an additional 12,700,000 are devoted to sedentary livestock production. This gives an estimated 106,346,600 hectares of land devoted to livestock production, 29,300,000 hectares of which are barren or desert.

Livestock is Ethiopia's most readily exploitable agricultural resource. A large livestock population, coupled with vast grazing areas with abundant indigenous forage grasses, and an adequate rainfall distribution are encouraging to the development of a viable livestock industry. According to the latest available data, 115,000,000 livestock - cattle, sheep, goats and poultry - make Ethiopia one of the highest livestock populated nations in the world. An estimated 25,000,000 cattle, 20 percent of the total number in Africa, are located in Ethiopia.

People are Ethiopia's most important resource. What the future holds for the nation depends on what is done for, with, and through this resource. The nomadic and semi-nomadic cattle owners are extremely good herdsmen, often enduring great personal hardships for the benefit of this livestock. The present system of land use is one that has evolved over centuries of livestock production under existing conditions over which the livestock producer has had little control due to lack of education, technical skills, equipment and finances. Development of rangelands must draw on this human resource to produce livestock which will in turn reimburse development, maintenance, and management costs through increased yields in beef output. The increased output will in turn increase income to cattle producers who in turn can furnish increased revenues to the government.

Livestock production and husbandry is on a primitive scale. Grazing is the only method of feeding practiced, and grazing conditions are unfavorable during a major portion of the year. Stockwater is a serious problem in almost every part of the country during the dry season. Many animals are watered only every 3rd day. Large areas are not utilized during the dry season due to lack of permanent water, while areas adjacent to permanent water are heavily overgrazed. Livestock of all ages are herded together which limits any efforts in breeding-up the herd through selectivity.

Livestock production is poor, calf losses are great, and animal maturity slow. Livestock numbers are excessive in many regions of the nation, particularly the sedentary and semi-nomadic areas. Numbers far exceed the capacity of the land thus decreasing forage intake below the body maintenance level.

Efforts have been made by the government to control major livestock diseases, but these efforts have not been far reaching. The prevalance of livestock diseases in Ethiopia, such as rinderpest, food and mouth disease, anthrax and bovine pleuropneumonia are one of the major factors limiting the development of the export market for livestock.

Livestock are trailed great distances to market with inadequate feed and water along the routes. Some areas require as much as five days travel during the dry season without water. (Routes pass through farmlands where inadequate forage and rest stops are available.) The results are heavy losses in body weight, a subsequent loss in meat quality, and high death losses, in moving the animals to market.

The Ministry of Agriculture has an animal production division which is seriously understaffed. A section of this division should be established to include Range Development and Management. Legislation is now being processed to require animal quarantine and meat inspection prior to slaughter. Legislation is also required to enable the establishment of grazing areas which can be developed and managed by the Ministry of Agriculture. These areas in turn will be utilized by local cattle owners for which a grazing fee will be paid. This grazing privilege in turn becomes a form of land tenure for nomadic cattle producers.

STRATEGY

This project is a combined effort through range development and management, veterinary services, animal husbandry and marketing to increase the annual take-off from the livestock production of Ethiopia for both local consumption and export. This increase is expected to increase from the present 2% to at least 10% by 1977, and will be accomplished by providing the following assistance, services and guidance:

1. Range Management Programs

Three pilot Range Management demonstration areas will be established to serve as a guide for future developments by the Ethiopian Government. Two of the pilot areas are located in the Southern Region (Sidamo Province), and the third in the Central Region (Shoa Province). Each demonstration area shall consist of approximately 800 square miles or 208,800 hectares. The combined area of the 3 projects should total 626,400 hectares. Each pilot area shall support approximately 50,000 head of cattle or a total of 150,000 head. These cattle will be owned by approximately 3,700 cattle owners with an average of 40 head per family. The pilot demonstration areas will serve both as a training area for government officials (both Ministry of Agriculture and local government employees) and for the nomadic cattle owners. Their objective will be to produce a sustained high level of beef over a long period of time, while improving both animal quality and quantity and without damaging the productivity of the rangeland.

These pilot demonstration areas will be located in those areas of the country where nomadic type livestock production on government-owned land is the major land use. The demonstrations and the training of government personnel will serve as a nucleus for the formation of a Range Management and Development section in the Ministry of Agriculture. It will also serve as a pattern for establishing a land tenure system based on the issuance of grazing permits to nomadic cattle owners. It will utilize the resources of the nomadic cattle owners through grazing fees that will reimburse the government for cost of development, maintenance and administration. There are several other alternatives to this approach. First, private ranches both from a local capital input and foreign investment standpoint are possible in range development programs. However, the overall impact of such ranches on the cattle industry would be relatively small. Local cattle owners are not capable of developing and managing such enterprises at this time. Such developments will undoubtedly evolve in the future when local cattle owners have acquired sufficient education and managerial skills. Second, government-owned and operated commercial ranching operations have been established, but they also have had little impact on local cattle owners. Cattle owners indigenous to these development areas, both nomadic and semi-nomadic, comprise a vast resource which must be utilized if the livestock industry of Ethiopia is to be developed.

2. Animal Husbandry and Livestock Improvement

An extension type program will be established to give educational assistance and guidance to the nomadic cattle owners on the pilot schemes and adjacent areas. Each pilot demonstration area will have eight assistant project managers who will be responsible for issuing grazing permits to local cattle owners. He will also be responsible for the collection of grazing fees and disseminating information to the cattle owners regarding herd improvement, veterinary treatment available, current market prices and rules and regulations of the grazing schemes.

The Ministry of Agriculture has developed an excellent herd of Boreena cattle at their Adami Tulu Ranch. The bulls from this ranch are for distribution to local cattle owners. However, the acceptance of these bulls by local cattle owners has been quite disappointing. Local cattle owners do not believe the improved bulls could survive under their prevailing conditions. This is probably not the case, yet expected results will not be achieved until the level of nutrition of the local cattle is raised to a level that would give a response to improved blood lines. In order to achieve distribution of these bulls, it is planned to run three government herds on each of the demonstration areas. The first herd would be a cow-calf herd to show what production can be expected on the pilot schemes from the improved breed. The second would be a herd of young bulls from the Adami Tulu herd, and later from the cow-calf herd, from which local cattle owners could select and trade bulls to improve their own herds. Local cattle owners could trade one of their poor quality bulls for one of the improved bulls. The third would be composed of poor quality bulls or steers which would be sold for slaughter purposes.

3. Veterinary (Animal Health Program)

Plans are to establish a mobile veterinary service with the capability of servicing the three demonstration areas, adjacent areas to the pilot layout and other IEG/USAID selected areas. Three mobile units have been equipped and staffed for treatment of livestock on the demonstrations and surrounding areas. An effort is being made to eradicate the diseases now prevalent which not only cause considerable loss to cattle owners, but prohibit the export of chilled and frozen beef from Ethiopia. Dipping vats will be established on the demonstration areas to control ticks that carry tick-born diseases. Check points and a quarantine system will be established along the major stock routes from production areas to market centers. This system when completed will enable livestock to be produced on disease free areas and move through a system of check points and quarantine to abattoirs and export channels. Meat inspection at the abattoirs will be established and personnel trained for this purpose. This beef will then be acceptable on the world market.

