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UNITED STATES INTERNATIONAL DEVELOPMENT COOPERATION AGENCY
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D. C. 20523

BELIZE

PROJECT PAPER

LIVESTOCK DEVELOPMENT

Amendment No 2

AID/LAC/P-434
CR-P157

Project Number: 505-0003
Loan Number: 505-T-003

UNCLASSIFIED

AGENCY FOR INTERNATIONAL DEVELOPMENT PROJECT DATA SHEET	1. TRANSACTION CODE <input type="checkbox"/> A = Add <input type="checkbox"/> C = Change <input type="checkbox"/> D = Delete	Amendment Number _____ 2	DOCUMENT COLE 3
2. COUNTRY/ENTITY Belize	3. PROJECT NUMBER 505-0006		
4. BUREAU/OFFICE Latin America and the Caribbean (LAC)	5. PROJECT TITLE (maximum 40 characters) Livestock Development		
6. PROJECT ASSISTANCE COMPLETION DATE (PACD) MM DD YY 1 2 3 1 9 2	7. ESTIMATED DATE OF OBLIGATION (Under 'B.' below, enter 1, 2, 3, or 4) A. Initial FY 8 3 B. Quarter <input checked="" type="checkbox"/> C. Final FY 9 0		

8. COSTS (\$000 OR EQUIVALENT \$1 =)						
A. FUNDING SOURCE	FIRST FY 83			LIFE OF PROJECT		
	B. FX	C. L/C	D. Total	E. FX	F. L/C	G. Total
AID Appropriated Total						
(Grant)	(300)	()	(300)	(4,084)	(366)	(4,450)
(Loan)	(1,000)	()	(1,000)	(1,900)	()	(1,900)
Other						
U.S.						
Host Country		330	330		120	2,120
Other Donor(s) Private Sector		20	20		130	130
TOTALS	1,300	350	1,650	5,984	2,606	8,600

9. SCHEDULE OF AID FUNDING (\$000)									
A. APPRO-PRJATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECIL CODE		D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
(1) ARDN	110	078	078	1,450	1,900	3,000	-0-	4,450	1,900
(2)									
(3)									
(4)									
TOTALS									

10. SECONDARY TECHNICAL CODES (maximum 6 codes of 3 positions each) 012 052 334 963	11. SECONDARY PURPOSE CODE
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12. SPECIAL CONCERNS CODES (maximum 7 codes of 4 positions each) A. Code BP TNG XII B. Amount	
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13. PROJECT PURPOSE (maximum 480 characters)

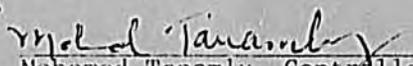
To improve livestock production efficiency, expand market outlets and increase the volume of livestock products that are price and quality competitive with imported livestock goods.

14. SCHEDULED EVALUATIONS Interim MM YY MM YY Final MM YY 0 1 2 0 1 0 9 2	15. SOURCE/ORIGIN OF GOODS AND SERVICES <input checked="" type="checkbox"/> 000 <input type="checkbox"/> 941 <input type="checkbox"/> Local <input type="checkbox"/> Other (Specify)
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16. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a _____ page PP Amendment.)

This amendment will increase A.I.D. Grant funding for the Project in the amount of Three Million U.S. Dollars (\$3,000,000).

The Controller hereby certifies that he reviewed the methods of finance and implementation and hereby approves pertinent sections.


 Mohamed Tanamly, Controller

17. APPROVED BY	Signature Mosina H. Jordan	18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION MM DD YY 1 2 1 1
	Title A.I.D. Representative	Date Signed MM DD YY 0 6 2 9 8 8

PROJECT AUTHORIZATION
AMENDMENT NUMBER THREE

Name of Country: Belize
Name of Project: Livestock Development II
Number of Project: 505-0006

I. Pursuant to section 103 of the Foreign Assistance Act of 1961, as amended, the Livestock Development Project for Belize was authorized on August 22, 1983 (the Authorization). The Authorization was amended on April 2, 1984 and September 23, 1987 and is hereby amended as follows:

A. Delete Paragraph 1 in its entirety and substitute in lieu thereof the following:

"1. Pursuant to Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Amendment to the Livestock Development Project (the "Project") involving planned obligations not to exceed One Million Nine Hundred United States Dollars (\$1,900,000) in loan funds ("Loan") and Four Million Four Hundred and Fifty Thousand United States Dollars (US\$4,450,000) in Grant funds ("Grant") over a nine year and five month period from date of authorization, subject to the availability of funds in accordance with the A.I.D. OYB/Allotment process, to assist in financing foreign exchange and local currency costs for the Project. The planned life of the Project is one hundred and thirteen (113) months from the date of initial obligation."

B. In Paragraph 3.(d) "Conditions Precedent to Disbursement" the following is inserted:

(vii) Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement to finance the Foreign Exchange cost of the Screwworm Eradication Program, the GOB shall, except as A.I.D. may otherwise agree in writing, furnish to A.I.D., in form and substance satisfactory to A.I.D., evidence that the Eradication Program is included in the GOB Fiscal Budget and that the GOB has provided adequate funds for their contribution to the Program.

2

C. In Paragraph 3.(e), Covenant, the following is included:

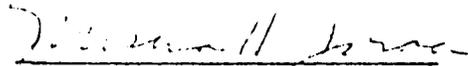
The GOB shall covenant that the Belize Livestock Producers Association (BLPA) will be incorporated into the Phase II Project activities and that such participation in Project activities will be agreed in a Memorandum of Understanding (MOU) between the Cooperating Country and BLPA and concurred to by A.I.D.

The GOB shall covenant that a survey shall be conducted at the beginning and the conclusion of the eradication phase of the screwworm program describing use of pesticides for screwworm treatment(s) both before and at the conclusion of the initial eradication program, including a description of the methods of treatment used.

The GOB shall covenant that the only pesticide that will be procured or used in the screwworm eradication program is coumaphos which will be used according to the EPA approved label instructions.

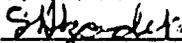
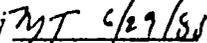
The GOB shall covenant that training programs on the safe and proper use of insecticides in the topical treatments of cattle wounds be incorporated in the Screwworm Eradication Program.

III. Except as previously amended or amended herein, the Authorization remains in full force and effect.


Mosina Jordan
A.I.D. Representative
USAID/Belize

June 29 1988
Date


Drafted: PDO: PBLapera: 6/29/88: 0143B

Clearance: ADO: Szadek:  6/29/88 CONT: MTanably  6/29/88
GC/LAC: MWilliams: By Phone 6/29/88

v

TABLE OF CONTENTS

	<u>Page</u> <u>Number</u>
I. <u>SUMMARY AND RECOMMENDATIONS</u>	1
A. Recommendations	1
B. Grantee and Implementing Agency	1
C. Summary Amendment Rationale and Strategy	1
D. Summary Amendment Description	2
E. Summary Financial Plan	3
F. Summary Findings	4
II. <u>BACKGROUND</u>	4
A. Agricultural Development in Belize	4
B. USAID Project Development Strategy	5
C. Relationship to Agency and Mission Program	6
D. Relationship to GOB Agricultural Strategy	7
III. <u>PROJECT AMENDMENT DESCRIPTION</u>	7
A. Goals and Purpose	7
B. Project Amendment Activities	8
1. Improved Livestock Management	8
2. Pasture/Feed Management Improvement	15
3. Special Policy and Analytical Studies	17
4. Laboratory Services	20
5. Credit	23
IV. <u>PROJECT ANALYSES</u>	25
A. Economic Analysis	25
B. Institutional/Technical Analysis	27
C. Financial Analysis and Plan	30
D. Social Soundness Consideration	32
E. Environmental Considerations	32

V.	<u>PROJECT IMPLEMENTATION</u>	34
A.	Implementation Plan	34
	1. Implementation Schedule	35
	2. Administrative Arrangements	35
	3. Special Procurement Requirements and Waivers	40
B.	Evaluation Plan	41
	1. Project Manager Assessments	41
	2. In-Depth Evaluations	42
C.	Methods of Financing	42
D.	Condition and Covenants	44
	1. Condition Precedent to Disbursements	44
	2. Covenants	44

ANNEXES

I.	Logical Framework
II.	Project Paper (PP) Amendment Guidance Cable
III.	Mission Directors 611 (e) Certification
IV.	Grantee Request
V.	Statutory Check List
VI.	Illustrative Budget Plan
VII.	Illustrative Scope of Work for Technical Assistance
VIII.	Illustrative Training Plan
IX.	Economic Analysis
X.	Belize Livestock Producers Association (Summary)
XI.	Environmental Treshold Decision - STATE 038808, BELIZE 4524

LIST OF ACRONYMS

BCA	Belize College of Agriculture
BEST	Belize Enterprise for Sustained Technology
BLPA	Belize Livestock Producers Association
CARDI	Caribbean Agricultural Research and Development Institute
CARICOM	Caribbean Community and Common Market
CBI	Caribbean Basin Initiative
CDB	Caribbean Development Bank
CDSS	Country Development Strategy Statement
CIDA	Canadian International Development Agency
DFC	Development Finance Corporation
EEC	European Economic Community
EOPS	End of Project Status
ESF	Economic Stabilization Fund
GOB	Government of Belize
IFAD	International Fund for Agriculture Development
LOP	Life of Project
LT	Long Term
MOA	Ministry of Agriculture
MOU	Memorandum of Understanding
NDFB	National Development Foundation of Belize
NTE	Not to Exceed
PACD	Project Activities Completion Date
PADF	Pan-American Development Foundation
PVO	Private Voluntary Organization
SECID	South Eastern Consortium for International Development
ST	Short Term
USAID	United States Agency for International Development
WB	World Bank

1

I. SUMMARY AND RECOMMENDATIONS

A. Recommendations

That a grant be approved in the amount of US\$3,000,000 to be incrementally obligated as follows: \$500,000 in fiscal year (FY) 1988, \$1,200,000 in FY 1989 and \$1,300,000 in FY 1990.

B. Grantee and Implementing Agency

The Grantee will be the Government of Belize (GOB) represented by the Ministry of Finance. The Ministry of Agriculture (MOA) will be the project's major implementing agency.

C. Summary Amendment Rationale and Strategy

This Amendment (Phase II) is a follow-on to the Belize Livestock Development Project (505-0006) Phase I. Phase I was comprised of a loan of US\$1.9 Million, a Grant of US\$1,450,000, and a Government of Belize contribution of US\$1,180,000 in equivalent currency. Phase II provides US\$3 Million in grant funds and US\$1,000,000 in equivalent currency to further enhance and increase income and productivity of the livestock sector. This amendment expands and strengthens the activities of the original project to the livestock industry of Belize. Phase I of the Livestock Development Project commenced on July 20, 1983 and will terminate December 31, 1988. Phase I was amended to continue pasture activities until the beginning of Phase II. Phase I was composed of 6 components: (1) policy analysis; (2) meat processing; (3) swine improvement; (4) pasture improvement; (5) milk market demand study; and (6) training. Studies on meat slaughtering and the processing enterprises called attention to the import substitution potential for meat products, stimulated an expansion of the industry, and enhanced the variety and quality of local products. To a lesser degree, the Macal Dairy Cooperative triggered consumer and producer interest in fresh processed milk products and is regarded as a cornerstone in the expansion of a vital industry, one which conserves foreign exchange by reducing the importation of processed milk products.

Noteworthy also were the contributions of the agricultural policy component. A Ministry of Agriculture (MOA) Policy Analysis Unit was established with the assistance of an expatriate policy advisor funded under Phase I of the Project. A constructive work program is underway, and an inter-ministerial Agriculture Policy Advisory Committee has been established and is in operation.

The swine component stimulated producer interest in establishing swine enterprises and has achieved impressive momentum, even though the current number of cooperators is limited and below original target levels. The potential for expansion is very promising.

Accomplishments under the Phase I pasture improvement program were expectedly modest. Problems centered around delays in introducing technical assistance. The objectives of the pasture component were modified during the first project evaluation to redirect the emphasis to the distribution of information to farmers. The current emphasis is on-farm field demonstrations for improved pastures using proven grass and legume species and is setting the stage for an expanded program by farmers. Improved pastures are a primary concern of the amended project phase II activities. The project was amended to allow for the continuation of the pasture activities through the development of Phase II.

The Livestock Development Project was the first project implemented by the GOB and the A.I.D. Mission in Belize. Previously, A.I.D. funded projects were managed out of A.I.D.'s Regional Development Office/Caribbean in Barbados and through established regional institutions. This new, direct relationship with USAID/Belize brought about new requirements for project implementation, many of which involved responding to the conditions precedent for disbursement and for assuming the significant local costs incurred in accommodating technical advisors, support services and other incidentals related to commodities, training, and facilities. The pre-implementation activities took longer than anticipated in arranging the administrative structure to meet these requirements. After five years of implementation, an effective administrative structure is in place. Despite the significant gains made during Phase I, problems of the livestock industry still continue to center around inefficient production systems and the resultant high costs of production. Also, there is still a lack of domestically produced livestock products that can compete qualitatively with imported products.

For the long-term, improvement in the income and productivity of the livestock producers and a reduction in food costs for consumers will depend largely on the livestock producers' ability to increase production efficiency and reduce production costs. Food processors will have to produce fresh and processed animal products that are price and quality competitive with imported products.

Long-term, rational cooperation among GOB ministries is needed to ensure exportation and importation of live animals without undue delays. Cooperation among ministries must be encouraged in order to establish grading standards for feedstuffs, live animals, and carcasses.

Support of the Screwworm Eradication Program is expected to improve livestock production and create a healthier environment for wildlife. Based on the above rationale and the priority assigned by the GOB to the further development of Belize's livestock industry, the Phase II project is designed to address key constraints in production efficiency, expand product markets and enhance the role of the private sector. While the Ministry of Agriculture has made appreciable gains in institutionalizing their livestock regulatory functions and taken significant first steps in putting together a national agricultural plan with clearly enunciated policy objectives, the inputs of private producers are vital to avoid overtaxing a small GOB staff. A constructive partnership between government and the private sector has been established which will improve the livestock industry in Belize.

D. Summary Amendment Description

The project will consist of five major components described in the following summaries and in greater detail in Part III, the Project Description, of this Project Paper Amendment.

1. Improved Livestock Management

This key component will consist of three major undertakings:

- (a) expanding the genetic improvement program to replenish stock through selective stock importation and/or artificial insemination;
- (b) establishing a screwworm control program in cooperation with the Mexico-United States Commission for screwworm eradication; and
- (c) developing central markets to improve the existing marketing/processing systems through the Ministry of Agriculture (MOA) and the Belize Livestock Producers Association (BLPA).

2. Improved Pasture/Feed Management

This component will expand upon programs started in Livestock I

which are designed to strengthen the overall testing, demonstration, and outreach capabilities in pasture and feed development. Special emphasis will be placed on improved feeding systems and rationing programs using locally produced feeds -- particularly for swine production.

3. Special Policy/Analysis Studies

This component will strengthen the data base and analytical framework for planning and policy making in the livestock sector. Financial resources will be available to conduct studies that will impact or influence policy objectives or targets. Analytical teams financed under the project will work under the direct supervision of the MOA Policy Analysis Unit.

4. Laboratory Services

This component will strengthen the MOA laboratory capabilities and facilities to make the quality of diagnostic services to the livestock industry more competent, relevant and timely.

5. Credit

Through technical assistance, this component will establish a local currency line of credit for small and medium livestock producers who have difficulty obtaining credit through commercial banks.

E. Summary Financial Plan

SUMMARY FINANCIAL PLAN
(U.S. \$000)

<u>PROJECT INPUTS</u>	<u>A.I.D. GRANT</u>	<u>GOB</u>	<u>PRIVATE SECTOR</u>
Project Administration	\$ 470,715	270,000	
Technical Assistance	689,700		
Training	565,000		
Commodities (excluding Project Admin.)	736,000	150,000	
Support Activities (includes Screworm Eradication Program)	374,000	480,000	100,000
Evaluation/Audit	65,000		
Inflation	50,000		
Contingency	49,585		
	<u>3,000,000</u>	<u>900,000</u>	<u>100,000</u>

F. Summary Findings

The project committee has found the project to be administratively, technically, socially, economically and financially feasible and consistent with the development objectives of the GOB and the objectives contained in the USAID CDSS document and Action Plan.

II. BACKGROUND

A. Agricultural Development in Belize

Agriculture will continue to be the most important sector of the economy of Belize, representing the largest source of employment, a major source of the Gross Domestic Product (GDP), and the primary foreign exchange earner. Farming and related activities provided employment for 30 percent of the national labor force in 1983-1984. In 1985, BZ\$61.1 million (1980 prices) or 19.9 percent of GDP originated in agriculture.

Of Belize's estimated 5.7 million acres of land, approximately 2.2 million acres (40 percent) are suitable for cultivation, yet only about 15 percent of the total arable land is now being farmed. Expansion of cultivated area is not constrained by physical or legal barriers. More than one million acres of agricultural land are owned by the Government of Belize (GOB), much of it with access to the national road network and available for development by Belizean or foreign farmers or businessmen at reasonably low prices. Because modern agriculture is relatively new to Belize, soils have not as yet been seriously degraded, but the potential for erosion and damage to soil structure and fertility does exist. Much of the land suitable for agriculture must be cleared of existing vegetation. This is a costly operation, and regrowth is rapid under tropical conditions.

Five years after achieving national independence (September, 1981), GOB agricultural policy pronouncements were contained in several documents and memoranda. The first comprehensive statement was issued in 1986. This statement represents an effort to apply recent, but limited, data as a basis for proposed policy objectives, measures, and implementation steps. The general policy and development objectives as described in the policy statement are categorized as follows:

- Achievement of a higher degree of national food self-sufficiency;
- Development of the human resources base in agriculture;
- Diversification of agricultural production;

- Increased per capita income as a result of increased agricultural output; and
- Encouragement of domestic food and feed processing for both import substitution and for foreign exchange earnings from selected commodities for export.

The policy objectives are based on the premise that the nation needs full participation of both the public and private sectors.

It is fortunate that Belize is developing a blueprint for long-term agricultural development so soon after gaining national independence. Achieving these objectives will require efficient organization of the available human, physical and institutional resources.

The livestock sector contributes annual sales of approximately \$10 million to the GDP (1984). In addition, an estimated annual expenditure of \$12-14 million of foreign exchange is required to supply domestic requirements. The expansion of the livestock sector is a high national priority and is one of several activities in the GOB designated to accelerate sector development and performance.

To achieve this, GOB policies in the agriculture sector must be designed to give producers confidence to invest for expansion and development, to increase feed production and nutrition, to lower costs of production through improved husbandry practices and to ensure adequate human and animal health standards. This will require short-term increases in budget allocations which will eventually be compensated with long-term budget receipts from taxes and foreign exchange.

B. USAID Project Development Strategy

As noted in the Phase I Project Paper, the Livestock Development Project is an integral component of an agricultural development strategy consisting of increased crop diversification, improved farm to market roads, and increased/improved livestock production. The CDSS describes the Phase I Project as: (1) the development of appropriate cultural practices and indigenous feed rations for swine; (2) the improvement of natural pastures for beef and dairy animals; (3) the development of milk marketing information; (4) the establishment of a (modern) pilot dairy processing facility; (5) the improvement of the meat cutting and processing capability of local butchers; (6) the installation of a meat testing capability responsive to USDA import requirements; and (7) assistance to the Ministry of Natural Resources (now the Ministry of Agriculture) in the development of rational

agricultural plans. Phase II will expand upon these activities along with additional efforts to improve the national beef herd and insure that the dairy industry will produce high quality products.

Additional needs include: (1) a proposed central market; (2) screwworm control activity; (3) an artificial insemination program; (4) improved pasture management; (5) the development of short-term farmer credit; (6) a genetic improvement program; (7) technical assistance and (8) commodity support. All of these activities will benefit from USAID efforts in developing farm-to-market roads and will support structural reform in the agriculture sector as well as promote overall efforts in crop diversification.

C. Relationship to Agency and Mission Program

The overall A.I.D. development strategy with regard to Central America concentrates on four basic elements: economic stabilization, establishment of long-term growth, promotion of equity, and strengthened democratic institutions. This project is discussed in the USAID/Belize Action Plan under Management by Objectives (MBO) Objective 1, Increasing Agricultural Production. The A.I.D. strategy for Belize takes into account:

- a relative abundance of undeveloped land resources;
- viable but predominantly low levels of production technology;
- a rural population considered receptive to economic incentives and innovations that will increase farm productivity and income; and
- a favorable investment climate with strong private sector participation.

Based on such considerations, the Mission's development strategy (FY 1986 CDSS) focuses on reducing constraints to growth with a program concentrated on economic stabilization in the short run (1984-1986) and on agricultural production and diversification, export promotion and human resource development over the longer term (1986-1990). The food and agriculture challenge for Belize is to build upon its human and national resource base to take advantage of emerging opportunities in the domestic and world market place, to provide consumers quality food at reasonable prices, and increase foreign exchange earnings for Belize. The livestock sector is a major component in meeting these agricultural challenges.

D. Relationship to Government of Belize Agricultural Strategy

The current elected Government in Belize (GOB) considers their key priority the reduction of import payments and earning of additional foreign exchange. It is the GOB's premise to devise policies and strategies that minimize restrictions on the free play of market forces. Based on this premise, the GOB believes that in the long run improved efficiency of basic resources will enable Belize to be competitive within the Caribbean region and beyond. Due to the unique features of agricultural supply and demand, government policies and strategies will be shaped to ameliorate unusual sharp fluctuations of market price and its unfavorable impacts on investment.

The proposed project is consistent with the GOB and A.I.D. policy of facilitating private sector contribution to national development. The Government strongly supports the private sector's role in developing the livestock industry and new alternative crops for export or import substitution to achieve increased foreign exchange earnings and/or food reliance.

Apart from markets, the growth and development of Belizean agriculture is also dependent upon its resource base - land, labor and capital. Agricultural policies that will lead to increased efficiency of resource use and the combination of these into a least cost system are critical for long-term success.

III. PROJECT DESCRIPTION

A. Goal and Purpose

The goal of the project is to increase agricultural productivity, income and quality of life among Belizean farmers - particularly those producers and entrepreneurs involved in livestock production. Achievement of this goal will contribute to increasing employment in the livestock production, processing and distribution system, and enhance the balance of trade situation through food import substitution activities.

The purpose of the project is to improve livestock production efficiency, expand market outlets and increase the volume of livestock products that are price and quality competitive with imported livestock goods. The project will have four components financed with project funds and a fifth component (credit) financed under a non-Development Assistance activity, but administered by this project. These activities are

described in the following section and are budgeted as described in Part I Section E. The financial analysis is contained in Part IV Section C. The detailed budget of A.I.D. resources (including technical assistance, training and commodities) to support this project are detailed in Annex VI.

B. Project Activities

1. Improved Livestock Management

The objective of this important and comprehensive component is to improve livestock productivity and enterprise profitability and to lower costs of production. This will be achieved through improved husbandry practices, animal health management, and a more efficient marketing infrastructure.

This component will focus on development activities which strengthen the role of private sector in livestock production. The Belize Livestock Producers Association (BLPA), represents all livestock related producers in Belize and has mandated itself to be more actively involved in the systematic growth of the industry. The Ministry of Agriculture (MOA) fully recognizes the need for BLPA participation, and a set of selected activities will be instituted which will contribute to a more stable and profitable livestock industry. The subsectors components are described below.

a. Genetic Improvement

One of the more serious constraints facing the livestock industry in Belize is a limited genetic base in dairy, beef and swine. The recent importation of swine breeding stock under Phase I will improve the swine sector and further importations of stock (mostly boars) will accelerate the production of meat-type hogs for the domestic market.

Artificial insemination (AI) is a proven technology for introducing new genetic material into the nation's dairy herd. Introduction of dairy type genetics will produce an improved animal which gives more milk and is much easier to handle, while retaining its natural tolerance to local diseases and parasites. At the present time, much of the milk produced by the Macal Dairy Cooperative and other dairy enterprises is produced by beef-type cows. These animals, of mostly Zebu breeding, have limited genetic potential for milk production. Introduction of improved genetic characteristics in the present stock of animals will lead to increased production per cow which will help reduce cost of production (per unit) and

increase total production thereby lowering the processing costs at the plant.

Improvements in the beef cattle herd present an entirely different set of challenges. The nation's beef herd is largely Zebu breed and is dispersed over a wide geographic area. This restricts the use of AI given the intensive management required to maintain a cost effective program.

Importation of improved breeding animals is recommended as a rapid and efficient intervention for national herd improvement. After an acclimation period, a small purebred, breeding herd will be kept at Central Farm. Bulls will be further sold at a fair market price to progressive cooperating farmers under an agreed plan between the MOA and BLPA. The end result is expected to be improved calving rates, more efficient feed conversion and a shorter time to market. Programs will be developed for the introduction of new genetic material into farmers herds.

The Sub-component of Genetic Improvement includes the activities described below.

(i) Dairy Herd Improvement:

An AI service based in Central Farm in the Cayo District and at Yo Creek in the Orange Walk District has attracted the interest of farmers as a method of introducing new genetic material in their herds. The service has had a modest success but has been plagued by deficiencies such as lack of transport, communication and other equipment, shortages of liquid nitrogen, etc.

An AI program, based at Central Farm, in close collaboration with dairy producers will be developed and supported. Special emphasis will be directed to those producers who service the Macal Cooperative membership which is located in the Cayo District. Demonstration equipment, including a liquid nitrogen generator, will be provided to carry out the program with producers by personnel who have been trained to handle AI activities.

