

MODERNIZATION OF AGRICULTURAL HEALTH PROJECT

(BL-0003)

EXECUTIVE SUMMARY

BORROWER AND GUARANTOR: Government of Belize

EXECUTING AGENCY: Belize Agricultural Health Authority (BAHA) and Ministry of Agriculture, Fisheries and Cooperatives (MAFC), initially

AMOUNT AND SOURCE:

IDB (OC):	US\$3.6 million
Local counterpart funding:	<u>US\$1.2 million</u>
Total:	US\$4.8 million

FINANCIAL TERMS AND CONDITIONS:

Amortization period:	25 years
Execution Period:	4 years
Disbursement period:	4.5 years
Interest rate:	variable
Supervision and Inspection:	1%
Credit fee:	0.75%
Currency:	US dollars from the Single Currency Facility (SCF)

OBJECTIVES: The objective of this project is to enhance the competitiveness of Belize's agricultural products, especially in foreign markets. The project seeks to improve the quality and financial viability of animal and plant health services, without a significant increase in the present level of Government expenditure, meeting the cost of further improvements from increased private sector fee income. The project seeks to reduce losses from disease and ensure the safety and quality of agricultural products for domestic and foreign consumers, with increased participation of the private sector.

DESCRIPTION: With the opening of international markets, countries are developing stricter import regulations, requiring the implementation of systems of quality control throughout the production process and certification in the exporting country prior to shipment. As a member of the World Trade Organization (WTO), Belize will be expected to conform with all rules on sanitary and phytosanitary measures by 1999. Belize's systems for controlling the quality of agricultural exports have major deficiencies that may soon prevent Belize from exporting to certain important markets.

The project will consolidate MAFC agricultural health services into one independent organization with significant private sector input into management and oversight; the project will have five components:

a. **Institutional Strengthening (US\$651,000):** Establish the Belize Agricultural Health Authority (BAHA), with active private sector participation through the Board of Directors and User Groups; improve general public education in matters of animal and plant health; promote private sector technical services; improve the collection and distribution of information on agriculture and food-related diseases and pests; recommend improvements to existing laws and regulations on agricultural health and give producers a greater role in monitoring the quality of laboratory services.

b. **Animal Health (US\$1,557,000):** Establish a system of animal health surveillance, upgrade animal diagnostic laboratory facilities, establish a microbiology food laboratory with private users involved in oversight, and better inspection of food processing facilities, establish a better control, registration and monitor the quality and suitability of veterinary drugs, biologicals and medicated feeds, which may pose a threat to public health or the environment.

c. **Plant Health (US\$783,000):** Improve systems for plant health surveillance; upgrade plant diagnostic and entomology laboratory facilities; improve field services; strengthen internal post-entry quarantine services.

d. **International Quarantine and Inspection (US\$613,000):** Establish two new border control points, one new port control point, rehabilitate the physical facilities at six other border control points, and recondition a cattle observation station.

e. **Soils Laboratory (US\$167,000):** Rehabilitate the laboratory and lease the administration of the facility to a non-profit private sector Users Group.

**RELATIONSHIP OF
PROJECT IN BANK'S
COUNTRY AND SECTOR
STRATEGY:**

The Bank's strategy for Belize has been ratified by the government with the following identified priorities: (a) provision of physical and institutional infrastructure and complementary technical assistance to stimulate private sector development in tourism, agriculture, and agroprocessing, and (b) improvement of the human capital base through increased education

and training. The proposed operation is consistent with these priorities. The project investments in infrastructure, and institutional strengthening will increase public sector efficiency in animal and plant health activities designed to support agricultural sector development and increase the competitiveness of private sector production, especially for export oriented commodities.

**ENVIRONMENTAL/
SOCIAL REVIEW:**

The main environmental and social impact of the project is obtained with the introduction of inspection and laboratory analysis, including water quality, in the agricultural productive process. The positive results will permit an increased capacity to gain food safety for domestic consumers and insure the quality standard of exported commodities. The project activities begin even before BAHA is legally established by working transitorily within the structure of MAFC. The consultants' terms of reference are available. The training of technicians and farmers in the appropriate use of pesticides and agricultural inputs will protect the health of farm workers. The biological security of the laboratory personnel will be assured with the use of adequate controls, such as the use of discharge treatment procedures, included in the design of the facilities (see paragraphs 3.1, 3.10, 3.22 and from 4.29 through 4.33).

BENEFITS:

The project will allow Belize to: (a) reduce the losses and improve the quality of agricultural production, (b) improve the effectiveness and financial viability of agricultural health services, (c) continue exporting agricultural products, (d) establish a reliable baseline for animal and plant diseases in Belize, (e) improve the safety of the domestic food supply and food exports, and (f) improve monitoring and control of imported veterinary and agrochemical inputs, in order to safeguard public health and the environmental quality of Belize.

RISKS:

Fiscal constraints could make it difficult for the Government to provide financial support to BAHA. To accommodate this risk, BAHA will gradually reduce its dependence on the Government by operating on a fee for service basis where possible.

The drafting of laws and regulations, and the process of parliamentary approval, can be slow and very time consuming and may delay the formal creation of BAHA or the approval of agricultural health legislation. To reduce the risk, the project will provide

technical assistance on appropriate laws and legislation in an effort to avoid delays.

**SPECIAL
CONTRACTUAL
CLAUSES:**

Upon compliance with the standard conditions prior to first disbursement, up to US\$120,000 would be available to: (a) contract a lawyer to assist in the drafting of the proposed Belize Agricultural Health Authority Act and the preparation of the corresponding regulatory documentation; (b) contract an architect to finalize drawings and cost estimates for the BAHA Building Rehabilitation Program; (c) contract a local financial specialist to design BAHA's financial control system; and (d) purchase office equipment needed in the component of Institutional Strengthening (see paragraph 3.14).

Subsequent project disbursements will be subject to: (a) formal establishment of BAHA; (b) contracting of the Managing Director acceptable to the Bank; and (c) transferring of all the relevant MAFC personnel and assets to BAHA (see paragraph 3.15).

Certain special conditions shall apply to disbursements corresponding to the Microbiology Food Laboratory and Soil Laboratory (see paragraph 3.8).

Within twelve (12) months of its establishment, BAHA will present evidence: (a) that an officer of BAHA, appointed by the Minister of MAFC, be a member of the Board of Directors of the PCB and that close coordination exists between BAHA and the PCB with regards to importation of agrochemicals and training in management of pesticides (see paragraph 3.6); (b) that the Ministry of Health (MOH) has transferred personnel and laboratory equipment to BAHA, and is sending water and food samples for testing by the Microbiology Laboratory (see paragraph 3.9); and (c) the Ministry of Industry, Commerce, Public Services and Labour, and BAHA have prepared a joint program to enforce the sanitary and phytosanitary standards and to strengthen the regulation and monitoring of food processing plants (see paragraph 3.9).

Retroactive Financing: It is recommended that up to US\$10,000 of the expenses incurred before the approval of the loan, but after June 1, 1999, be eligible for reimbursement with the proceeds of the Loan as long as IDB procedures and policies have been followed. Also, it is recommended that up to the equivalent of US\$12,000 incurred in operation

expenses after March 1, 1999, be recognized as local counterpart contribution (see paragraph 3.16).

**POVERTY-TARGETING
AND SOCIAL SECTOR
CLASSIFICATION:**

This operation does not qualify as a social equity enhancing project, as described in the indicative targets mandated by the Bank's Eighth Replenishment (Documento AB-1704).

Furthermore, this operation does not qualify as Poverty Targeted Investment (PTI) (see paragraph 4.34). The borrowing country will not be using the 10 percentage points in additional financing.

**EXCEPTIONS TO
BANK POLICY:**

After the Soils Laboratory has been rehabilitated, the Government of Belize will lease this facility, by sole sourcing, to a Users Group. The exception to Bank Policy on procurement is based on the selection of the Users Group, consisting of farmers groups such as the sugar, citrus and banana producers associations, without open bidding, based on their interest to operate the facilities, and their administrative capacity. Services will be available to all farmers on a fee for service basis.

PROCUREMENT:

The threshold over which Program Procurement will be by competitive international bidding is US\$225,000 for goods and services; procurement of civil works (estimated at US\$732,000) will be by competitive local bidding.

I. BACKGROUND

A. Macroeconomic situation

- 1.1 The macroeconomic situation of Belize reflects the challenges of a small, tariff protected, high cost economy, adapting to an increasingly globalized and competitive world economy. It has a low population density in an area of 22,965km² with only 233,000 inhabitants. Agriculture, trade, tourism and communications account for about 65% of Gross Domestic Product (GDP). GDP growth averaged 5.1% from 1981 to 1992. Thereafter, it slowed down, averaging 2.8% from 1993 to 1998.
- 1.2 As a result of increasing government expenditures, the deficit of the non-financial public sector has deteriorated systematically in recent years, reaching a level equivalent to 4.5% of GDP in 1998. To increase revenues, the government introduced in April 1996 a 15% value added tax (VAT). The increased revenues were expected to offset declining tariffs, as Belize gradually adjusts to the Caribbean Community (CARICOM) Common External Tariff. The tariff was reduced from 35% in April 1996 to 25% in April 1998, and is expected to reach 20% by the year 2000. It is important to point out that recently the government decided to substitute the VAT tax with a sales tax with a lower rate but a broader base.
- 1.3 Consistent with unfavorable fiscal management and the gradual phasing out of preferential trade agreements with the United States (US), the European Unit (EU) and CARICOM, a recurrent trade deficit has also been observed, financed primarily by foreign aid, remittances from Belizeans working overseas, foreign investment and official borrowing. At the end of 1998, gross foreign reserves stood at 1.3 months of imports. The trade deficit has shown that Belize is susceptible to world commodity price fluctuations due to dependence on a narrow range of export products. A significant development in recent years has been the increase in value of non-traditional exports such as farmed shrimps, papayas, sawn wood, red kidney beans and grapefruit squash, which combined with lower sugar prices and quotas has reduced the share of sugar in total agricultural exports. The Caribbean Basin Initiative (CBI) has actively encouraged important private investments in the citrus and shrimp industries, while the EU and the UK have been responsible for most foreign investments in the sugar and banana industries.
- 1.4 The primary exports are sugar (29% of all exports), bananas (16%), citrus (19%) and seafood (13.6%). These products benefit from preferential access to markets, but such preferences are being eliminated as the world moves towards more open markets. Currently bananas from Belize can enter the EU free of certain duties. The World Trade Organization (WTO) found that this arrangement, giving preferences to certain CARICOM banana imports, violated trade provisions. The loss of preferential access to the EU market would

have serious consequences for Belizean exports and requires a transition phase to open market conditions.

- 1.5 The government follows a fixed exchange rate regime with the US Dollar at a rate of BZ\$2 = US\$1. This fixed peg of the Belizean dollar to the US dollar, in conjunction with reduced trade tariffs, lower oil prices and a tight monetary policy, have allowed for a sustained downward movement in inflation. This offsetting effect has been such that the inflation rate in 1998 was actually negative (-0.8%).
- 1.6 The existing agricultural policy environment includes a coherent sector policy, designed to adjust to open market trade, with the gradual reduction of tariffs and protection. The specific policy measures, include:
 - a. Review Quantitative Restrictions (QR) as part of reducing protection and moving towards an open economy.
 - b. Joined the World Trade Organization.
 - c. Continued the tariff reduction agreed with CARICOM.
 - d. Increased private sector investments, especially in the citrus industry.
 - e. Reduced import quotas consistent with the Lome Agreement with fixed datelines.
 - f. Reduced fiscal expenses, including a retrenchment policy.

