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DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D.C. 20523

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CAPITAL ASSISTANCE PAPER

Proposal and Recommendations
For the Review of the
Development Loan Committee

TANZANIA: TSETSE FLY ERADICATION LOAN

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AID-DLC/P-939

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DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D.C. 20523

AID-DLC/P-939

January 22, 1971

MEMORANDUM FOR THE DEVELOPMENT LOAN COMMITTEE

SUBJECT: Tanzania: Tsetse Fly Eradication

Attached for your review are the recommendations for authorization of a loan in an amount not to exceed \$800,000 to the Government of the United Republic of Tanzania to assist in financing the foreign exchange cost of goods and services for the Tsetse Fly Eradication Program in Tanzania.

Please advise us as early as possible but in no event later than close of business on Tuesday, February 2, 1971, if you have a basic policy issue arising out of this proposal.

Rachel R. Agee
Secretary
Development Loan Committee

Attachments:

Summary and Recommendations
Project Analysis
ANNEXES I-V

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TANZANIA: TSETSE FLY ERADICATION

SUMMARY AND RECOMMENDATIONS

1. BORROWER: Government of the United Republic of Tanzania (GOT).
2. AMOUNT OF LOAN: \$800,000.
3. TERMS:
 - A. Interest: 2% per annum for the first ten years;
3% per annum thereafter.
 - B. Maturity: 40 years, including a ten-year grace period.
 - C. Currency: Interest and principal payable in U.S. Dollars.
4. COST OF PROJECT:

<u>A.I.D. Loan</u> :	\$ 800,000.
<u>GOT Contribution</u> :	1,200,000.
	<hr style="width: 100%; border: 0.5px solid black;"/>
	\$2,000,000.
5. PURPOSE OF LOAN: To finance the U.S. and eligible LIC costs of equipment and supplies, in support of tsetse fly eradication.
6. DESCRIPTION OF PROJECT: This loan is to provide equipment and supplies for a Tsetse Eradication Program in the West Lake Region of Tanzania. The basic objective of this project is to eradicate tsetse fly from this area to permit its development into useful range lands that would support livestock development programs planned for this region, and to eliminate human sleeping sickness.

This loan would finance (1) the required equipment and supplies to support one complete team for bush clearing and windrowing in connection with the construction of tsetse control barriers and; (2) one aircraft equipped for aerial spraying for tsetse fly eradication. The team would also perform other important functions on development projects within the controlled areas such as construction of small water impoundment works (valley tanks), feeder roads and possibly some soil conservation works.
7. JUSTIFICATION OF THE PROJECT: This project is an important part of the overall effort of the Government of Tanzania under its Second Five Year Plan, which strongly emphasizes agricultural improvement and rural development. The Tsetse eradication project will help provide the basis for a significant expansion in livestock production with additional lands being made available for smallholder development. This project should help (i) increase the income and well-being of those

people settling in this area; (ii) increase the country's self-sufficiency in basic food production, including a significant addition to protein availability; (iii) increase the overall GNP of the country; (iv) increase the country's foreign exchange earnings as well as reduce food import requirements; and (v) eliminate human sleeping sickness.

8. BACKGROUND OF THE PROJECT: In a letter dated October 24, 1969, the GOT requested an agricultural sector loan for the U.S. and some local costs of a broad range of agricultural activities, including the elements proposed in this loan. Following discussions with the GOT, the request was modified to cover only the U.S. costs of the project described above and two other projects covered in the recent Tanzania Agricultural Projects Support Loan authorized in June, 1970.
9. EXPORT-IMPORT BANK CLEARANCE: Received in December 1970.
10. COUNTRY TEAM VIEWS: The Country Team strongly endorses this loan.
11. STATUTORY CRITERIA: Satisfied; see Annex I.
12. ISSUES: None.
13. RECOMMENDATION: Authorization of a loan to the Government of the United Republic of Tanzania of an amount not to exceed \$800,000. to finance the foreign exchange costs of the project, in accordance with the draft authorization attached as Annex II.

LOAN COMMITTEE:

Capital Development Officer: AFR/CDF, R. A. Delemarre
Counsel: GC/AFR, R. Meighan
Agriculture: AFR/ESA, C. Sanders
Engineer: AFR/CDF, R. Henrikson
Desk Officer: AFR/ESA, J. Canning
USAID: F & AO, O. Hess

\$1 = 7.14 East African Shillings

AFR/CDF:RADelemarre:gei:mr:vlh:1/5/71

TANZANIA: TSETSE FLY ERADICATION LOAN

I. INTRODUCTION

A. History

Beginning in 1967 with an A.I.D. agricultural reconnaissance study which sought to identify, define and formulate the scope of work for a number of self-contained, package projects with clear and specific development objectives, the USAID has moved toward a more sharply focussed technical and capital assistance program heavily concentrated in the agriculture sector. A number of detailed project feasibility studies, which were undertaken by A.I.D. beginning in late 1968, have resulted in several new project proposals in the agricultural sector for implementation in FY 1970 and FY 1971. This effort has coincided with the initiation of Tanzania's Second Five-Year Plan (1969-73) which is heavily oriented toward rural development and expansion of agricultural production. The loan funds proposed herein would support the Tanzanian West Lake Regional Tsetse Fly Eradication Program.

B. Request for Loan

In a letter dated October 24, 1969, the GOT requested an agricultural sector loan for the U.S. and some local costs of a broad range of agricultural activities, including the elements proposed in this loan. Following discussions with the GOT, the request was modified to cover only the U.S. costs of the project described above and two other projects covered in the recent Tanzania Agricultural Projects Support Loan. A.I.D. approved this loan in June 1970.

C. Relationship to U.S. Aid Strategy and Policy

Within the context of the U.S. aid program in Tanzania, a loan for support of this project is consistent with the major program emphasis of providing capital and technical assistance to increase production in the agricultural sector.

II. BORROWER

The borrower will be the Government of the United Republic of Tanzania, acting through the Treasury. The responsible agency for administering and implementing the project is the Ministry of Agriculture, Food and Cooperatives through its Tsetse Control Division.

The Tsetse Control Division presently consists of five categories of professionals. These are:

- a) Tsetse Officer - in post = six; vacancies = 4.
- b) Field Officer - in post = 11; under training = 13; vacancies = 9.
- c) Assistant Field Officer - in post = 63; no vacancies.
- d) Field Assistants - in post = 300; no vacancies.
- e) Pilots - in post = 1; vacancies = 1.

Large-scale tsetse eradication efforts have been and are now being conducted by the Tsetse Control Division in response to specific requests from Regional Development Committees. Five year project plans are formulated by the headquarters staff of the Tsetse Control Division and are implemented under the supervision of tsetse control officers assigned to the respective project areas.

At present there are five major schemes and one experimental scheme under way:

- a) West Lake - a major program is under way to develop large-scale ranching in this region. Tsetse eradication is being carried out by sheer clearing the perimeter of an area and then spraying residual insecticide within the perimeter. Hand clearing and spraying have been completed for the Kitengule Ranch, with work in progress in the Missenyi area;
- b) Arusha - a second project is the elimination of sleeping sickness in the Babati area through the continuing use of aerially applied insecticides, land clearing and ground spraying of about 300 square miles during the five-year period;
- c) Holding Grounds - development of livestock holding grounds to assist in marketing cattle and improving disease control is under way in the Coast, Singida, Arusha, and Tabora areas. This operation requires simultaneous bush clearing, pasture improvement and tsetse elimination;
- d) National Agricultural Company Ranching - preparatory work is under way for the sheer clearing of barriers and spraying of large ranching areas at Mkata and Dakawa in the Morogoro area. Mkata has 15,000 cattle on pasture and intensive tsetse eradication operations are due to start there in the next 12 months;
- e) Livestock Breeding Station, Mivumoni, Tanga - preliminary work covering 100 square miles is under way; and
- f) Aerial Application of Insecticides - work is continuing on the development and evaluation of airspraying techniques using light aircraft.

III. TSETSE FLY ERADICATION PROJECT

A. Project Description

This loan is to provide the Tsetse Control Division of the Ministry of Agriculture, Food and Cooperatives, with the necessary equipment and supplies to support a tsetse eradication program in the West Lake Region of Tanzania. Successful implementation of this project would eradicate the tsetse fly from this area, thus permitting its development into useful range lands that would support livestock development and smallholder settlement schemes planned for this region. As set forth below, specific plans have been formulated for development of production projects in this area.

The loan-funded equipment would support (1) one team (See Annex IV for team composition) for bush clearing in connection with the construction of tsetse control barriers, and (2) one aircraft equipped for aerial spraying of tsetse fly. The team would also perform other important functions on development projects within the controlled areas such as small water impoundment works (valley tanks), feeder road construction and possibly some soil conservation works. The equipment (including 10% spares) will consist of:

- a) four heavy duty tractors with dozer blades, anchor chains and other accessories;
- b) one motor grader;
- c) two agricultural tractors;
- d) transport equipment for movement of above machinery, fuel, operational supplies and personnel in the field;
- e) maintenance and repair equipment;
- f) portable, prefabricated structures with camp and office equipment to house stores and staff in the field; and
- g) one light aircraft equipped for aerial spraying operations.

