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USAID/GUATEMALA TRADE AND INVESTMENT PROGRAM
MONITORING AND EVALUATION PLAN

Submitted To:

Office of Trade and Investment
U.S. Agency for International Development
Mission to Guatemala

Submitted By:

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Executive Summary

In late 1990, A.I.D./Washington senior management announced a new initiative to strengthen the role of evaluation within the agency, as a basis for better program and policy decision-making and more effective performance for Congressional accountability. Since that time the A.I.D./Washington has embarked on a number of efforts to develop an agencywide program performance information system for strategic management, designated PRISM. As a complement to this agencywide system, there are ongoing efforts at the Regional Bureau level to improve program and project evaluation guidance, to develop program performance indicators, to assist Missions in implementing program-level management and evaluation systems, and to better apply program performance information in management decision making.

To date, technical assistance has been provided specifically to USAID/Guatemala to: 1) develop a conceptual framework clarifying each of the Mission's developmental objectives; 2) develop criteria for selecting program and project performance indicators; 3) provide guidance on the development of program and project information systems; 4) suggest an initial set of program level indicators, analyses and reporting procedures; 5) provide advice on the management implications of the systems proposed; and 6) indicate what additional outside assistance might be needed to successfully implement the end product of this cumulative technical assistance, a Mission level program performance assessment system (PPAS).

This report represents product of an additional technical component to complement to the Mission' PPAS, namely, the development of an initial monitoring and evaluation (M&E) plan relating specifically to the Mission's Trade and Development Sector Program which is nearing the end of its design phase. This latest phase of technical assistance relating to the PPAS had four objectives: 1) determine the types and quality of data required to measure implementation progress and the impact of the Trade and Investment Sector Program; 2) analyze preliminary Trade and Investment Sector Program performance indicators delineated in the Mission's January 1992 Program Objectives Document and Action Plan (POD/AP) to take into consideration validity of the indicators chosen, ease of collection and measurement reliability; 3) prepare of a M&E plan which outlines how the Mission will monitor progress against established performance benchmarks and development impact targets; and 4) provide recommendations for an information system for the collection, maintenance, analysis and use of data for the evaluation of program progress and impact.

Information, evaluation and reporting needs of USAID/Guatemala's Trade and Investment Sector Program were analyzed for each level of the program, and performance indicators were delineated at the strategic objective level, the program output level and project activity level on the basis of indicator validity, ease of data collection and measurement reliability. Revisions to the original strategic objective level performance indicators were made on the basis of a number of conceptual and methodological issues and assumptions. The target for the strategic objective

level performance indicator relating to increases in the value of nontraditional exports are based on the International Monetary Fund's balance of payments outlook for Guatemala and is somewhat more optimistic than that contained in the Mission's POD/AP. Projections of the increases in two additional strategic objective level performance indicators which differ from those in the POD/AP, private investment and U.S.-Guatemala bilateral trade, are based on these variables' historic growth rates and are to be measured in absolute terms rather than as proportions of gross domestic product, a variable not within the manageable interest of USAID/Guatemala. Flaws in existing Government of Guatemala data specific to these indicators are identified and alternate sources of more reliable information are specified.

The reader is cautioned, however, that these strategic objective level performance indicators, and to a lesser extent program output level and project activity level indicators as well, present both the Mission and external evaluators with the problem of attribution. The Trade and Investment Sector Program will consist largely of policy-based, non-project assistance to influence trade policy reform and legal and regulatory reform. It is impossible to attribute with any reasonable degree of certainty future outcomes of individual trade policy reforms, legal and regulatory reform and other interventions envisaged by the Trade and Investment Sector Program without first having understood and predicted them, and one cannot predict these outcomes without some kind of broad conceptual model of the Guatemalan economy and where it is going, with and without the package of reforms and interventions that are being advocated. Without first attempting to predict individual policy, legal and regulatory reform impacts with some degree of rigor, any success that is attributable to USAID/Guatemala's support would be largely conjectural. As such, a number of "Special Studies", i.e., research efforts which would facilitate more accurate measurement of the impact of the Trade and Investment Sector Program's actions, have been recommended for all three levels of performance indicators. The difference between a relatively satisfactory and an excellent monitoring and evaluation effort lies in "Special Studies".