B. The agricultural sector: plant and animal health

- 1.7 The agricultural sector accounts for 19.7% of GDP, 87% of merchandise exports, and 38% of employment. Of the total population, 52% live in the rural area. Belize has increased exports of non-traditional products such as shrimp, habanero peppers and papaya. It has potential to compete with other crops such as black-eyed peas, limes, organic cacao, and forest based products. Some Caribbean countries have shown interest in beef from Belize. The US receives 45% of all exports and 80% of all seafood; UK receives 37% of exports.
- 1.8 The opening of international markets requires a commitment from producers and health officials to improve the animal and plant health, to meet the sanitary standards as defined in international agreements. The quality control standards for products imported into the United States and the EU are becoming stricter and require the implementation of quality control systems throughout the production process and certification in the exporting country.
- 1.9 The United States approved legislation requiring that all imported fish products be produced under certified quality control systems

based on Hazard Analysis Critical Control Points (HACCP) by December 1997. Beginning in January 1997 meat exporters have to comply with standard operating procedures to prevent sanitation problems and sanitary inspection, as well as micro-biological control. By December 1999 meat exporters must have HACCP systems in place. The Food and Drug Administration (FDA) of the US Department of Health and Human Services, has distributed the Guide to Minimize Microbial Food Safety Hazards for Fresh Fruits and Vegetables. The United States is drafting legislation to require HACCP systems for other products, such as fruits and juices. EU, Japan and other important markets are likely to adopt similar measures.

- 1.10 Belize's systems for controlling the quality of agricultural exports has major deficiencies that may soon prevent Belize from complying with the new systems of quality control. As a member of WTO, Belize has to conform with all rules on sanitary and phytosanitary measures for imports by December 1999. There is an urgent need for implementation of quality control systems to avoid on-farm losses and rejection of exports in commercial markets.
- 1.11 One of the more serious problems is the absence of diagnostic laboratories for testing agricultural products. Belize does very little monitoring of the economic consequences of diseases and pests and almost no public health monitoring of the food system. This limits the information on the various pests and diseases which may be present, the measurement of economic damages, risk analysis and the agricultural health status.
- 1.12 Another problem is the absence of an efficient information system. Information generated by Control Posts at border points are recorded but the information is not used for planning, policy decisions or preventing the entrance of exotic diseases. Several offices issue phytosanitary certificates and import permits but there is no system to control the number issued. There is limited capacity to share information with external institutions or to access data bases. The need to strengthen this linkage will become critical in the near future as Belize becomes increasingly integrated with the Caribbean and Central America. Information on international agreements, regulations, and health requirements is limited. Non-compliance with such regulations will adversely affect the country's ability to export.

C. Private Sector institutions involved with animal and plant health

- 1.13 The private sector of Belize plays a key role in agricultural production and management of export markets. There are several producer organizations and some operate plant health services. One is the Citrus Research and Education Institute (CREI), of the Citrus Growers Association (CGA). Its staff includes a plant biologist, plant pathologist and extension workers. CREI has a very basic laboratory complemented with soil and leaf analysis

performed in Guatemala. It has received an FAO grant of \$125,000 to organize a certified root stock and nursery program.

- 1.14 The Banana Growers Association (BGA) has technical assistance services to monitor pest and disease problems, including laboratory facilities, with support from the Central Plant Laboratory of the MAFC. Some samples are sent to Guatemala. The Sugar Industries Board (SIB), provides research and plant protection assistance to sugar growers. The Belize Livestock Producers Association (BLPA), does not provide sanitary services.

D. Public sector institutions involved with animal and plant health

- 1.15 The public sector institutions involved with animal and plant health, include three ministries: the MAFC, the Ministry of Industry, Commerce, Public Services and Labour, and the Ministry of Health. The following paragraphs summarize the problems encountered in each ministry:

1. Ministry of Agriculture, Fisheries and Cooperatives (MAFC)

- 1.16 The MAFC is responsible for animal and plant health, and is financed through annual budget allocations. During the last years there has been a steady decline in budget resources due to fiscal constraints. Weaknesses in the Ministry's system of personnel administration and the lack of funds to buy chemical inputs, repair equipment, and cover travel costs, have created serious problems.
- 1.17 There is significant room to improve the operation of MAFC, especially in policy analysis, priority setting, planning and use of fiscal resources. There is a mismatch between staffing levels and operating budgets and poor communication between headquarters and field offices, limitations in travel expenditures that reduce supervisory capacity, such as enforcement of over-fishing controls. Except for sugar, bananas and citrus, there is very little information on prices, production levels and costs needed by the private sector to assess market opportunities.
- 1.18 About 29% of MAFC's personnel costs go to animal and plant health; of this percentage, animal health constitutes 42%; quarantine 21%; plant health 21% and special projects 16%. In 1998, personnel cost reached 80% of recurrent expenditures on animal and plant health (The MAFC Organizational Chart is available in the Project Files). The following paragraphs describe the four MAFC units responsible for animal and plant health, plus the Soils Laboratory and the PCB.
- 1.19 **a. Plant Protection Unit (PPU):** PPU is responsible for: plant pathology, entomology, biological control, plant quarantine, integrated pest management, other field and laboratory diagnostic services, documentation and data management. The PPU does some monitoring, surveying and diagnosis of pests, but limited pest risk analysis to determine their impact on crop production. It has a

list of pests and diseases of the Caribbean Region, but with the exception of the Mediterranean Fruit Fly, no monitoring work is done. There is no seed testing to determine the presence of seed-borne pathogens, such as virus or bacteria.

- 1.20 The Overseas Development Administration (ODA) of the U.K. and the United States Agency International Development (USAID), strengthened PPU's capacity with personnel training and equipment and constructed a plant laboratory. Organization and budget problems in the PPU have resulted in a low level of operational activity. Poor coordination and the lack of transport for MAFC extension agents for the systematic collection of plant samples, do not allow the PPU to verify the existing pests and diseases. The plant pathology lab, designed to process 1,300 samples per year, averages less than 300. Part of the problem is the inefficient use of scarce resources responding to political pressures for ad hoc testing for isolated problems. The PPU has limited contact with its regional counterparts and with the main trading partners. Stronger ties are needed to take preventive action against potential problems and to stay informed about the regional and international plant health situation.
- 1.21 **b. Veterinary Services Division (VSD):** VSD is responsible for: field services; veterinary laboratory services; animal inspection and quarantine; disease surveillance and veterinary public health, including vaccinations and slaughter house inspections; and, control and eradication of diseases. Commercial meat products are inspected before export by VSD staff. In April 1996 clinical services for small animals were transferred to private clinics; MAFC continues to provide clinical services for large farm animals.
- 1.22 No regular monitoring is done of animal diseases in Belize. In the early 1980s, the Central Veterinary Laboratory (CVL) performed 2,000 samples per year; it is now averaging less than 200. As a result, serious problems may remain undetected, such as tuberculosis in dairy cows, hog cholera, or diseases that affect marine products and aquaculture.
- 1.23 **c. Special Projects Department:** This Department is responsible for the Mediterranean Fruit Fly Control Program in coordination with USDA/APHIS, as well as Screwworm Eradication, Vampire Bat Control and Quarantine Service.
- 1.24 The Quarantine Service has six inspection posts, shared with the Customs Department, at various ports of entry and staffed by eleven Quarantine Inspectors (QIs). The responsibility of the QIs is to enforce regulations to prevent the introduction of pests and diseases from foreign countries and to inspect animals and plants for export. Commercial inspection of exported produce, such as bananas, papayas and peppers, are inspected by the QIs and in some cases by Agricultural Extension Officers with experience in this area. Nevertheless, several problems limit the efficiency of the

service, such as the lack of adequate space; irregular communication with the head of the service and inadequate supervision. In 1993 the Service received seven incinerators under an ODA project; two were installed, and one is presently functioning; the others have not been installed due to insufficient resources. New inspection posts are needed at Jalacte, La Union and Port Dangriga to inspect the border trade.

- 1.25 The QIs working hours are not consistent with those of the Customs Inspectors. There are a limited number of QIs and MAFC will not pay overtime; consequently borders are not covered for long periods, to the advantage of those wishing to avoid the inspection. The monthly reports provided by the QIs to the MAFC are not analyzed or monitored. Inspection procedures, data collection and reporting systems are not standardized. The QIs are forced to use personal judgement rather than a fixed set of guidelines.
- 1.26 **d. Fisheries Department:** This Department is responsible for monitoring fishing practices, and enforcement of the closed seasons for lobster and conch. It had a small laboratory to examine samples of fish exports, but this lab has ceased to operate. Commercial inspection of fish products is done by the staff from the Fisheries Department; they also make sanitary site inspections of fish processing plants.
- 1.27 **e. Soils Lab:** The Government has a Soils Laboratory located at Central Farm; it has not operated in four years. The absence of this service is a serious constraint to the private sector, due to inefficiencies in applying chemical inputs. Good management of soil nutrients is a fundamental farming practice which improves yields and increases plant resistance to pathogens and pests.
- 1.28 **f. Pesticides Control Board (PCB):** The PCB is a statutory body responsible for: registration of pesticides; licensing people to sell restricted pesticides; inspection of premises where restricted pesticides are sold; authorizing the use of restricted pesticides; reviewing registration requests; training pesticide applicators; and establishing labeling and packaging guidelines in accordance with Food and Agriculture Organization (FAO) Standards.

2. Public Health Bureau (PHB)

- 1.29 The Public Health Bureau (PHB) of the Ministry of Health (MOH) is responsible for maintenance of standards and quality in food processing facilities, restaurants, water quality and slaughter facilities. Its activities are enforced through the Food and Drugs Act which provides for diagnosis, epidemiological surveillance and inspection services. Resource constraints have restricted the frequency and the geographic scope of tests done by the PHB. Its laboratory capabilities are limited and it does not conduct routine diagnosis and tests of basic food products. PHB has a laboratory limited to simple water quality tests.

- 1.30 The Department of Environment (DOE), Water and Sewage Authority (WASA), Department of Hydrology and the PHB are all required to monitor the quality of water in Belize, but they are able to perform only basic tests. Because they do not have access to an operating gas chromatograph, they are not able to test water for the presence of a variety of chemical contaminants.

3. Bureau of Standards (BOS)

- 1.31 The Bureau of Standards (BOS) of the Ministry of Industry, Commerce, Public Services and Labour, is responsible for the implementation of trade regulations, including the approval of import licenses, monitoring and coordinating Belize's trade agreements and monitoring standards for products. It has an important complementary role to the MAFC in maintaining "codes of practice, specifications and standards". Although legislation exists for quality control of animal products and by-products, the BOS needs to coordinate with MAFC and PHO units to execute this mandate.

E. Experience of the Bank and other organizations in animal and plant health

- 1.32 Except for Belize, all Central American countries have had projects financed by the Bank to strengthen systems of animal and plant health. Experience demonstrates the importance of: (a) taking a comprehensive approach to solving multiple problems rather than focusing on individual control of specific diseases or pests; (b) coordinating activities between neighboring countries, given the regional nature of many problems and the flow of goods between countries; and, (c) understanding the need to meet the sanitary and phytosanitary requirements defined by the importing countries.
- 1.33 Experience also indicates the need to provide the private sector with appropriate incentives to ensure an active participation. The private sector must be involved in the planning, execution and evaluation stages. The private sector financial participation on a fee for service basis is important to ensure efficiency and sustainability. Some projects have demonstrated that low pay and poor management in public administration results in excessive staff turnover, suggesting that non-governmental structures with more control over revenues, salary scales, hiring and promotion practices, can be more effective.

F. Conceptualization of the project

- 1.34 The Bank's strategy in Belize has been to facilitate greater efficiency in the agricultural sector, with a particular focus on the needs of the private sector. The MIF Trade Promotion and Business Development Project (ATN/ME-5443-BL) is providing technical assistance to farmers' associations and agribusinesses and establishing a market information service at the Belize Chamber of Commerce. The Belize Land Administration Project (1017/OC-BL)

has advanced significantly in improving the existing land and titling information system, to give small farmers easier access to land and create a more efficient land market.