This equipment, essential for the timely and least-cost completion of this project, would be used in the West Lake Region in a cooperative effort with the Government of Uganda to eradicate tsetse fly from the region west of Lake Victoria (see map on page iii for the Project Area and Associated Ranching/Settlement Schemes). The schedule of tsetse eradication activities for this project has been prepared. The Tsetse Control Division, using much more expensive and time-consuming hand labor, has initiated work with the clearing of bush in Area 1, north of the Kitengule Ranch. The proposed loan equipment first would be used in the following sequence: (1) finish spraying Area 1 to free it of tsetse fly; (2) establish a two-mile consolidation barrier south of Kitengule Ranch at the southern tip of Lake Ikimba from near the town of Bugene on the west to east of Rubare; (3) spray

Area 2 clear of tsetse fly; (4) establish a four-mile barrier at the southern tip of Lake Burigi; (5) spray the area between this four-mile barrier and the two-mile consolidation barrier at Lake Ikimba clear of tsetse fly; (6) establish a two-mile consolidation barrier exactly west of the Lake Ikimba Barrier, continuing to Lake Rushwa. If found necessary, a barrier from the northern tip of Lake Rushwa to Uganda along the Burundi border will also be cleared; (7) spray clear of tsetse fly Area 4 in the NW corner of West Lake; (8) establish a four-mile barrier from west of the Lake Burigi barrier to the Burundi border; (9) spray Area 5 clear of tsetse fly.

There are five development programs in this project area that are either proposed or under way - briefly, these are:

- Area 1 - Kitengule with a present herd of 19,000 cattle.
 - Missenyi West and Missenyi East, being developed for beef production.
 - Encourage the Bukoba Coffee Union to develop about 40,000 acres east of Missenyi East as a crossbreeding ranch to produce in-calf heifers for distribution to their farmer members.

- Areas 2 and 3 - Encourage, over the short-term, the settlement of ten 40,000 acre ujamaa villages.
 - Development of cattle ranching for the bulk of the area with an estimated capacity of 25,000 plus cattle.

- Areas 4 and 5 - Develop for smallholder settlement.

After Areas 1 through 5 are cleared (estimated time of three years) the scheduling of clearing operations during the next three-year period would depend upon firming up development plans for Area 6 which will encompass lands between the Lake Burigi barrier and one to be cleared east and west of Biharamulo. The GOT's goal during this second three-year period is definitely to commence concerted efforts toward the complete elimination of Human Sleeping Sickness, prevalent around and south of Biharamulo.

B. Economic Analysis

1. The Tsetse Fly: Problems and Progress

More than 4 million square miles of Africa are denied to productive cattle raising because of tsetse flies. Trypanosomiasis transmitted by the fly also presents a serious health hazard for humans in many of these areas. Increasing populations require additional land for settlement and food production. This creates an urgency to eradicate tsetse. Many eradication projects have been carried out in the past with varying success. Technological know-how has now advanced sufficiently to clear tsetse if the work is adequately organized and financed.

The prevalence of tsetse in an area tends to preserve its natural ecology; therefore clearance must be followed by sound land use to prevent deterioration of grass cover and soils. Uganda has been particularly successful in reclaiming over 11,000 square miles of tsetse. An outstanding example of wise land use development following tsetse clearance is the 300 square mile Ankole-Masaka Ranching Scheme in Southwest Uganda. The area was subdivided into 59 ranches and leased to cattle owners who formerly operated on the open range. Fencing, roads, water facilities and technical supervision were provided by the Government of Uganda (GOU) with the assistance of an AID loan and grant-financed technical assistance.

In 1965, the Government of Tanzania (GOT) cleared about 175 square miles in West Lake Region for the Kitengule Ranch now carrying about 19,000 cattle. The West Lake Region has the fertile soils, temperate climate and adequate rains to make it an excellent area for large-scale ranching and smallholder development. Based upon these factors and the success of Kitengule Ranch, the GOT is continuing to actively encourage the development of this region for livestock development.

In addition to Kitengule Ranch, the National Agricultural Company Limited (NACO) has a second ranching scheme under way and a third in the final planning stages. Missenyi-West now in operation has almost 5,100 cattle with an expected maximum capacity of slightly under 19,000 to be reached within five years. Missenyi-East, for which an IERD loan is anticipated in March 1972, projects an initial herd of over 6,000 cattle, building up to its maximum carrying capacity of about 13,000 cattle within four to five years. Thus, within four to five years, it is projected that slightly over 60,000 cattle will be contained within the three ranching schemes.

2. Benefits

Total benefits expected to accrue from the Tsetse Eradication Program are derived from three areas or categories. In the first area, benefits that would accrue to the above three mentioned ranches are based upon eliminating the need to inoculate cattle with a resultant decrease in weight loss, market loss, and cattle deaths. The basis for benefit calculations is explained in the section entitled "Footnotes" following Tables 1, 2 and 3 (See Annex V for all Tables).

A second area of benefits that would accrue to the Tsetse Eradication Program would be the savings due to elimination of the need to construct and maintain two additional barriers, one at the Mwesa River and the other on the Uganda Border (See Table 4).

The third and last area of benefits that would accrue to the Tsetse Eradication Program would be that of opening-up presently uninhabitable lands for cattle grazing and farming. During the first three-year project, a gross surface area of approximately 1,440,000 acres will be cleared of

tsetse infestation. Deducting areas comprising lakes, marches and escarpments, an approximate net grazing/farming area of 50% or 720,000 acres is derived.

The GOT is now preparing plans to utilize 500,000 of these 1,440,000 acres for the establishment of approximately eight - 50,000 acre cooperative ranching schemes. Each scheme, or block, would provide common grazing land, i.e. 40,000 acres for grazing, with the remaining 10,000 acres, set aside for roads, shambas (small farms) and central service facilities. Farmers from the overcrowded areas south of Lake Victoria would be encouraged to bring their present herds and settle these blocks. In addition to this scheme, the Missenyi-West and Kitengule Ranches are presently reaching their maximum carrying capacity and will be negotiating with the GOT for additional grazing land as it becomes available. Based upon the above factors and Table 5, it is conservatively estimated that a one-time value of \$1.00 (7.14 shs.) per acre of net grazing land is attributable to the Tsetse Eradication Program. This would then be equivalent to U.S. \$720,000 (undiscounted) over the 20-year project appraisal life, spread equally over years two, three and four.

Discounted to net present value (NPV), Table 6 shows a total benefit to the 3-year project over a twenty-year life of Shillings 9,360,588 or U.S. \$1,311,160.

A similar projection has been made for the total six-year program incorporating the first 3-year project plus the area south of Lake Burigi to below Biharamulo and east towards Geita which would be cleared during the second three-year project. As the precise program for clearing and settling this area has not been prepared, it has been calculated that a similar net grazing/farming area of 720,000 acres would be cleared of tsetse and improved with feeder roads, firebreaks and valley tanks. The total net present value of benefits to the six-year Tsetse Eradication Program have therefore been derived by adding to the first three-year project benefits the value of 7.14 shillings (U.S. \$1.00) time 240,000 acres each for the years 5, 6 and 7. Discounted to net present value (NPV), Table 7 shows a total benefit to the total program over a twenty-year life of Shillings 12,270,786 or \$1,718,590.

3. Costs

Costs for the first 3-year project and for the combined six-year program have been shown separately in Tables 8 and 9 respectively. These costs are based upon equipment and supply costs (Annex III) and upon recurrent expenses (Annex IV). Discounted to net present value, the combined costs of the first 3-year project total Shillings 7,950,683 or \$1,113,540, while total costs for the total six-year program would be Shillings 10,816,848 or \$1,514,960. No salvage value for equipment has been ascribed to either cost estimate.

4. Benefit/Cost Analysis

In both the 3-year and the 6-year projections, using a 10% opportunity cost of capital as the discount factor,* benefits exceed costs. In the first 3-year project, benefits equal \$1,311,160 vs. costs of \$1,113,540, for an Internal Rate of Return of 14+%. The total 6-year program indicates benefits of \$1,718,590 vs. costs of \$1,514,960, also giving an Internal Rate of Return of 14+%.