Sound dairy husbandry practices, including the use of concentrate feeding with those producers issuing improved stock, will be promoted, thereby improving the volume and quality of milk produced and handled on the farm. Again, special emphasis will be on those producers who supply the Macal Cooperative.

The importation of dual-purpose animals which can make a significant contribution to improve milk production will be explored and implemented if found to be feasible and complimentary to the AI service.

(ii) Swine Herd Improvement:

The importation of additional breeding animals, predominantly boars will be supported. After acclimatization, these animals will be distributed to progressive cooperating farmers at a fair market price based on an approved operational plan. Under the program, small herds of each breed that are pure-bred should be maintained to enhance a three-way-cross program. In-country training for appropriate Ministry and BLPA personnel will be undertaken to maintain and operate this activity.

(iii) Cattle Herd Improvement:

Proposed will be the importation of beef cattle to be used in the MOA multiplication program for distribution to producers based on financial and operational plans agreed upon between MOA and BLPA. Selection of breeds will be based on Belizean climate considerations.

Breeding techniques by systematic testing of bulls used for natural service before breeding periods begin will be introduced. Emphasis of management and selection practices, with the culling of low producers based on calving rate and growth rate of the offspring will be encouraged.

b. Screwworm Eradication Program

The program of the U.S. - Mexico Screwworm Eradication Commission, which has been in operation since 1972, includes the initiation of eradication activities in Belize as the total effort moves south through southern Mexico, Belize, Guatemala and Central America. Currently, the main core of this program is in southern Mexico and is scheduled for Belize over the next four year period. Negotiations have been completed between the Commission and the GOB. The Commission has expressed its readiness to begin implementation of the eradication program. The GOB has identified funding source for it's part of the effort. Based on discussions with key Ministry officials and the private livestock sector, the Phase II Livestock Project will contribute US\$200,000 and the Economic Stabilization L/C Program will provide US\$320,000 to the total estimated cost of \$520,000 for an eradication effort in Belize. Continuous

inspection and monitoring required after initial eradication will necessitate the MOA and the private sector developing an ongoing program.

The screwworm is a serious pest of livestock and wildlife. It has been eradicated from the U.S. and most of Mexico through the release of sterile male flies. The release of sterile male flies results in reduced populations (female screwworm flies mate only once in their lifetime). Eventual eradication can occur if re-introduction from surrounding areas is prevented. Maintenance of a sterile fly barrier is the primary means of preventing this re-introduction.

The screwworm flies lay eggs in open wounds, including the unhealed umbilical cord of new-born mammals. The larvae live and nourish on living flesh, and can remain intact throughout the life of the animal. Currently, topical insecticides are used routinely by livestock producers as wound dressings to help reduce infestations of screwworms. Wildlife is especially vulnerable because no treatment of wounds is possible, thus a fly eradication program should contribute to reducing wildlife mortality.

The long-term economical benefits to Belize of screwworm eradication include:

- Significant reduction of livestock production costs by increasing offtake and reducing labor costs;
- Freedom of movement of live animals from Belize into "fly free" countries and enhancement of the quantity and quality of the livestock product;
- Institutionalization of a host country surveillance capability with proven techniques;
- Increase of mammalian wildlife by reducing mortality. (This has significant implications for Belizean wildlife protection programs); and
- Curtailment of pesticide use, thus reducing expenditures of foreign exchange for imported pesticides, reducing the exposure of livestock and the environment to pesticides.

Under this sub-component, activities will: (a) develop MOA capabilities to carry out the country-wide eradication effort through in-country training programs for operational personnel and; (b) develop functional arrangement complete with

responsibilities and established procedures among MOA and the BLPA membership to assure control and monitoring of the program according to Commission standards.

c. Marketing/Processing

In general, agriculture faces a limited domestic market due to a small population base. In the context of small economy, Belizean agriculture is more open to trade influences than most countries. Consequently, it is often subjected to large commodity price fluctuations and/or limited access that arise from demand or supply changes on world markets. Also, urban consumers have acquired tastes and preferences for imported goods - pork related products being a good example. Imported commodities are often priced lower than domestic goods and are perceived to be of higher quality.

Concurrently, many agricultural exports, such as citrus, bananas, sugar, and beef have depended on protected and concessionary markets. These protected markets include the Caribbean Common Market (CARICOM), U.S. preferential trade agreements, and the Lome II Agreement with the EEC. All these offer preferential access for processed goods as well as limited amounts of fresh and live produce. As a result, few Belizean products are able to compete with those of other exporting countries in unprotected market due to price competitiveness. Livestock products are no exception. The potential for growth and efficiency of a livestock marketing system in a small country such as Belize largely depends on being able to effectively address problems related to low volumes of production. The major constraints particularly endemic to the livestock sector are listed below.

- Many marketing problems in rural areas are related to transportation problems. This situation affects perishable goods the most.
- There are very few agricultural products that can move into the world market without development incentives. Unequal access to markets, and deceptive buying and selling affects most producers in the country's relatively small and fragile economy.
- There is a general lack of relevant market information to monitor markets and to analyze problems, decisions, and policies. This lack of data affects not only public policy makers but also individual producers.

- The level of technical skills needed to solve day-to-day problems of moving, handling, processing, and the merchandising of livestock products is limited. This often results in lower quality products reaching markets at higher prices.
- Food processing capacity, although much improved under Phase I, is still limited and many operations cannot efficiently produce and maintain a high quality product.
- The lack of central markets and assembly points for livestock raises assembly costs, reduces the bargaining position of sellers, makes monitoring of the marketing process difficult, and reduces the level of market information available to producers.

The marketing/processing sub-component will address several of these key constraints. The private sector and the various government agencies will work together to improve the quality of livestock products through the marketing chain.

Implementation of the marketing and processing activities will consist of:

(1) Central Market

A pilot project under the management of the BLPA and in cooperation with the MOA will be initiated in the Belmopan area which will provide producers with a central location to sell animals. A possible site is the MOA's fairgrounds which has existing facilities to handle livestock. The development of this central market activity under the project is organized into three distinct implementation stages:

Planning and Design:

The initial planning and design stage will begin during the first four month period after the arrival in Belize of the livestock development specialist. The short-term marketing consultant, designated BLPA representatives and MOA officials will be involved in this planning and design stage which is estimated to be completed within a 6-8 week period. Among the issues to be resolved are:

- Preparing the technical feasibility and a cost benefit analysis;
- Defining BLPA management requirements and responsibilities;

- Identifying site(s) for the facility and the MOA/BLPA relationships and responsibilities;
- Defining resources including commodities, staffing, training, in-kind contributions and procurement schedules;
- Developing an operational plan and a construction/rehabilitation plan of new or existing facilities; and
- Preparing a Memorandum of Understanding (MOU) with GOB/USAID/BLPA.
- Pasture Program involvement - extension involvement.

Construction and Operations:

Based on stage one findings, the operational unit, headed by BLPA with appropriate MOA and project contract staff, will develop the facility and commence operations. This will begin approximately one to three months after the signing of the MOU. Operations of the facility will begin after completion of facilities and hiring of management and support personnel.

Expansion:

Based on experiences of the stage two operations, reviews by BLPA in cooperation with MOA and USAID/contract personnel will assess prospects of expanding the program - whether at the existing site, or at additional sites, possibly in Orange Walk and Toledo districts. This phase of the plan is estimated to take place 10 to 12 months after the operations of stage two have begun.

(ii) Meat Processing

The meat processing activity in Livestock I met with considerable success. Interest in more information remains high as there are strong indications that a broader range of products could be added to meet domestic consumption demands.

Additional short courses and/or seminars are proposed for meat processors and butchers to demonstrate new products as well improved processing procedures and techniques for packaging, labeling, distribution and storing of processed products. Encouragement will be given to include butchers and processors from all districts in these training activities. Internship programs will be arranged under the project which allow for meat inspectors, butchers and processors to visit technologically appropriate meat plants in the U.S. for 4-8 weeks each. Economical methods of carcass cutting and use of the total carcass will be demonstrated, as well as evaluating

procedures for the better utilization of waste products to reduce the cost of prime cuts. Market testing and consumer product evaluation will be used for feedback to local meat processors and stimulate consumer acceptance of newly developed products. An expanded domestic market is possible if Belize can manufacture an acceptable corned beef product. Use of waste products should be explored. For example, pet food is a large import item and meat processing waste products, if properly formulated and canned, will be able to compete with imports.

An expanded effort to market within CARICOM will increase the export of meat products. Economical canning using retort packaging and/or plastic and metal cans will be investigated. Marketing specialists will establish what conditions must be met to be competitive. Improved local laboratory capabilities will assure that quality standards are met.

2. Pasture/Feed Management Improvement

There are two major objectives of this component. The first is to strengthen the MOA capability to promote pasture and feed programs. This would concurrently stimulate greater participation by the BLPA to adopt and utilize more on-farm cost efficient technologies in these critical production areas. The second is to further the work done in Livestock I, particularly in swine, to foster better ways to improve feeding systems and rationing programs by implementing programs from work already done and by identifying alternates to imported concentrates placing greater emphasis on incorporating locally produced products into locally produced feeds. Analyses show that the total digestible nutrients produced by green grass and legumes costs about one-fifth as much as those produced by general grain crops. It has also been shown that, with the exception of phosphorus, all the nutritional requirements of cattle can be acquired in adequate amounts from palatable nutritious forages. Pasture, therefore, will continue to play a very important role in cattle production, especially since it is the least expensive source of nutrition and considerable arable land is available.

Yet, the development of both the cattle and swine industries has been hampered by insufficient improved pasture resources and poor pasture management practices. Although a number of grass and legume species are available in Belize, well planned pasture improvement activities have been implemented by only a few producers. There is a need to develop and promote pasture management systems that will provide adequate energy and protein to maintain satisfactory productive levels of cattle

during the dry season. However, farmers still are generally reluctant to invest in pasture or even livestock improvement, particularly if pasture improvement has not proven to be a profitable investment for the short-term. The present data verifies serious inefficiencies in the current pasture/forage management practices by producers, which contributes to concerns expressed about the high cost of production.

During Livestock I, considerable emphasis was placed on pasture/forage improvement to promote and establish on-farm demonstrations and nurseries of improved pastures, to train extension staff, and to produce appropriate publications in advancing pasture grass and legumes. However, this effort met with only limited success even though the technical capability within the MOA improved. An additional result of Livestock I activities was the increase in farmer awareness that good feed preparation and nutrition are fundamental to improved livestock production. Concerted efforts will be directed to lowering production costs while still increasing production efficiency.

Based on experience to date and given the current state and viability of the local institutions, Livestock II activities related to pasture/feed management are described below.

a. Cost/Benefit Demonstration

Cost benefits of forage improvement at Central Farm and the other stations as well as on-farm sites will be demonstrated. There is a critical need to assess costs and returns and determine the efficiencies of various pastures and/or forage crops as feed for livestock. A regularized program of data collection complete with records of operations is needed. Close linkage to the Ministry of Agriculture Policy Analysis Unit is particularly important.

b. Establishment of Nurseries

Higher quality vegetative and seed production nurseries of pasture/feed species will be established as a basis for widespread adoption of forage improvement on farms. The establishment of a functional seed multiplication unit and appropriate field equipment at Central Farm is fundamental to this effort.

c. Evaluation

Better qualitative evaluations for recommended pasture/forage/feedgrains will be developed. Improved coordination with the Caribbean Agricultural Research and

Development Institute (CARDI) in respect to feed grain production and storage will be important to this process.

d. Building on MOA Work

The excellent work of the MOA which focuses on systematic swine feeding and production systems for limited resource farms, and the development of rations that maximize the utilization of locally produced feedstuffs will be expanded. This activity by necessity requires close integration with the MOA overall swine effort which includes production of feeder pigs, production of breeding animals at MOA stations, and the economic analysis work related to cost/price differentials in the production and marketing of swine.

e. Testing On-Farm Grain Storage

Better methods of on-farm grain storage to reduce post-harvest losses in forage and feed grain crops will be explored and tested. On-farm demonstrations of new methods, techniques and cost-effective structures will be emphasized. Additional methods will be explored in preserving and storing palatable forages during the dry season. Demonstration equipment will be made available on selected producer sites and at Central Farm and appropriate Ministry farms at the district level.

f. In-Country Training Program

In-country training programs for producers in pasture/feed management will be expanded through periodic seminars, workshops and field days. Also, training opportunities for technical specialists and extension workers in promoting the improved packages of technologies will be expanded.

g. Preparation and Distribution of Publications

MOA capacity to prepare and distribute publications and other printed information will be increased. Audio-visual presentations for on-farm seminars or demonstrations will be part of the concerted effort to improve communications and advance new production packages with farmers.

3. Special Policy and Analytical Studies and Trade

The objectives of this component are to strengthen the data base and framework of analysis for planning and policy making, primarily in the livestock sector, and to provide financial

resources to conduct studies that will impact or influence overall agriculture policy objectives and production targets. Policies that will contribute to the further profitable expansion of the livestock sector are a high national priority. Under Livestock I, the basic framework for an effective policy planning unit was put into place with a useful work program to promote sound policy dialogue and implementation. This included appointing a Policy Advisory Committee, establishing effective working relationship with Ministry officials, and training a cadre of several Belizeans to implement the program. Effective policy analysis work will depend heavily on the available human resources and technical capabilities of this Policy Analysis Unit, which is located in the Office of the Minister/Permanent Secretary of the Ministry of Agriculture.

Livestock II now will direct more attention to addressing those key policy related issues that affect the overall livestock industry in Belize. Special emphasis is to be directed at those policies that will:

- Increase the efficiency of local production and lower costs through better husbandry management, improve feed production and nutrition, and institute processes that insure adequate human and animal health standards;
- Improve opportunities to expand and further develop the exportation of livestock products to help reduce imports and increase scarce foreign exchange earnings; and
- Enhance the role of the private sector in the livestock industry by improved marketing and distribution efficiencies in increased volume and reduced per unit cost.

Approximately \$200,000 will be made available to conduct special studies that will address key policy related issues that are intended to improve the trade performance of the livestock industry, stimulate better and more efficient uses of domestic resources, and promote a greater liberalization of those policies and procedures which will facilitate private investment.

Studies which may include the field application of existing knowledge could include any or all of those described below.

(a) Reduce Production Costs and Improve Quality

Cost of production information is needed for dairy, beef and swine related to alternate scales of operation,

application of technology, and improved husbandry practices. A range of institutional, planning, and operational issues need to be explored: quantity and quality of pasture, genetic improvement, disease prevention, product processing, feed implementation, input delivery systems (fertilizer, seed, pesticides, credit) and appropriate levels of technical support. Policy issues related to infrastructure requirements need to be examined.

(b) Comparative Advantages in Export Market

Comparative cost framework would be assessed in order to determine Belize's comparative advantage within CARICOM. Technical and/or policy changes for developing viable negotiating positions with CARICOM partners need to be determined. This is particularly necessary for beef (various forms and cuts), canned meats, and other livestock products with an export potential.

(c) Forage Feeding

Considerable research information is needed to answer the question of how supplemental forage feeding can lower costs of producing beef and milk. A number of policy related issues need to be reviewed such as credit requirements, tax and tariff reforms, analysis of delivery prices and the economic incentives needed for growers.

(d) Analyses of the Swine Industry

Needs of a comprehensive and integrated feeding and production system for swine would be assessed, with emphasis on:

- importation issues related to imports of high protein concentrates versus relative needs of local products;
- cost/price differentials in production and marketing;
- production of feeder pigs in the private sector; and
- implementation of rations that maximizes the utilization of locally produced feedstuffs.

(e) Local Food Processing for Feed

This investigation would determine the relative merits of processing local food by-products such as citrus pulp, cane, cocoa pods and others for feed lots or supplemental

feeding programs. Activities would assess energy costs and transport costs in sending the by-products to appropriate locations in-country. How the alternate prices for imported corn would affect the competitiveness in these rations is a key policy concern that would be addressed.

(f) Livestock Banking Program

The possibility of establishing a livestock development fund facility and accompanying banking structure to serve Belizean livestock sector would be examined. This feasibility study should be done in the context of Belizean economy of scale, and long-term institutional viability.

4. Laboratory Services

The objective of this component is to strengthen laboratory capabilities and related facilities within the MOA that have the responsibility of assuring that quality services to the livestock sector are maintained and supported. In the process of testing, adaptation, and adoption, a number of qualitative elements that can only take place under controlled laboratory conditions need to be placed into the system.

Many of the technologies being promoted lack good benchmark criteria for evaluation purposes. This and rudimentary testing capacities and facilities add to the unreliability of the results. Since many of the production problems in the livestock industry center on inefficient practices and the unpredictable quality of inputs, it is critical to improve the competency and relevance of the testing base. Analytical procedures based on reliable instruments and trained personnel are required for timely and correct recommendations.

a. Meat Residue Analysis Laboratory

The MOA expects to operate shortly a Meat Residue Analysis laboratory in Belize City which has much of the latest state-of-the-art analytical equipment. Equipment is necessary to do in-country residue analysis so that the abattoir can operate at USDA and EEC standards. Presently all meat residue testing is processed out of country. This is a critical function in the export marketing of beef to the U.S. or CARICOM markets. While some progress was made in improving capacities of this unit in Livestock I, further refinement is required. These are described below.

- Much of the equipment is non-operational due to the lack of an uninterruptable power supply (UPS) unit. Surges and

brown-outs make analyses impossible, inaccurate, or at best unpredictable. Severe damage to sensitive equipment is a major concern.

- Some of the equipment has been inoperative for as long as two years because there are no satisfactory in-country repair services. Spare parts often are not available and no provision has been made for routine maintenance in the MOA operational budget.
- Equipment and testing materials are needed for aflatoxin testing and analytical capacity.
- There is inadequate space in the present building and expansion possibilities as the present location are limited.
- The laboratory analytical chemist position is being established as a permanent position within the MOA. An in-country training program will be established under Phase II.

This project component will review additional equipment needs and recommend appropriate training for technicians to diagnose problems, effect repairs, and assist in new equipment procurement. An effort will be made to assess, recommend, and procure needed equipment to provide uninterruptable power supply for the facility.

b. Central Farm Laboratories

The Central Farm laboratories can be characterized as a grouping of small overcrowded facilities short on reliable, operational equipment, adequate storage capacity, and sufficiently trained staff. In support of the MOA desire to improve the overall direction and management of the Central Farm complex, resources will be provided for upgrading support services and analytical capacities. Due to the proximity of the Belize College of Agriculture, upgraded laboratory facilities at the Central Farm will provide much needed supplemental instructional and training opportunities for students in laboratory procedures and techniques.

The veterinary clinic at the Central Farm needs to increase its capabilities and scope of operation for disease diagnosis for livestock, and offer reliable assistance in health care and preventive medicine. As the livestock industry grows and more emphasis is placed on better and less costly husbandry practices, animal health becomes an important issue for producers. Additional basic laboratory equipment and a better

management system of clinical procedures and maintenance is requisite to the operations of this clinic.

Special emphasis is to be given to equipping a seed testing certification and multiplication unit. Equipment such as scales, cleaners, germinators, seed pans, and dryers in a climate control environment is needed to facilitate project efforts in improved livestock pastures and feed. The unit must have the capacity to establish, develop, adopt and perform the standard procedures of sampling and testing seed, and to insure a process of uniform evaluation of seeds which are used at government stations and private farms. To assure clients that they are receiving accurate information, these facilities need to have trained personnel capable of performing steps related to testing, certifying and distributing quality seed.

Mobile testing equipment is needed to assist the dairy producers in improving the quality of their milk at the farm site. Also, the laboratory located at the Central Farm should have a qualitative capacity of conducting tests for butterfat content, antibiotics, antibiotic sensitivity testing to assist in mastitis control and bacteria counts to assist quality control and improvement. Establishing quality control standards for the industry so that milk products can enter dairy processing facilities is critical for promoting a reliable, high standard product for the consuming public.

The Central Farm unit specializing in soils analysis and testing requires considerable physical rehabilitation as well as equipment replacement. Much of the primary equipment is antiquated and unreliable. The facility is not properly climate controlled, humidity can cause errors in test results and can also damage the equipment.

While the technicians have demonstrated reasonable technical skills in operating the soil and feedstuffs analyses, the working environment is very difficult. Obtaining analytical results is a slow process, due principally to the state of disrepair of the equipment, and the limited number of personnel trained to run such studies or analyses.

The forage analysis equipment should be able to test for moisture content, protein, nitrogen free extract (NFE) and fiber for commercial feeds to ensure that regulations and standards are met. Chemical analysis for the major and minor elements should be available for forage materials, and an oven for drying samples is vital for forage testing. This laboratory needs to expand its analytical and informational base in order to adequately support a national forage/feed

production effort. Yet, the facility is not adequate in size or condition to house basic forage and soils laboratory equipment. A modernized facility at the Central Farm remains a priority concern.

The equipment and training needs of the laboratories will be evaluated by the project team. The MOA will make a determination of priority of each laboratory with the assistance of project personnel. The illustrative budget provides the estimated expenditure expected for laboratory equipment and training.

5. Credit

Under this component, US\$300,000 of short term credit may be provided through a non Development Assistance source of funding, such as ESF and/or the 416 Sugar Quota Offset program local currencies, or other such sources, to help small and medium livestock producers. Related technical assistance in the expansion of livestock enterprises will also be provided. This will be directed to those limited resource producers who have difficulty in obtaining production credit on a timely basis, due primarily to the rigid collateral requirements of commercial banks.

While agricultural development is heavily dependent upon the availability and use of credit, the performance to date has been mixed - at least in the livestock sector. The formal lenders emphasize that approved credit includes having secure and tangible loan collateral. Livestock producers desire more flexibility and would like collateral to be deployed more from statutory property goods or lands to such items as the animals themselves. Bankers argue that the livestock industry, particularly the bigger producers, have not been the better credit risks and have on a number of occasions caused the banks to absorb huge losses due to repayment difficulties. The banks cite cases where even the sale of land did not satisfy the debt. While the discussions go on, all sides do agree that if yield increasing technologies are needed to meet new and expanded production goals, then additional capital will be required.

It is acknowledged that loan recovery problems have been serious and that lenders have resisted lending to many farmers because agricultural prices, incomes and repayment capacities generally are not secure. Yet, several groups in Belize have been experimenting with some modified traditional approaches to resolve the problem with promising results. Based on experience to date, it is evident that when proper mixes of

credit are introduced, together with good management, planning and supervision, performance has significantly improved. Thus, in terms of loan repayment to the lending institution and to the recipient involved in a production function, both have benefited.

This project component, subject to the availability of funds provided for under a separate resource, will facilitate the establishment and utilization of U.S. \$300,000 equivalent Belizean dollars line of production and marketing credit for livestock growers with the National Development Foundation of Belize (NDFB) and/or Development Finance Corporation (DFC). The features of the program will:

- Provide livestock growers with reasonable loan rates and accompanying fees and a wider-ranged or liberal collateral arrangement under a supervised credit program as agreed upon by USAID;
- Give preference to those smaller producers and families, without political or social bias, who depend almost totally on livestock related enterprises (swine, dairy, beef);
- Establish an agreed upon loan review committee which, throughout the life of the project, includes a facilitator and/or representative of BLPA. Participation of the BLPA representative must be continuous throughout the project LOP; and
- Commit BLPA and its membership to support the loan repayment process which is highly important to a successful credit program.

The National Development Foundation of Belize (NDFB) and/or Development Finance Corporation (DFC) will serve as the operational entity of this three year program. An overall agreement will be signed by the GOB Ministry of Agriculture and USAID to establish NDFB and/or DFC as the implementing entity. The Memorandum of Understanding for actual release of funds will be between the MOA, NDFB and/or DFC and USAID.

IV. PROJECT ANALYSES

A. Economic Analysis:

The economic feasibility analysis for this Project Amendment focuses on determining the economic internal rate of return (EIRR) of major project sub-activities and the economic benefit/cost ratio for the entire Phase II Project. The

economic ratios are calculated based on quantifiable benefits and costs stream which accrue from various project activities, as discussed below. Sensitivity analyses are performed to determine how adverse movements in prices and costs will affect the economic soundness of the sub-activities.

1. Economic Viability of Major Project Activities

The economic internal rates of return have been calculated for five major Phase II sub-activities, namely, genetic improvement for cattle; improved pasture/forage feeds; dairy herd improvement; swine improvement; and screwworm eradication. The economic benefits of improved cattle, pasture/feeds, and swine management are based on expected productivity gains resulting from the Project, i.e., higher average weight per animal and increased herd size. Economic benefits of the dairy herd improvement are derived from increased milk production estimated at 12 percent beginning in Year 4, while benefits of screwworm eradication are based on the assumption that this program will reduce calf mortality rate by 20 percent, resulting in livestock production increases of 5 percent in Years 3-4 and 15 percent in the succeeding years.

Economic prices for livestock and dairy products are based on current world market prices, (i.e., \$0.40/lb. for beef, \$0.65/lb. for pork and \$0.17/lb. for dairy). The economic costs in each activity are based on all technical inputs and commodities used in the Project as well as inputs used by farmer adapters. For the screwworm component, a proportionate share (one-third) of the costs borne by the Mexican-U.S. Commission for the same Program is included but only the benefits accruing to Belize are taken into account. The EIRR calculations for each activity, including the various assumptions used in the analysis, are discussed more fully in Annex IX.