- 1.35 The problems discussed in this chapter have highlighted the difficulties that Belize will encounter as it tries to diversify its exports and expand into new international markets. In order for exports to become more competitive, producers and health officials must be committed to complying with international sanitary and phytosanitary standards. By making such adjustments Belize will become more competitive in non-traditional exports, reducing its susceptibility to world commodity price fluctuations and its dependence on a narrow range of export products.
- 1.36 There is also a need to rationalize the present structure of agricultural health services, to make more efficient use of Government expenditures on agricultural health by organizing a new institution with active private sector participation and by privatizing selected health and inspection services.
- 1.37 The public sector requires a capability to provide basic public services to monitor agricultural diseases and pests, and the safety of food products. The active participation of the private sector will reduce animal and plant losses, leading to a gain in competitiveness and productivity. The challenge for this project is to achieve a greater impact on agricultural health and the quality of exports maintaining the present level of Government expenditures. The project will also strive to meet the costs of further improvements from increased fee income and to be more responsive to the needs of private sector producers and exporters.

II. THE PROJECT, COST AND FINANCING

A. Objectives

- 2.1 The objective of this project is to enhance the competitiveness of Belize's agricultural products, especially in foreign markets; to create systems of quality control that will meet the import requirements being developed by WTO member states; and to provide more efficient services with a minimum increase in the Government's current level of expenditure in agricultural health. It will accomplish this by strengthening animal and plant health services with increased participation of the private sector, reducing losses from disease and ensuring the safety and quality of agricultural products for domestic and foreign consumers (for the specific targets see the Logical Framework of the project in Annex II-1).

B. Project components and project description

- 2.2 An essential component of this project is the consolidation of MAFC agricultural health services into one organization with significant private sector input into management and oversight. It will be implemented over 4 years and have the following components:

a. Institutional Strengthening (US\$651,000)

- 2.3 The Government will establish a new independent statutory body called the Belize Agricultural Health Authority (BAHA), that will supervise and execute public sector responsibilities for animal and plant health services, including compliance with existing international agreements. It will have an administrative support unit (Central Office); it will have the active participation of the private sector on the Board of Directors and through various Users Groups (The BAHA Organizational Chart is available in the Project Files).
- 2.4 The project will hire a lawyer to help draft appropriate legislation to establish BAHA and to update existing laws and regulations controlling animal and plant health. It will rehabilitate offices and five MAFC laboratories. It will promote the formation of Users Groups to oversee the operation of the Microbiology Food and Soil Laboratories. The Users Groups participation will ensure the quality of services, develop a better dialogue between the Government and the private sector, and encourage the use of the labs by the private sector thereby promoting the financial sustainability of the labs. The project will educate the public on matters of agricultural health and upgrade existing computer and communications systems to facilitate data storage, decision making and coordination. It will fund the training of local staff at international training organizations, research and regulatory bodies; local training will also be carried out by consultants and through short courses.

b. Animal Health Department (US\$1,557,000)

- 2.5 This component will improve animal health to preserve the national poultry, livestock and fisheries sector through veterinary surveillance, country-wide control programs and laboratory support. This component will rehabilitate buildings and several incinerators, purchase computers, refrigerators, field equipment, audio-visual equipment, and other related materials. It will strengthen the national epidemiological surveillance system and establish stronger channels of communication and information sharing with international surveillance bodies such as the Office of International Epizootics (OIE), the Regional Organization for Plant and Animal Health (OIRSA), Inter-American Institute for Cooperation on Agriculture (IICA) and the Codex Commission formed by the FAO and World Health Organization (WHO). It will rehabilitate the Central Diagnostic and Investigation Veterinary Lab, the Microbiology Lab (food testing); modify existing facilities in Central Farm (specially for rabies testing) and in Orange Walk for the collection of samples; establish a system of residue screening and inspection of food processing facilities, and enhance local capacity for carrying out monitoring and eradication campaigns.
- 2.6 The PHB, which has responsibility for testing the quality of drinking water throughout Belize, will continue collecting water samples, but these samples will instead be sent to the Microbiology Lab for analysis. The Bureau's laboratory equipment and one lab technician will be transferred to the Microbiology Lab.
- 2.7 BAHA, through the Act of establishment, will have the mandate to monitor, regulate and control the quality and suitability of veterinary drugs, biologicals and medicated feeds. This is needed to improve the supervision of companies handling large quantities of certain chemicals and to better organize education efforts on the sale, use and management of these inputs. The project will purchase communication, computer equipment and education material.

c. Plant Health Department (US\$783,000)

- 2.8 This component will strengthen the local ability to quantify the presence of various plant diseases, evaluate their economic impact and develop control measures. Utilizing existing Government facilities, this component will establish three regional service units, rehabilitate existing facilities, purchase equipment for the Plant Diagnostic Lab and provide technical assistance to reorganize the systems, including the collection and transport of samples to the lab; it will upgrade laboratory facilities, restructure surveillance and eradication efforts.
- 2.9 In the area of internal quarantine services, this component will strengthen post-entry quarantine services for importing planting materials by expanding the screen house and entomology facilities, and improve the communications between Belize, the International

Plant Protection Convention (IPPC) and other bodies concerned with international phytosanitary controls. A stronger Plant Health Department will enhance the Pesticide Control Board's ability to monitor a wider variety of agrochemicals serving as a reference for examinations, identifying pests, integrated pest control (IPC), monitoring resistance and cataloging insects, and improving field services through the inspection of nurseries and plant materials and better coordination with USDA-APHIS, CREI, OIRSA, IICA and the various farmer associations.

d. International Inspection and Quarantine Department
(US\$613,000)

- 2.10 This component will improve the systems of agricultural inspection and control to reduce the risk of introducing pests and diseases into Belize and to facilitate the promotion of international trade. Within existing Government property, it will establish two new border control points, one new port control point, and rehabilitate the physical facilities at six other border control points and recondition a cattle observation station at the Mexican border.

e. Soils laboratory (US\$167,000)

- 2.11 The private sector, especially the citrus, sugar and banana growers, have expressed their willingness to partially finance the rehabilitation of the Soils Lab located at Central Farm. Private sector and project resources will be used to rehabilitate the laboratory, purchase equipment and materials. The laboratory will then be leased to the Users Group which will hire the staff needed to operate the facility making services available to the general public. The project will: (a) help organize the Users Group, and (b) work with the Group to finalize a Work Plan for the lab, including financial projections for investments, revenues and expenses for a four year period. Therefore, an exception to the Bank policy is proposed to permit the Government to lease this facility, without competitive bidding, to a non-profit Users Group that would operate this lab on fee for service basis, with services available to the general public. This exception is appropriate given the investment to be made by the Users Group and the importance of this lab to the livelihood of the various users.

C. Project cost and financing

- 2.12 The project will cost US\$4.8 million and be executed over four years. Bank loan resources (US\$3.6 million from Single Currency Facility) will be used primarily to finance investments in rehabilitating buildings and equipment (US\$1.7 million), technical assistance and training (US\$627,000), and interest payments during the execution period. Local counterpart (US\$1.2 million) will be generated partially from new service fees and will be used to cover incremental operational expenses, primarily the purchase of laboratory chemicals, public utilities and other operational expenses of the laboratories.

- 2.13 The projected costs of each component to be financed from loan and local counterpart are presented below (the details of the different investment and concurrent costs to be financed under the project, by components are in the Project Files).

Project Costs - (US\$000)				
	IDB	GOB	TOTAL	%
1. BAHA Institutional Strengthening	346	305	651	14
2. Animal Health	1,329	228	1,557	32
• Labs, surveillance and field	994	82	1,076	
• Microbiology Food Laboratory	279	141	420	
• Control veterinary products & Med. Feeds	56	5	61	
3. Plant Health	551	232	783	16
4. International Inspect. & Quarantine	360	253	613	13
5. Soils Lab	98	69	167	4
6. Unallocated	365	70	435	9
• Contingencies	248	40	288	
• Cost Escalation	117	30	147	
7. Financial Costs	551	43	594	12
• Inspection & supervision (1%)	36	-	36	
• Credit fee	-	43	43	
• Interest	515	-	515	
Total	3,600	1,200	4,800	100
Percentage	75	25	100	

D. Sources and conditions of Bank financing

- 2.14 The Bank's financing of the proposed project will be equivalent to US\$3.6 million from its Single Currency Facility (SCF). The terms and conditions will be as follows:

Amortization period: 25 years
Execution period: 4 years
Disbursement period: 4.5 years
Grace period: 5 years
Interest rate: variable
Inspection fee: 1%
Credit fee: 0.75% annually on undisbursed balance
Currency: US dollars.

- 2.15 Given public sector concerns with agricultural health and the Government's interest in ensuring the availability of such services, the Government has agreed to provide budgetary support at current levels, estimated to be about US\$880,000 per year, plus additional amounts to cover paid salary increases that will become due to public services. This amounts to about US\$3,670,000 in budgetary support to BAHA during the four years of project execution. Because this is the current level of Government expenditures on agricultural health, it is not included in project costs.
- 2.16 In addition to the US\$3,670,000, the Government will provide US\$1,018,000 of local counterpart to BAHA. It is expected that about US\$275,000 of this local counterpart will be generated from service fees and US\$743,000 (approximately US\$186,000 per year) will be additional central Government support. The Government will also provide additional budgetary support if service fees projected for this project are not met. The Soils Lab Users Group will contribute an additional US\$69,000 in local counterpart. The Government will also provide US\$113,000 of local counterpart to cover contingencies, cost escalation and credit fee.
- 2.17 Interest payments will be financed from Bank loan resources during the disbursement period.

III. PROJECT EXECUTION

A. Overall execution and administration

- 3.1 BAHA will be the executing agency for this project. Until BAHA has been legally established as an independent entity, a BAHA Unit within MAFC will administer the project. BAHA will have a Board of Directors made up of members from the public and private sectors, with the Minister of MAFC, or his appointee, serving as Chairman. Other public sector members will be appointed to represent the Ministry of Health (Public Health Bureau), Ministry of Industry, Commerce, Public Services and Labour (Bureau of Standards), Ministry of Budget Planning and Management, Economic Development, Investment and Trade and the PCB.
- 3.2 Approximately half of the Board will be drawn from private sector producer groups such as CREI, BGA, BLPA, Sugar Growers Association (SGA), Fisheries Cooperatives, shrimp farmers, and other agribusinesses. The composition of the Board and its operating procedures will be formulated in a manner acceptable to the Bank and in accordance to terms agreed upon with the Bank. The Managing Director of BAHA will serve as the Secretary of the Board.
- 3.3 Prior to the formal establishment of BAHA, the Minister of MAFC will establish BAHA as a unit within MAFC, consistent with the organizational chart contained in the Project Files. The person designated to be the Managing Director of BAHA will be responsible for this unit. The Minister will also form the BAHA Board as described above; the Board will serve as an advisory committee to the Minister until BAHA has been formally established. (A draft of the Act establishing BAHA is in the Project Files).
- 3.4 The BAHA's Board of Directors will designate a person, approved by the Bank, to serve as the Managing Director of BAHA. It is anticipated that BAHA will be initially staffed with about 60 people from MAFC and a technician from the PHB. Staff will be transferred to BAHA and will retain all the retirement and other benefits to which they are currently entitled as civil service employees (a table of existing and incremental staff is in the Project Files). BAHA will develop its own employment and personnel policies, gradually replacing MAFC personnel as they retire. MAFC assets (buildings, equipment, vehicles, furniture, etc.) currently being used in support of animal and plant health services will also be transferred to BAHA.
- 3.5 It is expected that BAHA will have four operating departments as described below. Each Department Manager within BAHA will be responsible for executing his component under the direction of the Managing Director of BAHA.