5. Additional Projects and Plans

In addition to the three previously discussed ranching schemes for which cost savings/benefits were calculated, there are additional plans for developing other sections of the West Lake Region. It is difficult at this time to place a value on some of the resulting benefits that would accrue other than economic potential of the land. However, it is apparent that they could be significant depending upon implementation of the following plans:

- a. Eradication of tsetse fly in the Nyabuyonza area (Area 5). Eradication of tsetse fly will eliminate human and animal sleeping sickness and will open this fertile area to further settlement and development.
- b. Settlement of Area 3. The Sukuma mixed cattle and cultivated area south of Lake Victoria is over-populated and the Sukuma people need additional land. They have been moving westward, but in general have been delayed by the presence of tsetse fly (The GOT cleared an area west of Geita which since has already been settled.). Based on this past experience the GOT is confident the Sukuma people will settle in Area 3.
- c. NACO is currently investigating the expansion of Missenyi-West toward and into part of Area 4. It is also considering the desirability of establishing a new ranch south of Kitengule, in Area 2 and/or 3.
- d. The Bukoba Coffee Union (BCU) has been considering the establishment of a ranch for the development of cross-bred dairy cattle in Area 1. These cattle would produce calves which would be made available to the farmer members of BCU at a price of Shs. 500. Since 1968, BCU has purchased 1,500 cattle and sold them at cost directly to their members. Plans for BCU's ranch are not expected to be firmed up for another one to two years.

* Rate used in the Tanzania Agricultural Projects Support Loan authorized this year.

- e. It is proposed to develop a large ranching complex in the West Lake Region as a part of the livestock development program to be financed by the IBRD: this will be partly an expansion (see c. above) of the Kagera Ranching Scheme developed by NACO at Kitengule and Missenyi Ranches, and partly a new block of ujamaa ranches (previously mentioned in the preceding economics section). It is envisaged that the Ujamaa Block will be contiguous with the southern boundary of Kitengule and will comprise a total of 500,000 acres of which 400,000 will actually be used for ranching. This block will comprise ten 40,000 acre ranches, at least eight of which will be owned or leased by Ujamaa Villages. Preliminary plans and costs have been developed for the Ujamaa Ranches.

Infrastructure will be constructed as tsetse clearance is done. The Ministry states that many of the existing roads in vast areas of Tanzania, which were formerly infested with tsetse, were initially constructed when the tsetse was cleared. These roads were initially required for the tsetse clearing operation. After tsetse was cleared these roads were used by the people moving into the area. Subsequent grading and improvement transformed them into permanent roads. As the equipment is moved into the tsetse infested areas and the clearing progresses roads will be constructed and dam sites located. Before the heavy equipment is moved on to clear other areas the dams will be constructed. These are, and generally will have a 2,000,000 gallon capacity.

The development cost of bush clearing and constructing infrastructure will be funded by the GOT and will not be charged directly to the ranches. The land rental fee the ranches pay to the GOT for government services is extremely minimal, Shs. .05 per acre per year.

The West Lake tsetse eradication program has been planned as a pilot scheme with a view to embarking on similar schemes for clearing the whole of Tanzania's tsetse infested area (60 percent of Tanzania). The GOT wants first to see how this pilot scheme progresses before seeking additional equipment loans. Furthermore, the GOT lacks the management capability at this time to handle more equipment.

C. Technical Analysis

1. Technical Soundness

A detailed technical study of "Tsetse Fly Eradication and Livestock Development" was prepared by a three-man USDA team during March-May 1969. The report recommended a practical and minimum cost approach to tsetse eradication in the project area. The proposed program of mechanical clearing, with a minimum of hand clearing where machine operation is impossible, is technically sound and far superior to hand clearing for many

reasons. Hand clearing is very inefficient, 2 to 5 times as expensive, and much less effective than mechanical clearing, primarily because large trees and bush are sheered waist high rather than being uprooted (as is the case with mechanical clearing) resulting in fast regeneration. Hand clearing also largely precludes mechanical cultivation or efficient farming operation due to large stumps being left during hand clearing operations. Mechanical clearing, on the other hand, uproots trees and facilitates settlement and cultivation within the tsetse barriers, said cultivation in turn may completely eliminate barrier maintenance costs to the government or to the ranches.

Tsetse eradication in Tanzania is achieved by use of all classical methods, the choice(s) depending on the type of problem:

(a) Sheer Clearing

This technique wherein all trees and brush are uprooted or cut down is used on projects where intensive agricultural use will follow, e.g., Dairying, Crop Production, etc. It is used extensively as a barrier (see (d) below);

(b) Ground Application of Insecticide

This operation is performed by teams equipped with knapsack hand sprayers and has been widely used in the West Lake and other areas at a cost of 4 shillings per acre minimum, with an average figure of 8 shillings per acre using Dieldrex insecticide;

(c) Aerial Application of Insecticide

This method has been used in Arusha and Kilwa areas at an average total cost of 3 shillings per acre for the necessary five applications. It is also planned to initiate soon the aerial spraying of the Tabora area.

(d) Barrier Construction

This technique consists of uprooting and/or cutting down all trees and brush suitable for tsetse fly habitation (sheer clearing) - in perimeter strips of two to four miles in width. The area within the perimeter is then cleared of tsetse fly using methods (b) and (c) as appropriate to ground conditions.

2. Need for Equipment

There are approximately 134,400 acres within the project area that will require bush removal (the four barriers) through sheer clearing using heavy tractors during the first three-year program. Including the

134,400 sheer cleared areas, an approximate total of 1,300,000 acres will have to be sprayed with insecticide using either aerial or hand spraying (Areas 1 through 5). Within the total 6-year program approximately 260,000 acres will be sheer cleared and an additional 1,300,000 acres will be sprayed.

Bush removal accomplishes tsetse fly control and increased forage production by decreasing bush/vegetation competition with grass for water and plant nutrients. The potential carrying capacity of the livestock development area can be realized only if the water development, stock routes, feeder roads, firebreaks, etc. are constructed. These improvements cannot be made without the equipment requested under this loan.

3. Equipment Availability and Maintenance Capability

The Tsetse Control Division of the Ministry of Agriculture, Food and Cooperatives (MinAg) does not now possess the equipment needed for the efficient, rapid and economic undertaking of its tsetse eradication program. However, in anticipation of receiving the necessary equipment the GOT has initiated a Tractor Training School. Trainees have been selected and placed with experienced operators on D-4 and D-6 tractors which MinAg has been using to clear bush, and build feeder roads and water impoundment dams, under the same conditions as will be encountered in the West Lake Region (these are the only tractors MinAg has for such use). These tractors are being operated twelve hours per day, and thus are providing double-shift training opportunities.

A heavy equipment supplier in Dar es Salaam has offered to provide instruction in the operation of the heavy construction equipment as part of the sales arrangement, to those men selected by MinAg to be assigned to the Tsetse Control Division. The Tsetse Control Division has a 7-ton truck which will be fitted out as a mobile equipment repair shop. An expatriate heavy equipment mechanic assisted by two local maintenance personnel selected to join the Tsetse Control Division, will perform all daily and minor equipment maintenance and repair. Major repairs and overhaul work will be performed by a local equipment supplier. In light of this, the Senior Tsetse Officer believes and A.I.D. concurs that a separate maintenance contract is not needed.

In addition to the equipment mentioned above the Tsetse Control Division has the following equipment (a) one Austin/Beagle D5/180, three-passenger airplane; (b) three passenger vehicles; (c) 22 Land Rovers; (d) 14 trucks; (e) 13 motorcycles and (f) 10 farm-type tractors.

IV. FINANCIAL ANALYSIS

A. Financial Requirements

The total financial requirements for the project financed under this loan are:

	<u>Foreign Exchange</u>	<u>Local Costs</u>	<u>Total</u>
4 - D8 Tractors	\$361,000		\$ 361,000
3 - Anchor Chains	34,800		34,800
1 - Motorgrader	37,400		37,400
2 - Farm Tractors	9,660		9,660
11 - Vehicles	91,250		91,250
3 - Sm. Trailers	4,330		4,330
Maintenance Equipment	19,150		19,150
Camp Equipment	7,850		7,850
One Airplane	42,060		42,060
Insecticides	90,000		90,000
Misc. & Contingencies	63,780		63,780
Personal Emoluments		\$ 255,910	255,910
Maintenance and Operation of Capital Equipment		911,580	911,580
Transport and Travel		6,000	6,000
Upkeep of Stations		1,680	1,680
Office and General Expenses		1,120	1,120
Misc. & Contingencies		23,710	23,710
TOTALS	\$800,000	\$1,200,000	\$2,000,000

B. Financial Plan

The financial plan for meeting the above requirements is:

	<u>Foreign Exchange</u>	<u>Local Costs</u>	<u>Total</u>	<u>%</u>
A.I.D. Loan	\$800,000	-	\$ 800,000	40
GOT Contribution	-	\$1,200,000	1,200,000	60
TOTALS	\$800,000	\$1,200,000	\$2,000,000	100

The proposed A.I.D. loan will be used to finance U.S. and other Code 941 country procurement. The GOT will provide all local costs.

The terms of the loan would be: maturity of 40 years including a ten-year grace period; interest at 2% per annum during the grace period and 3% thereafter; and payment of interest and repayment of principal in U.S. dollars.

As indicated by the above figures, the GOT is financing 60% of the costs of this project.