The EIRR calculations show the following results:

	<u>Base Case</u>	<u>15% Cost Increase</u>	<u>15% Benefit Decrease</u>
a. Genetic Improvement - Beef	32.4	27.2	30.5
b. Improved Pasture/Forage Feds	32.4	27.2	30.5
c. Dairy Herd Improvement	25.0	20.2	23.4
d. Swine Improvement	38.0	12.4	18.0
e. Screwworm Eradication	16.6	14.3	14.5

The results show that the EIRRs are well above the 10 percent rate, the threshold level considered to represent the social

cost of capital in Belize. Even a sensitivity analysis using two cases, i.e., assuming a 15 percent increase in costs, and a 15 percent decrease in expected benefits, resulted in EIRRs of greater than 10 percent for all the activities. The results show that the project activities tend to be more sensitive to reduced economic benefits (e.g., due to lower livestock prices or smaller herd size affected) than to changes in costs (e.g., due to cost over-runs or higher input prices).

2. Economic Benefit-Cost Ratio of the Project's Phase II.

The economic benefit-cost analysis is important to determine whether society benefits from the Project given the level of resources involved. The measurable economic benefits are attributed to increases in livestock production arising from Project activities. Such production increases lead to foreign exchange earnings or savings for the country to the extent that these products are either sold abroad or substitute for imports in the domestic market. Belize imports over \$2.0 million of meat products annually in spite of recent improvements in the livestock industry. Meanwhile, there has been a significant increase in meat exports, mainly to the U.S. and CARICOM countries. Belize beef exports in 1987 amounted to \$777 thousand compared to \$215 thousand in 1986.

Economic costs include all inputs used by the Project and the farmer-adapters to obtain the level of economic benefits projected above. Project inputs include technical assistance, market construction, screwworm eradication, laboratory improvement support and training. Shadow pricing for labor and foreign exchange are not considered necessary because market values in Belize appear to approximate the opportunity cost of labor and the rate of exchange seems realistic and needs no adjustment.

As shown in Table 1 Annex XI., the Project has an economic benefit-cost ratio of 1.1 based on a social discount rate of 10 percent and a 25-year stream of benefits and costs, indicating that its economic impact is greater than investment. Other economic and social impacts of the project, such as increased income and labor demand arising from ancillary industries linked to livestock production and meat processing, are not included in the analysis due to the unreliable data at this time. The social benefits should be substantial since local meat processing firms are going to expand their operations to take advantage of market opportunities, particularly from abroad. The inclusion of such benefits should result in higher economic returns.

The complete description of the Economic Analysis can be found in Annex XI.

B. Institutional/Technical Analysis

Commercial agriculture is a recent development in Belize. Prior to the 1950s, the major activity was forest products for export. During much of the colonial period the export of tropical hardwoods, especially mahogany, dominated and required a large labor force in a low population setting. The beginnings of commercial agriculture were stimulated principally by investments in banana estates, and by the 1950s, sugar plantations. Both were oriented to export markets and employed local wage laborers. Thus, Belize has had less than four decades of experience in shifting from subsistence to commercial agriculture. Externally introduced plantation agriculture brought with it a supportive infrastructure including roads, warehouses, and equipment as well as the required technology for production and marketing.

Liberal Government policies encouraged small-holder participation in agricultural production. It was instrumental in the development of many agricultural enterprises in Belize such as sugar, banana, cocoa, citrus, cattle, swine, poultry, and more recently, the dairy industry. Because of its geographic proximity, and cultural and political ties to the U.S. and the English speaking Caribbean, Belize has access to potentially useful agricultural technologies.

In order to carry out the difficult task of agricultural development in a post colonial era, Belize has to lean heavily on its Ministry of Agriculture (MOA). Yet, the MOA is understaffed, undertrained and underfinanced. A major constraint has been the relatively low level of financing of the MOA budget, not only for education and training to strengthen the talent pool, but also to support collection of data to build the national agricultural data base. This situation appears to be compounded by a heavily burdened national treasury and an ensuing dilemma of allocating scarce resources.

A serious effort is now underway within the Ministry to reduce the impact of this problem. Through the USAID-financed Commercialization of Alternative Crops Project, the MOA is receiving technical assistance for developing a long-range management plan. This includes specifications for improving accounting and financial management, human resource development and personnel management, streamlining of reporting requirements, and the reorganization of activities to increase

interaction with the overall agricultural community. The deficiency of trained personnel must be overcome as soon as possible. Policy makers at all levels are being challenged by the overwhelming need for appropriate training within the framework of limited resources. The question of how many in each of the many disciplines are required, and can be supported, is fundamental.

The private sector, in its development of commercial agriculture, brings along with it technologies drawn from many external sources. Usually private sector efforts in project development require the use of local talent, thus diverting personnel from public research and extension activities. A number of agriculture organizations, producers' associations, and cooperatives have been established in recent years in Belize. Most are usually organized by commodity and are established by specific ordinance from the GOB.

The GOB recognizes the crucial role which the livestock sector plays in the national economy, both in terms of percentage of GNP and of animal product imports which could be replaced by local production. The recently published Food and Agricultural Policy Statement assigned the expansion of the livestock sector as one of the highest priorities. This project is in keeping with this priority ranking.

By Government statute, all livestock producers who sell animals are automatically members of the BLPA. The present number of members and therefore the potential number of beneficiaries from a project of this type, stands at approximately 5,000. Nevertheless, it is envisioned that a far larger number of people associated with the livestock industry would also benefit from a more rational livestock marketing and credit system. Examples of this expanded group would include workers on the farms of BLPA members, livestock processors, packers and exporters, and the consumers of livestock products who would benefit from lower costs and higher quality products.

The feed mixing/distribution network is primarily in the hands of only a few commercial entities. Consequently, there is little competition within this network. Outside of the Mennonite feed supply system, there are no feed milling or mixing facilities available to farmers, although individuals can directly import their own feed supplies. Even in the case of the Mennonite facilities, the mills are often located at considerable distances from the farms. This does not foster the use of farm grown feeds since it is costly to transport these ingredients from farms to the existing feed milling or mixing facilities. The distribution of the Mennonite feed

mills does not promote the use of alternative or unusual feedstuffs, nor does it stimulate the recycling of animal wastes and by-products such as meat meal, fish meal, or poultry offals.

Formal agricultural credit, while thought to be adequate in terms of overall amounts, isn't always available to individual small farmers who lack collateral. Additionally, rural people have very limited access to deposit services. The DFC, with branch offices in each district, maintains credit services to farmers. Several commercial banks also provide rural credit, although they usually require more collateral than the DFC. Local credit unions operate in most rural areas and can make small loans to farmers. Credit is available to farmers from several cooperatives, which in some cases also serve as collection agencies at the time of delivery of specific commodities. Credit is also available to small and medium-scale farmers to acquire inputs for adapted agricultural technologies.

The commercial banks and the DFC are sufficient to meet the agricultural credit needs of farmers. Nevertheless, this credit often does not reach those who need it due to a combination of interest rates and other "transaction costs" which make the growing of many crops using credit uneconomical. At the same time, no attempt is being made to mobilize savings in the rural areas which could, over time, allow for varying degrees of capital self-sufficiency and farmer/financed investment in agriculture.

Under a special USAID grant to the Pan American Development Foundation and Local Currency Grant under an ESF loan to the GOB, a project was put into place in 1983 to establish the NDFB. Presently, NDFB efficiently provides credit and technical assistance to small and micro entrepreneurs with little or no access to commercial credit. A special credit program for swine improvement has been operating for one year within the NDFB with very promising results.

The pivotal point in the implementation of Livestock II will be the ability of the private sector organizations such as the BLPA to assume additional responsibilities and the leadership of the MOA to develop and direct new packages of production technology appropriate to the livestock industry. The various private and public entities which were involved in the design of this project basically agree as to the thrust of the various components. All appreciate the need to strengthen and refine the administrative, financial and management aspects of the project. While fledgling institutions are in place, the larger

and more difficult institution-building task still remains ahead.

C. Financial Analysis and Plan

The total cost of the project will be U.S. \$4.0 million of which A.I.D. will contribute U.S. \$3.0 million. The GOB and private sector will contribute equivalent \$1.0 million. The GOB counterpart contribution represents 25 percent of all local currency expenditure will come from ESF local currencies and GOB in-kind contributions (land, facilities, personnel).

The estimated life of the project (LOP) is three years, from FY 1988 to FY 1990. Tentative schedule for obligation of A.I.D. funding is:

<u>Fiscal Year</u>	<u>Obligation</u>
FY 1988	\$ 500,000
FY 1989	1,200,000
FY 1990	1,300,000

The project financial plan is summarized in the following input table. A summary financial plan by project component is contained in Part I, Section E of this Project Paper Amendment.

Table: 5

Summary Financial Plan
(U.S. \$000)

<u>Project Input</u>	<u>A.I.D.</u> <u>Grant</u>	<u>G.O.B.</u>	<u>Private</u> <u>Sector</u>
<u>Technical Assistance:</u>	\$1,160,415		
Long-Term	(462,860)		
Short-Term	(226,840)		
Administration (In-country Staff & Support) (including four vehicles)	(470,715)		
<u>Training:</u>	565,000		
Long-Term	(176,000)		
Short-Term	(82,000)		
Long-Term			
In-Country Chemist	(180,000)		
In-Country	(127,000)		
<u>Commodities:</u>	736,000		
(including vehicles)			
<u>Support Services:</u>	374,000		
<u>Evaluations/Audits:</u>	65,000		
<u>Credit:</u>		300,000	
<u>Operating Costs and</u> <u> In-kind Contribution:</u>		600,000	100,000
<u>Inflation:</u>	50,000		
<u>Contingency:</u>	49,585		
TOTAL	<u>\$3,000,000</u>	<u>\$900,000</u>	<u>\$200,000</u>

D. Social Soundness Considerations

The comprehensive analysis provided for in the Livestock I Project is still relevant for all components of the Livestock II (amendment).

This project will be much more involved with the private sector and as a result much of the technology and extension inputs will be dependent on the response of livestock growers. If the farm populations were largely illiterate, the communication and acceptance of new technologies would be more complicated. Fortunately, Belize has a literacy of greater than 90%; much higher than most developing countries. Another observation, although difficult to quantify, is that Belizean farmers view agriculture activities as economic opportunities and they are willing to experiment and freely discuss problems.

Belize has not experienced problems associated with highly skewed land ownership as the majority of the land is held in private holdings. Belize has a low population base in the rural areas with a substantial proportion of the land held by the national government. This makes it possible for farmers, meeting certain criteria, to lease land for development, and ultimately obtain title rights.

Much of the technology necessary to increase agricultural productivity, such as buildings, fences, fertilizer and improved pastures, requires inputs that have a useful life of several years. Secure land tenure that permits control and use of land is a fundamental need for moving toward a market oriented agricultural economy. The range of options of technology and agricultural practices available to research and extension workers would be limited if tenure rights could not be obtained for small-holders, emerging as commercial farmers.

The direct beneficiaries of this project will be the producers and processors and their families who are directly involved in livestock enterprises. This represents a client group of over 5,000 families, most of whom are members of the Belize Livestock Producers Association.

E. Environmental Consideration

The comprehensive Environmental Analysis completed under Phase I of the Project is still relevant to Phase II of the Project with the exception of the Screwworm Eradication Program. A separate analysis was performed for the program.

An analysis of the Screwworm, *Cochliomyia hominivorax* (Coquerel), Eradication Program to be carried out by the joint Mexico-United States Screwworm Commission and to be financed in Belize by the Project, was conducted by a scoping team of pesticide experts.

Major recommendations of the team are:

1. The Positive Threshold Decision for the Screwworm Eradication Program in Belize be changed to a Negative Determination. If future events dictate any significant alteration of the pesticide usage scenario described in these findings, the scoping team recommends that an Environmental Assessment be undertaken at that time.
2. Certain efforts be carried out in conjunction with the proposed screwworm eradication effort in Belize. The promotional campaign designed to encourage participation in all aspects of the program should emphasize the safe and efficacious use of topical treatments. Training materials and brochures for this purpose are available (or could be adapted to topical treatments) through the USDA (APHIS) as well as through various international offices.
3. A survey of the use of pesticides for screwworm treatment should be undertaken, both before and at the conclusion of the initial eradication phase of this program. This survey should focus, at a minimum, on factors such as the kind(s) of pesticide products employed and the methods of treatment used. This type of information should aid in the evaluation of the effectiveness of promotional and training activities.
4. An assessment of the effect of the eradication program on the size and health of the cattle herd as well as its effect on the growth of the cattle industry in Belize should be undertaken.

In response to the scoping team's recommendations the following actions will be taken in the implementation of the Project.

1. A specific Condition Precedent (CP) has been included in the Project Authorization to provide for the development of an action plan for the promotional and training activities which will be carried out during the implementation of the Screwworm Eradication Program for the safe and efficacious use of topical treatments.

2. A Covenant is included in the Project Authorization to provide for a survey to be conducted at the beginning and the conclusion of the eradicating phase of the Screwworm Program describing use of pesticides for screwworm treatment(s) both before and at the conclusion of the initial eradication program, including a description of the kind(s) of pesticide products applied and methods of treatment used.

3. The third recommendation proposed by the scoping team which calls for an assessment of the effect of the Screwworm Eradication Program on the size and health of the cattle herd as well as its effect on the growth of the cattle industry in Belize is one of the outputs of project activities and as such would be determined during project implementation, monitoring and evaluation. USAID proposed that the assessment as noted above be incorporated into overall project activities. This was approved in State 038808 and is attached in Annex XI.

V. IMPLEMENTATION

A. Implementation Plan

1. Implementation Schedule

The project is presented for FY 1988 authorization with an initial A.I.D. obligation of a \$500,000 grant. A credit fund in support of this activity will be authorized separately. The schedule of target dates for key project events is shown below.

Key Events

Project Amendment Authorization (USAID/Belize)	July 1988
Project Agreement Amendment signed	July 1988
Technical Assistance Contract signed	July 1988
Contractor team leader selected	August 1988
Screwworm Eradication MCU between USAID and MOA signed	August 1988
Long-term team members arrive	August 1988
Credit fund established with USAID	October 1988
Training plan approved and nominations provided for LT training	October 1988
Central market study completed and MOU with BLPA signed	October 1988
Two long-term participants approved and sent to U.S. University	January 1989
Central market construction completed and operations commence	January 1989

First policy study completed	February 1989
Laboratory construction design and equipment procurement completed	February 1989
Five (5) ST participants have completed programs in U.S. and third country	May 1989
Two additional policy studies completed	June 1989
Construction of new laboratory completed	June 1989
Meat residue and analysis lab completely upgraded	August 1989
Two additional long-term participants approved and sent to U.S. University	September 1989
Mid-term evaluation (in-house)	October 1989
Field operations at Central Farm expanded due to arrival of equipment	October 1989
Fourth policy study completed	September 1989
Fifth policy study completed	January 1991
Final project review (outside team)	April 1991
Project Assistance Completion Date	December 1992

2. Administrative Arrangements

a. Contracting

i. Host Country

Funds will be provided under the Project to finance a Host Country contract for a Project Administrator and staff. The Administrator will be hired by the MOA with specific responsibilities for the implementation of Phase II of the Project. Funds will also be available for the establishment of a Project Office in the Belmopan area. The MOA will provide the location. The Administrator will serve as the chief implementor of the four year Project.

The Project Administrator will report to a MOA/USAID coordinating body. The Administrator will direct all technical assistance assigned to the Project. All technical assistance provided under the institutional contract will be reviewed and initially approved by the Administrator. Final approval will be that of the MOA/USAID coordinating body.

The Administrator will be responsible for the development of specifications for equipment and commodities to be procured by the institutional contractor. U.S. Government regulations will be the basis of any and all procurement.

The Administrator will, in close collaboration with the MOA, BLPA, and USAID, be responsible for the design and implementation of the policy studies and feasibility studies

(credit and central market) proposed. Additionally, the Administrator will be responsible for the coordination of the Screwworm Program activities between the MOA and BLPA.

Constructive relationships among the Administrator, the institutional contractor, MOA, BLPA and USAID are essential to the success of the Project. The Administrator will prepare bi-annual reports as well as quarterly formal review meetings of the Project between the institutional contractors (the specialists in country), MOA officials, BLPA and USAID.

11. Direct A.I.D. Contracts

The selection of a contractor to provide term technical services to the project will be done in accordance with standard A.I.D. procurement regulations and procedures. Request for proposals will be issued by the Regional Contracting Officer. A selection panel consisting of MOA, BPLA, and USAID officials will evaluate and make recommendations on the final selection of a technical assistance contractor.

b. USAID Monitoring

The Project Administrator will be the day to day manager of operations for the implementation of the Project. The USAID Project Officer will coordinate with the Project Administrator on all activities of the Project, particularly in the coordination of the technical assistance to be provided under an A.I.D. direct contract.

The Project Officer will work closely with the Project Administrator and MOA official assigned to the Project to assure that provisions of the Project Agreement, Project Implementation Letters and Memorandum of Understanding are observed. The Project Officer will be responsible for providing the Project Administrator with all necessary A.I.D. documentation for proper project administration and implementation.

The majority of the procurements under the project will be directed by the contractor in collaboration with the USAID Mission and MOA.

A USAID project review committee will (a) periodically review project performance and examine the existing and proposed resource allocations under the project, including the need to make major changes, and (b) review obligation documents, and

clear and/or make recommendations to the A.I.D. Representative according to normal Mission procedures.

- The Agricultural Development Office will have responsibility for overall management of the project for USAID and coordinate directly with the contract team leader.
- The Program and Project Development Office will monitor project implementation to assure that the terms and conditions of the Project Agreements are met and will assist in carrying out reviews and evaluations.
- The Mission Controller, who will review disbursement and reimbursement requests for conformity with A.I.D. regulations, will ensure that adequate financial controls are exercised.

It is expected that given the level of Mission staff, on-board and planned, that there will be no difficulty in carrying out project monitoring responsibilities.

c. Establishment/Operation of Special Funds

Separate funds will be established under this project for the following:

i. Support Fund for Screworm Eradication

A.I.D. will provide US\$200,000 in grant funds for foreign exchange costs and US\$320,000 in equivalent local currencies to implement activities related to the Screworm Eradication Program. This will be in effect after the signing of a Memorandum of Understanding (MOU) between the MOA, USAID and BLPA. A Condition Precedent for the GOB to establish a separate line item in their annual budget as their contribution to the activity will also be required.

At GOB request and upon meeting MOU and related covenant requirements, A.I.D. will advance up to 60 days of projected expenditures for a fund in an agreed upon special account. The GOB counterpart assigned to direct this activity will collaborate with the contract team leader (or designee) and will have authority to draw upon this fund to meet planned operating costs on a timely basis in accordance with GOB financial regulations.

ii. Administrative Support to BLPA

A.I.D. will provide \$18,000 in grant funds to assist the BLPA in their start up operations for the central market activity. These funds will be used to provide administrative assistance and management guidance to help facilitate and strengthen BLPA during the initial period of this project activity and until their staff competency is able to assume all responsibilities. Funds will be made available upon an approved MOU between the MOA and BLPA and concurrence by USAID.

At GOB request and upon meeting MOU and related requirements, A.I.D. will advance up to 60 days of projected expenditures in an agreed upon special account. The BLPA representative directing this fund will have authority to draw upon these funds to meet planned administrative costs on a timely basis.

iii. Renovation/Construction of Laboratory Facilities

A.I.D. will provide up to \$6,000 in grant funds to the MOA for the purpose of physical enlargements and/or construction of laboratory facility at the Meat Residue Analysis Laboratory in Belize City. This will be in effect after the approval of a construction plan(s) between USAID and MOA. Construction contract procedures will be in accordance to USAID regulations.

At GOB request and upon meeting the conditions associated with the construction program, A.I.D. will advance up to 90 days of projected expenditures for a fund in an agreed upon special account. The GOB counterparts assigned to direct this activity will collaborate directly with the contract team leader and his/her designates during the entire process of planning and implementing the construction.

iv. Credit

A special production credit program will be provided under this project so that small and medium sized producers can have better access to production credit. The source of these funds will be provided from the ESF L/C Program, and/or the Section 416 Sugar Quota Offset Program.

Based on an operational plan prepared by the participating loaning institutions with the contract credit consultant, an agreement will contain features such as:

- Providing eligible livestock growers with appropriate loan rates and necessary management and information on

appropriate feeding systems and a wider-ranged or liberal collateral arrangement under a supervised credit program.

- Giving preference to those producers and families who are members of the Belize Livestock Producers Association (BLPA) and who depend almost totally on livestock related enterprises (swine, dairy, beef).
- Enacting a loan review committee which includes an facilitator and/or representative of BLPA. Participation of the BLPA representative must be steady and reliable.
- Ascertaining the responsibility of BLPA to support the loan repayment process which is highly important to a successful credit program.

The agreement will be signed by the GOB Ministry of Agriculture and USAID to establish NDFB and/or DFC as the implementing entity for the three year program. A Memorandum of Understanding for actual release of funds will be between NDFB and/or DFC. A Condition Precedent (CP) to the disbursement of the special credit funds will be included in the Project Authorization. The CP will include procedures and borrower eligibility criteria and a plan for regularized audit.

Also, A.I.D. will provide \$18,000 in grant funds to assist the NDFB and/or DFC in the start up program for special livestock production credit. These funds will be used to provide administrative and supervisory assistance to help NDFB and/or DFC during the initial stages of this special project activity. Funds will be made available upon an approved Memorandum of Understanding between USAID and GOB and concurrent with the availability of funds (U.S. \$300,000 equivalent) for the production credit under the special credit fund.

At GOB request and upon meeting MOU and related requirements, A.I.D. will advance up to 60 days of projected expenditures in an account of an agreed upon commercial bank. The NDFB and/or DFC representative directing this fund will have authority to draw upon these funds to meet planned operational costs on a timely basis.

3. Special Procurement Requirements and Waivers

a. Procurement Plan

The selection of consultants and contractors, procurement of equipment and material, shipping and insurance will be done in

accordance with standard A.I.D. procedures. For those grant-funded acquisitions for which the approved project contractor is responsible, terms and conditions will be specified in the contract and referred to the Grant Agreement and subsequent Implementation Letters with the MOA.

Project funded procurements for GOB components will, in accordance with the Project Authorization, be done by the Mission or the Regional Procurement Office, except on an exceptional basis where it is determined that sufficient capability exists for a particular host-country contracting action.

b. Special Computer/Software Procurements

Procurements of micro-computers and related software will be the responsibility of the project technical assistance contractor. Selection of the appropriate computer will be based on: (a) compatibility with existing systems in the MOA and/or private sector; (b) availability of parts and qualified repair services in Belize; and (c) capability and proficiency of recipient institutions(s) to carry out required functions using subject equipment.

Procurement will be in accordance with A.I.D. standard regulations governing this type of equipment and will be procured by contractor after written concurrence by USAID/Belize.

c. Vehicle Waivers

The project includes financing procurement for up to seven vehicles for use by the long-term advisors, counterparts in the MOA and the private sector (BLPA). The total value of this procurement is US\$110,000.

GOB is expected to request a waiver which specifies U.S. manufactured vehicles that have in-country repair and related services capabilities be only bought under project. Also, it will be in consonance with GOB interest of standardization of vehicle fleets.

In accordance with paragraph 12C.3a(3)a of Handbook 1 Supplement B, formal competitive bidding is normal for project goods when in excess of \$100,000. However, 12C.3a(3)c states that an informal competitive procedure may be used if approved by Mission Director. Among the justifications included in Handbook 1 for authorizing use of informal competitive procedures is when, "proprietary procurement is necessary". In

this instance, the MOA is proposing proprietary procurement of vehicles. Proprietary procurement is justified because Ford is the only U.S. vehicle manufacturer with a dealer in Belize to provide warranty and after sales service and spare parts. Because these elements of the procurement of trucks is necessary, the fact that they are available for only one make is justification for proprietary procurement. By signing the Project Paper the A.I.D. Representative approves informal procedure and proprietary procurement.

d. Gray Amendment

The prime contractor and USAID will make every effort to identify competent minority, disadvantaged individuals to provide either LT and ST consultants as programmed under the project.

B. Evaluation Plan

1. Project Manager Assessments

Due to the short time frame to meet stated goals and objectives, it will be important very early in the project life to focus on those key problem areas which can adversely influence stated objectives. Deficiencies in such areas as contractor performance, procurement schedules, and host country commitments cannot be compromised. In addition to the USAID monitoring arrangements stated earlier, the Project Manager, with GOB project representative and contract team leader, will assess progress in accordance to project objectives and plan of work. This includes identifying operational problems; defining ways of improving performance, and proposing appropriate and/or needed modifications to the project implementation plan. These one-day evaluation sessions should take place in the 6th, 12th and 24th month of the project's three year program.

2. In-Depth Evaluations

In addition to the above reviews, the project will have two in-depth evaluations funded by project resources. The mid-project evaluation will take place approximately one and a half years after project initiation and will systematically examine the operation plan and performance to date in relation to the stated project goals and purpose.

The recommendations of the mid-term evaluation will provide guidance to project management on determining the state of on-going project activities and propose what activities, if any, should be modified or terminated. Also, special emphasis

is to be placed on incorporating new activities based on the availability of funds and/or adequacy of the remaining project time frame to get tasks completed.

The composition of this team should not exceed four persons with team leader recruited from the outside. Other members could include a USAID Mission or A.I.D./Washington officer, a selected GOB official and possibly a second outside consultant.

The final evaluation will take place near the end of the project. It will not only measure the extent to which objectives have been achieved, but will also examine the need for any follow-up assistance as may be required by the GOB. This could be in the form of a new project activity through a development donor such as USAID.

The evaluation team composition will consist of individuals with proven skills in livestock development activities and/or evaluation assessments.

C. Methods of Financing

The preferred methods of payment contained in the Payment Verification Policy Statements should be used, as outlined in the table below.