- a. BAHA Central Office: administrative center for BAHA and the project; Managing Director, Business Manager, an Accounting Assistant and Secretary; overall administration, programming, procurement, oversee technical assistance contracts and construction, auditing and legal services,
 - b. Animal Health Department: surveillance of animal diseases; inspection of meat processing facilities; eradication programs; Central Veterinary Lab; Microbiology Lab; control of veterinary drugs, biologicals and medicated feeds; public education, liaison with international veterinary health bodies,
 - c. Plant Health Department: surveillance of plant diseases; eradication programs; Plant Diagnostic Lab; public education; screen house quarantine facility; liaison with international plant health bodies,
 - d. External Quarantine Department: health surveillance of products entering and leaving Belize; manage border and port quarantine facilities; liaison with international quarantine bodies.
- 3.6 The BAHA will coordinate activities with the PCB in the control of the importation of pesticides and the registration and monitoring of veterinary drugs, biologicals and medicated feeds. Within twelve (12) months after the establishment of BAHA, the executing agency will present evidence that an officer of BAHA, appointed by the Minister of MAFC, be a member of the Board of Directors of the PCB, and that close coordination exists between BAHA and the PCB with regards to importation of agrochemical products and training in management of pesticides (See Executive Summary). The training activities will be financed by BAHA with the technical support of the PCB.
- 3.7 The Central Veterinary Lab, the Microbiology Food Lab and the Plant Diagnostic Lab will be staffed by BAHA employees and remain under the control of BAHA, but with participation by the private sector User Groups organized as an Advisory Committee to each laboratory. The administration and operation of the Soils Lab will be leased to the Soils Lab User's Group; it will be staffed by employees hired by the Users Group and will remain under the direct control of the User's Group. The Soils Lab User Group will form a private non-profit organization to operate the lab on a fee-for-service basis. The Citrus Research and Educational Institute (CREI) has offered to serve as the organizing agent for the Soils Lab Users Group.
- 3.8 Certain special conditions shall apply to disbursements corresponding to the Microbiology Food Laboratory and the Soils Laboratory. To be eligible for disbursements to rehabilitate the Microbiology Food Laboratory, BAHA must present evidence that: (a) an Advisory Committee has been organized with the Users Group; (b) the Representatives of each Users Group has been assigned to the Advisory Committee; (c) it has signed a cooperative agreement with the Users Group; and (d) the BAHA has presented a Work Plan and

Financial Projections leading to increase awareness for administrative matters by the Advisory Committee. To be eligible for disbursements to rehabilitate the Soils Laboratory, BAHA will present evidence that: (a) the Users Group has been legally constituted; (b) that there is a formal agreement between the Users Group and MAFC to lease the laboratory facilities; and, (c) the Users Group has prepared a Work Plan and Financial Projections for the first four years of operation, including investments, revenues and expenses (see Executive Summary).

- 3.9 The execution of the Animal and Plant Health Components will be coordinated with the Ministry of Health (through the Bureau of Public Health) and with the Ministry of Industry, Commerce, Public Services and Labour (through the Bureaus of Standards). Within 12 months following its establishment, BAHA will present evidence to the Bank that: (a) the Ministry of Health has transferred personnel and laboratory equipment to the Microbiology Laboratory and is effectively coordinating with BAHA in areas of joint responsibility, especially in staff training and food inspection and sending water and food samples for testing; (b) the Ministry of Industry, Commerce, Public Services and Labour, and BAHA are working together to establish sanitary and phytosanitary standards and to strengthen the regulations and monitoring of food processing plants (see Executive Summary).

B. Terms of reference of the consultants

- 3.10 The project will finance 28 person months of consultant services in the following areas: legal, financial management, engineering and various agricultural sciences. (The Terms of Reference, Timetable, and Cost for all consultants are available in the Project Files).

C. Procurement of goods and services

- 3.11 Procurement of goods and services will be done according to Bank guidelines, set forth in Annex B of the loan contract. The Government (through BAHA and MAFC) will contract for the services needed under this project. BAHA is expected to contract with a consulting firm or specialized agency to provide most of the consulting services needed for this project. Individual consultants will be hired to perform the task of the Lawyer, the Financial System Specialist and the Soils Laboratory Specialist. The initial project report will include terms of reference (as agreed with the Bank) and time schedule for hiring all consultants. The Soils Lab will be operated by a Users Group under a lease from MAFC. The schedule of procurement and bidding is available in the Project Files.
- 3.12 The schedule for procurement and bidding (Annex III-1) indicates what purchases must follow international and local bidding procedures and what purchases need to be supported by three price quotations. The procurement of goods will amount to about US\$1.2 million over four years; approximately US\$652,000 for machinery and

equipment; US\$318,000 for vehicles (distribution and cost for each component is available in the Project Files); and US\$226,000 for supplies and publications. The threshold over which Program Procurement will be by competitive international bidding is US\$225,000 for goods and services. Construction and rehabilitation of buildings will amount to about US\$732,000 (timetable and cost are available in the Project Files); this work will be contracted through local bidding. Consultant and training costs will amount to about US\$627,000; most of the consulting will be hired through international bidding (timetables and costs of foreign scholarships and local training are available in the Project Files).

D. Execution period and disbursement calendar

- 3.13 The proposed period for project execution is four years. The tentative disbursement schedule is presented below, and will be subject to review in the semester reports.

Disbursement Schedule (US\$000)				
Year	IDB/OC	Government	Total	%
1	536	197	733	15
2	2,006	300	2,306	48
3	725	342	1,067	22
4	333	361	694	15
TOTAL	3,600	1,200	4,800	100

E. Disbursements and Retroactive Financing

- 3.14 The resources allocated to the project will be disbursed according to Bank procedures to the Belize Ministry of Finance and Foreign Affairs. There are no special conditions prior to the first disbursement. Once the standard conditions prior to first disbursement are met, up to US\$120,000 from Bank resources will be available for financing the following activities: (a) contract a lawyer to assist in the early enactment and implementation of the proposed national agricultural health services and prepare the documentation transforming BAHA into a new statutory body as a legally independent entity and to update laws and regulations on animal and plant health; (b) contract the architect needed to prepare final engineering drawings, cost projections and contracting documents for BAHA building program; (c) contract a local financial specialist to design BAHA financial control system, and (d) purchase of office equipment identified in Component of Institutional Strengthening (see Executive Summary). MAFC will also assign local resources for an amount of at least US\$30,000 to

appoint and hire the following Central Office personnel: the Business Manager, Accounting Assistant and Secretary.

- 3.15 Further project disbursements are subject to the completion of the following events: (a) BAHA has been formally established by Parliament and BAHA's Board of Directors has been appointed and initiated its duties; (b) BAHA's Board of Directors has contracted a Managing Director acceptable to the Bank; and (c) all the relevant MAFC personnel and assets have been transferred to BAHA, such that it has the staff and equipment necessary for project execution (see Executive Summary).
- 3.16 It is recommended that Government expenditures used for initial activities on the Project (after June 1, 1999) be recognized for retroactive financing at first disbursement. The expenditures agreed upon for retroactive financing include: purchase of office equipment and furniture for the Institutional Strengthening component, which is not expected to exceed US\$10,000. Also, it is recommended that the expenditures used in initial activities after March 1, 1999, be recognized as local counterpart contribution; this amount includes salaries and operation expenditures, and is not expected to exceed US\$12,000 (see Executive Summary).

F. External auditing

- 3.17 During project implementation, the financial statements of the project will be audited annually by an auditing firm acceptable by the Bank.

G. Monitoring, control and follow-up

- 3.18 The execution of the project will be guided by the Annual Work Plan prepared by the Managing Director of BAHA and approved by the Board. The Work Plan will be coordinated with other public and private entities active in the area of agricultural health, especially MAFC extension services, Pesticides Control Board, Public Health Bureau, DOE, WASA, CREI, farmers associations, etc. The Work Plan will be consistent with the project outputs as listed in the Logical Framework in Annex II-1. The BAHA will present to the Bank progress reports every semester (6 months) of each fiscal year within the month prior to the start of each semester. In the second progress report of each fiscal year BAHA must present to the Bank the consolidated Annual Work Plan (AWP) for the following fiscal year. On the basis of the AWP, the Bank and BAHA will jointly determine any adjustments to be made in the execution of the project. The AWP must include evidence to confirm the preparation of new animal and plant health laws and operation manuals for laboratories, surveillance, input registration and control, inspection, quarantine, and campaign regulations. The first semester report will include a three year work plan for BAHA.
- 3.19 The primary benchmarks for measuring the progress of this project are contained in the Logical Framework in Annex II-1. The ultimate

success of this project will be measured in the degree to which Belize can remain free of significant animal and plant diseases and in the ability of Belizean agricultural products to meet the phytosanitary import requirements of WTO and major trading partners.

- 3.20 In order to ensure proper financial management, BAHA will prepare monthly financial reports for its own internal supervision and control. These internal reports will keep track of all investments, revenues and expenses broken down by Department and in a format consistent with the Table of Project Cost (this table is available in the Project Files). In each semester report the BAHA Managing Director will indicate outputs against the targets agreed between the Bank and BAHA and based on the targets established in the Logical Framework in Annex II-1. The report will also discuss problems and corrective actions to be taken. Such reports will be prepared every 3 months during the first year. These reports will be sent to the Chairman of BAHA's Board of Directors, who will forward them to the IDB Representation in Belize.

H. Bank supervision

- 3.21 The Bank will supervise the progress and execution of the project, through its Country Office in Belize (COF/CBL). Project reviews will be undertaken in Belize after the submission of each semester report. All project reviews will be carried out by the Bank's technical specialist in RE2/EN2, the Specialist from the IDB Representation, Chairman of BAHA's Board of Directors, a representative of the Ministry of Budget Planning and Management, Economic Development, Investment and Trade and the Managing Director of BAHA.

I. Project readiness for implementation

- 3.22 The project was jointly prepared by MAFC staff and the Bank Project Team. The design of each component was completed by MAFC and the Project Team with the assistance of international experts. The Terms of Reference for the hiring of all the international and local consultants have been prepared and agreed upon with the Bank (see Executive Summary).
- 3.23 There are a number of legislative and regulatory changes that will need to take place before BAHA can be fully effective. The Parliament will need to pass enabling legislation establishing BAHA and appropriate supporting regulations will need to be prepared. Project resources will be used to contract the legal assistance needed to facilitate the drafting and processing of new laws, regulations and amendments.

IV. VIABILITY, BENEFITS AND RISKS

A. Political and institutional feasibility

- 4.1 The Modernization of Agricultural Health in Belize is a priority for reasons of foreign trade, public health and environmental monitoring of water resources. Placing agricultural health services in an entity outside MAFC and giving that entity control over its financial resources and personnel will: (a) improve the effectiveness and financial viability of these services, (b) better serve the needs of the private sector, reducing losses and enhancing quality, (c) reach larger numbers of people, and (d) improve the health and safety of the food system. Also, given the limited number of qualified professional personnel operating in agricultural health services in Belize, the creation of one public/private entity, that combines both animal and plant health, will make best use of available personnel and limit the investment needed in new construction, building repairs, equipment and other overhead costs.
- 4.2 The MAFC and other relevant ministries have agreed to the creation of BAHA as described in this project. MAFC has agreed to transfer its agricultural health staff, and the budget for these activities, to BAHA. Staff will be transferred for an indefinite period, allowing the retirement and other benefits to which they are currently entitled as civil service officers to be maintained. This method has been successfully applied previously and has been accepted by the Solicitor General Office. The method will allow the selection of officers on the basis of their current job description.
- 4.3 The Ministry of Health (Public Health Bureau) has agreed to transfer their lab technician and equipment to BAHA along with budgetary support. While the Bureau of Standards will be establishing a facility to test the physical properties of materials, they will not be establishing a biological testing facility. The BOS will rely on the Microbiology Lab for testing the composition of food products.
- 4.4 The creation of an independent technical entity focused on agricultural health, and outside the political structures, will increase the likelihood that technical decisions (relating to the movement of imports and exports, quarantine, eradication campaigns, etc.) will be made on scientific rather than political grounds.