C. Other Sources of Financing

Due to: (i) A.I.D.'s initial and continuing assistance in helping the GOT develop this project; (ii) its being one of two areas (agriculture and transport) of A.I.D.'s assistance efforts in Tanzania; (iii) and that the majority of dollars spent under this loan will be for U.S. made equipment and supplies, it has not been considered appropriate to solicit other donor financing.

The Export-Import Bank stated in December 1970 that it was not interested in participation in this project.

D. Prospects for Repayment

With 1968 per capita income of about \$65, Tanzania is one of the poorer East African countries. However, from 1963-1968 she achieved an average annual growth in gross domestic product (GDP) of 4.4%, and is targeting a GDP growth rate of 6.5% per year during the Second Five-Year Plan Period (1969-1973). Total investment to achieve this rate of growth is projected in the Plan at \$1,155 million. A recent IBRD report, "Economic Development and Prospects of Tanzania," (March 17, 1970) estimates that the GOT will be able to achieve about 92% of this planned investment or \$1,062 million, of which the central government would provide \$483 million. Of this amount, the IBRD estimates that \$268 million will be raised internally and \$215 externally, almost all of the latter as loans.

The IBRD report finds the projected level of investment to be consistent with the targeted growth rate.

The IBRD report also projects Tanzania's debt-servicing capacity from 1970-1985 on the basis of various assumptions of the blend of capital lending terms and related to export earnings. According to these projections, "the debt service ratio would remain under 10 per cent until 1980 under all assumptions, but would rise to 13.3 per cent thereafter. As the blend becomes harder, debt service ratios in excess of 10 percent would appear even by 1980, but only when the assumed rates of growth of exports are at the bottom range. By 1985, however, only the most favorable rate of growth of exports are at the bottom range. By 1985, however, only the most favorable rate of growth of exports would keep the debt service ratio lower than 10 per cent; in all other cases, the ratio would range from about 10 per cent to 15.8 per cent."

The IBRD concludes from this analysis that export earnings are expected to grow at a rate which "should ensure that no problems are encountered in meeting debt service payments." However, "in view of the substantial improvement in the short-term prospects for ... exports and a

slower growth rate thereafter," and since the "debt service ratio is sensitive both to the rate of growth of exports and to the terms of lending ... the situation is likely to deteriorate rapidly after 1980, if the terms become harder before then. Hence, if Tanzania's debt burden is to be kept within tolerable limits, it is desirable that new commitments in the 1970's should be on relatively soft terms" The report then adds "that Tanzania should exercise caution in the matter of incurring new debt with short maturities and carrying high interest rates. This is particularly important since, with a rather large concentration of agricultural exports, Tanzania's exports might suffer unexpected declines on account of extraneous factors such as weather and fluctuating commodity prices."

A.I.D. concurs in this analysis and its conclusions, and therefore concludes that there are reasonable prospects for repayment of this loan.

V. ECONOMIC EFFECTS OF THE LOAN

A. Impact on U.S. Economy and Balance of Payments

Procurement under the loan will be limited to equipment and supplies from the U.S. and/or other Code 941 countries. The U.S. is the most logical and competitive source for the major portion of the required items. Therefore, the affect of the loan on the U.S. Balance of Payments should be minimal.

B. Effect on Private Enterprise

Most equipment and supplies under the loan will be procured from private U.S. firms. The project is designed to benefit large ranches, small ranchers and smallholder farmers.

VI. IMPLEMENTATION

A. Schedule

It is expected that loan implementation will occur as follows:

<u>Action</u>	<u>Elapsed Time in Months</u>
Loan authorized	0
Loan executed	2
CP's satisfied	5
Issue Letter of Commitment	6
Initiate equipment procurement	7
Equipment arrives in Tanzania	10
Tsetse Eradication efforts begin	11

B. Procurement

The equipment to be provided under this loan will be procured by the GOT Central Procurement Agency for MinAg, using their own staff or specialized procurement contractor as required. As indicated in Annex III, the required equipment lists have already been developed and in most instances detailed specifications are available. Additional specifications will be prepared as needed.

EARCDO will provide A.I.D. backstopping and will review and approve proposed bid documents and bid awards.

The USAID has requested proprietary procurement for several items and justification for such a waiver is being prepared. Competitive bidding procedures will be followed in all instances, however, unless strong justification exists for proprietary or sole source procurement to ensure the adequacy of local service facilities or for the sake of standardization.

The equipment and supplies will be shipped to the port of Dar es Salaam, and off-loaded onto freight cars for the rail journey to Mwanza. From Mwanza, shipment to the project area will continue either: (1) by lake freighter to Bukoba and then heavy truck transport; (2) by heavy truck transport direct to the project area; or (3) by a combination of (1) and (2).

VII. CONDITIONS PRECEDENT AND COVENANTS

The following special conditions precedent and covenants are expected to be discussed and negotiated with the Government of Tanzania and included in the loan agreement:

A. Conditions Precedent

1. A written assurance from an appropriate official of the Borrower that sufficient funds will be budgeted to support the recurrent costs of the Tsetse Eradication Program in the West Lake Region for at least three years;
2. Evidence that a heavy equipment maintenance expert will be engaged for the project; and
3. A program outlining the first year's plan of clearing/spraying operations.

B. Covenants

1. Borrower warrants that a plan and necessary inputs for maintaining the loan funded equipment will be implimented.

2. Borrower warrants that it will begin, within three months of execution of the loan agreement, preparation of a master work plan for those lands to be cleared/sprayed during the first three-year program. The work plan will be completed in an expeditious manner so as to facilitate the orderly execution of the project.

3. Borrower warrants that a yearly plan will be made for utilizing those lands to be cleared during the subsequent year's clearing/spraying operations.

Page 1

CHECKLIST OF STATUTORY CRITERIA
DEVELOPMENT LOAN FUND

Many of the questions require only yes or no answers. Others, however, must be answered more fully. In those cases, a specific reference to explicit discussion of the matter in the loan paper will suffice. But where the loan paper does not deal explicitly with a matter that clearly requires more than a yes or no response, sufficient response must be made to indicate that the matter has been appropriately considered.

The following abbreviations are used in the checklist:

FAA - Foreign Assistance Act of 1961, as amended, incorporating amendments effected by the Foreign Assistance Act of 1968.

App. - Foreign Assistance and Related Agencies Appropriations Act, 1969.

Space for answers is provided in the margin to the right of each question. This form must be made a part of the Capital Assistance Paper.

I. COUNTRY PERFORMANCE

A. Progress Towards Country Goals

1. FAA §§ 201(b)(5), 201(b)(7), 201(b)(8), 203. Discuss the extent to which the country is:

(a) Making appropriate efforts to increase food production and improve means for food storage and distribution.

Satisfied. Tanzania has given appropriate emphasis to increasing food production, rating the agricultural sector as its first developmental priority.

(b) Creating a favorable climate for foreign and domestic private enterprise and investment.

Satisfied. The GOT has signed an Investment Guaranty Agreement. Domestically, investors are encouraged to engage in all but those ventures which are deemed to be too crucial to be left in private hands.

(c) Increasing the people's role in the developmental process.

Satisfied. The Arusha Declaration placed prime emphasis on development as a responsibility of "rural peoples."

(d) Allocating expenditures to development rather than to unnecessary military purposes or intervention in other free countries' affairs.

Satisfied. Major budget allocations are to development and major non-defense budgets. See Item D. 2 below.

(e) Willing to contribute funds to the project or program.

Satisfied. See Section V of loan paper.

(f) Making economic, social, and political reforms such as tax collection improvements and changes in land tenure arrangement; and making progress toward respect for the rule of law, freedom of expression and of the press, and recognizing the importance of individual freedom, initiative, and private enterprise.

Satisfied. Within the limits of the segment of the population in the money economy, a tax system has been established. New lands are developed outside of the traditional tribal holdings. Land tenure is not a major problem in Tanzania. Tanzania, although it has a party-controlled newspaper, allows freedom of expression and of the press. It recognizes the importance of individual freedom and initiative to a greater extent than do most other African countries, and encourages private enterprises within the constraints imposed by its Social Democratic philosophy.

(g) Responding to the vital economic, political, and social concerns of its people, and demonstrating a clear determination to take effective self-help measures.

Satisfied. The Arusha Declaration and the Doctrine of Self Reliance satisfy this requirement.

B. Relations with the United States

1. FAA §620(a). Is the government indebted to any U.S. citizen for goods or services furnished or ordered where: (a) such citizen has exhausted available legal remedies, including arbitration, or (b) the debt is not denied or contested by the government, or (c) the indebtedness arises under such government's, or a predecessor's unconditional guarantee?

Satisfied. No such indebtedness exists.

2. FAA §620(d). If the loan is intended for construction or operation of any productive enterprise that will compete with U.S. enterprise, has the country agreed that it will establish appropriate procedures to prevent export to the U.S. of more than 20% of its enterprise's annual production during the life of the loan?