<u>TYPE OF ASSISTANCE</u>	<u>METHOD OF IMPLEMENTATION</u>	<u>METHOD OF PAYMENT</u>	<u>ESTIMATED AMOUNT (\$000)</u>
Technical Assistance	Title XII Institution	Direct Reimbursement	689
Local Hire Personnel	Host Country Contract	Direct Reimbursement	471
Training	Title XII Institution	Direct Reimbursement	565
Commodities and Equipment	Title XII Institution	Direct Reimbursement	736
Support Services:			
In-country TA to BLPA	Intermediate Credit Institutions (ICI)	Direct Payment	18

Screwworm Eradication	HC MOU	HC Reimbursement	200
Expansion of Lab Facilities	Contractor	Fixed Amount Reimbursement	6
Special Policy/Analysis Studies	Title XII Institution	Direct Reimbursement	150
Evaluation/Audit	Contractor	Direct Reimbursement	65
Inflation			50
Contingency			<u>50</u>
Total Project			3,000

A complete institutional analysis of the Private and Public Sectors contracting, commodity procurement and payment verification procedures was not made, since all components of the Project will be implemented through a Title XII Institution. As such, the Title XII Institution should have an approved contracting/procurement system in place, consistent with A.I.D. approved regulations.

However, to ensure compliance of sound management and procurement procedures, USAID plans to conduct audits of all components through the life of the project. These audits will be funded through the evaluation/audit line item of the project budget, a CPA firm, affiliated with an International CPA firm.

D. Conditions and Covenants

The following conditions are essential to the proper implementation of the project:

1. Condition Precedent to Disbursements

Prior to any USAID disbursement, or the issuance of any commitment documents under the Project Agreement, the GOB will furnish A.I.D. a budget plan showing GOB is providing adequate funds as part of their contribution to the Screwworm Eradication Program.

2. Covenants

- a. BLPA through the GOB shall covenant that the operational plan for the central market activity be submitted to A.I.D. for approval prior to construction.

- b. GOB shall covenant that the laboratory facility construction plans be submitted for approval to A.I.D. before construction contracts are issued.
- c. GOB shall covenant that sufficient funds in a separate line item of the MOA budget be available to insure adequate financing for operating and maintaining project vehicles.
- d. GOB shall covenant that prior to commodity procurements and construction related activities at Central Farm, and the Meat Residue Analysis Laboratory, a line item will be incorporated in the MOA budget showing adequate maintenance funds to support and operate above equipment and facilities.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

ANNEX I

Life of Project:
From FY _____ to FY _____
Total U.S. Funding: _____
Date Prepared: _____

Project Title & Number: _____

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Program or Sector Goal: The broader objective to which this project contributes:</p> <p>Increase agricultural productivity, income and quality of life of Belizean farmers involved in livestock production.</p>	<p>Measures of Goal Achievement:</p> <ol style="list-style-type: none"> 1. Agriculture sector growth approximates 5% per annum. 2. Increased employment in the livestock production, processing, and distribution systems. 	<ol style="list-style-type: none"> 1. Socio-economic indicators and reports provided by GOB. 2. Special studies and evaluations related to household income. 	<p>Assumptions for achieving goal targets:</p> <ol style="list-style-type: none"> 1. Agriculture development remains a key sector priority for GOB. 2. Producers respond favorably to technology and policies that will improve productivity, expand markets and provide adequate economic rewards. 3. Political, economic, and social situation in Belize remains stable.
<p>Project Purpose:</p> <p>Improve livestock production efficiency, expand market outlets and increase volume of livestock products to reduce animal product imports to Belize and improve nation's balance of payments.</p>	<p>Conditions that will indicate purpose has been achieved: End of project status.</p> <ol style="list-style-type: none"> 1. Increase domestic pork production and processing capability by 30% by Life of Project. 2. Dairy production increases by 10% per annum and meets Macal Cooperative volume and quality requirements. 3. Beef production continues to meet domestic supply requirements and exports of quality beef expands 10% per annum. 4. Reliable credit and marketing systems assessed, and if found feasible, in place for producers and distributors which lowers production costs and improves production efficiency. 5. GOB Ministry of Agriculture institutional growth through human resources development and services support able to meet sector's needs. 6. Private Sector becomes a significant force in directing livestock industry programs on a constructive collaborative basis with GOB entities. 7. Belize declared screwworm free and Screwworm Monitoring Program in place. 	<ol style="list-style-type: none"> 1. GOB Agricultural Statistics. 2. Site Visits. 3. Annual Trade Reports. 4. Contractor and Credit Facility Reports. 5. Belize Livestock Producers Association Reports. 6. Workshops, Seminars and other Training Reports. 7. Screwworm Commission Reports. 	<p>Assumptions for achieving purpose:</p> <ol style="list-style-type: none"> 1. Government policies reasonably consistent for livestock sector particularly in terms of export potential for meat products and live beef animals. 2. Ministry of Agriculture has extension resources and appropriate funding to support reasonable growth in livestock industry. 3. Programs in project actively supported by all in-country interest groups (e.g., Meat Processors Association, Macal Dairy Cooperative, Belize Livestock Producers Association). 4. Institutional resources of GOB entities accessible to private sector.

Outputs:

1. Central market established for livestock.
2. Artificial insemination program established in collaboration with both beef and dairy producers and importation of selected livestock started to increase herd size and productivity.
3. Quality on-farm milk production enterprises to support milk processing facilities.
4. Field trial program in pasture and forage improvements to support continued growth in swine, beef and dairy production.
5. Institutional laboratory support to forage component and livestock sector significantly upgraded.
6. Expanded policy analysis operations at Ministry emphasizing the livestock sector.
7. Screwworm Eradication Program institutionalized within GOB Ministry of Agriculture.

Magnitude of Outputs:

1. An Operational Unit in Belmopan area to serve the livestock industry.
2. (a) A functional AI program, primarily directed to dairy producers, which is cost effective and adequately sized to need.
(b) Importation program operational in coordination with producers.
3. Supply of quality milk increases.
4. A technically proficient improved pasture/feed management program which completes or conducts:
(a) 12 field demonstrations on pasture improvement.
(b) 6 - 8 printed publication (new) for distribution to extension service.
(c) Minimum of 20 in-country short courses, seminars, and workshops involving 400 people.
(d) Complete five nurseries on GOB stations and 20 farms.

- e) Fully incorporate cost benefits of on-farm forage improvements as part of the demonstration analysis.
- 5(a) An improved functional capability of the soil and plant analysis at Central Farm laboratories.
 - (b) An operational seed multiplication unit for forage species.
 - (c) An upgraded diagnostic lab for meat products to meet international trade requirements.
 6. Minimum five economic/analytical studies related to livestock policy issues conducted and assessed.
 7. An operational screwworm program in place adequately funded and supported by GOB and meeting criteria of joint U.S.-Mexico Commission.

1. Field Inspections.
2. Site Inspections.
3. Macal Reports.
4. Evaluation Reports and Studies on Policy Analysis complete with recommendations.
5. Contractor Reports.
6. Ministry of Agriculture Report.
7. Laboratory Data and Evaluation Reports.
8. Reports of U.S.-Mexico Commission for Eradication of Screwworm.

Assumptions for achieving outputs:

1. Facility found to be feasible and acceptable to farmers.
2. TA in project is timely and meets requirements.
3. GOB procedures and approval authority in place on a timely continuing basis.
4. Equipment procured as planned.
5. Belize Livestock Producers Association provides backstopping support for field trials and appropriate involvement for producers.
6. Adequate support by U.S.-Mexico Commission and GOB to screwworm eradication is maintained.

Inputs	Implementation Target (Type and Quantity) In U.S. \$000			Assumptions for providing inputs:
	A.I.D. Grant	GOB	Private Sector	
<u>Technical Assistance</u>	\$1,160,415			1. Project financial records, vouchers, etc. in GOB, and USAID. 2. Contractor Reports. 3. USAID Audit Reports. 1. Project inputs provided in a timely manner. 2. GOB committed to recurrent costs. 3. Private Sector participation adequate and timely.
Long-Term	(462,850)			
Short-Term	(226,840)			
Administration (In-country Staff & Support (includes 3 vehicles)	(470,715)			
<u>Training</u>	565,000			
Long-Term	(176,000)			
Short-Term	(82,000)			
Long-Term				
In-Country Chemist	(180,000)			
In-Country	(127,000)			
<u>Commodities (including 4 vehicles)</u>	736,000			
<u>Support Services</u>	374,000			
<u>Evaluations/Audits</u>	65,000			
<u>Credit</u>		300,000		
<u>Operating Costs and In-kind Contribution</u>		600,000	100,000	
<u>Inflation</u>	50,000			
<u>Contingency</u>	49,585			
<u>Total</u>	<u>\$3,000,000</u>	<u>\$900,000</u>	<u>\$100,000</u>	

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TAGS:

SUBJECT: REVIEW OF USAID/BELIZERS FY 88/89 ACTION PLAN

1: THE REVIEW OF USAID/BELIZERS FY 88/89 ACTION PLAN WAS CHAIRED BY DAA/LAC MALCOLM BUTLER ON APRIL 28-29 AID REPRESENTATIVE NEBOYSHA BRASHICH, PROGRAM OFFICER PETER LAPERA, AND RURAL DEVELOPMENT OFFICER STEPHEN SZADEK REPRESENTED THE MISSION. THE CHAIRMAN NOTED THAT, WITH LIMITED RESOURCES, THE MISSION MAINTAINS GOOD RECORD OF ACCOMPLISHMENTS,

RESULTS OF THE REVIEW, AND ACTIONS AGREED WITH THE MISSION DURING PROGRAM WEEK ARE SUMMARIZED BELOW:

IT WAS AGREED THAT THE MISSION WOULD BE GUIDED, IN PREPARING THE FY 89 ABS, BY THE FOLLOWING PLANNING LEVELS FOR FY 88 AND FY 89:

	FY 88 1/	FY 89 1/
DA	7,600 2/	7,600 2/
ESF	2,250	2,250

1/ THESE FIGURES ARE LAC PLANNING LEVELS, AND DO NOT YET HAVE PPC OR INTER-AGENCY AGREEMENT; LEVELS ARE SUBJECT TO ADJUSTMENT DURING THE BUDGET PROCESS.

2/ INCLUDES AN ESTIMATED DOLS 300,000 PER YEAR FROM CENTRAL FUNDS FOR A DAIRY PROJECT:

2: SUMMARY OF PROJECT DECISIONS;

A: MISSION TO APPROVE THE CHILD SURVIVAL SUPPORT PP, SUBJECT TO THE GUIDANCE HEREIN:

B: MISSION TO APPROVE THE FOLLOWING PP AMENDMENTS, SUBJECT TO THE GUIDANCE HEREIN:

DIVISION	ACT	DATE
AID REP.		✓
CONF.		✓
GSO		✓
PPD		✓
ZRO		✓
DDO		✓
AGRICULTURE		
PPD		
IG		
PLANS		
SYSTEMS		
COCA		
TRAINING		
R. DEV.		
MANAGE		
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LGON		
CSR		
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		DUE DATE

WA

- LIVESTOCK DEVELOPMENT
- RURAL ACCESS ROADS AND BRIDGES.

OR THE FISHERIES DEVELOPMENT PROJECT WILL NOT BE INCLUDED IN THE FY 89 BUDGET;

D: LAC APPROVES THE SELECTION ON A NON-COMPETITIVE BASIS OF THE COUNCIL FOR VOLUNTARY SOCIAL SERVICES, AND NATIONAL PARENTS' RESOURCE INSTITUTE, INC., AS RECIPIENTS OF GRANTS FOR THE GUIDANCE AND PLACEMENT CENTER AND BELIZE DRUG AWARENESS EDUCATION PROJECTS, RESPECTIVELY:

E. THE MISSION WILL SUBMIT A CONCEPTS PAPER (OR PIDS) FOR ESF ASSISTANCE IN FYS 88/891

3: CROSS-CUTTING ISSUES

ISSUE: IS A NEW CDSS REQUIRED?

DISCUSSION: THE MISSION PROPOSED TO SUBMIT A NEW CDSS IN LATE 1988. THE NEED FOR A CDSS WAS QUESTIONED SINCE THERE IS STILL A REAL POSSIBILITY THAT WE WOULD SEEK TO CONCLUDE THE BILATERAL PROGRAM AT THE END OF THE CAI STRETCH-OUT PERIOD, IREL, FY 92:

THE AID REPRESENTATIVE EXPRESSED HIS BELIEF THAT BELIZE WILL CONTINUE TO NEED BILATERAL ASSISTANCE WITH INFRASTRUCTURE, INSTITUTION BUILDING, AND FINANCIAL MARKET DEVELOPMENT THROUGH 1992: THE CHAIR POINTED OUT

THAT THIS ASSISTANCE COULD BE PROVIDED THROUGH AMENDMENTS TO EXISTING PROJECTS AND PROJECTS ALREADY APPROVED FOR DESIGN: HE ADDED THAT WE SHOULD PROCEED ON THE PRESUMPTION THAT A NEW CDSS WILL NOT BE NECESSARY UNLESS THERE IS A DECISION TO ENTER INTO A NEW LONG-TERM COMMITMENT TO BELIZE BEYOND 1992.

DECISIONS: 1) RE-EXAMINE POSSIBLE NEED FOR A CDSS AT THE NEXT ACTION PLAN REVIEW:

2) NEW PROJECT DEVELOPMENT AND AMENDMENTS SHOULD BE DESIGNED TO PERMIT ORDERLY COMPLETION BY FY 92:

4: ISSUES ON OBJECTIVES

A: OBJECTIVE 1: INCREASE AGRICULTURAL PRODUCTION

PROJECT REVIEW ISSUE: SHOULD AUTHORITY BE DELEGATED TO THE AID REPRESENTATIVE TO APPROVE A PP AMENDMENT FOR THE LIVESTOCK DEVELOPMENT PROJECT?

DISCUSSION: THE MISSION CLARIFIED THAT THE PROJECT WILL NOT INCLUDE THE PROVISION OF CREDIT FUNDS AS INDICATED

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IN THE ACTION PLAN NARRATIVE, BUT WILL FINANCE TECHNICAL ASSISTANCE FOR DEVELOPING A CREDIT PROGRAM TO MEET THE NEEDS OF LIVESTOCK PRODUCERS. THE USE OF IN-KIND CREDIT, SUCH AS A FONDO THAT COULD BE ADMINISTERED BY PRODUCERS GROUPS, WILL BE STUDIED, AND OTHER POSSIBLE MECHANISMS FOR PROVIDING THE MEDIUM AND LONG TERM CREDIT WHICH IS NOW DIFFICULT FOR FARMERS TO OBTAIN BECAUSE OF STRICT COLLATERAL REQUIREMENTS OF COMMERCIAL BANKS. NON-PROJECT RESOURCES TO FINANCE THE CREDIT PROGRAM WILL ALSO BE IDENTIFIED: LOCAL CURRENCY GENERATIONS FROM SECTION 416 ACTIVITIES AS WELL AS FUNDING FROM THE PROPOSED EIC PROJECT WILL BE CONSIDERED.

DECISION: THE AID REPRESENTATIVE IS AUTHORIZED TO APPROVE THE AMENDMENT, PROVIDED IT DOES NOT INCLUDE DA FINANCED CREDIT IN THE PROJECT BUDGET, AND SUBJECT TO THE FOLLOWING GUIDANCE:

- IF PROJECT FUNDS ARE PROPOSED FOR USE IN A LIVESTOCK CREDIT PROGRAM, THE MISSION WILL CABLE A DESCRIPTION OF THE CREDIT ACTIVITY FOR PRIOR AID/W CONCURRENCE;
- THE MISSION SHOULD CONSIDER A GREATER SHIFT FROM MINISTRY OF AGRICULTURE ADMINISTERED PILOT ACTIVITIES TO INVOLVEMENT OF PRODUCERS GROUPS IN EXTENSION ACTIVITIES;

AND

- THE ISSUE OF CATTLE RUSTLING NEEDS TO BE EXAMINED TO DETERMINE HOW LARGE A PROBLEM IT CONSTITUTES, THE DEGREE TO WHICH IT INHIBITS INVESTMENT, AND POSSIBLE SOLUTIONS

B: OBJECTIVE 2. STRENGTHEN THE PRIVATE SECTOR

ISSUE: HOW CAN BELIZE RESOLVE CONSTRAINTS TO MEDIUM AND LONG-TERM CREDIT FOR DEVELOPMENT ACTIVITIES?

DISCUSSION: THE AID REPRESENTATIVE STATED THAT DESPITE CONTINUED EFFORTS BY THE MISSION, LITTLE CREDIT IS AVAILABLE AT MORE THAN 90 DAY TERMS: LACK OF

LONGER-TERM CREDIT CONTINUES TO BE A CONSTRAINT ON PRIVATE SECTOR DEVELOPMENT. HE REQUESTED AID/W ASSISTANCE IN HELPING TO DEVELOP A STRATEGY FOR TERM LENDINGR

PROJECT REVIEW DISCUSSION: INFORMAL DISCUSSIONS WERE HELD ON THE THREE INSTITUTIONAL ALTERNATIVES IDENTIFIED IN THE DRAFT PID FOR THE EXPORT AND INVESTMENT CREDIT (EIC) PROJECT, WHICH IS NOW SCHEDULED FOR AUTHORIZATION IN FY 88. THE CENTRAL BANK MANAGED INTERMEDIATE CREDIT UNIT (ICU) RECOMMENDED BY CONSULTANTS WOULD APPEAR TO OFFER THE BEST PROSPECTS FOR A FLEXIBLE AND BROAD GAUGED EFFORT TO MEET THE NEEDS OF A LARGE RANGE OF POTENTIAL BORROWERS AND PRODUCTIVE ACTIVITIES. IT IS SUGGESTED THAT THE MISSION CONTINUE TO WORK WITH THE CENTRAL BANK AND THE FINANCE MINISTRY TO RESOLVE THEIR CONCERNS ABOUT CREATING AND OPERATING THE ICUR THE GOB PREVIOUSLY ACCEPTED THE ROLE OF A SECOND STORY INSTITUTION FOR TERM LOANS UNDER THE COMMERCIAL BANK DISCOUNT FUND. THERE OUGHT TO BE SOME WAY OF REFINING THE APPROACH INITIATED UNDER THAT PROJECT TO PERMIT A BETTER DESIGNED AND MORE FOCUSED EFFORT:

THE BELIZE INVESTMENT GROUP, IF IT CAN GAIN THE NECESSARY FINANCIAL INVESTMENT FROM POTENTIAL SHAREHOLDERS, ALSO SEEMS WORTH PURSUING, EITHER SEPARATELY FROM OR IN ADDITION TO THE ICU: USING THE DEVELOPMENT FINANCE CORPORATION (DFC) AS A CHANNEL FOR CREDIT EITHER DIRECTLY OR THROUGH THE ICU, WAS SEEN AS A MORE PROBLEMATIC AND LESS DESIRABLE ALTERNATIVE: HOWEVER, USE OF PROJECT FUNDS TO STRENGTHEN THE DFCRS CAPABILITY TO IMPLEMENT THE PLANNED WORLD BANK AGRICULTURAL CREDIT PROJECT WOULD SEEM TO BE A GOOD FIRST STEP IN EVENTUALLY REDEVELOPING A POTENTIALLY

VIABLE SOURCE OF CREDIT FOR SMALL AGRICULTURAL ENTERPRISES: WHATEVER CHANNELS ARE USED, THE PROJECT SHOULD MAKE A SPECIAL EFFORT TO ENCOURAGE CHANNELING A SHARE OF THE FUNDS TO FARMERS AND SMALL BUSINESSMEN WHO ARE ASSISTED UNDER OTHER A.I.D.R PROJECTS:

DECISIONS: 1) LAC/PS AND LAC/DR WILL ASSIST THE MISSION IN DEVELOPMENT OF A STRATEGY FOR TERM LENDING. THE STRATEGY SHOULD SHOW HOW THE SHORT AND LONG-TERM CREDIT NEEDS OF BENEFICIARIES UNDER RELEVANT A.I.D: PROJECTS WILL BE MET, EITHER THROUGH THE FY 88 EXPORT AND INVESTMENT CREDIT (EIC) PROJECT OR OTHER PROGRAMSR

2) AS AGREED AT LAST YEAR'S ACTION PLAN REVIEW, THE PID FOR EIC WIPLBE REVIEWED IN AID/W. THE TERM LENDING STRATEGY PAPER WILL BE SUBMITTED AND REVIEWED IN ASSOCIATION WITH EIC:

C. OBJECTIVE 3R STABILIZE FINANCIAL STRUCTURES

ISSUE: HOW CAN THE MISSION BEST INFLUENCE NEEDED POLICY

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REFORMS?

DISCUSSION: THE AID REPRESENTATIVE EXPLAINED THAT WHEN THE ACTION PLAN WAS PREPARED, THE MISSION ASSUMED THAT BELIZE WOULD NOT ENTER INTO ANOTHER ARRANGEMENT WITH THE IMF: HOWEVER, IT NOW APPEARS THAT ARTICLE 4 CONSULTATIONS WILL SOON BEGIN: THE MISSION HAS AN OUTLINE FOR AN ESF POLICY REFORM AGENDA AND WILL BE FUNDING STUDIES ON KEY POLICY CONSTRAINTS WITH FY 87 ESF: FURTHER DEVELOPMENT OF THE POLICY DIALOGUE STRATEGY WILL DEPEND ON BALANCE OF PAYMENTS NEEDS AND THE ASSISTANCE PROVIDED BY THE IMF AND WORLD BANK: SHOULD BOP PROBLEMS NOT MATERIALIZE OR BE FULLY ADDRESSED BY IFIS, ESF COULD EITHER BE FOCUSED ON SECTOR-BASED PROGRAM ASSISTANCE OR REPROGRAMMED TO OTHER LAC COUNTRIES AID/W SUGGESTED THAT EITHER USE OF ESF (BOP OR SECTOR ASSISTANCE) BE PROGRAMMED THROUGH THE TIGHT CONSULTATIVE GROUP FRAMEWORK:

DECISIONS: 1) THE MISSION WILL SUBMIT A CONCEPTS PAPER (OR PIDS IF ONLY PROJECTIZED ACTIVITIES ARE PROPOSED) FOR ESF ASSISTANCE IN FYS 88/89 BY SEPTEMBER 30, 1987. THE CONCEPTS PAPER (OR PIDS) WILL INCLUDE A REVISED POLICY DIALOGUE AGENDA WHICH INCLUDES GOB REFORM OF THE INVESTMENT INCENTIVES AND TAX STRUCTURES AND OTHER NEEDED REFORMS AS POLICY AGENDA ITEMS: THE MISSION MAY CONSIDER USE OF THE ESF TO ACHIEVE POLICY REFORMS

THROUGH PROGRAM ASSISTANCE DIRECTED TO SECTORAL NEEDS AND OBJECTIVES:

2) LAC WILL FOLLOW-UP WITH THE IMF AND WORLD BANK ON APPLYING THE TIGHT CONSULTATIVE GROUP APPROACH TO BELIZE.

D: OBJECTIVE 5R PROMOTE EXPORTS

ISSUE: SHOULD THE MISSION EMBARK ON A MAJOR NEW PROGRAM IN FY 89 TO DEVELOP THE FISHING INDUSTRY?

DISCUSSION: LAC/WASHINGTON PARTICIPANTS EXPRESSED

53

CONCERN ABOUT THE MANAGEMENT BURDEN TO BE ADDED BY A MAJOR NEW AGRICULTURAL INITIATIVE WHEN THE BELIZE MISSION ALREADY HAS A FULL PLATTER OF AGRICULTURAL PROJECTS, EMBRACING MARKETING, CREDIT, LIVESTOCK DEVELOPMENT, AND RURAL ACCESS ROADS. FURTHER, THE FISHERIES PROJECT APPEARS TO REQUIRE IMPLEMENTATION AND PERHAPS FUNDING BEYOND FY 92:

MISSION REPRESENTATIVES EXPLAINED THAT FISHING WAS NOW BELIZERS SECOND LARGEST EXPORT EARNER, WITH THE POTENTIAL FOR HIGHER EARNINGS. THE MINISTRY OF AGRICULTURE REQUESTED AID ASSISTANCE TO IMPROVE ITS OPERATIONS, AND THE ACTIVITIES OF ITS FISHERIES UNIT. THE MISSION SEES FISHING AS A MEANS TO HELP IN AGRICULTURAL DIVERSIFICATION, INCREASE RURAL EMPLOYMENT, AND CONSERVE MARINE RESOURCES. PROJECT BENEFITS SUCH AS IMPROVED TECHNOLOGY AND AN ENHANCED FISHERIES UNIT CAPABILITY COULD BE REALIZED WITHIN THREE YEARS:

THE CHAIR POINTED OUT THAT EFFORTS SUCH AS TECHNICAL ASSISTANCE, TRAINING, STUDIES, AND SUPPORT TO COOPERATIVES COULD BE CARRIED OUT THROUGH EXISTING PROJECTS, WITHOUT THE LONGER-TERM COMMITMENT OF A NEW PROJECT. THE AID REPRESENTATIVE AGREED THAT THIS MIGHT BE A PLAUSIBLE OPTION, WITH USAID INVOLVEMENT DESIGNED TO LEAD TO LONGER-TERM SUPPORT FOR FISHERIES DEVELOPMENT BY OTHER DONORS.

DECISIONS: 1) THE MISSION WILL RE-EXAMINE POSSIBILITIES FOR ASSISTANCE TO FISHING THROUGH SMALL ACTIVITIES THAT CAN BE CARRIED OUT WITHIN THE FY 89 TO FY 92 TIMEFRAME, IN LIEU OF A NEW, DISCRETE PROJECT.

2) THE FISHERIES DEVELOPMENT PROJECT WILL NOT BE INCLUDED IN THE FY 89 BUDGET.