B. Technical feasibility

- 4.5 Through previous programs of assistance from USAID and ODA, MAFC has personnel with good training in all the critical areas of agricultural health, including veterinarians, lab technicians, plant pathologists and quarantine inspectors. Some upgrading of

specific skills will be needed, but most of this training can be done in country by visiting consultants, with complementary short term courses outside Belize. The basic physical infrastructure is in place but in need of some repairs and upgrading. With the development of the North American Free Trade Agreement (NAFTA) and WTO, the private sector is becoming more aware of the need for systems of inspections and quality control systems.

- 4.6 With respect to laboratories, all the tests to be done in this project are well understood and commonly carried out in laboratories around the world. The technicians needed to perform these tests are available in Belize. There are certain important tests (such as levels of residues, and formulation of pesticides) that require expensive equipment and specially trained personnel. The demand for such tests will not be sufficient to justify investment in the equipment needed. Arrangements will be made to have these tests performed at accredited laboratories in other countries.

C. Economic feasibility

- 4.7 The purpose of the economic evaluation is to measure the incremental on-farm net benefits obtained by private producers and by exporters of agricultural products. The reduced animal and plant losses, from improved agricultural health measures, will enhance Belizean competitiveness and productivity. Compliance with health standards in foreign markets and support for new productive opportunities in non-traditional goods will create investment alternatives, consistent with the Government's policy orientation for the agricultural sector. These benefits will be accompanied by more efficient and expanded public health services, partially financed through revenue generated from users fees.
- 4.8 In the proposed project, the incremental net benefits were measured by performing a benefit cost analysis of six of the most economically significant project activities related to the control of animal and plant infections and diseases. The lack of agricultural statistics precluded a probability analysis that normally would be associated with the causal effects of health measures. Nevertheless, the analysis confirms that the most important project benefits originate in the reduction of plant infections. In the case of oranges, by the strict health measures applied by the project to orange trees that have not reached maturity, in order to control the dreaded CTV virus, the reduced losses applicable to the project are significant. The benefits were calculated assuming that 40% of the impact of the reduced losses were attributable to project activities. Only 10% of the total area of oranges planted was considered for project benefits. In the same way for bananas, project benefits were calculated as 30% of reduced losses with project activities in 4% of infected area.
- 4.9 Assistance to reduce the rejection rate of exports of fresh tropical fruits that may be affected with Mediterranean fruit fly

was the third project activity measured. An estimated 15% of anticipated export losses was considered a project benefit. A similar project activity is the support to fishery exports with the microbiology laboratory and assistance to meet the recent quality control requirements of importing countries. Only 10% of anticipated exports were used to represent the impact of this project activity. The fifth project activity that was measured was the incremental benefit obtained by an increase in the efficiency of livestock inputs in the animal herd and the appropriate use of agricultural chemicals represented by 3% of the total area in sugar cane. The sixth project activity analyzed was the avoidance of economic losses from the probable presence of brucellosis and other livestock diseases.

- 4.10 The net project flow of all benefits and costs yields an Internal Rate of Return of 19% with a Net Present Value of US\$810,000, discounted at 12%. The economic evaluation has followed conservative assumptions that include a benefit flow to begin in year four. Also the value of production of all crops and the size of the herd were assumed to remain at constant values during the analysis period. The economic evaluation has not measured other direct and indirect benefits, specifically some potentially important ones associated with impact on human health. The direct benefits on human health would be obtained from increased quality of food products and from fewer work days lost as well as savings in medical drugs and treatment. The sensitivity analysis indicates the project will not be affected by an increase in costs. If an independent problem in the flow of benefits from exports or plant diseases and pests cannot be controlled, the project remains at a feasible level. But if a simultaneous impact occurs on these two key benefit flows, the project economic feasibility will be affected. The background information for the economic evaluation and the data for the six pest and disease control activities is available in the Project Files.

D. Financial feasibility

- 4.11 At the present time, the animal and plant health services are provided by the Government at no charge, but they are severely limited in their scope and quality. Due to fiscal constraints there is a chronic shortage of financial resources to cover even the most elementary needs, such as laboratory materials, supplies and building and equipment maintenance. With the proposed project, the number and type of services will be expanded, according to the demands of a modern agricultural sector, the quality and efficiency of the services will improve, and the system will move toward financial sustainability. A system of charging fees will be established and greater financial discipline will result from the active participation of the private sector, especially the organized producer groups.
- 4.12 The project will have four principal financial sources: (a) an amount equal to the present budget allocation for animal and plant

health activities (US\$880,000), which consists of salaries and benefits (US\$709,000) and travel, supplies, maintenance and utilities (US\$171,000); the Government is committed to transfer annually an amount equal to this budget, along with the personnel and corresponding installations, to the new BAHA , plus supplementary amounts to cover paid salary increases that will become due to public services; (b) an additional budgetary allocation for incremental local counterpart resources, that is, the resources needed by the Government to cover that portion of the local counterpart which is not generated by the fees charged during project execution; (c) the Bank loan, which covers the investment costs and some concurrent cost during execution; (d) cost recovery from user fee charges.

- 4.13 The indicators used for the demand estimation were based on: number of tests from historical experience, adjusted for the present number of enterprises and cooperatives; the volume of products processed and exported; and the systems of control points that must be installed in the production chain in order to meet modern health standards. The price for the services was set to be comparable with similar services in other countries in the Region and less than that charged by laboratories outside the Region. Neither comparison includes the additional packing, transport and time expenses involved in sending samples outside the country, which can be considerable. Moreover, performing the tests within the country has the additional advantage of better maintaining the integrity of the sample.
- 4.14 Interviews with private commercial farmers and exporters indicate a strong willingness to pay for such services, especially within the fisheries sector that are barred from exporting to the US as of December 17, 1997, unless they institute HACCP type quality control systems. Similar import requirements for other products and other countries will increase the need for local testing.
- 4.15 The willingness to pay will also be affected by Government enforcement policies. Public Health regulations call for testing within food processing facilities. Environmental regulations prohibit the contamination of water resources. The enforcement of existing local regulations for food safety and water monitoring will significantly increase the demand for laboratory testing.
- 4.16 The following table summarizes the financial projections for the program (details of these projections are available in the Project Files). The projections were based on the marginal operating revenues and expenses of the laboratories and the BAHA as a whole, in order to show the impact of the program on the restructured system. For that reason, the annual budgetary allocation of the Government, US\$880,000 and the estimated amounts during the next four years to cover personnel and other expenses, has been left out of the projections. These are the minimum amounts that the Government has agreed to continue contributing to the new animal and plant health system.

REVENUE PROJECTIONS CONCEPT	Year 1998	Year 1	Year 2	Year 3	Year 4	Total Exec. Period	Years 5-10 Average
Diagnostic Labs. Surveillance, Field. & Register							
1. Revenue (Fees)			9985	51436	100211	161632	120616
2. Expenditure (contain increment. staff)		11159	30010	80981	111582	233732	126732
3. Operating results		-11159	-20025	-29545	-11371	-72100	-6116
4. Financing / [contribution to]							
(a) IDB(concurrent)			7290	20439	21780	49509	
(b) Government Belize		11159	12735	9106	[10409]	22591	6116
* Current Expenditure in Present Budget	442170	446743	456651	466906	477520		477520
Microbiology Food Laboratory							
1. Revenue (Fees)			76049	141228	190121	407398	247825
2. Expenditure (contain increment. staff)		12000	89634	142812	179129	423575	222438
3. Operating results		-12000	-13585	-1584	10992	-16177	25387
4. Financing / [contribution to]							
(a) IDB(concurrent)			1299	1619	370	3288	
(b) Government Belize		12000	12286	[35]	[11362]	12889	[25387]
* Current Expenditure in Present Budget	26859	27799	28772	29779	30822		30822
Plant Diagnostic Lab. & Post-Entry Quar.							
1. Revenue (Fees)		8813	18150	29700	32050	88713	32050
2. Expenditure (contain increment. staff)		29860	71777	95208	103804	300649	103804
3. Operating results		-21047	-53627	-65508	-71754	-211936	-71754
4. Financing / [contribution to]							
(a) IDB(concurrent)			128	2101	3421	5650	
(b) Government Belize		21047	53499	63407	68333	206286	-71754
* Current Expenditure in Present Budget	227570	230005	234596	239346	244263		244263
International Quarantine & Central Offic.							
1. Revenue (Fees)		23722	48713	103063	108663	284161	108663
2. Expenditure (contain increment. staff)		134981	175591	239177	249842	799591	249842
3. Operating results		-111259	-126878	-136114	-141179	-515430	-141179
4. Financing / [contribution to]							
(a) IDB(concurrent)		1085	2922	5093	5093	14193	
(b) Government Belize		110174	123956	131021	136086	501237	141179
* Current Expenditure in Present Budget	180478	182482	187660	193021	198569		198569
Total (All Components)							
1. Revenue (Fees)		32535	152897	325427	431045	941904	509154
2. Expenditure (contain increment. staff)		188000	367012	558178	644357	1757547	702816
3. Operating results		-155465	-214115	-232751	-213312	-815643	-193662
4. Financing / [contribution to]							
(a) IDB (concurrent)		1085	11639	29252	30664	72640	
(b) Government Belize		154380	202476	203499	182648	743003	193662
* Current Expenditure in Present Budget	877077	887029	907679	929052	951174		951174
* Present Budget Support of Government. including: salaries, benefits, business travel, supplies, maintenance and utilities.							

4.17 The results of the projections show that one of the laboratories will be operating on a break-even basis at the end of the four-year period (Animal Health Lab), one will be making a net contribution to overhead and could be completely self-financing if the Government decides to privatize it (the Microbiology Lab), and one will continue to require additional funding from the Government (Plant Diagnostic and Screening Laboratory), primarily due to the

public goods nature of the services provided. The Quarantine Service, combined with the Central Office, will also generate fee income, but will need considerable future funding from the Central Government, primarily for the same public goods reasons.

- 4.18 During the execution of the project, the Government will be required to contribute additional resources of US\$743,000 over four years, or an average of US\$186,000 per year, to achieve what represents a quantum leap in the level of services for plant and animal health. This is in addition to the present expenditures of approximately US\$880,000 per year which the Government will continue to absorb plus the incremental salaries that will reach US\$70,000 in year four. The additional resources represent the shortfall in fee income. In other words, for US\$186,000 more than what they are now spending for an inefficient, obsolete and ineffective service, the Government will have a modern, financially viable, well-managed and effective plant and animal health system.
- 4.19 It should be noted that beginning in year five, under the present assumptions the Government would have to maintain its level of funding at about US\$1,143,000 that is, US\$950,000 from the present level of expenditures plus the incremental costs not covered by fee income. In the same year, fee income is projected at US\$509,000 for the consolidated system. Since both demand and its price elasticity are not possible to project with accuracy, it is expected that important decisions regarding pricing, based on actual demand, will be made at the end of project execution. At that time, with the present price structure the Microbiology Laboratory could be made completely autonomous, paying full costs including personnel. The Diagnostic Laboratories for plant and animal Health, and the Quarantine Service, on the other hand, may need a price increase in order to make a more substantial contribution to their costs of operation, which include relatively heavy personnel costs. Assuming a constant number of samples, a price increase of 33% in these two laboratories and the Quarantine Service would generate approximately US\$86,000 per year in income, thus reducing the Government's additional funding to US\$107,000 per year. These price increases would have to be determined by Government's policy at that time, depending on the demand that materializes and the fiscal objectives and constraints of the Government.