Satisfied. Not applicable.

3. FAA §620(e)(1). Has the country's government, or any agency or subdivision thereof, (a) nationalized or expropriated property owned by U.S. citizens or by any business entity not less than 50% beneficially owned by U.S. citizens, (b) taken steps to repudiate or nullify existing contracts or agreements with such citizens or entity, or (c) imposes or enforced discriminatory taxes or other exactions, or restrictive maintenance or operation conditions? If so, and more than six months has elapsed since such occurrence, identify the document indicating that the government, or appropriate agency or subdivision thereof, has taken appropriate steps to discharge its obligations under international law toward such citizen or entity? If less than six months has elapsed, what steps if any has it taken to discharge its obligations?

4. FAA §620(j). Has the country permitted, or failed to take adequate measures to prevent, the damage or destruction by mob action of U.S. property, and failed to take appropriate measures to prevent a recurrence and to provide adequate compensation for such damage or destruction?

Satisfied. On only one occasion has the GOT nationalized property owned by U.S. citizens. In 1966 a plantation belonging to Mr. and Mrs. William Kneib was expropriated. Appropriate steps were taken by the GOT to discharge its obligations and settlement of the claim was reached in 1968. Ref: State 187268.

Satisfied. There has been no such action against U.S. property in Tanzania.

5. FAA §620(l). Has the government instituted an investment guaranty program under FAA 0221(b)(1) for the specific risks of inconvertibility and expropriation or confiscation?

Satisfied. Tanzania has instituted the Investment Guaranty Program.

6. FAA §620(o): Fisherman's Protective Act of 1954, as amended, Section 5. Has the country seized, or imposed any penalty or sanction against, any U.S. fishing vessel on account of its fishing activities in international waters? If, as a result of a seizure, the U.S.G. has made reimbursement under the provisions of the Fisherman's Protective Act and such amount has not been paid in full by the seizing country, identify the documentation which describes how the withholding of assistance under the FAA has been or will be accomplished.

Satisfied. No such incident.

7. FAA §620(q). Has the country been in default, during a period in excess of six months, in payment to the U.S. on any FAA loan?

Satisfied. The GOT is not in default on any loan.

8. FAA §620(t). Have diplomatic relations between the country and the U.S. been severed? If so, have they been renewed?

Satisfied. No break in diplomatic relations.

9. App. §106. Describe any attempt made by the country to create distinction because of race or religion in granting personal or commercial access or other rights otherwise available to U.S. citizens generally.

Satisfied. No such distinction is made.

C. Relations with Other Nations and the U.N.

1. FAA §620(i). Has the country been officially represented at any international conference when that representation included planning activities involving insurrection or subversion directed against the U.S. or countries receiving U.S. assistance?

Satisfied. The GOT has attended no such conference.

2. FAA §§620(a), 620(n); App. §§107(a), 107(b), 116. Has the country sold, furnished, or permitted ships or aircraft under its registry to carry to Cuba or North Viet-Nam items of economic, military, or other assistance?

Satisfied. No such trafficking has taken place.

3. FAA §620(u); App. §114. What is the status of the country's U.N. dues, assessments, or other obligations? Does the loan agreement bar any use of funds to pay U.N. assessments, dues, or arrearages?

Satisfied. The GOT is not in default on its international obligations. Loan Agreement will forbid use of loan funds for any purpose unrelated to the project.

D. Military Situation

1. FAA §620(i). Has the country engaged in or prepared for aggressive military efforts directed against the U.S. or countries receiving U.S. assistance?

Satisfied. It has not engaged in any such activity.

2. FAA §620(s). What is (a) the percentage of the country's budget devoted to military purposes, and (b) the amount of the country's foreign exchange resources used to acquire military equipment? Is the country diverting U.S. development assistance or P.L. 480 sales to military expenditures? Is the country diverting its own resources to unnecessary military expenditures? (Findings on these questions are to be made for each country at least once each fiscal year and, in addition, as often as may be required by a material change in relevant circumstances.)

3. FAA §620(v); App. §119. Has the country spent money for sophisticated weapons systems purchased since the statutory limitation became effective? If so, identify either (a) the documentation which describes how the withholding of an equivalent amount of A.I.D. assistance has been or will be accomplished, or (b) the Presidential determination that such purchase is important to the national security of the U.S. so that no withholding is necessary.

Tanzania has devoted 6.8% of its budget to military purposes and has used 0.55% of its foreign exchange resources to acquire military equipment. Tanzania is not diverting any U.S. assistance to military expenditures, nor is it diverting its own resources to unnecessary military expenditures. The Symington InterAgency Committee has placed Tanzania on the "green light" list.

Answer to first question is no.
Last item not applicable.

II. CONDITION OF THE LOAN

A. General Soundness

-- Interest and Repayment

1. FAA §§201(d), 201(b)(2).
 Is the rate of interest excessive or unreasonable for the borrower? Are there reasonable prospects for repayment? What is the grace period interest rate; the following period interest rate? Is the rate of interest higher than the country's applicable legal rate of interest?

Satisfied. The rate of interest is not considered excessive or unreasonable for the borrower. See Section V. D. for prospects for repayment. See "Summary and Recommendations" for interest terms. The rate of interest is not higher than Tanzania's applicable legal rate of interest.

-- Financing

1. FAA §201(b)(1). To what extent can financing on reasonable terms be obtained from other free-world sources, including private sources within the U.S.?

Satisfied. See Section V. C. of the loan paper. The Export-Import Bank has stated (6 Dec., 1970) that it is not interested in financing this project.

-- Economic and Technical Soundness

1. FAA §§201(b)(2), 201(e). The activity's economic and technical soundness to undertake loan; does the loan application, together with information and assurances, indicate that funds will be used in an economically and technically sound manner?

Satisfied. See Section III of the loan paper.

2. FAA §611(a)(1). Have engineering, financial, and other plans necessary to carry out assistance, and a reasonably firm estimate of the cost of assistance to the U.S., been completed?

Satisfied. See Section V of the loan paper. Engineering plans not applicable.

3. FAA §611(b); App. §101. If the loan or grant is for a water or related land-resource construction project or program, do plans include a cost-benefit computation? Does the project or program meet the relevant U.S. construction standards and criteria used in determining feasibility?

Satisfied. Not applicable.

4. FAA §611(e). If this is a Capital Assistance Project with U.S. financing in excess of \$1 million, has the principal A.I.D. officer in the country certified as to the country's capability effectively to maintain and utilize the project?

Satisfied. Not applicable.

B. Relation to Achievement of Country and Regional Goals

Country Goals

1. FAA §§207, 281(a). Describe this loan's relation to:

a. Institutions needed for a democratic society and to assure maximum participation on the part of the people in the task of economic development.

Satisfied. This project is intended to involve and assist a considerable number of herdsmen, small farmers and several commercial, government-owned ranches.

b. *Enabling the country to meet its food needs, both from its own resources and through development, with U.S. help, of infrastructure to support increased agricultural productivity.*

Satisfied. The project supported by the loan directly addresses this goal.

c. *Meeting increasing need for trained manpower.*

Satisfied. See Section III.A. 4.

d. *Developing programs to meet public health needs.*

Satisfied. Will eliminate human sleeping sickness.

e. *Assisting other important economic, political, and social development activities, including industrial development; growth of free labor unions; cooperatives and voluntary agencies; improvement of transportation and communication systems; capabilities for planning and public administration; urban development; and modernization of existing laws.*

Satisfied. This project will open up a vast area for settlement through elimination of Tsetse Fly Infestation and construction of roads, firebreaks and water facilities.

2. *FAA §201(b)(4). Describe the activity's consistency with and relationship to other development activities, and its contribution to realizable long-range objectives.*

Satisfied. See Section I of the loan paper.

3. FAA §201(b)(8). How will the activity to be financed contribute to the achievement of self-sustaining growth?

Satisfied. See Section III.A.2. the loan paper.

4. FAA §201(f). If this is a project loan, describe how such project will promote the country's economic development, taking into account the country's human and material resource requirements and the relationship between ultimate objectives of the project and overall economic development.

Satisfied. See Section III.B.1. the loan paper.

5. FAA §201(b)(3). In what ways does the activity give reasonable promise of contributing to development of economic resources, or to increase of productive capacities?

Satisfied. See Sections III B 1 of the loan paper.

6. FAA §281(b). How does the program under which assistance is provided recognize the particular needs, desires, and capacities of the country's people; utilize the country's intellectual resources to encourage institutional development; and support civic education and training in skills required for effective participation in political processes.

Satisfied. See Section III.B.1 and III. B.4. of the loan paper.

7. FAA 8601(a). How will this loan encourage the country's efforts to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture, and commerce; and (f) strengthen free labor unions?

Satisfied as to (a), (b), (c), and (e). See Sections III.B. of the loan paper. There is no information as to (d) and (f).