E. OBJECTIVE 7. EXPAND AND IMPROVE INFRASTRUCTURE

PROJECT REVIEW ISSUE: SHOULD AUTHORITY BE DELEGATED TO THE AID REPRESENTATIVE TO APPROVE THE PP AMENDMENT TO RURAL ACCESS ROADS AND BRIDGES?

DISCUSSION: SEVERAL DONORS ARE ACTIVE IN ROAD CONSTRUCTION AND REHABILITATION IN BELIZE, CREATING A LARGE DEMAND AND COMPETITION FOR LIMITED MINISTRY OF WORKS (MOW) MANAGERIAL AND TECHNICAL RESOURCES. SINCE THIS HAS BEEN A FACTOR IN CAUSING DELAYS IN USAID-FINANCED ROAD ACTIVITIES, AND HAS IMPLICATIONS FOR THE CAPACITY OF THE MOW TO MAINTAIN BELIZERS RURAL ROADS OVER THE LONG TERM, THE MISSION SHOULD CAREFULLY EXAMINE HOW BEST TO APPLY PROJECT RESOURCES TO DEVELOP IN-COUNTRY CAPABILITY FOR ROAD REHABILITATION

DECISIONS: 1) AUTHORITY IS DELEGATED TO THE AID REPRESENTATIVE TO APPROVE THE PP AMENDMENT, SUBJECT TO THE SUBSTANTIVE INVOLVEMENT OF LAC/DR/ENG IN PREPARING

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AND REVIEWING THE DOCUMENT, AND THE FOLLOWING GUIDANCE
(IF ARRANGEMENTS CANNOT BE MADE FOR PARTICIPATION OF
LAG/DR/ENG, THE PP AMENDMENT WILL BE REVIEWED IN AID/W:)

2) THE AMPLIFIED PROJECT SHOULD:

- TAKE INTO ACCOUNT THE FINDINGS AND RECOMMENDATIONS OF THE NOVEMBER 1986 PROJECT EVALUATION AND DIRECT RESOURCES TO SOLVING THE PROBLEMS IDENTIFIED;
- UTILIZE, TO THE EXTENT FEASIBLE, PRIVATE FIRMS IN ROAD REHABILITATION;
- INCLUDE CONDITIONALITY THAT WOULD COMMIT THE GOB TO MAINTENANCE OF ROADS REHABILITATED AND EQUIPMENT PROCURED UNDER THE PROJECT;
- INCLUDE TECHNICAL ASSISTANCE TO IMPROVE EFFICIENCY IN MOW ROAD REHABILITATION AND MAINTENANCE OPERATIONS, AND IMPROVE THE CAPABILITY OF PRIVATE FIRMS TO QUALIFY FOR AND CARRY OUT ROAD REHABILITATION WORK; AND
- ATTEMPT TO ECONOMIZE ON THE COST OF EQUIPMENT BY PUTTING INTO OPERATION EXISTING DEADLINED EQUIPMENT IN BELIZE AND PURCHASE OF SUITABLY REHABILITATED UNITS:

FR OBJECTIVE 10. REDUCE INFANT AND CHILD MORTALITY

PROJECT REVIEW ISSUE: SHOULD AUTHORITY BE DELEGATED TO THE AID REPRESENTATIVE TO APPROVE THE PP FOR THE CHILD SURVIVAL PVO SUPPORT PROJECT?

DISCUSSION: THE MISSIONARS EFFORTS TO REDUCE MANAGEMENT UNITS BY CONSOLIDATING FOUR DISCRETE PVO PROJECTS INTO ONE UMBRELLA PROGRAM ARE TO BE COMMENDED: AT THE SAME TIME, THIS ARRANGEMENT INTRODUCES THE POTENTIAL FOR CONFLICT BETWEEN PARTICIPATING PVOS IF ONE ADMINISTERS THE PROJECT AND DELIVERS SERVICES, WHILE THE ROLE OF THE OTHERS IS LIMITED TO SERVICE DELIVERY.

DECISIONS: 1) AUTHORITY IS DELEGATED TO THE AID REPRESENTATIVE TO APPROVE THE PP, SUBJECT TO THE FOLLOWING GUIDANCE:

2) THE MISSION SHOULD CONSIDER THESE ALTERNATIVES IN ADDITION TO THE SINGLE PROJECT IDEA PRESENTED IN THE ACTION PLAN:

- SELECTION OF A NON-SERVICE DELIVERING PVO TO ADMINISTER THE PROJECT; AND

- USE OF SEVERAL USPVOs (E.G. CARE AND HOPE) TO PROVIDE SERVICES IN DIFFERENT REGIONS AND PROVIDE SUBGRANTS TO OTHER PVOs IN THOSE AREAS. PROPOSALS SHOULD BE REQUESTED ON A COMPETITIVE BASIS, EVEN IF IT IS EXPECTED THAT ONLY PVOs NOW ACTIVE (E.G. CARE AND HOPE) WILL RESPOND:

G. OBJECTIVE 12R IMPROVE EDUCATION OPPORTUNITIES

PROJECT REVIEW ISSUES: SHOULD TWO ORGANIZATIONS BE SELECTED ON A NON-COMPETITIVE BASIS TO CARRY OUT PROJECTS UNDER THIS OBJECTIVE?

(1) GUIDANCE AND PLACEMENT CENTER PROJECT:

DISCUSSION AND DECISIONS: 1) THE MISSION SHOULD SOON START MAKING ARRANGEMENTS FOR ENSURING CONTINUATION OF THE PROJECT AFTER THE GRANT ENDS: THE AMENDED AGREEMENT SHOULD LIMIT REMAINING ARI:D. FUNDED ACTIVITIES TO A TWO YEAR PERIOD. BY THE END OF THE FIRST YEAR, A SELECTION OF NEW INSTITUTIONAL SPONSOR (OR SPONSORS) AND A PLAN FOR THEIR PROGRESSIVE ASSUMPTION OF THE CENTERS ACTIVITIES SHOULD BE DEVELOPED. IMPLEMENTATION OF THE PLAN SHOULD BE COMPLETED BY THE END OF THE SECOND YEAR.

2) WHILE OTHER ALTERNATIVES SHOULD BE CONSIDERED WE UNDERSTAND THAT THE BELIZE INSTITUTE OF MANAGEMENT (BIM) MAY BE INTERESTED IN ABSORBING THE PLACEMENT FUNCTION HOWEVER, EVEN COVERING PART OF THE COSTS THROUGH SERVICE CHARGES, BIM MAY NOT HAVE SUFFICIENT RESOURCES TO EFFECTIVELY MANAGE THE SERVICE, AND THE GOB MAY WIND UP WITH BOTH THE COUNSELLING AND PLACEMENT ACTIVITIES. THE RESOURCES THE GOB CAN DEDICATE TO THESE ACTIVITIES ARE ALSO LIKELY TO BE LIMITED. ACCORDINGLY, THE MISSION SHOULD ATTEMPT TO DEVELOP A PROGRAM WITH LOW RECURRENT COSTS RATHER THAN DEVELOPING THE INTEGRATED, COMPREHENSIVE CAREER COUNSELLING PROGRAM IN FORMAL AND NON-FORMAL EDUCATIONAL INSTITUTIONS OUTLINED IN THE ACTION PLAN:

3) AA/LAC APPROVES THE SELECTION ON A NON-COMPETITIVE BASIS OF THE COUNCIL FOR VOLUNTARY SOCIAL SERVICES AS A RECIPIENT OF A GRANT OF UP TO DOLS 100,000 TO CONTINUE THE GUIDANCE AND PLACEMENT CENTER PROJECT, SUBJECT TO THE GUIDANCE ABOVE.

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(2) DRUG AWARENESS PROJECT:

DISCUSSION AND DECISIONS: 1) AA/LAC APPROVES THE SELECTION ON A NON-COMPETITIVE BASIS OF THE NATIONAL PARENTS' RESOURCE INSTITUTE, INC: (PRIDE) AS A RECIPIENT OF A GRANT AMENDMENT OF UP TO DOLS 650,000 TO CONTINUE THE BELIZE DRUG AWARENESS EDUCATION PROJECT, SUBJECT TO THE FOLLOWING GUIDANCE:

2) THE MISSION SHOULD ENSURE THAT AGREED UPON DRUG AWARENESS ACTIVITIES UNDERTAKEN BY PRIDE WILL BE ASSUMED BY THE GOB UPON PROJECT COMPLETION, AND THAT AN ADEQUATE BUDGET FOR RECURRING COSTS WILL BE PROVIDED:

5. RESOURCES AND MANAGEMENT

ISSUE: HOW CAN THE MISSION ADJUST TO THE REDUCTION IN ITS PLANNED TRUST FUND?

DISCUSSION: THE MISSION FACES AN OPERATING EXPENSES SHORTFALL IN FYS 87-89 BECAUSE SECTION 416 GENERATED LOCAL CURRENCIES CANNOT BE USED FOR A TRUST FUND, AS HAD BEEN ORIGINALLY PLANNED: THE FY 87 SHORTFALL IS ONLY ABOUT DOLS 70,000, AND CAN BE RESOLVED BY CUTTING BACK ON PLANNED EXPENDITURES: HOWEVER, THE FY 88/89 SHORTFALL OF ABOUT DOLS 140,000 PER YEAR STILL PRESENTS A PROBLEM:

DECISIONS: 1) THE CONTROLLER FROM USAID/BELIZE WILL VISIT AID/W, PRIOR TO HOME LEAVE, FOR FURTHER DISCUSSIONS ON OE:

2) AID/W AND THE MISSION WILL CONDUCT A JOINT REVIEW OF WAYS TO COVER OE COSTS IN LIGHT OF REDUCED OE AVAILABILITIES:

6: EVALUATION PLAN

ISSUES AND DISCUSSION: THE MISSION IS PLANNING 21

EVALUATIONS OVER THE FY 87-89 PERIOD, INCLUDING 10 IN FY 88: GIVEN THE WORKLOAD OF THE SMALL BELIZE STAFF, THIS NUMBER OF EVALUATIONS COULD PROVE TO BE A BURDEN. THE REASONS IN THE PLAN FOR SCHEDULING EVALUATIONS, PARTICULARLY TO ASSESS PROGRESS OF PROJECT IMPLEMENTATION ARE INADEQUATE. EVALUATIONS SHOULD BE ISSUE-ORIENTED AND NOT BE CONSIDERED STATUS REPORTS. ALTHOUGH THE MISSION HAS SCHEDULED ONE EVALUATION IN WHICH TWO PROJECTS WILL BE EVALUATED, IT HAS NOT PLANNED FOR ANY PROGRAM, OR CROSS-CUTTING EVALUATIONS: THE MISSION'S ACTION PLAN INCLUDES TEN OBJECTIVES. IT IS UNCLEAR FROM THE PLAN HOW EACH OF THE EVALUATIONS WILL IMPACT ON SPECIFIC OBJECTIVES:

DECISIONS: 1) THE MISSION WILL RE-SUBMIT ITS EVALUATION PLAN BY MAY 31, 1987 TO PROVIDE THE FOLLOWING:

- SPECIFIC ISSUES THAT WILL BE ADDRESSED IN EACH EVALUATION, WHAT DATA/INFORMATION IS EXPECTED FROM THE EVALUATION AND WHY THAT DATA/INFORMATION IS REQUIRED

- AT LEAST ONE PROGRAM EVALUATION SCHEDULED DURING THE ACTION PLAN PERIOD: A PRIVATE SECTOR EVALUATION WAS SUGGESTED AS A POSSIBILITY:

2) AS SCOPES OF WORK ARE DEVELOPED FOR FUTURE EVALUATIONS, THE MISSION WILL ENSURE THAT, AS APPROPRIATE, A REQUIREMENT TO MEASURE THE PROJECT'S CONTRIBUTION TO A SPECIFIC MISSION OBJECTIVE IS INCLUDED:

7. WOMEN IN DEVELOPMENT

ISSUES AND DISCUSSION: THE MISSION'S WID OVERVIEW STATEMENT INDICATES THAT SEVERAL PROGRAMS INCLUDE WOMEN AS DIRECT PARTICIPANTS IN PROJECT ACTIVITIES OR AS

IMMEDIATE BENEFICIARIES: THIS IS PARTICULARLY EVIDENT IN THE TRAINING PROJECTS AND IN THE SMALL ENTERPRISE ACTIVITIES: THE MISSION SHOULD BE COMMENDED IN ITS EFFORTS TO HAVE THE WID OFFICER INVOLVED IN THE IMPLEMENTATION SECTOR REVIEWS:

DECISIONS: 1) THE MISSION INDICATES THAT THE COMMERCIALIZATION OF ALTERNATIVE CROPS PROJECT HAS GREAT POTENTIAL TO INVOLVE FEMALES. WHEN THIS PROJECT IS EVALUATED IN FY 1988, THE MISSION WILL ENSURE THAT THE WID IMPACT IS INCLUDED IN THE SCOPE OF WORK.

2) AT THE MISSION'S CONVENIENCE, IT WILL PROVIDE LAC/DP, JACK FRANCIS, WITH A BRIEF CABLED DESCRIPTION OF THE GOB WOMEN'S DEPARTMENT, WHERE IT IS LOCATED WITHIN THE GOVERNMENT, ITS FUNCTION, AND HOW THE MISSION RELATES TO IT.

3) TO ENSURE THAT WID ISSUES CONTINUE TO BE EFFECTIVELY ADDRESSED IN NEW ACTIVITIES, THE MISSION WILL CONSIDER

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USING PPC/WID-FINANCED RESOURCES, SUCH AS THE INTERNATIONAL CENTER FOR RESEARCH ON WOMEN, TO SUPPLEMENT MISSION STAFF: THIS MAY BE PARTICULARLY USEFUL IN THE DESIGNS OF THE LIVESTOCK PROJECT AMENDMENT AND THE CHILD SURVIVAL AND GUIDANCE/PLACEMENT CENTER PROJECTS:

8: SUMMARY OF AID/W ACTIONS

1) SINCE INCREASING AMOUNTS OF ASSISTANCE IS BEING IMPLEMENTED THROUGH U.S. AND INDIGENOUS PVOS, THE MISSION IDENTIFIED THE NEED FOR RECONCILIATION OF HANDBOOK 3 AND HANDBOOK 13 GUIDELINES, I:E. THE PROJECT DEVELOPMENT AND APPROVAL PROCESS MUST BE RE-EXAMINED AS IT APPLIES TO HB 13 GRANTS: ALSO, APPARENT INCONSISTENCIES BETWEEN LAC/AA AND M/AAA/SER GUIDANCE REGARDING SELECTION OF HB 13 GRANTEEES MUST BE CLARIFIED: (SEE 86 STATE 395178 AND STATE 076123)

DECISION: SER HAS ISSUED SOME GUIDANCE WHICH HELPS RECONCILE THIS PROBLEM: LAC/DR WILL PROVIDE FURTHER GUIDANCE TO ALL LAC MISSIONS.

2) USAID/BELIZE REQUESTED RE-EXAMINATION OF ITS DELEGATIONS TO MAKE THEM COMMENSURATE WITH THE ITS PORTFOLIO. RIG/A/T AUDITORS HAVE IDENTIFIED A LACK OF CLARITY IN DELEGATIONS TO THE MISSION: SINCE SOME DELEGATIONS TO BELIZE ARE DIFFERENT FROM THOSE TO OTHER

FROM LAC/GC WHICH CLEARLY OUTLINES ALL DELEGATIONS TO THE A.I.D. REPRESENTATIVE IN BELIZE.

DECISION: GC/LAC IS REVIEWING THIS ISSUE AND WILL SOON PROVIDE CLARIFICATION ON REDELEGATIONS TO THE MISSION.

3) THE MISSION REQUESTED LOCATION OF BOTH A RLA AND RCO CLOSER TO BELIZE, TO MAKE THESE IMPORTANT SERVICES AVAILABLE TO USAID/BELIZE ON A MORE FREQUENT BASIS. CURRENTLY, THE RLA AND RCO ARE LOCATED IN BARBADOS AND PANAMA, RESPECTIVELY. IF THESE OFFICERS WERE LOCATED IN

EL SALVADOR, GUATEMALA, OR HONDURAS, THEY WOULD BE MORE READILY AVAILABLE TO ASSIST THE USAID WITH PROCUREMENT, CONTRACTING AND DOCUMENTATION.

THE CHAIR STATED THAT IT WAS LIKELY THAN A RLA WILL SOON BE PLACED IN GUATEMALA WHO COULD PROVIDE COVERAGE FOR THE BELIZE MISSION REGARDING CONTRACT OFFICER SUPPORT:

- THE LAC BUREAU IS CONSIDERING RELOCATION OF THE RCO NOW IN PANAMA TO GUATEMALA; AND
- USAID/HONDURAS HAS A USDH CONTRACT OFFICER WHO MIGHT BE ABLE TO SERVE BELIZE ALSO. MULTIPLE DAILY FLIGHTS BETWEEN HONDURAS AND BELIZE WOULD ASSURE RAPID ACCESS.

DECISION: LAC WILL FOLLOW-UP WITH AA/M AND USAID/HONDURAS TO EXPLORE THE POSSIBILITY OF RECEIVING CONTRACT OFFICER SUPPORT FROM THE LATTER MISSION.

- 4) AID/W WILL WORK WITH THE MISSION TO DEVELOP A STRATEGY FOR TERM LENDING. (SEE PARA 4, B.)
- 5) LAC WILL FOLLOW-UP WITH THE IMF AND WORLD BANK IN DISCUSSIONS OF THE TIGHT CONSULTATIVE GROUP APPROACH FOR BELIZE. (SEE PARA 4, C.)

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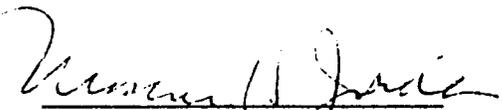
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ANNEX III

CERTIFICATION PURSUANT TO
SECTION 611 (e) OF THE
FOREIGN ASSISTANCE ACT OF 1981
AS AMENDED

I, Mosina H. Jordan, the principal officer of the Agency for International Development in Belize, certify that to the best of my knowledge and belief, Belize possesses both the financial capability and human resources to effectively utilize and maintain goods and services procured under the proposed grant project entitled, Livestock Production II.

This judgment is based on the performance and capabilities of the Ministry of Agriculture in Belize and the general lending criteria and operating procedures which have been negotiated for this project.



Mosina H. Jordan
A.I.D. Representative
Belize

June 6, 1988
Date

ANNEX IV



LIZE

see Quote

No. A/2101/4/86(21)

Ministry of Agriculture, Forestry and Fisheries

Belmopan, Belize B.H.



18th December, 1986

Mr. Nedoysa Brashich
A.I.D. Representative
USAID Mission to Belize
Gabourel Lane
Belize City

Dear Mr. Brashich,

We would like to indicate our interest in the extension of the Belize Livestock Development Project, as we feel that there is much more that can be done together to continue the efforts toward the development of this important industry in Belize.

Attached is an outline of those areas that the Ministry of Agriculture feels should be addressed in a proposed Phase II Belize Livestock-Development Project. We are sure that you will find the proposals interesting and we would be most pleased to get your comments in due course.

Sincerely,

(R. H. NEAL)
Permanent Secretary
Ministry of Agriculture

5C(2) - PROJECT CHECKLIST

Listed below are statutory criteria applicable to projects. This section is divided into two parts. Part A includes criteria applicable to all projects. Part B applies to projects funded from specific sources only: B(1) applies to all projects funded with Development Assistance; B(2) applies to projects funded with Development Assistance loans; and B(3) applies to projects funded from ESF.

CROSS REFERENCES: IS COUNTRY CHECKLIST UP TO DATE? HAS STANDARD ITEM CHECKLIST BEEN REVIEWED FOR THIS PROJECT?

Yes
Yes

A. GENERAL CRITERIA FOR PROJECT

1. FY 1988 Continuing Resolution Sec. 523; FAA Sec. 634A. If money is sought to obligated for an activity not previously justified to Congress, or for an amount in excess of amount previously justified to Congress, has Congress been properly notified?
Congress has been notified of the Project in the Congressional Presentation
2. FAA Sec. 611(a)(1). Prior to an obligation in excess of \$500,000, will there be (a) engineering, financial or other plans necessary to carry out the assistance, and (b) a reasonably firm estimate of the cost to the U.S. of the assistance?
Yes
3. FAA Sec. 611(a)(2). If legislative action is required within recipient country, what is the basis for a reasonable expectation that such action will be completed in time to permit orderly accomplishment of the purpose of the assistance?
N/A

4. FAA Sec. 611(b); FY 1988 Continuing Resolution Sec. 501. If project is for water or water-related land resource construction, have benefits and costs been computed to the extent practicable in accordance with the principles, standards, and procedures established pursuant to the Water Resources Planning Act (42 U.S.C. 1962, et seq.)? (See A.I.D. Handbook 3 for guidelines.)
N/A
5. FAA Sec. 611(e). If project is capital assistance (e.g., construction), and total U.S. assistance for it will exceed \$1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability to maintain and utilize the project effectively?
N/A
6. FAA Sec. 209. Is project susceptible to execution as part of regional or multilateral project? If so, why is project not so executed? Information and conclusion whether assistance will encourage regional development programs.
No. This Project will have little effect on regional development program.
7. FAA Sec. 601(a). Information and conclusions on whether projects will encourage efforts of the country to:
(a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture and commerce; and (f) strengthen free labor unions.
(a) Yes, exports to U.S. and CARICOM of beef production with increase.
(b) Yes
(c) Limited to enhancing producer association and improving access to credit institution.
(d) Yes
(e) Yes
(f) Limited impact in processing sector, otherwise, no effect anticipated
8. FAA Sec. 601(b). Information and conclusions on how project will encourage U.S. private trade and investment abroad and encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise).
Yes, may encourage U.S. private investment in the Livestock industry in Belize.
9. FAA Secs. 612(b), 636(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the U.S. are utilized in lieu of dollars.
The Memorandum of Agreements will be signed by the GOB with USAID prior to release of project funds for selected programmed activities.

10. FAA Sec. 612(d). Does the U.S. own excess foreign currency of the country and, if so, what arrangements have been made for its release? No
11. FY 1988 Continuing Resolution Sec. 521. If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity? No
12. FY 1988 Continuing Resolution Sec. 553. Will the assistance (except for programs in Caribbean Basin Initiative countries under U.S. Tariff Schedule "Section 807," which allows reduced tariffs on articles assembled abroad from U.S.-made components) be used directly to procure feasibility studies, prefeasibility studies, or project profiles of potential investment in, or to assist the establishment of facilities specifically designed for, the manufacture for export to the United States or to third country markets in direct competition with U.S. exports, of textiles, apparel, footwear, handbags, flat goods (such as wallets or coin purses worn on the person), work gloves or leather wearing apparel? No
13. FAA Sec. 119(g)(4)-(6). Will the assistance (a) support training and education efforts which improve the capacity of recipient countries to prevent loss of biological diversity; (b) be provided under a long-term agreement in which the recipient country agrees to protect ecosystems or other wildlife habitats; (c) support efforts to identify and survey ecosystems in recipient countries worthy of protection; or (d) by any direct or indirect means significantly degrade national parks or similar protected areas or introduce exotic plants or animals into such areas? (a) No (b) No (c) No (d) No

65

14. FAA 121(d). If a Sahel project, has a determination been made that the host government has an adequate system for accounting for and controlling receipt and expenditure of project funds (either dollars or local currency generated therefrom)? N/A
15. FY 1988 Continuing Resolution. If assistance is to be made to a United States PVO (other than a cooperative development organization), does it obtain at least 20 percent of its total annual funding for international activities from sources other than the United States Government? N/A
16. FY Continuing Resolution Sec. 541. If assistance is being made available to a PVO, has that organization provided upon timely request any document, file, or record necessary to the auditing requirements of A.I.D., and is the PVO registered with A.I.D.? N/A
17. FY 1980 Continuing Resolution Sec. 514. If funds are being obligated under an appropriation account to which they were not appropriated, has prior approval of the Appropriations Committees of Congress been obtained? N/A
18. FY Continuing Resolution Sec. 515. If deob/reob authority is sought to be exercised in the provision of assistance, are the funds being obligated for the same general purpose, and for countries within the same general region as originally obligated, and have the Appropriations Committees of both Houses of Congress been properly notified? N/A
19. State Authorization Sec. 139 (as interpreted by conference report). Has confirmation of the date of signing of the project agreement, including the amount involved, been cabled to State L/T and A.I.D. LEG within 60 days of the agreement's entry into force with respect to the United States, and has the full text of the agreement been pouched to those same offices? (See Handbook 3, Appendix 6G for agreements covered by this provision). This is an amendment to a Project Agreement signed by the Government of Belize and United States on August 22, 1983. USAID/Belize will cable state L/T and A.I.D. LEG of signing date and amounts as soon as this is confirmed.

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

a. FY 1908 Continuing Resolution Sec. 552 (as interpreted by conference report). If assistance is for agricultural development activities (specifically, any testing or breeding feasibility study, variety improvement or introduction, consultancy, publication, conference, or training), are such activities (a) specifically and principally designed to increase agricultural exports by the host country to a country other than the United States, where the export would lead to direct competition in that third country with exports of a similar commodity grown or produced in the United States, and can the activities reasonably be expected to cause substantial injury to U.S. exporters of a similar agricultural commodity; or (b) in support of research that is intended primarily to benefit U.S. producers?

Increased Livestock production in Belize will lead to some exports of beef products to CARICOM countries. However, the projected amount of Belize exports will not be significant to cause substantial injury to U.S. beef exporters.

b. FAA Secs. 102(b), 111, 113, 281(a). Describe extent to which activity will (a) effectively involve the poor in development by extending access to economy at local level, increasing labor-intensive production and the use of appropriate technology, dispersing investment from cities to small towns and rural areas, and

(a) Small and medium farmers in Belize will participate fully in production related programs for Swine, Beef Cattle and Dairy.