E. Project benefits

- 4.20 **Reduced Agricultural Losses:** More effective monitoring and control of agricultural diseases will reduce losses. Enhanced external quarantine and inspection will reduce the risk of importing diseases into Belize.
- 4.21 **Baseline Data On Existing Problems:** Through regular field sampling this project will establish the baseline for animal and plant

diseases and pests in Belize. This baseline is important for monitoring progress in combating existing diseases and in identifying the introduction of new diseases.

- 4.22 **Public Health Monitoring Of Food System:** Public health regulations pertaining to quality controls in the food processing system (milk, fish and meat processing plants) cannot presently be enforced because there are no local laboratories able to perform the required tests. This project will establish the capacity to perform the great majority of the tests needed.
- 4.23 **Environmental Monitoring:** The rehabilitation of these laboratories will help the Department of Environment, WASA, and the Public Health Bureau to monitor the environmental quality (bacteriological and chemical analysis) of Belize's river and coastal water systems.
- 4.24 **Continue Agricultural Exports:** Countries are developing stricter quality control standards for imported products, requiring more rigorous testing in the exporting country. Currently Belize is not able to perform even the most basic of such tests. This project will establish the systems needed to meet the testing requirements of importing countries. This is a particular urgency within the fisheries industries.
- 4.25 **Simplified Structure:** The consolidation of MAFC agricultural health activities into one organization will facilitate the task of educating the general public on relevant topics and giving training on specific topics to NGOs, MAFC personnel, farmers groups, etc. It will facilitate the mobilization of staff and equipment to respond to emergency situations. The concentration of laboratory facilities in one specialized institution will facilitate the management of supplies and equipment repairs. A single structure will also facilitate liaison with international research and regulatory agencies.
- 4.26 Successful agricultural health at the national level requires close collaboration with neighboring countries and the various international bodies established to control the spread of pests and diseases. The establishment of BAHA will facilitate this collaboration. The USDA is collaborating with Belize on the monitoring and prevention of foot and mouth disease, and other exotic diseases and control of Mediterranean Fruit Fly. Similar collaborations exist with FAO, OIRSA, Panamerican Health Organization (PAHO) and the Inter-American Institute for Cooperation on Agriculture (IICA).

F. Project risks

- 4.27 **Legal Delays:** The establishment of a new statutory institution will require the development of appropriate legislation and supporting regulations. The development and passage of legislation and regulations could delay project start-up. A consultant will

work with MAFC to develop draft legislation, and the project will hire a local lawyer to facilitate the processing and approval of appropriate laws and regulations. Prior to disbursing project resources for Component b through e, the MAFC will consolidate all animal and plant health activities under one chief operating officer (i.e. the designate Managing Director of BAHA) as indicated in further detail in the project Files. Also, a Project Coordinating Committee will be formed from those public and private entities that will constitute the Board of Directors of BAHA. The project will assist the Government to develop appropriate regulations.

- 4.28 **Institutional and Financial Viability:** The weakness of MAFC will require that the Program develop an institutional structure for agricultural health services that: (a) allows it to function without undue political interference, (b) ensures that it is responsive to private and public sector needs, and (c) provides for its financial viability on a fee for service basis. Given public health concerns with animal and plant health, the Government has agreed to continue providing financial support to the new entity. If the Government continues to provide salary support for those MAFC positions transferred to the new entity, by year four service fees should be sufficient to cover almost all other operational costs.

G. Environmental and social impacts and proposed action

- 4.29 The project will have a positive public health and environmental impact in Belize. It will educate the population in the proper use of pesticides and agrochemicals. It will institute controls over a wider range of chemicals that pose a risk to people and the environment. It will maintain a list of prohibited chemicals and control their importation, distribution and use. It will establish a system of taking samples to test for the presence of residues in meat and other food items. It will strengthen systems of quarantine, epidemiological surveillance and protect against the importation of diseases and pests. It will lower the need for pesticides and other chemicals by reducing the introduction and spread of diseases and pests. It will improve the use of fertilizers through soils testing to more accurately identify nutrient deficiencies.
- 4.30 The project will review the appropriateness of existing regulations controlling the use of agricultural chemicals. The Bank financed the Environmental and Social Technical Assistance Project (ESTAP) for Southern Belize which has a component to support environmental planning and education in Southern Belize. This project will give the DOE, MAFC and the private sector the laboratory support needed in developing programs to reduce the environmental pollution caused by the sugar, citrus and banana industries.

- 4.31 The project will significantly improve the local capacity for public health and environmental water analysis. Currently, Belize is able to perform only the most basic of water quality tests. This project will establish the laboratory facilities to control the quality of water being used in production processes and monitor the quality of WASA testing. The project will rehabilitate the gas chromatograph and be able to do an initial screening for the presence of pesticides. Arrangements will be made for final verification of pesticides to be performed in more advanced laboratories outside of Belize. The establishment of such laboratory facilities in Belize will enhance the local capability to monitor the local water resources.
- 4.32 The project will follow PAHO and FAO guidelines for the operation of laboratories, including the control of laboratory wastes and contaminated materials. PAHO's Veterinary Public Health Program will assist MAFC to prepare operating manuals for the laboratories. Laboratory procedures will also follow the requirements of the "Codex Alimentarius" and the manuals of the Association Official Analytical Chemistry (AOAC) which is working together with the "Codex Alimentarius" and the International Organization for Standardization (ISO).
- 4.33 Treatment facilities have been designed for each BAHA lab that will be generating biological and chemical waste. The Central Veterinary Lab (which also houses the Microbiology Lab and is located in Belize City) will have a holding tank and a stainless steel treatment tank. The laboratories at Central Farm (rural) will generate primarily organic waste and not significant amounts of chemical wastes. All liquid waste will be passed through a septic tank. Every three months BAHA will sample the discharge of facilities to verify the effectiveness of the treatment. The project architect will work with a sanitary engineer to properly design and locate these facilities.

H. Poverty Targeting and Social Sector Classification

- 4.34 The project does not specify explicit performance indicators to measure poverty reduction and social equity enhancement.

I. Project impact on women

- 4.35 The establishment of improved agricultural health programs is not seen as having gender specific positive or negative impacts.

BELIZE
MODERNIZATION OF AGRICULTURAL HEALTH PROJECT
(BL-0003)
LOGICAL FRAMEWORK

OBJECTIVES	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
<p>agricultural and fishery products, including fruits and vegetables for internal consumption and export market meet the World Trade Organization (WTO) health standards.</p> <p>quality of products increases the income of farmers, due to the reduction of losses from infections.</p> <p>soil amendments in agriculture, more</p>	<p>1. Animal and plant products from Belize have access to United States and European export markets without inspection and quarantine beginning in 2004.</p> <p>2. The prevalence and incidence of diseases and pests is known: free areas declared of brucellosis, tuberculosis and bovine rabies. Belize remains free from Mediterranean fruit fly, and the presence of Sigatoka in Banana plantations and the CTV are more effectively controlled after 2005.</p> <p>3. The soils laboratory is in operation under the supervision of the private sector.</p>	<p>1. Exports Registry of the External Quarantine Department of the Belize Agricultural Health Authority (BAHA) and the Export Reports from the producers associations.</p> <p>2. Reports from the Inspection Offices of the Plant and Animal Health Departments; results of surveillance sampling activities on diseases and pests.</p> <p>3. Reports from the private sector Users Group.</p>	<p>1. Prices for seafood, aquaculture, meat, and vegetables remain competitive.</p> <p>2. No significant impediments restrict the entrance of products into the regional and international markets.</p> <p>3. Farmers accept recommendations on soil amendments.</p>
<p>agricultural health system strengthened and maintained in a sustainable way. A permanent surveillance system of animal diseases and plant pests is in place and the level of prevalence and incidence is low.</p>	<p>1. In 2001 the phytosanitary and sanitary situation of Belize is known.</p>	<p>1. Veterinarian and phytosanitary Diagnostic Laboratory reports.</p>	<p>1. Importing countries meet requirements with the national and phytosanitary health standards of the World Trade Organization (WTO)</p>
<p>control measures are applied; seafood aquaculture, meats are safe and wholesome; disease inspection system is operating and exotic diseases are prevented.</p>	<p>2. Based on prevalence indicator of bovine tuberculosis, reduce the prevalence coefficients through a control and eradication program by 90% in 2004. Verify the disease free status for Bovine Brucellosis and Hog Cholera and maintain their free status on 100% of the farms. Maintain Bovine Rabies free status through reactivation of the Vampire Bat Control Program in 100% of the premises. In poultry, increase in vaccination coverage of New Castle, IB and IBD from 10% to 100% of commercial farms by 2004. In shrimp increase control of Taura Syndrome from 10% to 100% of farms by 2004.</p> <p>Control campaigns of CTV and Sigatoka in operation in coordination with private sector; by 2003, the campaigns will have controlled the diseases and allowed a high productivity level in all affected areas.</p>	<p>2. Reports from the Epidemiology Unit of the Animal Health Department and the Surveillance Unit of the Plant Health Department.</p>	<p>2. Farmers, fishermen and livestock producers increase net incomes using the health and health services and successful increase in traditional and traditional commodities.</p>

OBJECTIVES	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
laboratory is in operation.	3. By 2002 banana and citrus farmers basing fertilizer application rates on laboratory soil analysis have increased to 100%; sugar cane to 30%.	3. Reports from the soils laboratory and producers associations.	3. Net farm income is increased; expenses are reduced; amendments. Farmers recognize that income will increase through efficient use of soil amendments.
Components Organizational strengthening The Agricultural Health Authority, with its Directors, Coordinating Committee (Manager Departments Chiefs) and Central Offices, is operational. Offices and laboratories are equipped and equipped.	(i) In the first six months of the project, the Central BAHA office is integrated as a single service of agricultural health within MAFC. Year 1 (after the disbursement of up to US\$120,000 with no special condition and assignment of local resources for at least US\$30,000), formal establishment of BAHA, with its legal structure: Board of Directors and the Coordinating Committee in operation.	(i) Legal instrument establishing BAHA is valid in force; the required personnel transferred with all retirement and benefits; MAFC transfer of assets, currently being used (buildings, equipment, vehicles and furniture)	(i) The Government of MAFC provide and transfer BAHA the sanitary phytosanitary responsibilities, well as the authority to service fees and to directly its own resources
Education to producers, promotion of the veterinary clinic services and use of sanitary measures in the productive chain, implemented.	(ii) Training materials prepared and distributed to producer associations (5); agroindustries have installed HACCP: Fisheries (8); Milk Plants (2), Meat slaughter houses (2), poultry (3).	(ii) Registries and regional reports. Reports on plant inspection and frequency of supervision.	(ii) Producers and administrators accept the requirements of quality to supervise their proper conduct
Laws and regulations, approved.	(iii) 1999: Animal and Plant Health Laws approved; also the regulations on: processing and marketing of meats, poultry products, fish, dairy, and honey. 2000. Manuals and procedures for: Brucellosis, Tuberculosis, Bovine Rabies, Hog Cholera, Newcastle and fish diseases campaigns; Citrus Tristeza virus and Sigatoka; registry of veterinary drugs, agrochemical inputs, laboratories and sanitary surveillance.	(iii) Official reports published and manuals and procedures available. Reports of consultants.	(iii) Parliament approves Animal and Plant Health Laws
Agreements with participating institutions, signed.	(iv) 2000: Agreements with: Ministry of Health, Ministry of Industry, Commerce, Public Services and Labour, signed.	(iv) Minutes of review meetings on the advance of agreements.	(iv) Participating institutions provide full support to BAHA.
Technical assistance Plan, prepared and implemented.	(v) All 14 international and 3 national consultants hired; 37 training candidates selected; training for 40 professionals, 35 technical and 60 producers completed.	(v) Consultant reports and the Annual work plan.	(v) Consultants' recommendations and training programs and adequate transfer of technology
Animal Health Department Veterinary surveillance equipped, the national surveillance integrated with the regional, and international system (PAHO, WHO, FAO, IPPC, OIE), strengthened and operating efficiently. Ambulatory service for animals transferred to private veterinary	(i) Reports on animal health problems prepared by: Inspection posts, laboratories, extension professionals, farmers, agroindustrial plants and exporters. Risk analysis is prepared based on international disease status reports.	(i) Reports from the Epidemiology Unit, and the Risk Analysis documentation.	(i) No major animal health emergencies arise, nor emergencies which would require resources and implementation of this