8. FAA 8202(a). Indicate the amount of money under the loan which is: going directly to private enterprise; going to intermediate credit institutions or other borrowers for use by private enterprise; being used to finance imports from private sources; or otherwise being used to finance procurements from private sources.

Satisfied. The entire loan amount will finance goods and services from private sources.

9. FAA 8611(a)(2). What legislative action is required within the recipient country? What is the basis for a reasonable anticipation that such action will be completed in time to permit orderly accomplishment of purposes of loan?

Satisfied. No legislative action is required.

-- Regional Goals

1. FAA 8619. If this loan is assisting a newly independent country, to what extent do the circumstances permit such assistance to be furnished through multilateral organizations or plans?

Satisfied. The GOT is obtaining assistance from the UNDP and the IBRD in livestock development, which complements A.I.D.'s assistance. The small amount of the loan does not warrant multi-donor sponsorship.

2. FAA 8209. If this loan is directed at a problem or an opportunity that is regional in nature, how does assistance under this loan encourage a regional development program? What multilateral assistance is presently being furnished to the country?

Satisfied. Not applicable.

C. Relation to U.S. Economy

-- Employment, Balance of Payments, Private Enterprise

1. FAA 88201(b)(6); 102, Fifth. What are the possible effects of this loan on U.S. economy, with special reference to areas of substantial labor surplus? Describe the extent to which assistance is constituted of U.S. commodities and services, furnished in a manner consistent with improving the U.S. balance of payments position.

Satisfied. See Section VI of the loan paper. Regarding the second question, the loan is for Foreign Exchange costs in Code 941 countries.

2. FAA 88612(b), 636(h). What steps have been taken to assure that, to the maximum extent possible, foreign currencies owned by the U.S. and local currencies contributed by the country are utilized to meet the cost of contractual and other services, and that U.S. foreign-owned currencies are utilized in lieu of dollars?

Satisfied. The GOT contribution is the maximum contribution permissible given the country's financial situation. The U.S. has no Tanzanian currency that could be used in lieu of dollars for its local cost contribution.

3. FAA 8601(d); App. 8115. If this loan is for a capital project, to what extent has the Agency encouraged utilization of engineering and professional services of U.S. firms and their affiliates? If the loan is to be used to finance direct costs for construction, will any of the contractors be persons other than qualified nationals of the country or qualified citizens of the U.S.? If so, has the required waiver been obtained?

Satisfied. Not applicable.

4. FAA 8608(a). Provide information on measures to be taken to utilize U.S. Government excess personal property in lieu of the procurement of new items.

Satisfied. To the extent practicable, excess property will be utilized.

5. FAA 8602. What efforts have been made to assist U.S. small business to participate equitably in the furnishing of commodities and services financed by this loan?

Satisfied. USG competitive bid procedures will be followed for much if not all of the equipment to be procured.

6. FAA §621. If the loan provides technical assistance, how is private enterprise on a contract basis utilized? If the facilities of other Federal agencies will be utilized, in what ways are they particularly suitable; are they competitive with private enterprise (if so, explain); and how can they be made available without undue interference with domestic programs?

Satisfied. The loan will not provide technical assistance.

7. FAA §611(c). If this loan involves a contract for construction that obligates in excess of \$100,000, will it be on a competitive basis? If not, are there factors which make it impracticable?

Satisfied. Not applicable.

Procurement

1. FAA §602(a). Will commodity procurement be restricted to U.S. except as otherwise determined by the President?

Satisfied. Yes.

2. FAA §604(b). Will any part of this loan be used for bulk commodity procurement at adjusted prices higher than the market price prevailing in the U.S. at time of purchase?

Satisfied. No.

3. FAA §604(a). Will any part of this loan be used for procurement of any agricultural commodity or product thereof outside the U.S. when the domestic price of such commodity is less than parity? **Satisfied. Not applicable.**

D. Other Requirements

1. FAA §201(b). Is the country among the 20 countries in which development loan funds may be used to make loans in this fiscal year? **Satisfied. Yes.**

2. App. §112. Does the loan agreement provide, with respect to capital projects, for U.S. approval of contract terms and firms? **Satisfied. Not applicable.**

3. FAA §620(k). If the loan is for construction of a productive enterprise, with respect to which the aggregate value of assistance to be furnished will exceed \$100 million, what preparation has been made to obtain the express approval of the Congress? **Satisfied. Not applicable.**

4. FAA §620(b), 620(f); App. §109(b). **Satisfied. Such determination has been made.**
Has the President determined that the country is not dominated or controlled by the international Communist movement? If the country is a Communist country (including, but not limited to, the countries listed in FAA §620(f)) and the loan is intended for economic assistance, have the findings required by FAA §620(f) and App. §109(b) been made and reported to the Congress?

5. App. §109(a). **Satisfied. No.**
Will any military assistance, or items of military or strategic significance, be furnished to a Communist nation?

6. FAA §620(h). **All procurement under the loan will be from the U.S. or other code 941 countries. Loan Agreement will restrict use of funds to A.I.D. project purposes.**
What steps have been taken to insure that the loan will not be used in a manner which, contrary to the best interest of the United States, promotes or assists the foreign aid projects of the Communist-bloc countries?

7. App. §118. **Satisfied. No funds will be used for such procurement.**
Will any funds be used to finance procurement of iron and steel products for use in Vietnam other than as contemplated by §118?

8. FAA §636(i). **Satisfied. Approved waivers will be requested if so warranted.**
Will any part of this loan be used in financing non-U.S.-manufactured automobiles? If so, has the required waiver been obtained?

9. FAA §§620(a)(1) and (2), 620(p);
App. 8117. Will any assistance
 be furnished or funds made avail-
 able to the government of Cuba or
 the United Arab Republic?

Satisfied. No.

10. FAA §620(a). Will any part
 of this loan be used to compensate
 owners for expropriated or nationalized
 property? If any assistance has
 been used for such purpose in the
 past, has appropriate reimbursement
 been made to the U.S. for sums diverted?

Satisfied. No..

11. FAA §201(f). If this is a
 project loan, what provisions have
 been made for appropriate partici-
 pation by the recipient country's
 private enterprise?

Satisfied. See Section III. B.
 of the loan paper.

12. App. §104. Does the loan
 agreement bar any use of funds to
 pay pensions, etc., for persons
 who are serving or who have served
 in the recipient country's armed
 forces?

Satisfied. Loan Agreement will
 limit the use of loan funds to
 project costs.

ANNEX II

Project No.
A.I.D. Loan No.
AID-DLC/P-94-939

Capital Assistance Loan Authorization

Provided from: Development Loan Funds
Tanzania: Tsetse Fly Eradication Loan

Pursuant to the authority vested in the Assistant Administrator for Africa of the Agency for International Development ("A.I.D.") by the Foreign Assistance Act of 1961, as amended, and the delegations of authority issued thereunder, I hereby authorize the establishment of a loan pursuant to Part I, Chapter 2, Title I, the Development Loan Fund, to the Government of the United Republic of Tanzania ("Borrower") of an amount not to exceed Eight Hundred Thousand United States dollars (\$800,000) to assist in financing the foreign exchange cost of goods and services for the Tsetse Fly Eradication Program in Tanzania.

1. Interest Rate and Terms of Repayment.

Interest on the loan shall be three percent (3%) per annum, except during the grace period when the interest shall be two percent (2%) per annum. The loan shall be repaid within forty (40) years from the date of the first disbursement under the loan, including a grace period of not to exceed ten (10) years.

2. Currency of Repayment.

Repayment of the loan and payment of interest shall be made in United States dollars.

3. Other Terms and Conditions.

- (a) Goods and related services financed under the loan shall have their source and origin in the United States or other Code 941 countries.
- (b) Such other terms and conditions as A.I.D. may deem advisable.