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

(b) Milk producers serving dairy cooperative will be assisted by short-term specialist.
(c) Selfhelp efforts are encouraged through the extension service and the Belize Livestock Producers Association.
(d) Women's participation is encouraged, particularly in the Swine production program.
(e) Project will have little measurable effects for regional cooperation.

- c. FAA Secs. 103, 103A, 104, 105, 106, 120-21. Does the project fit the criteria for the source of funds (functional account) being used?
- d. FAA Sec. 107. Is emphasis placed on use of appropriate technology (relatively smaller, cost-saving, labor-using technologies that are generally most appropriate for the small farms, small businesses, and small incomes of the poor)?
- e. FAA Secs. 110, 124(d). Will the recipient country provide at least 25 percent of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or is the latter cost-sharing requirement being waived for a "relatively least developed" country)? **
- f. FAA Sec. 128(b). If the activity attempts to increase the institutional capabilities of private organizations or the government of the country, or if it attempts to stimulate scientific and technological research, has it been designed and will it be monitored to ensure that the ultimate beneficiaries are the poor majority?

Yes

Project will result in:
(a) Cost effective on-farm storage demonstration
(b) Improved meat processing techniques for local market.
(c) Feed ration programs for small scale livestock producers (mainly Swine).
(d) Use of local material to build livestock market facilities, feed lots and pens for Beef Cattle and Swine.
(e) Use of small scale equipment at farm level for improved cooling and delivery of milk from farm and market.

e.** Yes.

The project is designed so small and medium producers can be the primary beneficiaries.

6

g. FAA Sec. 201(b). Describe extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual resources to encourage institutional development; and supports civil education and training in skills required for effective participation in governmental processes essential to self-government.

The project is designed to accommodate the particular social and cultural needs of the varied ethnic participants in Belize. The project builds upon the capabilities existing in the MOA and offer Specific technical economic training of MOA staff. Special emphasis will be made to utilize the private sector and expand their participations responding directly to the Livestock Sector. Training and technical assistance are two major project inputs.

h. FY 1988 Continuing Resolution Sec. 538. Are any of the funds to be used for the performance of abortions as a method of family planning or to motivate or coerce any person to practice abortions?

No

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

No

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

No

i. FY 1988 Continuing Resolution. Is the assistance being made available to any organization or program which has been determined to support or participate in the management of a program of coercive abortion or involuntary sterilization?

No

If assistance is from the population functional account, are any of the funds to be made available to voluntary family planning projects which do not offer, either directly or through referral to or information about access to, a broad range of family planning methods and services?

No

- j. FAA Sec. 601(e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise? Procurement rules will include these governing relationships with title XII institution.
- k. FY 1988 Continuing Resolution. What portion of the funds will be available only for activities of economically and socially disadvantaged enterprises, historically black colleges and universities, colleges and universities having a student body in which more than 20 percent of the students are Hispanic Americans, and private and voluntary organizations which are controlled by individuals who are black Americans, Hispanic Americans, or Native Americans, or who are economically or socially disadvantaged (including women)? N/A
- l. FAA Sec. 118(c). Does the assistance comply with the environmental procedures set forth in A.I.D. Regulation 16? Does the assistance place a high priority on conservation and sustainable management of tropical forests? Specifically, does the assistance, to the fullest extent feasible: (a) stress the importance of conserving and sustainably managing forest resources; (b) support activities which offer employment and income alternatives to those who otherwise would cause destruction and loss of forests, and help countries identify and implement alternatives to colonizing forested areas; (c) support training programs, educational efforts, and the establishment or strengthening of institutions to improve forest management; (d) help end destructive slash-and-burn agriculture by supporting stable and productive farming practices; (e) help conserve forests which have not yet been degraded by helping to increase production on lands already cleared N/A

or degraded; (f) conserve forested watersheds and rehabilitate those which have been deforested; (g) support training, research, and other actions which lead to sustainable and more environmentally sound practices for timber harvesting, removal, and processing; (h) support research to expand knowledge of tropical forests and identify alternatives which will prevent forest destruction, loss, or degradation; (i) conserve biological diversity in forest areas by supporting efforts to identify, establish, and maintain a representative network of protected tropical forest ecosystems on a worldwide basis, by making the establishment of protected areas a condition of support for activities involving forest clearance or degradation, and by helping to identify tropical forest ecosystems and species in need of protection and establish and maintain appropriate protected areas; (j) seek to increase the awareness of U.S. government agencies and other donors of the immediate and long-term value of tropical forests; and (k) utilize the resources and abilities of all relevant U.S. government agencies?

- m. FAA Sec. 110(c)(13). If the assistance will support a program or project significantly affecting tropical forests (including projects involving the planting of exotic plant species), will the program or project (a) be based upon careful analysis of the alternatives available to achieve the best sustainable use of the land, and (b) take full account of the environmental impacts of the proposed activities on biological diversity?

N/A

- n. FAA Sec. 118(c)(14). Will assistance be used for (a) the procurement or use of logging equipment, unless an environmental assessment indicates that all timber harvesting operations involved will be conducted in an environmentally sound manner and that the proposed activity will produce positive economic benefits and sustainable forest management systems; or (b) actions which will significantly degrade national parks or similar protected areas which contain tropical forests, or introduce exotic plants or animals into such areas? No
- o. FAA Sec. 118(c)(15). Will assistance be used for (a) activities which would result in the conversion of forest lands to the rearing of livestock; (b) the construction, upgrading, or maintenance of roads (including temporary haul roads for logging or other extractive industries) which pass through relatively undegraded forest lands; (c) the colonization of forest lands; or (d) the construction of dams or other water control structures which flood relatively undegraded forest lands, unless with respect to each such activity an environmental assessment indicates that the activity will contribute significantly and directly to improving the livelihood of the rural poor and will be conducted in an environmentally sound manner which supports sustainable development? No
- p. FY 1988 Continuing Resolution If assistance will come from the 'Sub-Saharan Africa DA account, is it (a) to be used to help the poor majority in Sub-Saharan Africa through a process of long-term development and economic growth that is equitable, participatory, environmentally sustainable, and self-reliant; (b) being provided in N/A

12

accordance with the policies contained in section 102 of the FAA; (c) being provided, when consistent with the objectives of such assistance, through African, United States and other PVOs that have demonstrated effectiveness in the promotion of local grassroots activities on behalf of long-term development in Sub-Saharan Africa; (d) being used to help overcome shorter-term constraints to long-term development, to promote reform of sectoral economic policies, to support the critical sector priorities of agricultural production and natural resources, health, voluntary family planning services, education, and income generating opportunities, to bring about appropriate sectoral restructuring of the Sub-Saharan African economies, to support reform in public administration and finances and to establish a favorable environment for individual enterprise and self-sustaining development, and to take into account, in assisted policy reforms, the need to protect vulnerable groups; (e) being used to increase agricultural production in ways that protect and restore the natural resource base, especially food production, to maintain and improve basic transportation and communication networks, to maintain and restore the natural resource base in ways that increase agricultural production, to improve health conditions with special emphasis on meeting the health needs of mothers and children, including the establishment of self-sustaining primary health care systems that give priority to preventive care, to provide increased access to voluntary family planning services, to improve basic literacy and mathematics especially to those outside the formal educational system and to improve primary education, and to develop income-generating opportunities for the unemployed and underemployed in urban and rural areas?

12

2. Development Assistance Project Criteria
(Loans Only)

- a. FAA Sec. 122(b). Information and conclusion on capacity of the country to repay the loan at a reasonable rate of interest. N/A

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

- c. FY 1988 Continuing Resolution. If for a loan to a private sector institution from funds made available to carry out the provisions of FAA Sections 103 through 106, will loan be provided, to the maximum extent practicable, at or near the prevailing interest rate paid on Treasury obligations of similar maturity at the time of obligating such funds? N/A

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

3. Economic Support Fund Project Criteria

- a. FAA Sec. 531(a). Will this assistance promote economic and political stability? To the maximum extent feasible, is this assistance consistent with the policy directions, purposes, and programs of Part I of the FAA? N/A

- b. FAA Sec. 531(e). Will this assistance be used for military or paramilitary purposes? N/A

- c. FAA Sec. 609. If commodities are to be granted so that sale proceeds will accrue to the recipient country, have Special Account (counterpart) arrangements been made? N/A

5C(3) - STANDARD ITEM CHECKLIST

Listed below are the statutory items which normally will be covered routinely in those provisions of an assistance agreement dealing with its implementation, or covered in the agreement by imposing limits on certain uses of funds.

These items are arranged under the general headings of (A) Procurement, (B) Construction, and (C) Other Restrictions.

A. PROCUREMENT

1. FAA Sec. 602(a). Are there arrangements to permit U.S. small business to participate equitably in the furnishing of commodities and services financed? Yes
2. FAA Sec. 604(a). Will all procurement be from the U.S. except as otherwise determined by the President or under delegation from him? Yes
3. FAA Sec. 604(d). If the cooperating country discriminates against marine insurance companies authorized to do business in the U.S., will commodities be insured in the United States against marine risk with such a company? N/A
4. FAA Sec. 604(e); ISDCA of 1980 Sec. 705(a). If non-U.S. procurement of agricultural commodity or product thereof is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity? (Exception where commodity financed could not reasonably be procured in U.S.) Yes
5. FAA Sec. 604(q). Will construction or engineering services be procured from firms of advanced developing countries which are otherwise eligible under Code 941 and which have attained a competitive capability in international markets in one of these areas? (Exception for those Yes

76

countries which receive direct economic assistance under the FAA and permit United States firms to compete for construction or engineering services financed from assistance programs of these countries.)

6. FAA Sec. 603. Is the shipping excluded from compliance with the requirement in section 901(b) of the Merchant Marine Act of 1936, as amended, that at least 50 percent of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed shall be transported on privately owned U.S. flag commercial vessels to the extent such vessels are available at fair and reasonable rates? Yes
7. FAA Sec. 621(a). If technical assistance is financed, will such assistance be furnished by private enterprise on a contract basis to the fullest extent practicable? Will the facilities and resources of other Federal agencies be utilized, when they are particularly suitable, not competitive with private enterprise, and made available without undue interference with domestic programs? Yes
8. International Air Transportation Fair Competitive Practices Act, 1974. If air transportation of persons or property is financed on grant basis, will U.S. carriers be used to the extent such service is available? Yes
9. FY 1988 Continuing Resolution Sec. 504. If the U.S. Government is a party to a contract for procurement, does the contract contain a provision authorizing termination of such contract for the convenience of the United States? Yes
10. FY 1988 Continuing Resolution Sec. 524. If assistance is for consulting service through procurement contract pursuant to 5 U.S.C. 3109, are contract expenditures a matter of public record and available for public inspection (unless otherwise provided by law or Executive order)? Yes

17

B. CONSTRUCTION

1. FAA Sec. 601(d). If capital (e.g., construction) project, will U.S. engineering and professional services be used?

Project will have limited construction activities using Belizean and/or U.S. Contractors.

2. FAA Sec. 611(c). If contracts for construction are to be financed, will they be let on a competitive basis to maximum extent practicable?

Yes

3. FAA Sec. 620(k). If for construction of productive enterprise, will aggregate value of assistance to be furnished by the U.S. not exceed \$100 million (except for productive enterprises in Egypt that were described in the CP), or does assistance have the express approval of Congress?

No

C. OTHER RESTRICTIONS

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

N/A

2. FAA Sec. 301(d). If fund is established solely by U.S. contributions and administered by an international organization, does Comptroller General have audit rights?

N/A

3. FAA Sec. 620(h). Do arrangements exist to insure that United States foreign aid is not used in a manner which, contrary to the best interests of the United States, promotes or assists the foreign aid projects or activities of the Communist-bloc countries?

Yes

4. Will arrangements preclude use of financing:

- a. FAA Sec. 104(f); FY 1987 Continuing Resolution Secs. 525, 538. (1) To pay for performance of abortions as a method of family planning or to motivate or coerce persons to practice abortions; (2) to pay for performance of involuntary sterilization as method of family planning, or to coerce or provide financial incentive to any person to undergo sterilization; (3) to pay for any biomedical research which relates, in whole or part, to methods or the performance of abortions or involuntary sterilizations as a means of family planning; or (4) to lobby for abortion? N/A
- b. FAA Sec. 403. To make reimbursements, in the form of cash payments, to persons whose illicit drug crops are eradicated? Yes
- c. FAA Sec. 620(q). To compensate owners for expropriated or nationalized property, except to compensate foreign nationals in accordance with a land reform program certified by the President? Yes
- d. FAA Sec. 660. To provide training, advice, or any financial support for police, prisons, or other law enforcement forces, except for narcotics programs? Yes
- e. FAA Sec. 662. For CIA activities? Yes
- f. FAA Sec. 636(i). For purchase, sale, long-term lease, exchange or guaranty of the sale of motor vehicles manufactured outside U.S., unless a waiver is obtained? Yes

71

- g. FY 1988 Continuing Resolution Sec. 503. To pay pensions, annuities, retirement pay, or adjusted service compensation for prior or current military personnel? Yes
- h. FY 1988 Continuing Resolution Sec. 505. To pay U.N. assessments, arrearages or dues? Yes
- i. FY 1988 Continuing Resolution Sec. 506. To carry out provisions of FAA section 209(d) (transfer of FAA funds to multilateral organizations for lending)? Yes
- j. FY 1988 Continuing Resolution Sec. 510. To finance the export of nuclear equipment, fuel, or technology? Yes
- k. FY 1988 Continuing Resolution Sec. 511. For the purpose of aiding the efforts of the government of such country to repress the legitimate rights of the population of such country contrary to the Universal Declaration of Human Rights? Yes
- l. FY 1988 Continuing Resolution Sec. 516; State Authorization Sec. 109. To be used for publicity or propaganda purposes designed to support or defeat legislation pending before Congress, to influence in any way the outcome of a political election in the United States, or for any publicity or propaganda purposes not authorized by Congress? Yes

ANNEX VI

LIVESTOCK DEVELOPMENT PROJECT PHASE II

Illustrative Budget	Unit	Base	A.I.D. Contribution (4 years)	
			FX	LC
I. Project Administration				
A. Local Hire Staff				
Administrator (month)	48.00	\$2,000.00		\$96,000
Assistant/Secretary (month)	48.00	\$500.00		\$24,000
B. Livestock Office				
Office Support (month)	48.00	\$500.00		\$24,000
Fuel (gals)	48000.00	\$1.50		\$72,000
Maintenance	48.00	\$1,500.00		\$72,000
Office Equipment	1.00	\$65,000.00	\$65,000	
Computer	1.00	\$8,000.00	\$8,000	
Typewriter	1.00	\$700.00	\$700	
Air Conditioner	2.00	\$800.00	\$1,600	
Copier	1.00	\$1,000.00		\$1,000
Furniture	1.00	\$15,000.00	\$15,000	
Office Supplies	12.00	\$2,000.00		\$24,000
Vehicles	3.00	\$15,000.00	\$45,000	
Subtotal Admin.				\$448,300
Misc./Cont	0.05	\$448,300.00	\$22,415	
Total Admin.				\$470,715
II. Technical Assistance				
A. Long Term				
1. Pasture Management				
Salary (yr)	1.50	\$60,000.00	\$90,000	
Fringe Benefit (25%)	0.25	\$90,000.00	\$22,500	
Travel/Transport				
Intern'l Travel (rd trip)	2.00	\$600.00	\$1,200	
R&R (rd trip)	2.00	\$600.00	\$1,200	
Miscellaneous Travel			\$1,100	
Local Travel (gals)	5000.00	\$1.50		\$7,500
Transport/Storage			\$11,000	
Allowances				
Post Diff. (25%)	0.25	\$90,000.00	\$22,500	
Cost of Living (yr)	1.5	\$2,000.00	\$3,000	
Draperly (tour)	1	\$600.00	\$600	
Per Diem (day)	220.00	\$88.00	\$19,360	
Temp. Quarters				\$7,500
Residential Support (month)	18.00	\$850.00		\$15,300
Education (year)	2.00	\$16,500.00	\$33,000	
Other Direct Costs				
Physical Exams	4.00	\$300.00	\$1,200	
Communications			\$3,500	
Passports	2.00	\$75.00	\$150	
Sub Total LT Pasture TA				\$210,310
Total FX + LC				\$240,610
2. Livestock Management				

20

Salary (yr)	1.50	\$60,000.00	\$90,000	
Fringe Benefit (25%)	0.25	\$90,000.00	\$22,500	
Travel/Transport				
Intern'l Travel (rd trip)	2.00	\$600.00	\$1,200	
R&R (rd trip)	0.00	\$600.00	\$0	
Miscellaneous Travel			\$1,100	
Local Travel (gals)	3000.00	\$1.50		\$4,500
Transport/Storage			\$11,000	
Allowances				
Post Diff. (25%)	0.25	\$90,000.00	\$22,500	
Cost of Living (yr)	1.00	\$2,000.00	\$2,000	
Draperly (tour)	1.00	\$600.00	\$600	
Per Diem (day)	150.00	\$88.00	\$13,200	
Temp. Quarters				\$2,500
Residential Support (month)	18.00	\$850.00		\$15,300
Education (yr)	2.00	\$16,500.00	\$33,000	
Other Direct Costs				
Physical Exams	4.00	\$300.00	\$1,200	
Communications			\$1,500	
Passports	2.00	\$75.00	\$150	
Sub Total LT Livestock TA				\$199,950
Total FX + LC				\$222,250
B. Short Term Specialists (22mos)				
2 mos AI				
1 1/2 mos Nutrition				
2 1/2 mos Gen. Lstk Mktg				
2 mos Grain Mktg				
2 mos On-Farm Storage				
2 mos Dairy Production				
3 mos Meal Processing				
1 mo Meal Grades and Standards				
2 mos Animal Breeding				
2 mos Agricultural Credit				
2 mos Unspecified				
International Travel (rd trip)	22.00	\$600.00	\$13,200	
Per Diem (days)	594.00	\$88.00	\$52,272	
In Country Travel (gals)	5000.00	\$1.50	\$7,500	
Salaries (days)	572.00	\$269.00	\$153,868	
Total Short Term TA				\$226,840
III. Training				
LT-4 positions/2yrs	8.00	\$22,000.00	\$176,000	
ST-15 positions 20mos	20.00	\$3,500.00	\$70,000	
-Travel	15.00	\$800.00	\$12,000	
LT-In country	12.00	\$15,000.00	\$180,000	
In-Country Short Courses	130.00	\$900.00	\$117,000	
-Special Instructors			\$10,000	
Total Training				\$565,000
IV. Commodities				

A. Livestock Development			
1. Genetic Improvement			
-Dairy Improvement Equip.			\$6,000
-AI Equipment			\$65,000
-Breeding Stock			\$120,000
2. Central Market			
-Scales/Demonstration Equip.			\$15,000
-Vehicle Trailer - BLPA	1.00	\$20,000.00	\$20,000
-BLPA Support-Computer/ Software, Duplicator			\$15,000
-Livestock Market Development			\$130,000
3. Contractor Support			
-Vehicles	2.00	\$15,000.00	\$30,000
-Expendable, Support Equipment and Supplies, Demonstration Materials	1.00	\$10,000.00	\$10,000
B. Pasture/Feed			
1. Extension Education			
-Audio/Visual, Demonstration Supplies/Small Gen./Library Texts/Tech Mater./Training	1.00	\$20,000.00	\$20,000
2. Applied Research			
-Operational Tools, Testing Equip./Fert./Expen. Equip.	1.00	\$20,000.00	\$20,000
3. Expendable Support Equip. Supplies, Demonstr. Mater.			
	1.00	\$10,000.00	\$10,000
4. Farm Demonstration Equip.			
-Portable Scales, Tractor, Gates			\$50,000
C. Policy Analysis			
1. Computer/Software/Related Statistic Access. Equip.			
	1.00	\$15,000.00	\$15,000
2. Vehicle			
	1.00	\$15,000.00	\$15,000
D. Laboratory Services			
-Seed Testing			
-Certificatn, Multiplicatn	1.00	\$40,000.00	\$40,000
-Feed Ration Analysis Equip.	1.00	\$20,000.00	\$20,000
-Soil Analysis Equip.	1.00	\$15,000.00	\$15,000
-Veterinary Lab/Clinic	1.00	\$50,000.00	\$50,000
-Meat Residue Analysis Lab.	1.00	\$60,000.00	\$60,000
E. Credit			
-Computer/Software	1.00	\$10,000.00	\$10,000
Total Commodities			\$736,000

V. Support Activities			
1. Screwworm Eradication Program			\$200,000
2. TA to BLPA (18 mos x \$1000/mo)	18.00	\$1,000.00	\$18,000
3. Storage Expansion Meat Residue Laboratory (10' x 20' @ \$30/ft)	200.00	\$30.00	\$6,000
4. Policy Analysis Studies	5.00	\$30,000.00	\$150,000
Total Support Activities			\$374,000
VI. Evaluation/Audit	4.00	\$16,250.00	\$65,000
VII. Inflation		\$50,000.00	\$50,000
VIII. SUBTOTAL			\$2,950,415
IX. Contingency		\$49,585	\$49,585
GRAND TOTAL		\$2,634,400	\$365,600
			\$3,000,000

27

ANNEX VII

ILLUSTRATIVE SCOPES OF WORK FOR

TECHNICAL ASSISTANCE

Project Administrator (Host Country National)

The position requires administrative expertise in agricultural project financial planning and management, logistics for goods and services and personnel management. The individual should have considerable knowledge of host country institutions and their modes of operation. Experience in understanding how donor development agencies, such as A.I.D., operate would be very helpful.

This assistance will be provided through a Host Country contract with the GOB/MOA. The Administrator will be responsible for the establishment of a Livestock Project Office at the MOA Fairgrounds. The MOA will provide the facilities for the office. Funds for the operation of the office will be provided under the Host Country contract with the GOB.

The position is designated as the key administrative position for day-to-day service and technical support to the project and managing major non-technical logistics for the contract team and short-term consultants. This person will be hired by the GOB/MOA with funds provided within the project. An assistant will also be hired to work with the Project Administrator in the coordination and administration of the project. The A.I.D. Project Officer will help in the selection of candidate who will report to MOA Chief Agriculture Officer or his designee.

Specific tasks include:

1. Logistics - handle day-to-day project general service requirements (e.g., local procurement, supplies, vehicle maintenance, communications and oversee secretarial support services);
2. Report Management - assure contractor reports meet USAID and host country requirements as stipulated in contract documents;
3. Fiscal Management - handle financial reporting as required for host country, contract home office, and USAID.

4. Contract Agreements - assist in the preparation and oversight of key project instruments as negotiated upon by USAID, the contractor and/or relevant host country public or private institution including Memorandums of Understanding, procurement waivers/approvals, construction plans/contracts, revolving funds, and special fund accounts.
5. Short-term Consultants - provide non-technical logistics and support services.
6. Orchestrate A.I.D. inputs with the Belize Livestock Producers Association (BLPA) in the establishment and implementation of the central market system, and the genetic improvement activities.
7. Collaborate with MOA, BLPA, Long term management specialists and short-term consultants in implementing the training components of the project.
8. Participate with MOA veterinary personnel, health department personnel and producers in improving on-farm milking procedures and milk handling from farm to dairy plant.
9. Monitor the Screwworm Eradication Program.
10. Help coordinate project resources to the laboratory management component particularly to the Meats and Diagnostic Laboratory.
11. Coordinate equipment needs of ST personnel to assure timely procurement.
12. Coordinate each activity's credit needs and requests with short-term credit specialist.

Livestock Development Specialist (Long-Term)

The position requires proven experience in developing, implementing and managing integrated livestock programs. The individual must be a well trained animal science specialist and have at least 15 years working experience in livestock production programs. The specialist must have proven skills in managing personnel, planning long-term programs and must possess the technical capacity to render judgments and advice on a wide range of animal science issues - particularly in beef, dairy and swine. He/she must understand and know how to inter-link research related activities with extension and how to draw on resources to interface with his/her own skills.

Experience in tropical livestock development is mandatory, (15 years experience; at least 5 years in a development setting, minimum MS in animal sciences/husbandry). Overall, this advisor will work with the Project Administrator to coordinate U.S. consultant services, training and commodity procurement in the project. This advisor coordinates directly with the USAID/Belize Project Officer and the GOB Ministry of Agriculture in the planning and implementation of this project. A Project Administrator will be employed by the MOA to assist in the day to day management and support services.

Specific tasks include:

1. Work in close coordination with the MOA's Policy and Economic Analysis Unit in the selection and conducting of policy related studies for the project that will enhance the livestock sector.
2. Promote animal nutrition activities as part of improved on-farm husbandry practices. Emphasis on using local ingredients for improved ration programs, improving analytical and sampling techniques, training programs for extension workers and on-farm demonstrations with livestock. Special assistance will be given to swine producers based on work started in Phase I of the project.
3. Help establish an improved system of feed-tag information standards complete with ingredient lists, guaranteed analyses and mixing instructions.
4. Participate with MOA livestock and veterinary personnel in improved husbandry and animal health care programs for expanded livestock activities and breeding improvements. This function includes providing assistance on the importation of improved breeding stock (swine and cattle) and on the establishment of a reliable artificial insemination network with emphasis on supporting the fledgling dairy industry.