The overall veterinary program for Ethiopia is being assisted from several other aid programs. Veterinary treatment from French and Free China, Quarantine from U.K., and Meat Inspection from Spanish assistance. Very little of this other donor assistance extends into the areas presently served by the above mentioned mobile units. It is hoped that regional programs, such as the JP 15 Rinderpest Eradication Program, will soon be extended to Ethiopia. At present vaccines are furnished free by the veterinary department to cattle owners. These vaccines are

produced at two points, the F.A.O. Laboratory at Debre Zeit assisted by French Aid and the Ministry of Agriculture Laboratory at Asmara. Limited amounts of drugs and chemicals are also made available to livestock owners through the veterinary department. Future needs of livestock owners will require commercial outlets through local retail dealers of drugs, chemicals, vaccines, and veterinary equipment.

The animal health school at Debre Zeit staffed by F.A.O. produces some 20 diploma graduates annually who are utilized as assistants in the veterinary field programs.

4. Marketing of Livestock

An effective system of livestock routes will be established in the regions where the demonstration areas are developed. This will include improving the existing routes and the development of new routes where necessary. Major routes will be provided with permanent watering points, either by wells or surface ponds, at about one day travel (25 km.) intervals. Veterinary check points and rest areas will also be provided along the major routes at about 100 km. intervals. The availability of these facilities will encourage orderly and continuous, rather than seasonal, movement of livestock to market by local owners and herders. Such routes will facilitate the movement of livestock to the major markets and processing plants at Margo Wando, Addis Ababa and Dilla.

The total amount of meat produced within and imported into Ethiopia in 1965 was about 379,760,157 kilos, and exports were about 22,288,390 kilos. With a population of 22,590,400 this would indicate a per capita consumption of approximately 16 kgs. This consumption rate is low considering the number of livestock in the country.

While Ethiopia is potentially a large exporter of meat and meat products, it is already a large exporter of hides and skins. Export of hides and skins ranks Number 2 in export earnings for Ethiopia. The export of live animals and canned or frozen meat accounted for only 3% of the total exports earnings in 1964; yet Ethiopia is the only country in Africa of its size where livestock numbers exceed the human population.

The number of slaughterhouses are few considering the distribution of livestock and most of these are concentrated in the Asmara area. Slaughterhouses located within major livestock production areas would better equalize the market take-off of cattle throughout the nation, rather than deplete individual regions. With the slaughterhouses limited to a few areas, livestock prices are considerably higher in those locations. Most of the slaughterhouses in Ethiopia have adequate cold storage facilities to house and hold as many carcasses as they require. Several also have constructive by-product processing plants.

The present practice of exporting only canned beef dictates to the slaughterhouses the quality animals which they must purchase. These are canners and cutters only, usually aged animals. This limits the number of animals available for this market. On the other hand, a combined export of both canned and chilled or frozen beef would enable slaughterhouses to utilize better quality animals. The forequarters and less desirable cuts could be canned and the loin and rear-quarters exported or consumed locally as fresh beef.

In compliance with a request from the Minister of Agriculture USAID provided in 1965 the TDY services of a Meat Expert formerly with USDA who drafted a proposed proclamation and a set of Meat Inspection Regulations for the Ministry. This proclamation has recently been submitted to the Emperor for approval.

In 1967 the Livestock and Meat Board drafted and presented to their governing board for approval Hides and Skins Marketing Regulations designed to improve hides and skins marketing from Ethiopia. Approval of these regulations by the board is expected within the next two months.

Also, the Livestock and Meat Board has presented to the Council of Ministers a proclamation that, when approved, will give the board authority to set minimum slaughterhouse and slaughter slab standards. The Livestock and Meat Board has requested technical assistance from USAID in the form of a plant and meat expert on a topping off arrangement to assist the board in implementing these programs.

PLANNED TARGETS, RESULTS AND OUTPUTS

The overall objective of this project is to increase and improve significantly the commercial production and marketing of livestoc from the Southern and Central Region of Ethiopia through the following specific activities:

1. Range Management

It is planned to establish a pilot demonstration in each of the 3 major cattle producing regions of Ethiopia. These pilot demonstrations will be planned on the basis of a 20 year program. The initial stage covered by this plan will be the construction and first two years of management. By 1972 it is proposed to have a feasibility study of the program. If recommendations are favorable, an expanded development program would be embarked upon. This program conceivably would require additional external financing for equipment and operational costs.

The following is cost estimate of development, management and operational costs for the Yabelo grazing scheme in the Southern Region. Costs for the other two regions would follow the same general pattern as the Yabelo scheme.

YABELO GRAZING SCHEME
(All sums in Eth $)

~~Staff Requirements~~

a. Permanent Staff:

(1) Project Director (25%)	Eth $ 4,000
(2) One Project Manager	12,000
(3) Eight Assistant Project Managers	28,800
(4) Twenty-four Animal Husbandry Assistants	43,200
(5) Ten Laborers	9,000
(6) Three Drivers	6,750
(7) One Tractor Driver	1,200
(8) One Storekeeper	840
(9) Ten Cattle Herdsmen	3,600
	$ 109,390

b. Development Staff:

(1) One Engineer	12,000
(2) Eight Assistant Project Engineers	40,000
(3) One Plumber	2,400
(4) One Carpenter	2,400
(5) One Mechanic	2,400
	$ 59,200

Three years to complete

c. Construction Costs:

(1) Boundaries and sub-divisions 420 miles @ $112.50 per mile	$47,250
(2) 24 Stock Ponds @ 10,000 cu. yds. @ $0.75 per cu. yd.	180,000
(3) 3 Wells @ $12,500	37,500
(4) Housing	
(a) One House for Manager	15,000
(b) One Guest House	15,000
(c) Eight Houses (1,000 sq. ft. each @ $3.85 per sq. ft.	30,800
(d) Eight Houses 200 sq. ft. @ $3.85 per sq. ft.	6,160
(e) Machinery Sheds & Store (5) @ 4,000	20,000
(5) Access Road to Project-20 miles @ 225.50	4,500
(6) Access Roads to Dams-60 miles @ 112.50	6,750
	$363,020

d. **Equipment and Machinery**

(1)	One Tractor @ $8,000 x 4*	$8,000
(2)	Three Land Rovers @ $8,000 x 5*	24,000
(3)	One 5-ton truck @ $12,500 x 4*	12,500
(4)	Three Pumps @ $2,000 x 2*	6,000
(5)	Three Motors @ $4,000 x 2*	12,000
(6)	Three Storage Tanks $15,000 x 1*	45,000
(7)	Twenty Water Troughs @ $300 x 2*	6,000
(8)	Tools x 2	8,000
(9)	House Furniture x 2	20,000
(10)	Office Equipment x 2	5,000
		$146,500