OBJECTIVES	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS
Central Veterinary Diagnostic and Laboratory in Belize, the Regional in ... and Orange Walk upgraded, equipped ... Central Offices upgraded, expanded ... efficiently.	(ii) In 2002 the laboratories are in sustainable level of operation: diagnostic samples increase from 60 to 4,290 samples (8,100 analysis); samples of presence of residues in products increase from 0 to 842.	(ii) Annual reports of samples processed by the laboratories.	
... Laboratory of Microbiology of Foods, upgraded, ... operating with the Advisory Committee ... with user groups.	(iii) In 2002 the Laboratory of Microbiology of Foods increases samples from 0 to 3,400 (21,200 analyses). Private sector (users groups) prepares the evaluation of operation.	(iii) Annual reports of samples processed for industrial plants.	
... and animal health campaigns outfitted ... efficiently. Processing plants applying ... standards.	(iv) By 2003 surveillance coverage increased to 2,450 farms affected medium, large, and small farms. By 2003 increase the percentage of farms under control and eradication campaigns to 90%.	(iv) Monthly and annual reports of the specific campaigns.	
... services (Processing Plants) expanded to ... control of registration of veterinary drugs, ... and medicated feeds; and established office	(v) in 2001 coverage of products reaches 80%. By 2002 controlled coverage reaches 100% of all agricultural inputs. Coordinated activities with Pesticide Control Board (PCB).	(v) Reports from the unit within BAHA responsible for the registration: an officer of BAHA is a member of the Board of Directors of PCB.	The mandate of BAHA is the registration, control, monitoring of the suitability of veterinary biologicals and medicated
...: Central Veterinary Diagnostic, Plant ... soils and the regional accredited, validate ... biological, medicated feeds, fertilizers and ... All indicators adjusted to criteria of the ... standards, recommendations of the Codex ... OPS/INPPAZ and IPPC.	(vi) By 2001 the laboratories will process 200 samples of veterinary drugs, biologicals, medicated feeds, fertilizers and pesticides.	(vi) Record of samples sent to the laboratories and analysis reports prepared by them.	Signed Memoranda of Understanding: (a) to coordinate activities between FAO, Bureau of Standard (BIS) and coordinate activities between FAO and PCB.
Health Department ... Unit, equipped and the national, ... and international system, (OIRSA, IICA, ... national Plant Protection Convention ... (HIDS/USDA), integrated.	(i) Reports on plant health problems prepared by: agroindustrial plants, BCA, CREI, laboratories of producers associations, professionals, technicians and farmers. Field visits increase from 40% in year 0 to 100% in year 2000. Risk analysis is prepared on mayor pests and diseases.	(i) Reports from the Surveillance Unit, and the Risk Analysis documentation.	No major plant health emergencies arise.
... Diagnostic Laboratory, built, equipped ... tion, including nematology. Coordination ... and CARDI, increased.	(ii) In 2001 the laboratories are at a sustainable level of operation: diagnostic samples increase from 360 in 1998 to 1,254 in 2002, (including Mediterranean fruit fly, and pest control).	(ii) Annual reports of samples processed by the laboratories.	
... quarantine services and the entomology ... expanded, equipped and in operation.	(iii) In 2002 quarantine of 100% of seeds and vegetative imported material. Control increased from 310 in 1998 to 1,000 in year 2002.	(iii) Reports of imports and quarantine of seeds and vegetative materials.	
... services equipped and in operation in an ... form, inspection of nurseries, export ... plants, and specific campaigns supported.	(iv) In 2002 coverage of 100% of affected areas: Citrus Tristeza Virus and Sigatoka, control of nurseries, and internal quarantine.	(iv) Monthly and Annual reports from the specific campaigns.	

OBJECTIVES	INDICATORS	MEANS OF VERIFICATION	ASSUMPTIONS																								
<p>National Inspection and Quarantine</p> <p>Control Point in Dangriga, Inspection Posts in LA Union, built and in operation.</p> <p>Existing Inspection Posts: in Santa Elena (little observation station); in the Posts of o, Big Creek and Punta Gorda; in the son Airport and in the Port Authority of ditioned and rehabilitated.</p>	<p>(i) In 2001 all Inspection Posts will detect noncompliance of products that do not meet import requirements at a 90% level and reach 100% by 2002.</p>	<p>(i) Monthly and Annual reports from the External Quarantine Department.</p>	<p>No major animal or sanitary emergencies and</p>																								
<p>Laboratory</p> <p>ation and operation, under the private ratory and building rehabilitated, and urchased and installed. Laboratory in</p>	<p>By 2001 at least 1,200 soil samples are processed and 20 fertilizers are controlled.</p>	<p>Laboratory reports of samples processed.</p>	<p>The Government of MAFC authorize the tr infrastructure of th facilities of the soils la the Users group (leasin sector is willing to responsibility for ru laboratory.</p>																								
<p>S</p> <p>a(i), b(ii)(iii)(v), c(ii)(iii), d(i)(ii) and e(i) <u>expansion and upgrade of works</u></p> <p>Terms of reference for final designs</p> <p>ize contract (publish announcements, call , evaluate proposals, select and negotiate)</p> <p>final designs and bidding documents of ctions</p> <p>se the design and the preparation of final</p> <p>notice of construction contract</p> <p>firm</p> <p>ntract</p> <p>on and supervision of works</p>	<table><tr><td></td><td><u>0</u></td><td><u>1</u></td><td><u>2</u></td><td><u>3</u></td><td><u>4</u></td></tr><tr><td>Desig.</td><td>23</td><td>-</td><td>-</td><td>-</td><td>-</td></tr><tr><td>Superv.</td><td>2</td><td>22</td><td>7</td><td>-</td><td>-</td></tr><tr><td>Const.</td><td>53</td><td>552</td><td>127</td><td></td><td></td></tr></table>		<u>0</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	Desig.	23	-	-	-	-	Superv.	2	22	7	-	-	Const.	53	552	127			<p>(i) Information from the annual estimates of revenues and expenditures of Belize</p>	<p>At least three valid received.</p>
	<u>0</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>																						
Desig.	23	-	-	-	-																						
Superv.	2	22	7	-	-																						
Const.	53	552	127																								
<p>a, b, c, d, and e <u>of vehicles</u></p> <p>bidding documents</p> <p>and approve</p> <p>nd qualify participating firms</p> <p>ntract and take receipt of vehicles</p>	<table><tr><td></td><td><u>0</u></td><td><u>1</u></td><td><u>2</u></td><td><u>3</u></td><td><u>4</u></td></tr><tr><td></td><td>-</td><td>234</td><td>84</td><td>-</td><td>-</td></tr></table>		<u>0</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>		-	234	84	-	-	<p>Project report and the annual estimates of revenues and expenditures of Belize</p>	<p>Interested parties present</p>												
	<u>0</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>																						
	-	234	84	-	-																						

OBJECTIVES	INDICATORS					MEANS OF VERIFICATION	ASSUMPTIONS
a, b, c, d, and e <u>use of equipment</u> purchase price proposals <u>Bidding</u> ement of laboratory equipment and are ement of machinery and field and office ent ist and bidding documents lists and budgets and qualify participating firms ize contract with selected firm e and inspect equipment	<u>0</u> -	<u>1</u> 146	<u>2</u> -	<u>3</u> -	<u>4</u> -	Information from the annual estimates of revenues and expenditures of Belize	
a, b, c, d, and e <u>of inputs and publications</u> ase based on open price proposals	<u>0</u> -	<u>1</u> 21	<u>2</u> 73	<u>3</u> 83	<u>4</u> 27	Information from the annual estimates of revenues and expenditures of Belize	The biological labora prequalified.
<u>istance</u> A n an open international competition the specialized agency that will hire the consultants and manage the fellowships s. t local consultants and organize the in- training courses. al consultant <ul style="list-style-type: none"> • International • National 	<u>0</u> -	<u>1</u> 125	<u>2</u> 264	<u>3</u> 55	<u>4</u> 21	Information from the annual estimates of revenues and expenditures of Belize	
an a: Institutional strengthening and make effective all laws, regulations tional manuals. perational activity by the Board of , Users groups and Laboratory advisory es. professionals. strategy for animal and plant health and promotion of private services and materials. and define the fees to be charged for a programming, management, monitoring ation system.	Incremental Concurrent Cost (US\$ 000) <u>0</u> a) Institutional strengthening -	<u>1</u> 88	<u>2</u> 76	<u>3</u> 75	<u>4</u> 77	Information from the annual estimates of revenues and expenditures of Belize	BAHA, the new statu reaches desired auton enabled to execute at t level all central mandate in a coordinated manne private sector.

OBJECTIVES	INDICATORS					MEANS OF VERIFICATION	ASSUMPTIONS
b and c: Animal and Plant Health surveillance systems ies: the Food Microbiology laboratory g Water Quality Control) and operating participation of the Advisory Committee l with user groups; Organize Central y and Plant Laboratory; ctions with livestock and farmer groups; ns: develop all scheduled plant and animal activities; scheduled operations with extension and private sector. on of veterinary inputs and medicated egistration of veterinary drugs, biologicals cated feeds; te BAHA activities with PCB specifically ontrol of the importation of pesticides and g of veterinary products, training in ient of pesticides.	<u>0</u> b) Animal health -	<u>1</u> 23	<u>2</u> 63	<u>3</u> 93	<u>4</u> 102	Technical and financial reports	All fees obtained from rendered and from labor used in their own operation maintenance. The Microbiology laboratory self supported stage.
d: Quarantine e control posts e coordinated activities with neighboring	<u>0</u> d) Quarantine -	<u>1</u> 28	<u>2</u> 61	<u>3</u> 82	<u>4</u> 86		
e: Soils Laboratory Users legal by establish igned (users group and MAFC) rehabilitation nt repair on of equipment and other inputs	<u>0</u> e) Soils Laboratory -	<u>1</u> 4	<u>2</u> 21	<u>3</u> 23	<u>4</u> 23	Technical and financial reports	Users groups organization charge of the operation management and underway for the collection samples.