Pasture/Forage Management Specialist (Long-Term)

The position requires proven experience in planning, implementing, managing and assessing forage/pasture activities designed to improve swine/beef/dairy production enterprises in Belize. The individual should have at least 10 years working experience in forage production and management programs. Capabilities in developing applied research, field demonstrations, and extension training programs and planning for activities that will be in effect for three to five years

are requisite to the position. It is important to know how to inter-relate demonstration programs with farmers through extension agents, help analyze data - particularly for economic impact; and render technical judgments on a wide range of pasture/forage related issues. At least five years work experience in tropical environments in a developmental context is mandatory.

Overall, this advisor will direct the pasture/forage development activities of the project and will coordinate most of his work with the GOB, Ministry of Agriculture in collaboration with livestock producers.

The Pasture Advisor will be assigned a MOA counterpart with whom the advisor will coordinate and conduct all pasture activities.

Specific tasks include:

1. Develop base data formats for assessing performances of trials and demonstrations with a special emphasis on cost of product on analysis.
2. Develop viable pasture and forage programs that improves the efficiency and quality of swine, beef and dairy production.
3. Demonstrate on farmers fields (and Central Farm) a range of grasses and other crops that contribute to animal feeding and nutrition activities with an emphasis on management improvements.
4. Increase performance of extension workers and other outreach personnel in various areas of improved pasture/forage management and feed development through demonstrations, seminars, field days and on-farm testing.
5. Participate with other institutions related to pasture/forage activities on a case-by-case basis with emphasis on upgrading demonstration programs on Central Farm and farmers fields.
6. Help design special studies in cooperation with the MOA Policy Analysis Unit that could be useful in influencing improving policies to the sector.
7. Give support and technical guidance for improving analytical capabilities to the laboratories at Central Farm.
8. Guest lecture for BCA (not full time).

9. Coordinate activities with MOA counterpart.

Short-Term Specialists

1. Artificial Insemination Specialist

Assist Ministry of Agriculture to service the private sector producers and establish an Artificial Insemination (AI) program with emphasis on the dairy industry.

Tasks include:

(a) Help develop an operational plan for the AI program with GOB counterparts. Use BLPA to assist with communications between the AI program and livestock producers for a fully integrated activity.

(b) Participate in selection of needed equipment and help install nitrogen generator at Central Farm.

(c) Conduct training seminars or demonstrations with producers that emphasizes basic elements for a successful AI program.

(d) Assist in selection and ordering of semen and promoting proper procedures for record keeping.

2. Animal Nutrition Specialist

Assist MOA personnel - particularly extension workers - improve basic nutritional concepts for dairy, beef, and swine and to a lesser extent poultry and work closely with producers to carry out improved packages of feeding practices. The end package should contribute to higher herd offtake, higher birth rates, shorter time to maturity and better price received by farmers for their product.

Tasks include:

(a) Organize and participate in short courses and/or seminars for extension workers, livestock producers and special interest groups.

(b) Promote more systematic and supervised mixed feed rationing program for producers - with special emphasis to swine production. Work should evolve on least-cost, balanced rations and making full use of waste and by-product feeds.

(c) Assessment of programs of feed analysis and testing for possible improvement in monitoring and regulation of feed industry.

(d) Participate with dairy producers in promoting improved nutrition related activities for quality milk production.

(e) Collaborate closely with the Pasture/Forage Management Specialist.

3. Livestock Marketing Specialist

Assist Ministry of Agriculture and Belize Livestock Producers Association in selected marketing activities that will improve marketing efficiency of the livestock sector. Analytical skills in marketing related economics is requisite.

Tasks include:

(a) Assist in the planning establishment and operation of the central market operations.

(b) Help team leader and MOA Policy Analysis and Economics Unit formulate basis of several of the policy studies that are directed towards marketing concerns.

(c) Assess and recommend ways export markets for beef and processed meat products can be further developed - primarily in CARICOM.

(d) Devise ways essential market services can be provided at lower cost. Close liaison required with MOA, BLPA meat processors association and other marketing entities.

4. On-farm Storage Specialist

Assist in testing with Ministry of Agriculture and producers some techniques and procedures to reduce postharvest losses of feed grain at the farm level.

Tasks include:

(a) Based on the existing information conduct the construction and field testing of improved storage facilities at Central Farm and on selected producer sites, and establish a system of monitoring and collecting data to determine the results of improved structures.

(b) Give guidance and seminars, where applicable, to extension workers and feed grain producers on improved on-farm storage.

(c) Review and identify major problems related to on farm losses of forage/feed grains.

5. Meat Processing Specialist

Assist processors to expand their capacities to manufacture and market improved quality processed meat products to compete with imported products and drive demand for domestically produced livestock.

Tasks include:

(a) Develop and conduct workshops demonstrations and/or seminars in appropriate meat processing techniques. Prepare programs for processors to have on-the-job experiences in the appropriate site similar to the Belizean condition.

(b) Explore possibilities of producing a marketable corned beef product.

(c) Develop and demonstrate procedures for cost effective cutting and utilization of animal carcasses.

(d) Review and evaluate facilities and recommend ways to improve efficiency, meet health standards and maintain equipment.

(e) Assist meat processors in identifying meat processing equipment, costs, and liaison with credit specialty for securing funds.

7. Meat Grades and Standards Specialist

Assist the MOA and BLPA establish grades for live market animals and help set acceptable standards for meat products.

Tasks include:

(a) Review current procedures for establishing market prices and develop meat grades and standards to improve pricing efficiency.

(b) Establish procedures with public and private sector personnel in animal grading techniques and establishing pricing/grade relationships appropriate to Belizean conditions.

91

(c) Work with BLPA and meats industry to assure grades systems are understood by producers and promote monitoring steps to assure industry support and adherence.

(d) Develop selective workshops and/or seminars for extension personnel and producers/processors of the private sector.

(e) Liaison with marketing specialists.

8. Dairy Production Specialist.

Assist Ministry of Agriculture and dairy producers promote improved husbandry practices that will provide quality milk for consuming public.

Tasks include:

(a) Work with producers and Central Farm in improving production efficiency of clean milk.

(b) Explore and test ways to improve cooling of milk at the farm level and simplify transport to processing plants.

(c) Establish a milk improvement program with the producers that service the Macal Dairy Cooperative.

(d) Prepare for extension workers, check list of evaluating farm milking practices and set up appropriate seminars and/or workshop on improved husbandry practices.

9. Laboratory Management Specialist.

Improve the Ministry of Agriculture capacity to perform those basic laboratory services at the Central Farm and the Meats Diagnostic Laboratory to support livestock development activities.

Tasks include:

(a) Review, assess, and prepare list of equipment for special laboratory work to support testing services in the veterinary clinic, in seed certification and multiplication (forages), soils, feeds and the meat diagnostic work that need to be procured and installed.

(b) Determine with Central Farm management, the physical improvements of the laboratories and help develop the layout for construction of new facilities where needed.

1/2

- (c) Review training needs for key laboratory personnel and work with contract team and MOA officials in facilitating a training program. Develop training plans for short-term candidates preparing for program in U.S. or Caribbean region.
- (d) Prepare guidelines for improved laboratory techniques and procedures and participate in training seminars for laboratory management personnel.
- (e) Review program of meat residue analysis at the Belize City facility.

10. Credit Specialist

Develop an operational plan for the Livestock project that will establish a special credit program for Livestock producers who require short and medium term production credit.

Tasks include:

- (a) Produce a plan of action for a livestock producer and processor credit program that is agreed upon by USAID, BLPA, MOA and the participating banking organization.
- (b) Develop the memorandum of understanding that accompanies subject plan.
- (c) Assure extension, banking support and BLPA support to the supervisory process of these credit activity so it is incorporated within plans.
- (d) Work closely with A.I.D. and contractor to assure credit plan meets pre-determined criteria of strengthening credit opportunities to producers.
- (e) Establish evaluation criteria for credit performance.

ANNEX VIII

ILLUSTRATIVE TRAINING PLAN

1. Long-Term Training

The following categories are representative of long-term (LT) training needs in the livestock sector to strengthen Belize Ministry of Agriculture. Due to scarcity and/or availability of personnel that will eventually be approved to attend LT training in the U.S. or Caribbean area countries, this project is allocating 4 participants for 2 years each.

Subject Area

- Animal Science (Breeding)
- Animal Science (Nutrition)
- Agronomy (Food/Feed Grain Production)
- Pasture Management
- Food Processing (Meat/Meat Products)
- Veterinary Science
- Poultry Husbandry

Schedule

Participants 1-2	Select by 7/88. Enroll in training by 9/88. Complete training by 8/90.
Participants 3-4	Select by 5/89. Enroll in training by 9/89. Complete training by 8/91.

Project Funding

(U.S.)\$176,000

2. Short-term Training

The following categories are representative (but not exclusive) of short-term (ST) training needs in the livestock sector for both the private sector and Ministry of Agriculture, with a preference to private sector individuals. These ST training grants will be primarily to the U.S. and Caribbean areas. The project is planning to have 15 grants totaling 20 person months.

Subject Areas

Butcher/processor internship grants
Credit
Extension (Communications)
Seed Certification/Multiplication (Forage Grasses/Legumes)
Disease Control (Livestock)
Grain/Feed Storage
Laboratory Management
Statistics
Animal Breeding/Management
Marketing (Livestock)

Schedule

5 ST Grants completed by 5/89
7 additional ST Grants completed by 5/90
3 additional ST Grants completed 1/91

Project Funding

(U.S.)\$82,000

3. Special In-country Training Programs (Workshops/Seminars/
Short Courses)

The following categories are representative of in-country training programs that are designed for Government field workers, producers and processors, and private foundation and bank personnel to facilitate livestock development.

Subject Areas

Extension Communications (primarily for extension workers,
credit personnel and lead farmers)
Farm Management
Artificial Insemination
Livestock Marketing/Processing
Pasture Management
Dairy Husbandry
Feeds and feeding
Livestock Husbandry
Supervised Credit

Schedule

5 in-country training programs in Year 1 of Project
9 in-country training programs in Year 2 of Project
6 in-country training programs in Year 3 of Project

The training plan under the project should be completed and approved by MOA and USAID by June 1988 (3 months after arrival of LT Project Consultants.)

Project Funding

(U.S.)\$123,750.

ANNEX IX

ECONOMIC ANALYSIS

I. Economic Benefit-Cost Analysis of Livestock Development Phase II.

Benefits: The measurable economic benefits are attributed to increases in livestock and dairy production resulting from Project activities. These benefits will lead to foreign exchange earnings or savings for the country to the extent that increased output are either sold abroad or substitute for imports in the domestic market. The Project's estimated economic benefits are derived from the projected production benefits accruing from the various sub-activities or components. This is a more conservative approach than one using the expected output increases based on Project goals/purpose in the Log-frame.

Costs: Economic costs include all inputs used by the Project and farmer-adapters to obtain the level of economic benefits projected above. Project inputs include technical assistance, market construction, screw/worm component, laboratory improvement and support and training. Shadow pricing for labor and foreign exchange are not necessary because market values in Belize appear to approximate the opportunity cost of labor and the rate of foreign exchange seems realistic and needs no adjustment.

As shown in Table 1, the Project has an economic benefit-cost ratio of 1.10 based on a social discount rate of 10 percent and a 25-year stream of benefits and costs, indicating that its economic impact is greater than the investment. Other economic and social benefits of the Project, such as increased income and labor demand arising from ancillary industries linked to livestock production and meat processing, are not included in the analysis due to unreliable data. The social benefits should be substantial since local meat processing firms are going to expand their operations to take advantage of market opportunities, particularly from abroad. The inclusion of such benefits should result in higher economic returns.

II. Economic Internal Rate of Return for Project Sub-Activities.

A. Genetic Improvement - Beef

Production Benefits: The results expected from improvements in genetic stock will take approximately three years to show up as increased productivity in cattle. The beginning herd size of farmers expected to take advantage of new blood lines is estimated at 7,500 head. Average weight at time of sale will be at least 900 pounds and average price is estimated at \$0.40 per pound. Both of these are considered conservative figures. A simple calculation of production benefits is calculated by multiplying beginning herd size (7,500) times estimated production increases (5 percent). This result is multiplied by the average weight per sale times the average selling price per pound to get the benefits resulting from this project activity. For simplicity, this calculation is carried out through year 20 even though herd size will increase as will numbers of farmer adapters.

Costs: These costs include technical inputs as well as commodities used to increase the genetic base of the cattle. The resulting IRR for this activity is 32.4%, as shown in Table 2.

B. Improved Pasture/Forage Feeds - Beef

Production Benefits: These are derived in the same manner as in the Genetic Improvement sub-activity. Increased productivity arising from improved pasture and forage feeds is expected to begin on the third year. The herd size affected would be 7,500 head. Production is expected to increase 5% annually after year 3.

Costs: These costs include technical inputs as well as commodities used to increase the productivity of pasture and forage feeds. The estimated IRR for this activity is 32.4% as shown in Table 3.

C. Dairy Herd Improvement

Production Benefits: Various project activities will impact on dairy production throughout the life of the Project: genetic (artificial insemination), farm management and milk handling, marketing and pasture/forage improvements. The last three will contribute an estimated 12 percent production increase beginning in year four. Together, milk production should increase from an average of 9.5 pounds per day per cow to approximately 12 pounds per day per cow by Year 4.

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Costs: Approximately \$18,000 or \$60 per head will be required in additional grass/feed costs coupled with project costs of \$25,000 per year for three years to achieve the above projected output. Project costs include money for artificial insemination technology, training, and materials and equipment. The estimated IRR for this activity is 25%, as shown in Table 4.

D. Swine Improvement

Production Benefits: Changes in genetic makeup of the swine herd and improvements in husbandry practices should quickly produce increases in production. A 5 percent increase in production is estimated for years 1 - 2 and a 10 percent increase for years 3 - 20. A beginning herd size of 6,500 head, average weight at slaughter of 220 pounds and price per pound at \$0.65 yields approximately \$46,500 of annual benefits during Year 1 and \$93,000 annually from the third year onward.

Costs: A total of \$75,000 in project costs spread out over three years will be used to improve genetic stock, implement efficient feed rations and provide technical assistance to improve herd management. In addition, approximately \$108 in variable costs per year per head will be required (\$93 in feed costs and \$15 for feeder pig). Further, \$25 in fixed costs per head spread out over 5 years will be required for pen construction. The IRR for this activity is 38%, as shown in Table 5.

E. Screwworm Eradication

Production Benefits: Significant increases in production can be realized if mortality rates are decreased. Screwworm infestation contributes to approximately 1 in 5 deaths in calves so eradication of screwworm can increase production by approximately 20 percent. Based on a 7,500 herd size, a 5 percent increase in production is estimated for years 3 - 4 and a 15 percent for years 5 - 20. These estimated benefits are those projected to directly represent production increases in Belize. Other benefits will naturally occur to countries being protected from screwworm infestations (e.g., Mexico, U.S. and Guatemala), but these are not considered in the calculations..

Costs: The Mexican - U.S. Commission estimates that approximately \$3.5 million will be their contribution to the Belize eradication program. However, much of the equipment and personnel costs are to be shared with two other countries, Guatemala and Mexico, so the economic analysis has only included one third of the costs presented by the Commission.

This is a fair representation since only the benefits accruing to Belize are considered. In addition, the cost for the screwworm component under the Livestock Development Phase II are included. The IRR for this component is estimated to be 16.58%, as shown in Table 6.

TABLE 2
GENETIC IMPROVEMENT - BEEF

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15-20
PRODUCTION BENEFITS	0.0	0.0	0.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0
COSTS	70.0	70.0	60.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
INCREMENTAL NET BENEFITS	-70.0	-70.0	-60.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0

ASSUMPTIONS:

BEGINNING HERD SIZE 7500
 AVERAGE WEIGHT AT SALE 900
 AVERAGE SELLING PRICE/LB. 10.40
 ESTIMATED PRODUCTION BEGINNING YEAR 4 5.0%

IRR GENETIC IMPROVEMENTS 32.40%

TABLE 3
IMPROVED PASTURE/FORAGE FEEDS - BEEF

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15-20
PRODUCTION BENEFITS	0.0	0.0	0.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0	135.0
COSTS	70.0	70.0	60.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0
INCREMENTAL NET BENEFITS	-70.0	-70.0	-60.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0

SIMILAR ASSUMPTIONS TO TABLE 2

IRR IMPROVED PASTURE/FORAGE 32.40%

TABLE 4
DAIRY HERD IMPROVEMENT

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15-20
PRODUCTION BENEFITS	0.0	0.0	26.4	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1
COSTS	43.0	43.0	43.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
INCREMENTAL NET BENEFITS	-43.0	-43.0	-16.4	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1	35.1

IRR DAIRY HERD IMPROVEMENT 24.98%

ASSUMPTIONS:

NUMBER OF HEAD 500
 INCREASE IN MILK PROD AVG LBS/DAY (250 DAYS/YR):
 FROM 9.5 LBS TO 10.75 LBS IN YEAR 3 TO 12 LBS IN YEAR 4 AND ON
 PRICE PER/POUND \$0.17

100

TABLE 5
SWINE IMPROVEMENT

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15-20
PRODUCTION BENEFITS	46.5	46.5	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0	93.0
COSTS (INCLUDES \$75,000 PROJECT)	61.7	61.7	98.5	73.5	73.5	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2	70.2
INCREMENTAL NET BENEFITS	-15.3	-15.3	-5.5	19.5	19.5	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8	22.8
IRR SWINE IMPROVEMENT	37.90%														
ASSUMPTIONS:															
INITIAL HERD SIZE (HEAD)	6500														
PRICE PER POUND	\$0.65														
AVERAGE WEIGHT/HEAD	220														
PIS AND FEED COSTS/HEAD	\$100														
OTHER COSTS (PER HEAD)	\$5 (ESTABLISHMENT COSTS OVER FIRST THREE YEARS)														
% INCREASE YRS 1 & 2	5.0%														
% INCREASE YRS 3-20	10.0%														

TABLE 6
SCREWORM ERADICATION

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15-20
PRODUCTION BENEFITS	0.0	0.0	135.0	135.0	405.0	405.0	405.0	405.0	405.0	405.0	405.0	405.0	405.0	405.0	405.0
COSTS	810.0	643.8	123.0	118.8	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0
GOVERNMENT OF BELIZE	171.0	145.0	182.0	182.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0
MEXICAN-U.S. COMMISSION	639.0	498.8	21.0	16.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
INCREMENTAL BENEFITS	-810.0	-643.8	12.0	17.0	386.0	386.0	386.0	386.0	386.0	386.0	386.0	386.0	386.0	386.0	386.0
IRR SCREWORM ERADICATION	16.58%														
ASSUMPTIONS															
BEGINNING HERD SIZE	7500														
AVERAGE WEIGHT AT SALE	900														
AVERAGE SELLING PRICE/LB.	\$0.40														
ESTIMATED PRODUCTION															
INCREASES YEARS 3-4	5.0%														
ESTIMATED PRODUCTION															
INCREASES YEARS 5-20	15.0%														
% OF TOTAL COMMISSION COSTS															
ATTRIBUTABLE TO BELIZE	33.3%														

ANNEX X

BELIZE LIVESTOCK PRODUCERS ASSOCIATION

The Belize Livestock Producers Association (BLPA) was formed under legislation passed in 1976. All producers who own at least five head of livestock are members. Financial support comes from a "cess" (tax) on all livestock sold.

The objectives of the Association are:

1. To promote the understanding and good-will among the members of the Association.
2. To promote the development of the livestock industry.
3. To nominate the Association's representatives on the Meat and Livestock Commission to safeguard the interests of members in all matters concerned with production and marketing of livestock.
4. To encourage the production of better livestock and the formation of cattle breeding societies.
5. To provide technical and other information of assistance to members.
6. To promote increased consumption of beef and livestock products.
7. To participate in livestock exhibitions.
8. To provide educational and training facilities for the benefit of members in the livestock industry.
9. To do all things necessary which are in the best interests of the livestock industry.

The Association is managed by a Board of Directors who are elected at the Annual General Meeting. Each member of the eight-man Board serves a two year term with four members being elected each year to provide continuity. Members are eligible for re-election, with all districts being represented. Monthly Board meetings are held to transact business and monitor projects.

The office activities and day-to-day operations are carried out by the secretary who is employed by the Board. Annual reports to the membership are prepared and annual financial audits are published.

The Association maintains the brand registry for Belize which now numbers over 3500. Many old brands are no longer used and an up-dating is in progress. However, work is slow and computerization of this process would be more efficient. Rustling of all types of livestock continues to be serious and in many parts of the country this problem has accelerated over the past several years.

The Association actively supports the screwworm eradication program and has urged the Ministry of Agriculture (MOA) to move more quickly on the matter. Membership appears to be willing to financially back the program through the levying of a special cess for a short term (two year) period.

The Association also pursues an active role in proposing new legislation, concentrating their efforts on matters pertaining to marketing, credit, finance and export opportunities.

While the Association does represent the livestock producers, it never-the-less has some perception problems which hampers its overall effectiveness:

1. An appearance which seems to project an "old boy" attitude favoring the large producers.
2. An image of representing the beef producers only.
3. Lack of representation on the Board from the swine and dairy portions of the livestock industry.

Membership in BLPA is currently about 5000, with 500-600 actively taking part in meetings and elections. Members of the current Board are articulate and well informed. A monthly newsletter is published to keep the membership informed of activities as well as market information. The Board seems to be eager to assume a more active role in the management of development activities that will enhance the sector. Additional staff is necessary if their portfolio of responsibilities increases.

The BLPA maintains close working relationships with the GOB through linkages and representation of the Meat and Livestock Commission which also has representatives of MOA and Ministry of Trade and Commerce. In fact, a joint audit statement is now prepared for the two organizations.

102

BLPA is very interested in increasing the export of live and processed beef. They want to encourage the development of a good quality corned beef product which could capture an additional portion of the domestic beef market.

ANNEX X1a

NATIONAL DEVELOPMENT FOUNDATION OF BELIZE LIMITED

TO: Stephen Szadek, Chief Ag. Development Officer
USAID/Belize

FROM: Manuel Cuellar, Managing Director, NDFB

SUBJECT: Livestock Project.

DATE: September 3, 1987

The "Swine Production and Improvement Project" undertaken jointly by NDFB and Government of Belize has been under implementation for about one year.

Documented reports on the pilot project show that the support U.S. \$60,000 capital loan funds have been distributed among some forty (40) farmers recommended by GOB livestock field staff in the Cayo, Orange Walk, and Belize districts. The reports further show encouraging program results by which repayments are satisfactory and arrears to date are non-existent. There seems to be an unsolicited demonstration of client satisfaction and betterment expectations.

Now that the funds are about to start revolving to new applicants, noteworthy pointers seem to suggest evident reasons for the current success of the project and acceptable rationale for continuance and expansion of the program.

Conclusions from a preliminary internal evaluation of the project indicate that the developing trend of success is due largely to NDFB's complementary provision of business guidance training and project monitoring to the already existing good quality technical assistance provided by GOB field staff. In the process client farmers are beginning to learn and accept that they are business persons with an equitable stake in their individual projects. They no longer view the loan assistance as reward and/or handout by GOB. The NDFB program has also begun to expose the clients to innovative approaches to alternate local source of feed, stocky and technology which inevitably have begun to lower the discouraging high cost of production.

For their part, GOB participators in the program have been very collaborative and sensitive to the real needs of the farmers. Principally, GOB has given public assurances of protection for the phased national plan of production by the farmers. Furthermore, there has been meaningful and rewarding dialogue between NDFB and GOB field staff and supervisors.

The NDFB experience with this pilot project and its IAF-funded agribusiness project is amounting to a level of hands-on learning that clearly suggests the project should be expanded to include loan assistance for projects of diversification as well as for linkages of production. While the projects should advisedly remain "small" within the NDFB program objectives, they should nevertheless extend to the inclusion of rearing of small herds of beef cattle and dairy cows, chickens (layers and broilers), as well as production of short term crops for family food and animal feed. Chicken entrails and food and other crops could supplement expensive commercial feed for the livestock production. There is an obvious local consumption market to warrant a substantive increase of production of the above, not only to satisfy subsistence purposes but also to address the glaring need for import substitution where feasible and economically cost effective.

NDFB is happy to have participated in this pilot project of Livestock I, and gladly welcomes the possible opportunity to play a more meaningful role in the contemplated expanded Livestock Project II. There will certainly result a national advantage and gain if all interested parties will obligate their respective inputs and commitments for this singular reason, let alone an array of expected other fringe benefits to all participants. The project support funds would come as fortuitous and alleviating to the threatening decapitalization problem presently faced by the revolving loan fund of the NDFB as a result of improved and growing performance.

Here are some revealing statistics as of June 30, 1987:

1. Loans Approved: No. 425 Amount \$1,467,054.52 (BZE)
2. Loans Disbursed: No 362 Amount \$1,280,071.98 (BZE)
3. Disbursement/Reflows Ratio: 2.7:1
4. Supply/Demand Ratio: 3.7:1

108

5. Default Rate: 6.2%

6. Employment Affected:

Jobs saved: 481

Jobs created 154

7. Loans Portfolio Value: \$996,033.00

8. Cost Ratios

Dollars loaned per administration & Operation Costs: \$0.47
Dollars loaned per Loan Portfolio Value: \$0.19

9. Self Sustainability Rate: 49%

Sincerely yours,

Manuel F. Cuellar
Managing Director

CC: Chairman - NDFB

ANNEX XIb

USAID TO CONGRESS

SUCCESS STORY

BELIZE - NATIONAL DEVELOPMENT FOUNDATION OF BELIZE (505-0011)

This project has been successful in promoting private sector growth and participation in the economic development of Belize. Initiated in FY 1983 with a \$142,000 A.I.D. grant to the Pan American Development Foundation (PADF) and local currency equivalent of \$388,000 from the ESF Loan to the Government of Belize, the project established the National Development Foundation of Belize (NDF/B) as a mechanism for providing credit and technical assistance to small and micro entrepreneurs who have no access to formal or institutional credit. Essentially, it involved the creation of an organization consisting of members drawn from the cross-section of the Belizean private sector. PADF provided training and technical assistance to the NDF/B Board and staff and assisted in setting up a credit revolving fund and securing a sound financial base for the Foundation's operations. Aside from A.I.D. assistance, NDF/B was able to secure financial contributions from the local private sector, the Government and other international organizations to augment its lending program.