*represents the number of times these items will be replaced over a 20 year period of time ($8,000 x 4, etc.)

e. **Maintenance Cost Annual**

(1)	Boundaries and sub-divisions	
	(a) Grading - 480 miles @ $27.50	$ 13,200
	(b) Stream Crossings 300 hrs. @ $27.50	8,250
(2)	Access Road	
	(a) Grading 20 miles @ $55.00	1,100
	(b) Stream Crossings 50 hrs. @ $27.50	1,375
(3)	Repair Dams	
	(a) Labor	1,200
	(b) Rip Rap	4,500
	(c) Heavy Machinery 200 hrs. @ $27.50	5,500
(4)	House	
	(a) Manager's	1,250
	(b) Guest House	1,250
	(c) Eight Staff	1,520
	(d) Ten Labors House	1,350
(5)	Wells	
	(a) Pipe and lift roads	1,500
	(b) Motors	750
	(c) Pumps	600
	(d) Storage	1,000
	(e) Troughs	2,000
		$46,345

f. Operational Costs Annual

(1)	One Tractor	$10,000
(2)	Three Land Rovers	30,000
(3)	One 5-ton Truck	5,000
(4)	Three Pumps (Wells)	15,000
(5)	Three Electricity	10,000
		$70,000

g. Expenditures by Government over 20 year Period of Time

(1)	Permanent Staff $109,390 x 20	$2,187,800
(2)	Development Staff $59,200 x 3	177,600
(3)	Development Cost	368,020
(4)	Equipment $146,500 x 4	586,000
(5)	Maintenance $46,345 x 20	926,900
(6)	Operational Cost $70,000 x 20	1,400,000
	Total for 20 years	$5,646,320

h. Revenue Returned to Government over 20-year Period of Time

512,000 acres	512,000
Animal Units (12 acres per Animal Unit)	42,666
Annual Grazing fee for Animal Unit	7.25
Annual Grazing Fee	309,323.50
Grazing Fees over 20-year Period	6,186,570
Water Fees Transit Cattle	
1500 head 3 days @ 0.05	
$2,250 x 20 years	45,000
Government Cattle Herd	
250 head per yr. net profit $100 each	
25,000 x 20 years	500,000
Grand Total	$6,731,570

2. Veterinary Services

The main objective of the veterinary service is mass prophylactic treatment of domestic livestock throughout the various provinces of Ethiopia. Livestock in the South Region deserves special attention especially those along the dry lowlands which are heavily infested with ticks. Trypanosomiasis and a number of tick-borne diseases are of prime importance.

Equipment, vehicles, and funds are made available for mobile veterinary teams to operate in the Sidamo Province, the Awash basin, and Southern Shoa. Detailed information on operations and plans of work for each team will be prepared and submitted by team leaders.

Veterinary Mobile Team "A"

This team is supervised by one veterinarian with two mobile units and will cover Mega, Yabelo, Agere Mariam, Hibre-Mengiste, and Wadera all in Sidamo Province.

Veterinary Mobile Team "B"[1]

This team, with one veterinarian and one mobile unit, covers Awarjasa in Southern Shoa and the Northern Awash basin.

Veterinary Mobile Team "B[2]"

This team, with one veterinarian and one mobile unit, will carry out vaccination campaigns along the Eastern portion of the Awash valley. A list of description of items, minimum staff needs, vehicles, expenditures, etc., of these teams follows:

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ITEM DESCRIPTION	TEAM A			TEAM B			TEAM B'		
	No.	Days	Amount	No.	Days	Amount	No.	Days	Amount
Per Diem									
A.H.A. @ $7.00/day	3	20	420	2	20	280	1	20	140
Vaccinator @ $3.00/day	8	20	480	3	20	360	4	20	240
Drivers @ $4.00/day	2	20	160	1	20	80	1	20	80
			$1060			$720			$460
Benzene									
Jeep (22L. @ .45 per)$10.00	2	20	400	1	20	200	1	20	200
G.M.C.(22L. @.45 per) $10.00	1	20	200				1	20	200
Vehicle Up-Keep (Repairs)									
$100 per month	3		300	1		100	2		200
Refrigerator (Butane)-$40.00	1		40				1		40
Deep Freeze(electricity)-$40.00	1		40				1		40
Generator (Benzene)- $20.00	1		20				1		20
Contingencies			250			130			130
Total per Month			$2310			$ 1180			$ 1320
Total per Year			$27,720			$14,160			$15,840

CAPITAL EXPENDITURE REQUIREMENTS, Eth $

	No.	Each $	Amount $	No.	Each $	Amount $	No.	Each $	Amount $
1. Spray pumps, at $100 each	20	100	2,000	20	100	2,000	20	100	2,000
2. Ice Box of 1 liter @ $20 ea	20	20	400	20	20	400	20	20	400
3. Thermos bottle of 3.4 liters at $50 each	10		500	10		500	10	50	500
4. Butane gas operated refrigerators at $150 each	10	150	1,500	10	150	1,500	10	150	1,500
5. Materia Medica, arsenicals			2,500			2,500			2,500
			6,900			6,900			6,900
GRAND TOTAL			34,620			21,060			22,740

Total: $78,420 (Seventy eight thousand, four hundred twenty dollars)
Cost in Eth $

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3. Marketing

The Livestock and Meat Board, with its headquarters in Addis Ababa, will open branch offices in Dire Dawa and Asmara during the next five years. Projects will be implemented on a regional basis, namely: the Northern (Eritrea, Begemdir, Simien, Tigre, Gojjam and Wollo); Eastern (Harrar); Western (Wollega, Illubabor and Kaffa); Southern (Gemu Goffa, Sidamo and Bale); and Central (Shoa and Arussie).

Detailed plans of operations will be prepared annually.

A complete investigation of export markets will be carried out by the Livestock and Meat Board. This study will include:

a. An analysis of world consumer demand for meat and meat products and an evaluation of the countries where the most promising markets exist for Ethiopian Livestock products, including frozen beef, canned and prepared meat, meat extracts and by-products (hides, skins, etc.)

b. A comprehensive report of the veterinary requirements for import of meat into those countries, with recommendations as to how to best satisfy these requirements, if possible, in a standardized and internationally recognized manner. Bilateral agreements must be considered.

c. A full report on the import licensing and policies of the same countries as they would effect imports of meat products from Ethiopia.

d. A full analysis of all the cost factors involved in exporting to each of the selected countries, including recommendations as to transportation by air, sea or land, as well as cold storage facilities and wholesale and retail refrigeration facilities.

e. Detailed recommendations as to prices, preparation of products, consumer tastes and seasonal, religious and psychological factors affecting the sales of meat products in the selected countries.

f A report on the current state of supply and demand for meat products in the countries concerned, taking into account existing supply sources and consumer satisfaction.