**BELIZE
AGRICULTURAL HEALTH PROJECT**

**LOGICAL FRAMEWORK
BREAKDOWN OF INDICATORS OF AIM**

OBJECTIVES	INDICATORS	CUMULATIVE GOALS			
		Year 0	Year 1	Year 2	Year 3
agricultural and fishery products, fruits and vegetables for internal and the export market meet the standards.	1. Animal and plant products from Belize have access to United States and European export markets without inspection and quarantine beginning in 2004: - International sanitary inspection standards and HACCP - National sanitary inspection standards and HACCP	100% 0%	100% 20%	70% 30%	50% 50%
quality of products increases the income to farmers, due to the reduction in diseases and infections.	2. The prevalence and incidence of diseases and pests is known; at a level of knowledge expected to be 100% in 2002. - Dairy farms declared free of bovine tuberculosis - Citrus Tristeza virus campaigns reduced production losses (reduced percentage of trees susceptible to infections) - Sigatoka banana campaign reduces economic losses from rejected fruit	- - 60% 15%	- - 50% 15%	- 10% 40% 12%	90% 30% 20% 9%

**AGRICULTURAL HEALTH PROJECT
BREAKDOWN OF INDICATORS OF PURPOSE**

OBJECTIVES	INDICATORS	CUMULATIVE GOALS			
		Year 0	Year 1	Year 2	Year 3
National health system strengthened and maintained in a sustainable way. A permanent system of animal diseases and plant pests is in place and the level of incidence is known; control measures are applied; seafood inspection system is operating and exotic diseases are prevented.	By 2001: - Country is maintained free of Bovine Brucellosis - Decrease prevalence of Bovine Tuberculosis - Country is maintained free of Bovine Rabies - Screw Worm eradicated. Prevalence monitoring - Hog Cholera maintains free status - New Castle, IB, IBD (poultry) % vaccination cover - In shrimp farms, increased control of Taura Syndrome	100% 10% 10%	100% - 100% 100% 100% 10% 10%	100% 20% 100% 100% 100% 30% 30%	100% 50% 100% 100% 100% 60% 70%
	- Control campaigns of CTV and Sigatoka in operation in coordination with private sector (100% to the year 2002); area covered. - Presence of Mediterranean fruit fly not reported (trap surveillance)	- 100%	- 100%	50% 100%	75% 100%

AGRICULTURAL HEALTH PROJECT
BREAKDOWN OF INDICATORS OF COMPONENTS

OBJECTIVES	INDICATORS	CUMULATIVE GOALS			
		Year 0	Year 1	Year 2	Year 3
<p>NTS</p> <p>al strengthening</p> <p>ize Agricultural Health Authority with its</p> <p>rectors is fully operational. Offices and</p> <p>are rehabilitated and equipped.</p> <p>s and regulations, approved.</p> <p>education to producers, promotion of the</p> <p>terinary clinic services and use of sanitary</p> <p>ms in the productive chain, implemented.</p> <p>nts with participating institutions, signed.</p> <p>and Technical Assistance Plan, prepared</p> <p>1.</p>	<p>(i) BAHA, with its Board of Directors, Coordinating Committee and Central Offices, is fully operational.</p> <p>(ii) 1999: Animal and Plant Health Laws approved; also the regulations on: processing and marketing of meats, poultry products, fish, dairy, and honey. 2000: Manuals and procedures for: Brucellosis, Tuberculosis, Bovine Rabies, Hog Cholera, Newcastle and fish diseases campaigns: Citrus Tristeza virus and Sigatoka.</p> <p>(iii) Material prepared and distributed: 8 producers associations participating (livestock, bananas, citrus, sugar cane, fisheries, grains, milk, poultry), BCA, BEST, participating producers, Board of Directors, and Administration Committee.</p> <p>(iv) Agreements with: Ministries of Health, Industry, Commerce, Public Services and Labour. A cooperative agreement with Users Group of Microbiology Food Laboratory and a formal lease agreement with the Users Group of the Soils Laboratory.</p> <p>(v) All 14 international and 3 national consultants contracted</p> <ul style="list-style-type: none"> • 37 training candidates selected • training for 40 professionals and 20 technicians • training for 15 Quarantine Inspectors • training for 60 producers in pesticides management (first year 10 professionals and 10 technicians) 		50%	100%	100%
			50%	100%	100%
			4	4	5
				4	
			7	9	1
			8	18	8
			95	55	40
			15		15
				20	20
<p>Health Department</p> <p>inary surveillance equipped, the</p> <p>cal surveillance integrated with the</p> <p>ional, and international system, (OIRSA,</p> <p>OIE, PAHO), strengthened and operating</p> <p>Ambulatory service for production animals</p> <p>o private veterinary practice.</p>	<p>(i) Reports on animal health problems prepared by: Inspection posts, laboratories, extension professionals, farmers, agroindustrial plants and exporters. Risk analysis is prepared based on international disease status reports.</p>	20%	20%	50%	80%

BREAKDOWN OF INDICATORS OF COMPONENTS

OBJECTIVES	INDICATORS	CUMULATIVE GOALS			
		Year 0	Year 1	Year 2	Year 3
Central Veterinary Diagnostic and Research Laboratory in Belize, the Central Farm, and Orange Walk upgraded, and in operation; BAHA Central Offices expanded and operating efficiently.	(ii) In 2002 the laboratories are in sustainable level of operation: <ul style="list-style-type: none"> • <u>diagnostic number of samples</u> No. of analysis: 60 Income from analysis (US\$000): 109 • <u>Toxic residues number of samples</u> Samples with presence of residues: - Income from analysis (US\$000): - 	60 109 - -	60 109 - -	800 1200 8.9 -	2450 4500 27.8 367 1100 21.6
Microbiology Laboratory, upgraded, and operating with the participation of the committee structured with user groups.	(iii) 2000 Laboratory in operation: <ul style="list-style-type: none"> <u>Fish and shrimp</u> No. of samples: 470 No. of analysis: 3,810 Income from analysis (US\$000): 50.9 <u>Water</u> No. of samples: 597 No. analysis: 776 Income from analysis (US\$000): 5,650 25.2 <u>Pasteurized milk</u> No. of samples: 233 No. of analysis: 1,400 Income from analysis (US\$000): 14.3 <u>Process of meat, pork and poultry</u> No of samples: 580 No. de Analysis: 2,800 Income from analysis (US\$000): 28.0 <u>Animal Feed</u> No. of samples: 350 No. of analysis: 700 Income from analysis (US\$000): 12.0 <u>Bottled water</u> No. of samples: - No. of analysis: - Income from analysis (US\$000): - 			470 3,810 50.9 597 776 5,650 25.2 233 1,400 14.3 580 2,800 28.0 350 700 12.0	470 3,720 54.2 776 7,345 32.7 233 1,400 14.3 580 2,800 28.0 350 700 12.0
in performance standard operation sanitary and HACCP.	(iv) Inspection and verification PEOS y HACCP <ul style="list-style-type: none"> Fish and shrimp No. of companies: 6 Milk, No of pasteurizing plants: 2 Slaughter houses for meat, pork or poultry: 2 		6	2	
itary campaigns equipped and operating	(v) By 2002 surveillance reaches 2,450 participating farms			700	1,700
ration and control of veterinary drugs, and medicated feeds: office established, all in agricultural production registered.	(vi) By 2001 system registering veterinary drugs, biologicals and medicated feeds working; the register system integrated, and reaches a coverage of 100% of inputs by 2002.	0	0	40%	80%

BREAKDOWN OF INDICATORS OF COMPONENTS

OBJECTIVES	INDICATORS	CUMULATIVE GOALS			
		Year 0	Year 1	Year 2	Year 3
laboratories: Central Veterinary Diagnostic, Soils and the regional accredited, validate biological and agro-chemicals.	(vii) By 2002 laboratories process 200 samples: fertilizers, medicated feeds, veterinary drugs and biologicals.	0	0	90	180
Health Department ence Unit, equipped and the national, international system integrated.	(i) Phytosanitary problems are reported by agroindustrial plants, laboratories, producers and participating professionals (collection of information).		20%	50%	60%
ent Diagnostic Laboratory, built, equipped tion.	(ii) By 2001 plant diagnostic laboratory, rehabilitated and is in operation, diagnostic results increase from 360 to 1200 by 2002. No. of diagnostic samples: Income from service (US\$000):	360 0	464 1.5	664 2.4	1,059 4.2
reenhouse for plant post-entrance control omology Unit rehabilitated and operating	(iii) By 2000 post entrance quarantine station on seeds and vegetative material in operation. No. of samples. Income from services (US\$000):	315 0	315 2.4	600 9.0	1000 15.0
tary campaigns equipped and operating coordination with producers.	(iv) By 2002 coverage of 100% of affected area. Coverage of campaigns	15%	15%	40%	80%
National Inspection and Quarantine ontrol Point in Dangriga, Inspection Posts in La Union, built and in operation. ting Inspection Posts: in Santa Elena (tattle observation station); in the Posts of jo, Big Creek and Punta Gorda; in the son Airport and in the Port Authority of dditioned and rehabilitated.	<ul style="list-style-type: none"> By 2001 all control posts are capable of detecting products that do not meet with the requirements with a 90% effectiveness and by 2002 reach 100%. Income from inspection, quarantine, licenses and incineration (US\$000) 	70%	80% 23.7	80% 48.7	90% 103.1
Laboratory ration and operation, under the private ratory and building rehabilitated, and urchased and installed. Laboratory in	By 2000 laboratory in operation No. of soil samples: No. of leaf samples: No. of fertilizers samples: Income from services (US\$000):	0 0 0 0	0 0 0 0	1000 500 10 25.1	1200 800 20 33.2

BELIZE (BL-0003) MODERNIZATION OF AGRICULTURAL HEALTH PROJECT SCHEDULE OF PROCUREMENT AND BIDDING					
MAIN PROCUREMENT NEEDS OF THE PROJECT	Source of financing (%)		Method	Pre qualification requirements	Publication SPN Semester/year
	BID	LOCAL			
A. Procurement of goods					
1. Laboratory equipment, incinerators and glassware materials <ul style="list-style-type: none"> • 2 Lots • US\$114.0 thousands • US\$229.5 thousands 	100 100	-	PQ ICB	NO NO	II/99 I/2000
2. Field equipment, quarantine, furniture, refrigerators, air conditioning, computing equipment, communication and audio-visual equipment <ul style="list-style-type: none"> • 2 Lots • US\$ 39.2 thousands • US\$302.8 thousands 	100 100	-	PQ ICB	NO NO	II/99 I/2000
3. Vehicles: pick-ups and motorcycles <ul style="list-style-type: none"> • 1 Lot • US\$ 318.0 thousands 	100	-	ICB	NO	I/2000
4. Inputs: Laboratory materials, chemicals, field, audio-visual and computation <ul style="list-style-type: none"> • 4 Lots • US\$ 7.0 thousands • US\$ 70.0 thousands • US\$ 80.0 thousands • US\$ 23.0 thousands 	100 100 100 100	- - - -	PQ PQ PQ PQ	NO NO NO NO	II/99 II/2000 II/2001 II/2002
B. Civil Works Rehabilitation, expansion and upgrade of works: Microbiology food laboratory and the Central Veterinary Diagnostics and Research Laboratory in Belize City <ul style="list-style-type: none"> • 1 Lot • US\$ 170.0 thousands 	100	-	LB	NO	II/99
Rehabilitation, expansion and Construction of BAHA Central Office, the Diagnostic Phytosanitary Laboratory (greenhouse); Regional Veterinary Diagnostics and Rabies Laboratory; the Soils Laboratory in Central Farm. <ul style="list-style-type: none"> • Office and Regional Laboratory of Veterinary Diagnostic in Orange Walk • 1 Lot • US\$398.0 thousands 	100	-	LB	NO	II/2000
Construction of Inspection Posts in Dangriga, La Union, Jalacte, Santa Elena, Benque Viejo, Big Creek and Punta Gorda. Rehabilitation of Airport and the Port Authority of Belize <ul style="list-style-type: none"> • 1 Lot • US\$164.0 thousands 	100	-	LB	NO	II/2000
C. Consulting services Consulting firm or specialized agency, administration of technical assistance (international consultancy and overseas training) <ul style="list-style-type: none"> • US\$464.0 thousands 	100	-	ICB	SI	II/99
International Consultants. Lawyer to prepare enabling legislation for enactment of BAHA and animal and plant health regulations, the Soils laboratory specialist and National Consultant to design BAHA Financial Control System <ul style="list-style-type: none"> • US\$49.0 thousands <u>a/</u> 	100	-			II/99
<u>a/</u> Direct contracting	ICB = International Competitive Bidding LB = Local Bidding PQ = Price Quotations				

PROPOSED RESOLUTION

BELIZE. LOAN ____/OC-BL TO BELIZE
(Modernization of Agricultural Health Project)

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with Belize for the purpose of granting a financing to cooperate in the execution of the Modernization of Agricultural Health Project. Such financing will be for the amount of up to US\$3,600,000, which are part of the resources of the Single Currency Facility of the Ordinary Capital of the Bank, and will be subject to the "Special Contractual Conditions" and the "Terms and Financial Conditions" of the Executive Summary of the Loan Proposal.