From an initial loan fund amounting to \$200,000 in April 1984, NDF/B had made 300 loans to micro and small entrepreneurs totaling \$450,000 by September 1986. Through its loan and technical assistance program, the NDF/B created or protected 600 jobs by September 1986. Owing to the strict monitoring and the business guidance provided by its field personnel to borrowers, the delinquency rate for NDF/B loans is only 5%. By comparison, other non-banking financial entities in Belize have loan default rates of over 30%. Aware of the high demand for credit in its target group, the NDF/B carefully screens the applicants, resulting in a ratio of 4:1 potential/actual clients. The program covers the whole country and almost half of all clients are outside of Belize City. While the NDF/B clients cannot be classified as the very poorest in Belize, many of them are marginal. Two-thirds of the clients surveyed in the evaluation indicated marked improvements in income as a result of NDF/B assistance. After only three years, the combined efforts and expertise of its Board have institutionalized the NDF program in Belize. Its success has convinced A.I.D. to provide NDF an additional grant of \$200,000 in FY 86-88 to allow it to further expand its operations and

service a greater number of small and micro entrepreneurs.
Over the next three years, the loan portfolio will grow from
\$450,000 to \$1.3 million.

Subject Areas

Butcher/processor internship grants
Credit
Extension (Communications)
Seed Certification/Multiplication (Forage Grasses/Legumes)
Disease Control (Livestock)
Grain/Feed Storage
Laboratory Management
Statistics
Animal Breeding/Management
Marketing (Livestock)

Schedule

5 ST Grants completed by 5/89
7 additional ST Grants completed by 5/90
3 additional ST Grants completed 1/91

Project Funding

(U.S.)\$82,000

3. Special In-country Training Programs (Workshops/Seminars/
Short Courses)

The following categories are representative of in-country training programs that are designed for Government field workers, producers and processors, and private foundation and bank personnel to facilitate livestock development.

Subject Areas

Extension Communications (primarily for extension workers, credit personnel and lead farmers)
Farm Management
Artificial Insemination
Livestock Marketing/Processing
Pasture Management
Dairy Husbandry
Feeds and feeding
Livestock Husbandry
Supervised Credit

Schedule

5 in-country training programs in Year 1 of Project
9 in-country training programs in Year 2 of Project
6 in-country training programs in Year 3 of Project

The training plan under the project should be completed and approved by MOA and USAID by June 1988 (3 months after arrival of LT Project Consultants.)

Project Funding

(U.S.)\$123,750.

ANNEX IX

ECONOMIC ANALYSIS

I. Economic Benefit-Cost Analysis of Livestock Development Phase II.

Benefits: The measurable economic benefits are attributed to increases in livestock and dairy production resulting from Project activities. These benefits will lead to foreign exchange earnings or savings for the country to the extent that increased output are either sold abroad or substitute for imports in the domestic market. The Project's estimated economic benefits are derived from the projected production benefits accruing from the various sub-activities or components. This is a more conservative approach than one using the expected output increases based on Project goals/purpose in the Log-frame.

Costs: Economic costs include all inputs used by the Project and farmer-adapters to obtain the level of economic benefits projected above. Project inputs include technical assistance, market construction, screwworm component, laboratory improvement and support and training. Shadow pricing for labor and foreign exchange are not necessary because market values in Belize appear to approximate the opportunity cost of labor and the rate of foreign exchange seems realistic and needs no adjustment.

As shown in Table 1, the Project has an economic benefit-cost ratio of 1.10 based on a social discount rate of 10 percent and a 25-year stream of benefits and costs, indicating that its economic impact is greater than the investment. Other economic and social benefits of the Project, such as increased income and labor demand arising from ancillary industries linked to livestock production and meat processing, are not included in the analysis due to unreliable data. The social benefits should be substantial since local meat processing firms are going to expand their operations to take advantage of market opportunities, particularly from abroad. The inclusion of such benefits should result in higher economic returns.

II. Economic Internal Rate of Return for Project Sub-Activities.

A. Genetic Improvement - Beef

Production Benefits: The results expected from improvements in genetic stock will take approximately three years to show up as increased productivity in cattle. The beginning herd size of farmers expected to take advantage of new blood lines is estimated at 7,500 head. Average weight at time of sale will be at least 900 pounds and average price is estimated at \$0.40 per pound. Both of these are considered conservative figures. A simple calculation of production benefits is calculated by multiplying beginning herd size (7,500) times estimated production increases (5 percent). This result is multiplied by the average weight per sale times the average selling price per pound to get the benefits resulting from this project activity. For simplicity, this calculation is carried out through year 20 even though herd size will increase as will numbers of farmer adapters.

Costs: These costs include technical inputs as well as commodities used to increase the genetic base of the cattle. The resulting IRR for this activity is 32.4%, as shown in Table 2.

B. Improved Pasture/Forage Feeds - Beef

Production Benefits: These are derived in the same manner as in the Genetic Improvement sub-activity. Increased productivity arising from improved pasture and forage feeds is expected to begin on the third year. The herd size affected would be 7,500 head. Production is expected to increase 5% annually after year 3.

Costs: These costs include technical inputs as well as commodities used to increase the productivity of pasture and forage feeds. The estimated IRR for this activity is 32.4% as shown in Table 3.

C. Dairy Herd Improvement

Production Benefits: Various project activities will impact on dairy production throughout the life of the Project: genetic (artificial insemination), farm management and milk handling, marketing and pasture/forage improvements. The last three will contribute an estimated 12 percent production increase beginning in year four. Together, milk production should increase from an average of 9.5 pounds per day per cow to approximately 12 pounds per day per cow by Year 4.

Costs: Approximately \$18,000 or \$60 per head will be required in additional grass/feed costs coupled with project costs of \$25,000 per year for three years to achieve the above projected output. Project costs include money for artificial insemination technology, training, and materials and equipment. The estimated IRR for this activity is 25%, as shown in Table 4.

D. Swine Improvement

Production Benefits: Changes in genetic makeup of the swine herd and improvements in husbandry practices should quickly produce increases in production. A 5 percent increase in production is estimated for years 1 - 2 and a 10 percent increase for years 3 - 20. A beginning herd size of 6,500 head, average weight at slaughter of 220 pounds and price per pound at \$0.65 yields approximately \$46,500 of annual benefits during Year 1 and \$93,000 annually from the third year onward.

Costs: A total of \$75,000 in project costs spread out over three years will be used to improve genetic stock, implement efficient feed rations and provide technical assistance to improve herd management. In addition, approximately \$108 in variable costs per year per head will be required (\$93 in feed costs and \$15 for feeder pig). Further, \$25 in fixed costs per head spread out over 5 years will be required for pen construction. The IRR for this activity is 38%, as shown in Table 5.

E. Screwworm Eradication

Production Benefits: Significant increases in production can be realized if mortality rates are decreased. Screwworm infestation contributes to approximately 1 in 5 deaths in calves so eradication of screwworm can increase production by approximately 20 percent. Based on a 7,500 herd size, a 5 percent increase in production is estimated for years 3 - 4 and a 15 percent for years 5 - 20. These estimated benefits are those projected to directly represent production increases in Belize. Other benefits will naturally occur to countries being protected from screwworm infestations (e.g., Mexico, U.S. and Guatemala), but these are not considered in the calculations..

Costs: The Mexican - U.S. Commission estimates that approximately \$3.5 million will be their contribution to the Belize eradication program. However, much of the equipment and personnel costs are to be shared with two other countries, Guatemala and Mexico, so the economic analysis has only included one third of the costs presented by the Commission.

This is a fair representation since only the benefits accruing to Belize are considered. In addition, the cost for the screwworm component under the Livestock Development Phase II are included. The IRR for this component is estimated to be 16.58%, as shown in Table 6.

ANNEX X

BELIZE LIVESTOCK PRODUCERS ASSOCIATION

The Belize Livestock Producers Association (BLPA) was formed under legislation passed in 1976. All producers who own at least five head of livestock are members. Financial support comes from a "cess" (tax) on all livestock sold.

The objectives of the Association are:

1. To promote the understanding and good-will among the members of the Association.
2. To promote the development of the livestock industry.
3. To nominate the Association's representatives on the Meat and Livestock Commission to safeguard the interests of members in all matters concerned with production and marketing of livestock.
4. To encourage the production of better livestock and the formation of cattle breeding societies.
5. To provide technical and other information of assistance to members.
6. To promote increased consumption of beef and livestock products.
7. To participate in livestock exhibitions.
8. To provide educational and training facilities for the benefit of members in the livestock industry.
9. To do all things necessary which are in the best interests of the livestock industry.

The Association is managed by a Board of Directors who are elected at the Annual General Meeting. Each member of the eight-man Board serves a two year term with four members being elected each year to provide continuity. Members are eligible for re-election, with all districts being represented. Monthly Board meetings are held to transact business and monitor projects.

The office activities and day-to-day operations are carried out by the secretary who is employed by the Board. Annual reports to the membership are prepared and annual financial audits are published.

The Association maintains the brand registry for Belize which now numbers over 3500. Many old brands are no longer used and an up-dating is in progress. However, work is slow and computerization of this process would be more efficient. Rustling of all types of livestock continues to be serious and in many parts of the country this problem has accelerated over the past several years.

The Association actively supports the screwworm eradication program and has urged the Ministry of Agriculture (MOA) to move more quickly on the matter. Membership appears to be willing to financially back the program through the levying of a special cess for a short term period.

The Association also pursues an active role in proposing new legislation, concentrating their efforts on matters pertaining to marketing, credit, finance and export opportunities.

While the Association does represent the livestock producers, it never-the-less has some perception problems which hampers its overall effectiveness:

1. An appearance which seems to project an "old boy" attitude favoring the large producers.
2. An image of representing the beef producers only.
3. Lack of representation on the Board from the swine and dairy portions of the livestock industry.

Membership in BLPA is currently about 5000, with 500-600 actively taking part in meetings and elections. Members of the current Board are articulate and well informed. A monthly newsletter is published to keep the membership informed of activities as well as market information. The Board seems to be eager to assume a more active role in the management of development activities that will enhance the sector. Additional staff is necessary if their portfolio of responsibilities increases.

The BLPA maintains close working relationships with the GOB through linkages and representation of the Meat and Livestock Commission which also has representatives of MOA and Ministry of Trade and Commerce. In fact, a joint audit statement is now prepared for the two organizations.

BLPA is very interested in increasing the export of live and processed beef. They want to encourage the development of a good quality corned beef product which could capture an additional portion of the domestic beef market.

ADP. 41 11/15/87

Dec 15 1987

TELEGRAM

INDICATE
 COLLECT
 CHARGE TO

FROM AMBASSY BELIZE		CLASSIFICATION UNCLASSIFIED	P 112230Z DEC 87 4524
E.O. 11652:	N/A		
TAGS:			
SUBJECT:	ENVIRONMENTAL ASSESSMENT FOR PROPOSED SCREWORM PROGRAM UNDER LIVESTOCK DEVELOPMENT PROJECT AMENDMENT PHASE II - 505-0006		
ACTION:	SECSTATE WASHDC PRIORITY		
	INFO: AMEMBASSY SAN JOSE ROCAP, SAN JOSE		
	UNCLAS BELIZE 4524		
AID: ADO	AIDAC		
AID: CONT			
AID: CHRON			
AMB	PASS TO: (1) J. HESTER, LAC/DR/EST		
DCH	(2) T. KING, LAC/DR/ED		
CHRON	(3) A. CHIRI, ROCAP		
ELI	(4) C. COLLIER, S AND T/AGR/AF		
	REF: (A) STATE 346277 (B) BELIZE 4196		
	1. SUMMARY. PER REFILL (A), DURING PERIOD NOVEMBER 30 THROUGH DECEMBER 3, 1987, DR. ANGEL CHIRI, REGIONAL OFFICE FOR CENTRAL AMERICAN PROGRAMS (ROCAP) AND DR. JOSEPH REINHERT, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (USEPA) CONDUCTED A SCOPING EXERCISE FOR AN ENVIRONMENTAL ASSESSMENT RELATED TO THE SCREWORM		

DRAFTED BY: ADO:SSzadek:pp	DRAFTING DATE 12/14/87	TEL. EXT. 261	CONTENTS AND CLASSIFICATION APPROVED BY: THE AMBASSADOR
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CLEARANCES:

PUO:PLapera: (In Draft)

USAID:AR:NRBrashich: _____

DCH:TCoony: _____

UNCLASSIFIED
CLASSIFICATION

OPTIONAL FORM 153
(Formerly FS-413)
January 1976
Dept. of State

183

ERADICATION PROGRAM (CROCHILTOXYIA HOUMIVORAX, COQUELLO) TO BE ADMINISTERED BY THE U.S. - MEXICO SCREENWORM COMMISSION AND FINANCED BY AID UNDER SUBJECT PROJECT IN BELIZE. THE SCOPING TEAM MET WITH VARIOUS GOVERNMENT AND PRIVATE SECTOR INDIVIDUALS HAVING KNOWLEDGE OF THE LIVESTOCK INDUSTRY IN BELIZE AND FAMILIARITY WITH PROPOSED SCREENWORM ERADICATION PROGRAM. BASED ON THE FINDINGS OF THE SCOPING TEAM, USAID/BELIZE PROPOSES THAT:

(A) REPORT BY THE SCOPING TEAM BE INCLUDED AS AN ANNEX IN THE PROJECT AMENDMENT TO SERVE AS THE ENVIRONMENTAL ASSESSMENT; AND (B) RECOMMENDATIONS CONCERNING PROMOTIONAL AND TRAINING ACTIVITIES BE INCLUDED AS A CONDITION PRECEDENT (CP) TO INITIAL DISBURSEMENT FOR THE SCREENWORM PROGRAM IN THE AMENDMENT. THE CP IS DETAILED IN PARA THREE (3) BELOW. ADDITIONALLY, USAID PLANS TO INCLUDE A COVENANT IN THE PROJECT AUTHORIZATION FOR THE PESTICIDE SURVEY RECOMMENDED BY THE SCOPING TEAM. THE COVENANT IS DESCRIBED IN PARA FOUR (4) BELOW. USAID/BELIZE REQUESTS AID/W CONFORMANCE TO ABOVE MEASURES SINCE WE WISH TO AUTHORIZE PP AMENDMENT IN EARLY JANUARY 1988.

2. FOLLOWING ARE THE FINDINGS AND RECOMMENDATIONS AS PREPARED IN DRAFT BY THE SCOPING TEAM: QUOTE

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(A) FINDINGS.

(1) USE OF PESTICIDES IN THE PROGRAM. THE REPORT ENTITLED "PROGRAM OF ERADICATION OF SCREWORMS IN THE REPUBLIC OF BELIZE, C.A." DATED MAY 17, 1967 AND PREPARED BY THE JOINT MEXICO - U.S. COMMISSION FOR THE ERADICATION OF SCREWORMS (THE COMMISSION) INDICATED THAT PESTICIDES COULD BE USED IN THREE WAYS IN THE ERADICATION PROGRAM: (A) PESTICIDES COULD BE APPLIED TOPICALLY TO TREAT INFESTED WOUNDS ON CATTLE; (B) PESTICIDES COULD BE USED AS PART OF SWASS (SCREWORM ADULT SUPPRESSION SYSTEM). SWASS PELLETS ARE A MIXTURE OF SUGAR BAIT, ATTRACTANT, AND INSECTICIDE AND ARE APPLIED AERIALLY TO CONTROL THE ADULT FERTILE POPULATION OF SCREWFLIES, ALLOWING THE STERILE FLY RELEASE PROGRAM TO BE MORE EFFECTIVE; (C) CATTLE COULD BE SPRAYED/DIPPED AT QUARANTINE FACILITIES AVAILABLE IN BELIZE.

AFTER DISCUSSING THESE POSSIBLE PESTICIDE USE ALTERNATIVES WITH VARIOUS EXPERTS, THE TEAM CONCLUDED THAT IT IS VERY UNLIKELY THAT EITHER THE SWASS SYSTEM OR SPRAY/DIP OPERATIONS WILL BE USED SUCCESSFULLY IN THE ERADICATION PROGRAM IN BELIZE. SWASS PELLETS ARE INEFFECTIVE IN VERY HUMID CLIMATES AND ARE UNLIKELY TO BE USED ANYWHERE IN CENTRAL AMERICA (CONVERSATION WITH

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Classification

Best Available Document

DR. ERICK HOFFMAN, THE COMMISSION, MEXICO CITY). GIV-
ING THE GEOGRAPHIC AREA OF BELIZE, THE NEED FOR QUARANTINE
FACILITIES IS DOUBTFUL. SCREWWORM IN BELIZE WOULD BE
ERADICATED IN TOTO RATHER THAN IN SEGMENTS. IF, WHEN
SCREWWORM IS ERADICATED AND REINFESTATION OCCURS,
STERILE FLY DISPERSAL WOULD AGAIN BE NECESSARY. THERE
ALSO DOES NOT APPEAR TO BE MOVEMENT OF CATTLE FROM
OTHER COUNTRIES INTO BELIZE (BASED ON DISCUSSIONS WITH
DR. HOFFMAN, AS WELL AS DISCUSSIONS BETWEEN DR. CHIRI
AND DR. SALMORE SILVA, PRINCIPAL VETERINARY OFFICER,
GOVERNMENT OF BELIZE (GOB), MR. JOHN CARR, CHAIRMAN,
BELIZE LIVESTOCK PRODUCERS ASSOCIATION, AND DR. A.
FRANKLIN, ENTOMOLOGIST, GOB).

THE TOPICAL TREATMENT OF INFESTED CATTLE WOUNDS IS A
TYPE OF PESTICIDE TREATMENT, BUT WOULD HAVE THE SAME
IMPACT ON THE ENVIRONMENT AS OTHER TOPICAL VETERINARY
TREATMENTS WHICH DO NOT INVOLVE PESTICIDES. THERE
WOULD BE NO SIGNIFICANT DISPERSAL OF PESTICIDE TO THE
ENVIRONMENT. IN FACT, PESTICIDES ARE CURRENTLY BEING
USED TO TREAT WOUNDS, AND IN SOME CASES, BY MORE
DISPERSIVE METHODS (E.G. SPRAYING) THAN IS BEING
PROPOSED IN THE SCREWWORM ERADICATION PROGRAM. THE
SAFE ADMINISTRATION OF TOPICAL TREATMENT BY THE
CATTLEMAN IS DISCUSSED IN RECOMMENDATIONS BELOW. AS

THE ERADICATION PROGRAM PROGRESSES, THE NEED FOR
TOPICAL APPLICATION WILL DECLINE.

(2) THE USE OF THE ERADICATION PROGRAM IN BELIZE AS A
PILOT PROJECT FOR THE REST OF CENTRAL AMERICA. THE
TEAM DOES NOT BELIEVE THAT THE PROGRAM IN BELIZE WOULD
BE THE MOST APPROPRIATE PROGRAM FOR EXTRAPOLATING
RESULTS TO OTHER CENTRAL AMERICAN COUNTRIES. BECAUSE
OF FAIRLY UNIQUE GEOGRAPHICAL, ANIMAL MOVEMENT,
POLITICAL AND OTHER CONSIDERATIONS, SUCH EXTRAPOLATIONS
MIGHT PROVE DIFFICULT. FOR EXAMPLE, IF IN A LARGER
COUNTRY, ERADICATION BY STERILE FLY DISPERSAL MUST
PROCEED BY ZONES IN THAT COUNTRY, A QUARANTINE OF FLY
FREE ZONES MOST PROBABLY WOULD HAVE TO BE UNDERTAKEN.
AN ERADICATION PROGRAM IN ANOTHER CENTRAL AMERICAN
COUNTRY MAY MORE PROFITABLY SERVE AS A MODEL FOR THE
REGION.

THIS DOES NOT MEAN THAT WHAT IS LEARNED IN SOME ASPECTS
OF THE BELIZE ERADICATION PROGRAM COULD NOT BE APPLIED
TO PROGRAMS IN OTHER COUNTRIES. FOR EXAMPLE, EFFECTIVE
PROMOTIONAL CAMPAIGNS IN THE SAFE AND EFFICACIOUS
TOPICAL TREATMENTS OF SCREWORM-INFESTED WOUNDS
DEVELOPED IN THE BELIZE PROGRAM WOULD LIKELY BE
APPLICABLE TO ERADICATION PROGRAMS IN OTHER COUNTRIES.

8. RECOMMENDATIONS:

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(1) THE SCOPING TEAM RECOMMENDS THAT THE POSITIVE THRESHOLD DECISION FOR THE SCREWORM ERADICATION PROGRAM IN BELIZE BE CHANGED TO A NEGATIVE DETERMINATION. IF FUTURE EVENTS DICTATE ANY SIGNIFICANT ALTERATION OF THE PESTICIDE USAGE SCENARIO DESCRIBED IN THESE FINDINGS, THE SCOPING TEAM RECOMMENDS THAT AN ENVIRONMENTAL ASSESSMENT BE UNDERTAKEN AT THAT TIME.

(2) THE TEAM RECOMMENDS THAT CERTAIN COROLLARY EFFORTS BE CARRIED OUT IN CONJUNCTION WITH THE PROPOSED SCREWORM ERADICATION EFFORT IN BELIZE.

THE PROMOTIONAL CAMPAIGN DESIGNED TO ENCOURAGE PARTICIPATION IN ALL ASPECTS OF THE PROGRAM SHOULD EMPHASIZE THE SAFE AND EFFICACIOUS USE OF TOPICAL TREATMENTS. TRAINING MATERIALS AND BROCHURES FOR THIS PURPOSE ARE AVAILABLE (OR COULD BE ADAPTED TO TOPICAL TREATMENTS) THROUGH THE USDA (APHIS) AS WELL AS THROUGH VARIOUS INTERNATIONAL OFFICES. THE TEAM ALSO RECOMMENDS THAT A SURVEY OF THE USE OF PESTICIDES FOR SCREWORM TREATMENT BE UNDERTAKEN, BOTH BEFORE AND AT THE CONCLUSION OF THE INITIAL ERADICATION PHASE OF THIS PROGRAM. THIS SURVEY SHOULD FOCUS AT A MINIMUM ON FACTORS SUCH AS THE KIND(S) OF PESTICIDE PRODUCTS EMPLOYED AND THE METHODS OF TREATMENT USED. THIS TYPE

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OF INFORMATION SHOULD AID IN EVALUATING THE EFFECTIVENESS OF PROMOTIONAL AND TRAINING ACTIVITIES. THIRDLY, THE SCOPING TEAM RECOMMENDS AN ASSESSMENT OF THE EFFECT OF THE ERADICATION PROGRAM ON THE SIZE AND HEALTH OF THE CATTLE HERD AS WELL AS ITS EFFECT ON THE GROWTH OF THE CATTLE AND QUOTE.

(3) FOLLOWING IS SUGGESTED WORDING FOR CP TO BE INCLUDED IN PROJECT AUTHORIZATION FOR PP AMENDMENT: QUOTE PRIOR TO DISBURSEMENT OF FUNDS FOR THE SCREWORM ERADICATION PROGRAM THE GOB WILL PRESENT TO AID AN ACTION PLAN FOR THE PROMOTIONAL AND TRAINING ACTIVITIES WHICH WILL BE CARRIED OUT DURING THE IMPLEMENTATION OF THE ERADICATION PROGRAM WITH RESPECT TO THE SAFE AND EFFICACIOUS USE OF PESTICIDES FOR TOPICAL TREATMENTS UNQUOTE.

(4) THE FOLLOWING IS THE COVENANT REGARDING THE SURVEY RECOMMENDATION PROPOSED BY THE SCOPING TEAM: QUOTE THE GOB SHALL COVENANT THAT A SURVEY SHALL BE CONDUCTED AT THE BEGINNING AND THE CONCLUSION OF THE ERADICATION PHASE OF THE SCREWORM PROGRAM DESCRIBING USE OF PESTICIDES FOR SCREWORM TREATMENT(S) BOTH BEFORE AND AT THE CONCLUSION OF INITIAL ERADICATION PROGRAM, INCLUDING A DESCRIPTION OF THE KIND(S) OF PESTICIDE PRODUCTS APPLIED AND METHODS OF TREATMENT

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USED END QUOTE.

(5) THE THIRD RECOMMENDATION PROPOSED BY THE SCOPING TEAM WHICH CALLS FOR AN ASSESSMENT OF THE EFFECT OF THE SCREWDRORS ERADICATION PROGRAM ON THE SIZE AND HEALTH OF THE CATTLE HERD AS WELL AS ITS EFFECT ON THE GROWTH OF THE CATTLE INDUSTRY IN SLELL IS ONE OF THE SUBJECTS OF PROJECT ACTIVITIES AND AS SUCH WOULD BE DETERMINED DURING PROJECT IMPLEMENTATION, MONITORING AND EVALUATION. USAID PROPOSES THAT THE ASSESSMENT AS NOTED ABOVE BE INCORPORATED INTO OVERALL PROJECT ACTIVITIES.

(6) USAID REQUESTS THAT AID/W PROVIDE CONCURRENCE TO THE ABOVE APPROACH REGARDING SCREWDRORS ACTIVITIES AS PROPOSED UNDER PROJECT 505-0006.

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Classification