Assistant Administrator for Africa

Date

EQUIPMENT LIST
TSETSE ERADICATION PROGRAM

ITEM	Shillings
I. <u>Bush Clearing/Earth Moving Equipment:</u>	
A. Four Caterpillar D8 Series "H" Shift Tractors Each with, No. 8 Torsion Bar, Straight blade for use with hydraulic control. Tilt cylinder for tilting straight blade; 183 hydraulic control, 3-valve, to operate tilt cylinder and hydraulic ripper; No. 8D Ripper, hydraulic, rear mounted, multi-shank beam with 3 teeth; FLECO heavy duty cab guard with center brace and side screen; Spare blades; Spare set of tracks; Spare parts at 10% of capital cost.	2577612
B. Three 3-1/8" Anchor Chains (6-90 ft. lengths) with shackles and Box Swivels with open eyes.	249000
C. One Caterpillar No. 12 F Motor Grader with: Canopy, lighting system and scarifier and 10% spare parts.	267320
D. Two Massey Ferguson, MF 178 Tractors or equivalent and 10% spare parts.	69200
II. <u>Vehicles:</u>	
A. One Truck Tractor with diesel engine and 35 ton lowboy trailer with 10% spares.	300000
B. One 5-ton heavy duty stake body truck with diesel engine and 10% spares.	63000
C. Four - Long wheel base - 4-wheel drive vehicles, with 10% spares	112800

EQUIPMENT LIST - TSETSE ERADICATION PROGRAM
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ITEM	Shillings
III. Trailers:	
A. One Fuel (1000 gal)	7000
B. One Water (1000 gal)	7000
C. Two load carrying 6-ton trailers	17000
IV. Maintenance Equipment and Tools:	
A. Block and Tackle with Travelling Trolley and Gentry.	5000
B. 16 KW generator for power and lighting, 240/416 volt with diesel engine, switch gear, cable and fittings for illumination, 50 gallon fuel tank and battery.	35000
C. Welding Plant (diesel driven - electric) with welding rods.	21000
D. Gas Welder and cutters.	3600
E. One High Pressure Grease Plant, Trailer Mounted	50000
F. One Battery Charger.	1820
G. One Tool Kit - heavy duty shop set.	9100
H. Four hydraulic operated telescoping masts with 40 foot height.	11200
V. <u>Fuel Tank (2,000 gals), with pump.</u>	10000
VI. Office Equipment and Camp Equipment:	
Drawing board with drafting instruments. Typewriter. Three 8' x 12" Tents with canopies. Ground to Air portable radio set.	17500

EQUIPMENT LIST - TSETSE ERADICATION PROGRAM

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ITEM	Shillings
VII. <u>Portable Buildings:</u>	
Twenty 10' x 10' Tin or Steel, to house stores and staff in field	28000
VIII. <u>One Cessna Skowagon 185:</u>	
With:	300500
Avionics Equipment	
Instruments	
Accessories including 160 gallon spray tank and equipment	
Radio equipment	
10% spares	
IX. <u>Sprayers</u>	
50 motorblow knapsack type with 2-4 gal capacity	17500
2 Insecticidal Fog Applicators	30000
X. <u>Insecticides:</u>	630000
XI. <u>Estimated Shipping Costs:</u>	30000
XII. <u>Contingencies and Procurement Services:</u>	
Contingencies at 5% and Procurement Services at 3%.	389612
	Shs. <u>5259764</u>
XIII. <u>Replacement Vehicles:</u>	
Those vehicles listed under II.B and II.C will have to be replaced in year 4 at addition cost of	175800
	Shs. <u>5435564</u> or
	\$761,280
N.B. Costs of all vehicles and machinery includes 10% estimate for spare parts and delivery f.o.r. Dar es Salaam.	

ANNEX IV
TSETSE ERADICATION PROGRAM
Recurrent Costs for 3-Year Program *

I.	<u>Personal Emoluments:</u>	<u>Shillings</u>
	Field Officer	198000
	Spray Pilot	198000
	Maintenance Engineer	198000
	Two maintenance assistants	39600
	Ten D-8 Operators	180000
	Eight drivers	100800
		<u>913600</u>
II.	<u>Transport and Travel:</u>	21000
III.	<u>Maintenance and Operation of Capital Equipment:</u>	
	Four D-8 Tractors @ 110 shs. per hour for 2,000 hours each per year	2640000
	One Caterpillar 12 F Motor Grader working 1,000 hours per year at 45 shs. per hour	135000
	One Low Loader working 750 hours per year at 35 shs. per hour	78750
	Two Agricultural Tractors working 750 hours per year each at 20 shs. per hour	90000
	Four long wheel base 4-wheel Drive Vehicles	100000
	One 5-ton truck	54000
	One spray plane 500 hours per year @ 100 shs. per hour	150000
	Four trailers at 550 shs. per year	6600
		<u>3254350</u>
IV.	<u>Upkeep of Stations and Establishments:</u>	<u>6000</u>
V.	<u>Office and General:</u>	<u>4000</u>
		4198950 shs. or \$588088

* Costs for the total six-year program would be double, or \$1,176,176

Table 1

Kitengule Ranching Scheme

Undiscounted Loss Due to Tsetse Fly Infestation **

Year	Animals	Drugs ^{1/}	Weight ^{2/}	Market ^{3/}	Death ^{4/}	Total
	Number		Loss	Loss	Loss	
		Shillings				
1	4,000	24,000	12,400	4,960	3,176	44,536
2	6,000	36,000	18,600	7,440	4,614	66,654
3	8,000	48,000	24,800	9,920	6,352	89,072
4	10,000	60,000	31,000	12,400	7,690	111,090
5	(Years 5 - 20 same as Year 4)					

* See Page 4 for footnotes

** Although Kitengule anticipates achieving a maximum herd size of 27,800 within three years, it is believed by NACO that only the numbers shown would need be kept on drugs due to the localized nature of tsetse infestation - unlike Missenyi - West / Missenyi - East, where all animals would be kept on drugs.

Missenyi - West Ranch Scheme

Undiscounted Loss Due to Tsetse Fly Infestation*

Year	Animals	Drugs ^{1/}	Weight ^{2/} Loss	Market ^{3/} Loss	Death ^{4/} Loss	Total
	<u>Number</u>			<u>Shillings</u>		
1	5,567	33,402/	17,236	6,894	4,229	61,761
2	9,597	57,582	29,729	11,892	7,305	106,508
3	15,114	90,684	46,841	18,736	11,611	167,872
4	18,023	108,138	55,862	22,345	13,842	200,187
5	18,992	113,952	58,869	23,548	14,534	210,903
6	18,156	108,936	56,265	22,506	13,918	201,625
7	18,884	113,304	58,528	23,411	14,457	209,700
8	18,798	112,788	58,249	23,300	14,380	208,717
9	18,763	112,578	58,156	23,262	14,380	208,376
10	(Years 10 - 20 same as year 9)					

* See Page 4 for footnotes

Missenyi - East Ranching Scheme*

Undiscounted Loss Due to Tsetse Fly Infestation

Year	Animals	Drugs ^{1/}	Weight ^{2/}	Market ^{3/}	Death ^{4/}	Total
	Number		Loss	Loss	Loss	
		Shillings				
1	6,077	36,462	18,817	7,527	4,614	67,420
2	10,194	61,164	31,589	12,636	7,690	113,079
3	12,141	72,846	37,634	15,054	9,228	134,762
4	13,787	82,722	42,718	17,087	10,766	153,293
5	13,074	78,444	40,517	16,207	9,997	145,165
6	13,259	79,554	41,075	16,430	9,997	147,056
7	13,251	79,506	41,075	16,430	9,997	147,008
8	12,867	77,202	39,866	15,946	9,997	143,011
9	(Years 9 - 20 same as year 8)					

* See Page 4 for footnotes

1. Drug Costs = The NACO veterinarian has determined the cost of providing prophylactic drug treatment against Trypanosomiasis to be six shillings per animal consisting of four shillings for drugs (Samorin and Antrycide prosalt) and two shillings for labor and management expense. This is based upon inoculating each animal every four months. Cattle can be kept in tsetse infested areas under this treatment with drugs. However, there appears to be a serious possibility of a build-up of resistance to these drugs. If this occurs, several curative treatments of Berenil at a cost of seven shillings per dose would have to be used.
2. Weight Loss = Total weight loss is calculated based upon an annual takeoff (slaughter rate) of 10 percent. Animals are inoculated every four months with an accompanying weight loss each time of up to ten kilos due to the shock effect of the inoculation and the lameness caused by the drug which reduces the animal's grazing time. By maturation all but approximately ten kilos of this weight loss will have been made up, giving a total loss of ten kilos times a dressed weight price of Shs.3/10 for a net loss per animal of Shs.31.
3. Market Loss = An average of two kilos in each hindquarter due to scar tissue in the muscle. Said scarred portions are cut out and the price of shillings 3/10 per kilo is subtracted from the purchase price by the abattoir for a total loss of shillings 12/40 per animal. Annual takeoff = 10%.
4. Death Loss = Death loss is assumed at one animal per thousand. A minimum loss of zero to 0.5% of cattle can occur due to Trypanosomiasis in tsetse infested areas. The loss at Mkata in 1969 was 19 animals out of an average herd of 13,000 giving a loss rate of 0.146%. The loss at Kitengule in 1969 was 30 animals out of an average herd of 15,000, giving a loss rate of 0.2%. The loss rate at Missenyi West through January-October 1970 is running under 0.1%. With increased management effectiveness present on all three above ranches, a loss rate of one animal per thousand per year is assumed for these projections. This is a reduction from the figure of 1.5 animals per thousand derived from averaging past losses from the three ranches.

An average animal marketing weight of 450 kilos and a dressed weight average of 55% gives a total average of 248 kilos dressed weight per animal times Shs.3/10 per kilo, or an average loss per animal of Shs.769.

* These estimates and figures are based upon discussions and information provided by Dr. Robertson, the NACO vet and Dr. Coyle, a vet with MinAg.