Marketing Commissions (Trade Missions) will be sent to all countries that are potential importers of Ethiopian livestock and livestock by-products.

g. The first step toward a more efficient marketing system will be a diagnosis of what is wrong. Such a diagnosis will be made by studying the internal marketing system for livestock, meat, hides, skins and by-products. This study will be conducted by Regions and will serve as a guide for the following programs:

(1) Marketing centers for livestock and hides and skins will be established to adopt an orderly method of buying and selling, acceptable to both sellers and buyers.

(2) Grades and standards for hides and skins will be established so that producers will receive a premium for quality products.

(3) Accurate and unbiased information about prices and future markets will be developed and disseminated.

(4) Stockroutes will be demarcated and overnight stops and rest facilities established to enable the movement of livestock from primary markets to processing facilities.

(5) Stockponds will be established in areas where stock water shortages exist.

(6) The Board will encourage the establishment of one meat processing plant in Gojjam Province, and encourage existing meat processing plants to operate at full capacity.

(7) The Board will encourage the establishment of Rural Slaughter and Municipal Abattoir facilities ~~development~~, in conjunction with curing facilities for hides and skins.

(8) Training will be given to all levels of staff in all marketing aspects of livestock and livestock by-products.

(9) Necessary regulations for the marketing of livestock, meat, hides, skins and by-products will be issued and enforced.

COURSE OF ACTION

The Livestock Development Project is under the general direction of the Director General of the Livestock Production Division of Ministry of Agriculture, with a project director directly under the Director General. An Advisory Board is chaired by the Director General and its members are the Project Director, the Director General of Extension, the Director General of Veterinary Services, and the General Manager of the Livestock and Meat Board. This Advisory Board reviews and approves plans and budgets for the program. The project also draws on qualified personnel from these various divisions to fill needed managerial or operational positions.

1. Range Management Administration:

The Range Development Schemes have a project manager for each pilot area and are divided into eight ranges of about 100 square miles. Each range has an assistant project manager (8 assistant project managers for each pilot area). Each range is further sub-divided into 4 grazing units which are grazed 3 months each in a deferred rotational grazing pattern. Each range has three patrols who guard the units not being grazed against trespass, grazing, and fire.

Each demonstration pilot project area shall have a Board of Supervisors composed of the following members:

Chairmen	-	Governor of Sub-Province Provincial Agriculture Officer
Members	-	Project Director, Project Manager, Assistant Project Managers (8), and eight representatives elected or appointed by the cattle owners from each range (8).

Bi-annual meetings will be held at which time rules and regulations will be discussed with cattle owners. Cattle owners will discuss any proposals for minor changes which might be causing undue hardship or which might benefit the program.

The areas are to be developed and grazing privileges issued to the local people now using the areas. Any necessary reduction in the numbers of animals using the areas will be pro-rated among present users. Also, any increase will be pro-rated among the permittees. Grazing permits will be renewed annually on June 1 with past permit holders having first priority in renewing or increasing their permits.

The managers will be responsible for determining the validity of claims for past use by prospective permittees, issuing and renewing permits, collection of grazing fees and overall administration of the grazing schemes.

The local people shall elect or appoint a representative for each of the units. These representatives will be kept informed as to rules and regulations governing the grazing schemes and any changes which are planned. The representatives will ~~ke~~ bring to the attention of the manager any complaints or suggestions by the local people regarding the administration and operation of the schemes.

Assistant managers will be assigned to each of the units. They will be responsible for carrying out the rotational grazing programs, checking on trespass livestock, and implementing the extension herd improvement program with the livestock owners.

Grazing privileges will be paid for on the basis of animal units as follows:

One cow 4 years or older with or without calf by its side equals one animal unit; one bull 4 years or older equals 1.25 animal unit; one male or female one year to two years equals .5 animal unit; one male or female two to three years of age equals .75 animal unit; one male or female three to four years of age equals .9 animal unit; one goat or sheep equals .2 animal unit.

Recommended charges are as follows:

1st year	- $0.50	per animal unit year
2d year	- $1.00	" " " "
3rd year	- $2.00	" " " "
4th year	- $3.00	" " " "
5th year	- $4.00	" " " "
6th year	- $5.00	" " " "
7th year	- $6.00	" " " "
8th year	- $7.00	" " " "
9th year	- $8.00	" " " "
10th year	- $9.00	" " " "
11th year	-$ 10.00	" " " "
12th year	-$ 10.00	" " " "
13th year	-$ 10.00	" " " "
14th year	-$ 10.00	" " " "
15th year	-$ 10.00	" " " "
16th year	-$ 10.00	" " " "
17th year	-$ 10.00	" " " "
18th year	-$ 10.00	" " " "
19th year	-$ 10.00	" " " "
20th year	-$ 10.00	" " " "
20 years total	$145.00	20 Animal Unit Years

This is an average of $7.0275 per animal unit per year for a 20 year period of time. There are two reasons for the sliding scale in the rates. First the cattle owner must become accustomed to paying the fee and second with the improvement of the range condition and consequent increased production of the livestock the owner can afford the higher rate of charge. The average rate of charge based on a 20 year expected life of the project should be ample to repay the government for administration, maintenance and a large part of the development costs. It is planned that by the end of 20 years or so these cattle producers can become owners of the land with operations similar to that found in the Western United States.

Cattle owners are more likely to accept improved management practices where demonstrations are conducted with their own cattle. Demonstrations on government operated ranges have little impact on local cattle owners. However, local cattle owners are quick to observe any improvement in the production or general condition of their own animals.

The present system of nomadic and semi-nomadic cattle production produces an average annual take-off of 2-3%. This low take-off is due to low production rather than the often quoted fact that cattle owners will not sell their animals. A close analysis of production under nomadic conditions reveals that cattle owners are selling all available animal, but production of males reaching 5-8 years of age is only 2-3%. All females are kept as replacements in the herd. Maturity is quite slow. Females calve first at about 5 years of age, and males require 5-8 years to reach marketable size. Cows after reaching maturity calve at an average rate of 60%. Of these calves 55% die from disease and starvation before they reach one year of age. Death rates are about 10% per annum thereafter. Thus a cow herd of 100 mature cows would produce only 60 calves. 55% of these would die before reaching one year of age. Leaving 33 animals one year of age, 20% of the animals would die before reaching 2 years of age leaving 27 animals an average of 10% death loss would occur annually before reaching 5 years of age or 9 additional animals leaving 16 animals of 5 years of age. Half of those would be females for replacements and half males. One male would be kept as a herd bull ~~leaving~~ leaving 7 males 5 years of age for sale.

The total number of animals in such a composite herd would be as follows:

Females		Males	
5-15 years old	100	5-8 years old	4
4-15	8	4-5	8
3-4	10	3-4	9
2-3	12	2-3	10
1-2	17	1-2	16
Total	147		47

The total animals in the herd would be 194 animals producing 7 marketable animals or 3.6% take-off.

The expected benefits from the pilot demonstration projects coupled with adequate veterinary treatment would be as follows: Animals would mature at 3 years of age. Death loss of calves would be reduced from the present 55% to 10%. Reduction in death loss thereafter to 3% annually. A 100 cow herd under these conditions would be as follows:

Females		Males	
3 - 12 years old	100	3 - 5 years old	4
2 - 3	26	2 - 3	26
1 - 2	27	1 - 2	27
Calves	30	Calves	30
Sale			
12 years old	5	2 - 3 years old	24
2 - 3	5		

The total animals in the herd over one year of age would be 210; of this number 30 would be sold annually for an average take-off of 16%.

The average nomadic cattle owner has a herd of about 40 animals including both females and males ages one year to 16 years of age. On a the basis of present production he would have an average of 1.5 animals per year for sale, the value of which would be $75.00 each or an average annual income of $112.50. Based on expected returns from the same size herd on one of the pilot demonstration projects his income would be as follows:

2 old cows @ $30.00	$60.00
2 Cull females 2-3 years old @ $25.00	50.00
10 Males 3 years old @ $75.00	750.00
	$860.00

This would give an average net gain in annual income of $747.50 for each of the 3,700 cattle owners on the 4 project areas or an increase of $2,765,750 dollars annually.

In addition to the direct benefits on the project sites, areas surrounding the project areas would receive benefit from the extension programs and from veterinary treatment by the Mobile Units.

2. Range Development and Construction

The Water Resources Department, Ministry of Public Works is charged with the construction phase of the pilot demonstration areas. They shall provide the personnel for two construction teams consisting of the following:

Construction Engineer
Construction Foreman (2)
Operators for each heavy machine
One Mechanic and two Service men
Camp Cook
Camp Guard

In addition a base camp garage will be staffed on the Pilot Area near Yabelo for major machinery repairs.

The Ministry of Agriculture has purchased and received during 1968 from project funds heavy machinery worth Eth$700,000 and Excess Property Support Equipment valued at $130,000. The Ministry of Agriculture provides fuel and maintenance cost for heavy machinery used in construction.

The following is a list of project machinery from various sources and its intended utilization:

a. Mobile Veterinary Units:

(1)	2 Jeep Pick-ups	AID	1966
	1 GMC Truck	AID	1966
(2)	2 Jeep Pick-ups	AID	1966
	1 GMC Truck	AID	1966
(3)	2 Jeep Pick-ups	AID	1966
	1 GMC Truck	AID	1966
(4)	AID Vet. Adv. 1 Chevrolet Pick-up and Camper	AID	1967

b. Range Management:

(1) Management Phase:

(a) Yabello:

1 Chevrolet Pick-up	AID(Yemen)	1967
1 6 x 6 Truck	AID 608	1968

(b) Adami-Tulu

1 Chevrolet Pick-up	AID(Yemen)	1967
1 6 x 6 Truck	AID 608	1968

(c) Neghelli

1 Chevrolet Pick-up	AID(Yemen)	1967
1 6 x 6 Truck	AID 608	1968

c. Construction Phase:

(1) Team A - Yaballo

1 D-7E Caterpillar	on hand	Min. of Agric.	
1 D-7E Caterpillar Dozer	on hand	Min. of Agric.	
1 453 Scraper	on hand	Min. of Agric.	
2 D-7S Caterpillars	New purchase	Min. of Agric.	
1 D-7E Caterpillar Dozer	New purchase	Min. of Agric.	
1 Cat 12 Road Grader	New purchase	Min. of Agric.	
1 Mobile Shop Van	608	Min. of Agric.	1967
1 1200 Gal. Tank Truck	608	Min. of Agric.	1967
1 400 gal. Water Trailer	608	Min. of Agric.	1967
1 Service Unit	608	Min. of Agric.	1967
3 12 cu.yd. Scrapers	608	Min. of Agric.	1967
1 10-ton Truck Tractor	608	Min. of Agric.	1967
1 45-ton low boy trailer	608	Min. of Agric.	1967
1 7½ ton Mercedes Truck		Min. of Agric.	1968
1 Land Rover Pick-up		Min. of Agric.	1968
1 Land Rover Station Wagon		Min. of Agric.	1968

(2) Team B - Adami Tulu and Awash -

1 D-7E Caterpillar	on hand	Min. of Agric.	
1 D-7E Caterpillar Dozer	on hand	Min. of Agric.	
1 453 Scraper	on hand	Min. of Agric.	
2 D-7E Caterpillars	New Purchase	Min. of Agric.	
1 D-7E Caterpillar Dozer	New Purchase	Min. of Agric.	
1 Cat 12 Road Grader	New Purchase	Min. of Agric.	
1 Mobile Shop Van	608	Min. of Agric.	1967
1 1200 gal. Fuel Truck	608	Min. of Agric.	1967
1 400 gal. Water Trailer	608	Min. of Agric.	1967
1 Service Unit	608	Min. of Agric.	1967
3 12 cu. yd.	608	Min. of Agric.	1967
1 7½ ton Mercedes Truck		Min. of Agric.	1968
1 Land Rover Pick-up		Min. of Agric.	1968
1 Land Rover Station Wagon		Min. of Agric.	1968

(3) Road Repair Unit

Also Riprap ends of dams and Spillways

2 Cat 955 Traxcivators	AID(Yemen)	1967	
1 6 x 6 Cargo Truck	AID(Yemen)	1967	
1 6 x 6 Dump Truck	608	Min. of Agric.	1967

(4) Yabelo Shop:

Shop Equipment and tools ($86,850)	Min. of Agric. 1968
1 Land Rover Pick-up	Min. of Agric. 1968
1 7½ Ton Mercedes Truck	Min. of Agric. 1968

d. Livestock:

Project Coordinator 1 Chevrolet Pick-up and House Trailer	AID	1967
2 Jeep Station Wagons Headquarters Transportation	AID	1966

e. Geologist: (Well Drilling)

1 Chevrolet Pick-up & Camper	AID	1967
1 Jeep Pick-up Counter Part	AID	1968
1 6 x 6 Truck	AID 608	1968
Windmills	AID(Yemen)	1967
Pumps	AID(Yemen)	1967

f. Well Servicing Unit:

1 Jeep Pick-up	AID	1967
1 6 x 6 Truck	AID 608	1968
Servicing Equipment & Tools	Min. of Agric ($7000)	1968

The construction phase of the program would be as follows:

Team A currently working north of Yabelo in the Southern Region was brought to full strength in 1968 by the addition of new equipment purchased in 1967. Also part of the support equipment ordered in 1967 has arrived and the remainder should arrive by the end of 1968. This unit consists of 3 D-7E Caterpillar Scrapers and one D-7E Caterpillar Ripper building dams and one D-7E Dozer and one Cat 12 Grader building roads, boundaries and sub-division of the project area. The construction phase of this project site is expected to be completed by January 1970. At this time a second area either west or east of Yabelo will be started.