TSETSE ERADICATION PROGRAM

Estimated Construction and Maintenance Savings (Shillings)
due to Program Implementation

<u>Year</u>	<u>Construction</u>		<u>Maintenance</u>		<u>Total</u>
	<u>Mwesa River</u>	<u>Uganda Border</u>	<u>Mwesa River</u>	<u>Uganda Border</u>	
1	304,640	896,000	-0-	-0-	1,200,640
2	-	-	30,464	89,600	120,064
3	-	-	30,464	89,600	120,064
4	-	-	30,464	89,600	120,064
5	-	-	30,464	89,600	120,064
6	-	-	30,464	89,600	120,064
7	-	-	30,464	89,600	120,064
8	-	-	30,464	89,600	120,064
9	-	-	30,464	89,600	120,064
10	-	-	30,464	89,600	120,064
11	-	-	30,464	89,600	120,064
12	-	-	30,464	89,600	120,064
13	-	-	30,464	89,600	120,064
14	-	-	30,464	89,600	120,064
15	-	-	30,464	89,600	120,064
16	-	-	30,464	89,600	120,064
17	-	-	30,464	89,600	120,064
18	-	-	30,464	89,600	120,064
19	-	-	30,464	89,600	120,064
20	-	-	30,464	89,600	120,064

A. Mwesa River Barrier South of Kitengule

The existing barrier is really only a consolidation line rather than a permanent barrier and was completed as temporary protection for the Kitengule Ranch until the West Lake Tsetse Eradication program could be completed. This consolidation line is 1,000 yards wide and 17 miles long. If tsetse eradication is not carried out in the West Lake Region, this consolidation line will have to be widened from 1,000 yards to 2 miles, and be maintained. The cost of clearing to widen this barrier if done, will be 20 shillings per acre. The additional cost for maintaining the barrier would be 2 shillings per acre per year.

	<u>Shs.</u>
Construction of additional width of barrier = 1.4 miles x 17 miles x 640 acres per sq. mile = 15,232 acres	
x 20 shillings	= 304,640

Maintenance of additional width of barrier = 15,232 acres x 2 shillings	= 30,464
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B. Uganda Border Barrier North of Missenyi

The Government of Uganda has already cleared a barrier 4 miles wide x 10 miles long. It is prepared to continue this barrier for an additional 35 miles at a width of 2 miles. The cost of constructing the additional barrier will also be Shs.20 , with follow on maintenance costs of Shs. 2 per acre per year.

Shs

Construction of additional barrier = 2 miles
x 35 miles x 640 acres per sq. mile =
44,800 acres x 20 shs. = 896,000

Maintenance of additional 35 miles of
barrier = 44,800 acres x 2 shs. = 89,600

If the West Lake Region is cleared using the requested loan equipment the Government of Uganda will not need to construct and maintain this barrier.

TABLE 5

Tsetse Eradication Program
Increased Land Available for Cattle Raising and Farming
Undiscounted Conservative Value

<u>Year</u>	<u>Increased Acreage *</u>	<u>One Time Value Per Acre **</u>	<u>Total Value ***</u>
2	240,000	\$1.00	\$240,000
3	240,000	\$1.00	240,000
4	240,000	\$1.00	240,000
Totals	<u>720,000</u>	-	<u>\$720,000</u>

* Out of a total project area of 1,440,000 acres (in addition to that occupied by Kitengule, Missenyi - West and Missenyi - East), by eliminating areas comprised of Lakes, Marshes and Escarpments, a net grazing/cultivation area of approximately 50 percent, or 720,000 is obtained. This acreage would be cleared over a three-year period.

** Experience from recent range management/ranching projects and surveys in Ethiopia, Kenya and Uganda indicate that the net productive value per acre of grazing land is equal to 16.67 shilling or \$2.33 per year in the form of beef production (based upon one animal requiring six acres per year for grazing). The value to that portion of this land, if cultivated for subsistence and cash crops, would be appreciably higher. As this land is now uninhabitable in that indigenous farmers can not use it for grazing their cattle due to tsetse infestation, the present value of this land is in effect nil to both potential farmers and to the GOT. Based upon the estimated net productive value of \$2.33, a conservative value of \$1.00 per acre has been attributed to the Tsetse Eradication Program.

*** A like amount of increased acreage would also be made available under the 2nd 3-year program, with a like undiscounted benefit ascribed to years 5, 6 and 7.

Table 6

Consolidated Benefits of Tsetse Eradication Program
Three Year Project
Discounted to Net Present Value

Year	Barrier Construction	Kitengule	Missenyi West	Missonyi East	Total	Discount Factor -10%	Total Discounted
			Shillings				
1	1,200,640	44,536	61,761	67,420	1,374,357	.9091	1,249,427
2	120,064	66,654	106,508	113,079	2,119,905	.8264	1,751,889
3	120,064	89,072	167,872	134,762	2,225,370	.7513	1,671,920
4	120,064	111,090	200,187	153,293	2,298,234	.6830	1,569,694
5	120,064	111,090	210,903	145,165	587,222	.6209	364,606
6	120,064	111,090	201,625	147,056	579,835	.5645	327,839
7	120,064	111,090	209,700	147,008	587,862	.5132	301,691
8	120,064	111,090	208,717	143,011	582,882	.4665	271,914
9	120,064	111,090	208,376	143,011	582,541	.4241	247,056
10	(Years 10 - 20 same as Year 9) ..				.3855	224,570
11						.3505	204,181
12						.3186	185,598
13						.2897	168,762
14						.2633	153,383
15						.2394	139,460
16						.2176	126,761
17						.1978	115,227
18						.1799	104,799
19						.1635	95,245
20						.1486	<u>86,566</u>

9,360,588 shs.
or

* Includes 1,713,600 shillings per year for years 2, 3, and 4 only (See Table 5 for basis).

= \$1,311,160

Consolidated Benefits of Tsetse Eradication Program
Six Year Project
Discounted to Net Present Value

Year	Barrier Construction	Kitongulo	Missenyi West	Missenyi East	Total	Discount Factor -10%	Total Discounted
			Shillings				
1	1,200,640	44,536	61,761	67,420	1,374,357	.9091	1,249,427
2	120,064	66,654	106,508	113,079	2,119,905	.8264	1,751,889
3	120,064	89,072	167,872	134,762	2,225,370	.7513	1,671,920
4	120,064	111,090	200,187	153,293	2,298,234	.6830	1,569,694
5	120,064	111,090	210,903	145,165	2,300,822	.6209	1,428,580
6	120,064	111,090	201,625	147,056	2,293,435	.5645	1,294,644
7	120,064	111,090	209,700	147,008	2,301,462	.5132	1,181,110
8	120,064	111,090	208,717	143,011	582,882	.4665	271,944
9	120,064	111,090	208,376	143,011	582,541	.4241	247,056
10	(Years 10 - 20 same as Year 9) ..				.3855	224,570
11						.3505	204,181
12						.3186	185,598
13						.2897	168,762
14						.2633	153,383
15						.2394	139,460
16						.2176	126,761
17						.1978	115,227
18						.1799	104,799
19						.1635	95,245
20						.1486	<u>86,566</u>
							12,270,786 shs or
						=	\$1,718,590

* Includes 1,713,600 shillings per year for years 2 through 7 only (See Table 5 for basis).

Table 8

Tsetse Eradication Program
Consolidated Costs of Three-Year Project
Discounted to Net Present Value
(Shillings)

<u>Year</u>	<u>Capital Costs</u>	<u>Recurrent Costs</u>	<u>Total</u>	<u>Discount Factor-10%</u>	<u>Total Discounted *</u>
1	4,734,764	1,399,650	6,134,414	.9091	5,576,796
2	105,000	1,399,650	1,504,650	.8264	1,243,443
3	105,000	1,399,650	1,504,650	.7513	1,130,444
					7,950,683 shs.
					or
					\$1,113,540

* Assumes no salvage value for equipment, and one-half of insecticides have been consumed.

Table 9
Tsetse Eradication Program
Consolidated Costs of Six-Year Project
Discounted to Net Present Value
(Shillings)

<u>Year</u>	<u>Capital Costs</u>	<u>Recurrent Costs</u>	<u>Total</u>	<u>Discount Factor -10%</u>	<u>Total Discounted</u>
1	4,734,764	1,399,650	6,134,414	.9091	5,576,796
2	105,000	1,399,650	1,504,650	.8264	1,243,443
3	105,000	1,399,650	1,504,650	.7513	1,130,444
4	280,800	1,399,650	1,680,450	.6830	1,147,747
5	105,000	1,399,650	1,504,650	.6209	869,043
6	105,000	1,399,650	1,504,650	.5645	849,375
					10,816,848 shs
					or
					\$1,514,960

* Assumes no salvage value for equipment, all insecticide used, and includes the purchase for beginning of 4th year of one new 5-ton truck and four new 4-wheel drive vehicles.