The Second Unit, or Team B, began construction in the Adami Tulu area of the Central Region in April 1968. The construction phase of this project should be completed by September 1969. This unit would then be transferred to the Neghelli area in the Southern Region. The construction phase of this pilot area should be completed by January, 1971. At this time a second area in the Neghelli area will be started.

USAID funded
The/Geologist will supervise the drilling of wells and the installation of pumps on all project areas and along the stock routes. The well drilling will be done by Water Resources Department.

Pumps will be installed at all the Headquarter Units of the pilot range management projects and at some veterinary check points along the stock routes. Windmills will be erected on other wells at camps on the range management projects and along the stock routes.

A well servicing unit will be established and equipped to repair and maintain pumps and windmills on the pilot range management ~~xxxxxxx~~ projects and along the stock routes.

Construction of the Headquarter Units including housing, water storage, garage and warehouses will be done by the project-employed development staff consisting of one Engineer, 8 Assistant Engineers, one plumber, one carpenter and locally hired laborers.

The project engineer and assistant engineers will survey all boundaries and sub-divisions of the projects.

3. Mobile Veterinary Units:

The three Mobile Units will be under the general direction of the project director and advised by the USAID Veterinary Advisor. Administration and technical direction will be under the Director of Veterinary Services. Staff for the Units will be supplied by Veterinary Services, and equipment, vehicles, and operational funds will be supplied from the project. Vaccines, drugs and supplies will be provided by Veterinary Services. The Units will cooperate with the provincial agriculture officers in scheduling innoculation programs in their provinces.

Each Mobile Unit will be under the direction of a Doctor of Veterinary Medicine. His crew will be composed of animal health assistants and vaccinators. The animal health assistants will be graduates of the animal health school at Debre Zeit. The Vaccinators will be trained or will be given field training in innoculation of animals.

The Veterinarian will have equipment for field diagnosis of diseases. Also a well equipped laboratory will be maintained for diagnostic work at their home base.

The units will schedule their treatment campaigns to coincide with the end of the rainy season in the areas. This lessens the reaction and death loss of animals.

The units will be available for emergency calls to other areas in the event of major disease outbreaks.

4. Livestock Marketing:

This phase of the program will be advised by a Marketing Specialist under the USAID Agricultural Advisory Services Project.

Potential Markets:

Export markets for livestock products have never been fully exploited. The world will continue to need meat protein. Ethiopia remains in a potentially excellent sales position. There is every reason to believe that the present demand for canned meat in Italy, Israel, and the Middle East countries will continue. Ethiopia is a good buyer of exports from Japan, and there is a good possibility for the development of trade agreements with Japan and other countries. This is further emphasized by Japan's increased per capita consumption of high quality beef. When fresh meat is cleared for export, with an IEG seal of safety and quality, there may well be new demands from a number of other countries.

Domestic consumption will also increase as the economy and buying power of the people increase.

Livestock and Meat Board:

The Livestock and Meat Board is expected to do much to spur the development of the livestock and meat industry in Ethiopia.

The establishment of this organization was authorized on May 14, 1964. The Minister of Agriculture or his duly authorized representative serves as Chairman of the Board. Other board members include one representative each from the Ministries of Public Health, Commerce and Industry, Finance, and National Community Development and Social Affairs. Also included is one representative each from traders, processors, and producers as designated by the Minister of Agriculture.

Objectives and purposes of the Livestock and Meat Board are as follows:

a. To encourage the production and marketing of healthy and high quality livestock, poultry, meat, eggs and by-products.

b. To collect and disseminate information relating to the production, processing, transporting, and marketing of livestock, poultry, meat, eggs and by-products.

c. To promote the establishment and supervision of improved stock routes, watering points, and marketing facilities.

d. To stimulate research on any aspect of livestock and poultry production, transportation, processing and marketing.

e. When requested, and in accordance with such requests, to assist in and facilitate the carrying out of vaccination and related programs, by the Veterinary Services of the Government, and to cooperate in the expansion and application of veterinary standards and requirements.

f. To promote the sale of livestock, meat, poultry, eggs and by-products by advertising at home and abroad and by participation in international trade fairs. This board will be very effective in helping to increase the economy of the country and should be given full cooperation and support. This program will be developed along the following lines:

(1) Establish Organized Marketing Centers:

There is a need for the establishment of organized marketing centers at strategic points throughout Ethiopia. These centers will be under the control of the Livestock and Meat Board. This will provide uniformity of operation and guidance. Auction markets will be established to replace the present traditional system. The five auction centers in the Borena Region (Moyale, Neghelli, Dilla, Yabelo and Mega), which have not yet been effectively utilized, would make good places from which to start. Again, it is believed best to establish a logical, workable pattern, in the Borena region and then spread north through other production areas.

(2) Provide Marketing Information and Reporting Service:

A well-supervised marketing system for livestock is badly needed for the benefit of the livestock owner as well as the processor. Meat packing plants are faced with a serious problem in procuring a steady supply of cattle which is essential for a continuous successful operation.

There is a need for market information and a reporting service to keep auction centers, traders, and cattle producers informed as to existing markets, trends, demands and prices in various parts of the country.

It has been observed that there are considerable variations in market prices at different selling points during the same time period. There is a need for stabilizing prices through establishing standards and grades in marketing practices. The Livestock and Meat Board is presently undertaking these activities.

It is recommended that the USAID economist make a cost study of both livestock production and meat processing. This would be in addition to what the Agro-Industrial study being done by SRI would provide. This information would be helpful in bringing about more efficient methods of production and marketing.

(3) Establish Holding Centers on Cattle Routes:

Holding centers will be established on cattle routes to markets. These will be located at logical distances along the routes. Mobile veterinarian units (such as the Ministry of Agriculture is using in certain areas) will follow the flow of cattle and check and vaccinate them enroute. Established "check and control points" can be used to handle the cattle so they would be ready for slaughter on arrival at the plant. Stock ponds or wells will be located at these holding centers. These centers will also offer grazing facilities.

(4) Establish Standards and Grades for Livestock and Dressed Meats:

To assist in marketing livestock and meat, the system of grades and standards soon to be proclaimed by the Livestock and Meat Board will be established. The proclamation for this was recently approved by the Council of Ministers. Even though the inspected plants bone or can their production, there is a wide range in value according to breed, type and condition of the live animals. Recognized standards would assist in setting and ~~xxxxx~~ stabilizing prices at Market centers and at packing houses. Carcass values could be much better determined, so superior meat would bring a justified premium. Farmers and other livestock owners would have more incentive to fatten cattle for slaughter.

The Federal Grading System is widely employed in the U.S., although it is not compulsory except on some contracts covering Government purchases. It is in use by most packers who slaughter cattle or sheep. Many operators have their own house grading system as well. U.S. Government grading is demanded by most chain stores who now do about 70 per cent or more of the retail meat business. Wholesalers, as well as independent retailers, demand a high percentage of government graded beef and lamb.

(5) Increase and Up-Grade IEG Meat Inspection:

It is important to increase government inspection of animals before and after slaughter. Authorization to do this is included in the recently approved proclamation. There are indications that veterinary inspection is more lax in some areas than in others. With only a few plants in operation periodic checks could be made without much expense.

(6) Recommend Smaller Packing Plants:

Transportation is a major problem concerning both livestock and meat products. There are a few good roads into cattle production areas. Rates are very high on the extremely limited highway and rail transportation facilities. When additional plants are built, careful consideration should be given to locating smaller units in good livestock supply areas rather than concentrating on large plants in widely separated locations.

Carcasses from average Ethiopian cattle represent only 40 to 50 per cent of the live weight, and the boned-out meat from the carcass only about 30 percent of live weight. After the canning process, the final meat product is probably less than 20 per cent of "on the hoof" weight. Under these circumstances, it would be much more logical and economical to have the longer haul made by the processed products. For operating economies, smaller plants should be equipped to utilize and process by-products, such as beef extract, canned beef, tankage, bone meal, glue, etc. These by-products are the basis of a well-managed profitable business organization.

(7) Discourage Un-Inspected Slaughter of Livestock:

The ultimate objective should be to reduce home or farm slaughter, and channel more animals through inspected plants or local slaughter slabs. This would eliminate, or help to control, health hazards by providing disease-free and parasite-free meat. Through this added control more meat could become acceptable for export.

(8) Make Better Utilization of By-Products:

Encourage all slaughterers to improve quality and value of hides and skins through better techniques. Increase production of other by-products for food, animal feed, fertilizer and other uses. Results can best be attained by bringing about a sharp reduction in farm and "backyard" slaughter, and by encouraging slaughtering plants to more fully utilize offal through the production of by-products.

(9) Provide Training on Hides and Skins:

Hides are another important item. It is reported that approximately 70 per cent of the hides and 80 per cent of the sheep and goat skins are exported. The total export value of hides and skins from Ethiopia is second only to coffee in agricultural commodities. The income value could be increased considerably by improving present methods of preparation, curing, handling, and marketing.

Some improvement has been made in handling the skins, most of which have been shipped dried, while some have been semi-processed or pickled. Ethiopian skins are of good quality and in strong demand in many international markets. Pickled skins from the more technically advanced slaughter-houses would bring a higher price, even though weight and transportation costs would be slightly increased. The use of this process should be encouraged wherever possible.

Country or ordinary hides are poorly handled. Prices realized average 5-6 cents per pound under butchery hides. This heavy loss in value can be largely eliminated by educating the farmers and country slaughterers in skinning and curing methods.

A hides and skins improvement program is included in the Third Five-Year Plan, but the big problem lies in reaching the peasant farmer with educational materials and demonstrations. Hide curing centers at strategic locations would be feasible and very beneficial. Short training courses on hide and skin handling methods should be provided for farmers and slaughter slab operators. Specialists from Ethiopia could be sent to established training centers in Africa (such as Nairobi, Kenya) to receive further training. The Extension Service can also be helpful in taking information to the farmers and conducting demonstrations.

(10) Encourage Packing Plant Slaughter of Sheep and Goats:

The best estimates report a sheep and goat population of approximately 43 million head. Annual slaughter has been running near the 8 million mark. This is mostly family or home slaughter for meat requirements and the sale of skins. These skins are a very important export item. Meat from sheep and goats is important to the diet, although more emphasis is placed on skins because of their export value.

Geographically, Ethiopia has an advantage over other countries in shipping to the Middle East where there is a demand for lamb and mutton. Present international conditions might increase this demand. Other outlets could be developed. Slaughter plants for sheep and goats would increase meat production, improve the quality of the skins and utilize the offal and by-products to far greater advantage. In addition, benefits would come from increased employment. In deciding on plant locations, careful consideration should be given to live animal supply areas and shipping facilities for the products produced. Most private commercial plants are well located. It is a common practice in some countries to process small stock (lambs, sheep, goats and calves) and cattle in the same plant. There should be definite advantages in similar operations in Ethiopia.

(11) Increase Effort to Develop Foreign Markets:

While domestic consumption can be increased to some extent, the greater potential lies in an expanded export trade. Special effort should be made to develop foreign markets. There is a great demand for boneless lean meat, the type that Ethiopia can easily supply.

Generally speaking, most Ethiopian cattle carry little or no fat. This makes the meat much more desirable for boning and canning than for selling in carcasses or primal cuts. The absence of any grading system also favors these operations. Export restrictions on fresh and frozen meat plus the refusal of many countries to purchase meat from Ethiopia except in canned or dehydrated form, all tend to promote the production of preserved meat products.

More aggressive action should be initiated in the development of foreign markets. The Livestock and Meat Board is developing an improved plan for actively aiding the marketing of Ethiopian livestock products. It has begun to actively plan market studies in order to find countries which will purchase more animal products, and help utilize the tremendous potential in meat exports. There is an ~~ext~~ acute shortage of canned meat in Eastern countries. There is also a shortage of canned corned beef in England, the Philippines, parts of the United States, and many African countries. Exports to Italy may be increased. Japan is also a good prospect. As mentioned before, since Ethiopia imports many products from Japan, it is very feasible to exploit a trade agreement.

(12) Make Greater Effort to Increase Domestic Consumption:

The average weight of livestock in the country is comparatively light. The boned out meat yield of the carcasses is low. Heavy slaughter in numbers might tend to cause an overestimate of actual meat production. Per capita consumption is reported to be 31 pounds. A moderate increase would soon absorb any surplus production. It is readily accepted that more animal protein is needed for a healthy diet. An effort should be made to increase home consumption in Ethiopia.

Presently, there is little or no effort to promote sales and distribution within the country, although the Livestock and Meat Board is attempting to work out a solution to this problem.

(13) Encourage Meat Retailers to Make More Attractive Displays:

Meat retailers should be shown how to make more attractive displays of meat in their shops and showcases. Improved cutting style and display of meat could enhance the sale of meat to the consuming public.

Although it is realized that the amount and kind of meat sold is dependent on the buying power of the consumers, attractive cuts of meat, together with packaging, wrapping and meat displays, will have greater selling appeal, as well as provide a more sanitary source of meat.

Literature, illustrations, and demonstrations provided to retailers would be most helpful in this regard. More sanitary regulations may also be of value in providing higher quality retail meat.

(14) Expand Cold Storage and Refrigerator Facilities:

Meat production is often curtailed due to lack of refrigerated transportation and cold storage facilities. Additional cold storage warehouses, other than the few located at the seaports, would greatly benefit the meat processors.

(15) Organize a Meat Packers Association:

An Organization of Ethiopian Meat Packers might be a little premature, but such an association could have far-reaching benefits. Preliminary meetings have already been held under the auspices of the Livestock and Meat Board. Results have been excellent in other countries where meat packing organizations exist. Mutual problems are discussed, new methods initiated, production and processing as well as sales and distribution are compared and studied. Under certain circumstances, mutual cooperative marketing of specialty products might prove highly beneficial.

A general exchange of ideas invariably proves helpful to all operators. Consideration should be given to such an organization.

(16) Continue to Promote Joint Ownership of Business Enterprises:

Investments should be shared jointly by local private and foreign investment. This will give a new enterprise the advantage of foreign business experience as well as local support. This makes good sense from both a business and political standpoint.

Government investments should be discouraged, except for initial support in getting programs or business enterprises started.

Ethiopia has a strong economic future. However, even though the situation may appear economically feasible, sound business investment practices must be strictly followed.

5. Organizational Structure:

There is a definite need for the establishment of a Range Management and Development Section within the Animal Production Division of the Ministry of Agriculture.

The Section would be headed by the present Project Manager. Each of the major activities: Range Development, Range Administration, Animal Husbandry, Veterinary, and Marketing would have an assistant director. The assistant directors, would be responsible for planning, budgeting and directing field operations.

The following are the staff requirements for this organization:

Staff Requirements:

a. Range Management:

(1) 1968

(a) Project Director 50% of time
(b) 2 Project Managers
(c) 16 Assistant Project Managers
(d) 48 Animal Husbandry Assistants
(e) 2 Project Engineers
(f) 12 Assistant Project Engineers

(2) 1969

(a) Project Director 75% of time
(b) Assistant Project Director
(c) 3 Project Managers
(d) 24 Assistant Project Managers
(e) 72 Animal husbandry assistants
(f) 3 Project Engineers
(g) 18 Assistant Project Engineers

(3) 1969 - 1972 staff remains the same.

b. Livestock Marketing:

(1) 1968

2 Marketing specialists

(2) 1969

3 marketing specialists

(3) 1969 - 1972 staff remains the same.

c. Veterinary Services:

(1) 1968

(a) Mobile Team A

1 Veterinarian
3 Animal Health Assistants
8 Vaccinators

(b) Mobile Team B[1]

1 Veterinarian
Animal Health Assistant
4 Vaccinators

(c) Mobile Team B[2]

1 Veterinarian
2 Animal Health Assistants
6 Vaccinators

(2) 1969

(a) Mobile Team A

1 Veterinarian
3 Animal Health Assistants
8 Vaccinators

(b) Mobile Team B[1]

1 Veterinarian
1 Animal Health Assistant
4 Vaccinators

(c) Mobile Team B[2]

1 Veterinarian
2 Animal Health Assistants
6 Vaccinators

(d) Mobile Team C

1 Veterinarian
3 Animal Health Assistants
8 Vaccinators

(3) 1969 - 1972 Staff to remain the same.

d. Animal Husbandry:

(1) 1968

Project Director

(2) 1969

Project Director
Assistant Project Director
2 Livestock Extension Specialists

(3) 1970 - 72 Staff remain the same.

e. Geology and Well Section:

(1) 1968

Geologist
2 Assistants
Water Resources Well Drilling Team

(2) 1969

Geologist
2 Assistants
Water Resources Well Drilling Team
Well Maintenance Team

(3) 1970 - 72 staff to remain the same.

There is a critical shortage of trained manpower for the implementation of this project. There is little doubt trained technicians will be the limiting factor in any expanded program following completion of the pilot project in 1972. Thus there is a critical need for an expanded participant training program to meet these needs. Also academic training in Range Management is required at the agricultural school at Alemaya. Sub-professional training in Range Management and animal husbandry should be added to the animal health school at Debre Zeit, or a similar school established to meet these requirements.

Participant Training Requirements

Subject	No.	Date Completed
Range Management	1	Completed Feb 1968
	1	Completed June 1968
	1	Complete June 1969
D.V.M.	1	Completed May 1968
	1	Complete June 1969
	2	Complete June 1970
	1	Complete June 1971
Livestock Marketing	1	Completed June 1967
	1	Completed June 1967
	1	Complete June 1969
Future Training Needs:		
Range Management	2 (1968)	Complete 1970
	3 (1969)	Complete 1971
D.V.M.	2 (1968)	Complete 1972
Animal Sciences	1 (1968)	Complete 1971
Agricultural Engineering	2 (1968)	Complete 1970
Agricultural Engineering	1 (1969)	Complete 1971
D.V.M.	3 (1969)	Complete 1973

HALL

Proj. No. 6230112

AGENCY FOR INTERNATIONAL DEVELOPMENT (A.I.D.)

PROJECT AUTHORIZATION

1. PROJECT NUMBER 663-11-730-112	2. COUNTRY ETHIOPIA	3. AID 0096
4. PROJECT TITLE National Range Development (Formerly Regional Livestock Development)		5. AUTHORIZATION DATE June 29, 1970
		6. PROP DATED August 19, 1968

a. Number of Years of Funding: 8
Start in FY 1965; Terminal FY 1972

b. Estimated Duration of Physical Work After Last Year of Funding (in Months): 6

FUNDING BY FISCAL YEARS (U.S. $000 or $ equivalent)	DOLLARS		P.L. 480	LOCAL CURRENCY Exchange Rate: $1 = Eth $2.50			
				U.S. OWNED		HOST COUNTRY	
	GRANT	LOAN	CCC + FREIGHT	GRANT	LOAN	JOINTLY PROGRAMMED	OTHER
[illegible] 1965	1,034					670	
[illegible] FY 1970	323					300	
[illegible] 1971	261*	*				100	
[illegible] 1972	254*					394	
[illegible] FY's							
TOTAL	1,872					1,564	

9. [illegible] FINAL FUNDING CONDITIONS OR RECOMMENDATIONS FOR IMPLEMENTATION, AND LIST KINDS AND QUANTITIES OF [illegible] AND COMMODITIES

[illegible] less cost of proposed contract team and loan. See Block 10.

10. CONDITIONS OF APPROVAL OF PROJECT

[illegible] applies to the project as described in the PROP. The proposal in the [illegible] Project Budget Submission, Pages 15-20, to add a contract team [illegible] loan [illegible] than in the PROP and to extend the final year of obligation to 1973 [illegible] approved at this time. It will be considered when USAID/Ethiopia submits a [illegible] PROP.

(Use continuation sheet if necessary)

[illegible] plans for the life of the project as described in the PROP, subject to the conditions cited in Block 10 above, [illegible] Detailed planning with cooperating country and drafting of implementation documents is [illegible].

[illegible] is contingent upon timely completion of the self-help and other conditions listed in the PROP or [illegible].

[illegible] will be reviewed at such time as the objectives, scope and nature of the project and/or the [illegible] of [illegible] deviate so significantly from the project as originally authorized as to warrant submission of a new or revised PROP.

A.I.D. APPROVAL	CLEARANCES	DATE
[illegible] C. Adams, Jr.	AFR/SA: JKnoll	[illegible]
SIGNATURE	AFR/DP: DShear	6/25/70
Assistant Administrator for Africa	DAA/AFR: PBirnbaum	6/29/70
TITLE DATE	A/CONT	