The report identifies a total of three strategic objective level performance indicators, thirteen program output performance indicators and nine project activity level performance indicators. For each level of indicator to be monitored, the report describes the rationale for establishing specific performance benchmarks and development impact targets, and elaborates on: 1) conceptual and methodological issues and assumptions relating to the choice of specific indicators; 2) any data gaps that may exist with regard to specific indicators; 3) the data set(s) required for monitoring and evaluation and their source(s); 4) special study requirements that may exist which would facilitate more accurate measurement of the impact of the Trade and Investment Sector Program specific to particular components; and 5) the Mission Office(s) responsible for data collection and funding source(s) for the Program's monitoring and evaluation activities.

In the final section, a recommendation is presented for an information system for the collection, maintenance, analysis and use of data for the evaluation of program progress and impact, together with recommended elements of a data management plan. The Trade and Investment Sector Program's most cost effective course of action for hardware and software

needs would be to modify the impressive DBase IV personal computer software-based management information system currently being used by the Mission's Highland Agricultural Development Project. The Mission currently has an extensive personal computer environment and many staff have developed considerable capability in the use of commercial off-the-shelf software which is readily available and relatively easy to learn to use, especially given the type of computer training resources readily available locally. The myriad of problems associated with the Mission's Private Enterprise Development Project's attempt to operationalize a data sharing network among key public and private sector entities engaged in trade and investment promotion suggests the need to keep the Trade and Investment Sector Program's information system within USAID/Guatemala, which has the leverage to solicit, *and acquire*, information from all quarters.

As for assignment of responsibility for data management, it appears that the Private Investment and Trade Strategic Objective Team is the most appropriate working unit. Furthermore, such an arrangement would have a functional advantage in light of the fact that the various projects which contribute to the Private Investment and Trade strategic objective are located in more than one Mission office.

I. Introduction

At the request of USAID/Guatemala, technical assistance was provided to help Mission staff in developing an initial monitoring and evaluation (M&E) plan as a complement to the Mission's Program Performance Assessment System (PPAS)¹. The technical assistance was provided by Randolph Lintz, a consultant provided by AG International Consulting Corporation. Mr. Lintz worked with the Mission's Office of Trade and Investment (TIO) and the Office of Rural Development (ORD) together with other relevant USAID staff and representatives from various Government of Guatemala (GOG) agencies and nongovernmental organizations² during a three week period from June 15 to July 2, 1992. This consultancy was timed to facilitate joint work with TIO staff for the preparation of the Mission's Trade and Investment Sector Program design document. This M&E plan reflects the results of lengthy discussions with the potential implementors of the program, and the consensus reached amongst Mission staff as to the viability of the various outputs and indicators delineated below. This report represents only a first draft of the Mission's program and project-level outputs and indicators, which will presumably be refined during the early stages of the Trade and Investment Sector Program's implementation.

The objectives of the technical assistance were the following:

- review the Mission's Program Objectives Document/Action Plan (POD/AP) and the Trade and Investment (T&I) Program Concept Paper as well as the objectives, scope and content of the newly designed Trade and Investment Program and of other ongoing projects contributing to the T&I Strategic Objective, their specific outputs and end-of-project-status (EOPS), to determine the types and quality of data required to measure implementation progress and program impact. Included in this task was the identification of, or the need for, baseline data for each of the indicators selected;

- analysis of existing indicators contained in the POD/AP's T&I Strategic Objective and in the T&I Concept Paper and revise as necessary and appropriate to assure a coherent set of T&I Strategic Objective performance indicators, program outputs and EOPS indicators;

- preparation of a monitoring and evaluation plan which outlines how the

¹ PPAS is a strategic systems approach to program planning and assessment which encompasses two elements: first, strategic planning, by identifying program-level strategic objectives (defined as a development undertaking within the Mission's manageable interest which leads to impact in the medium-term that is measurable and which can be reported on) using an objective tree methodology; and second, program assessment through the identification of performance indicators which is the system's means of verification. The building blocks of the PPAS are program outputs and their respective indicators for measuring progress towards strategic objective achievement. This strategic systems approach is intended to assist A.I.D. Missions to: 1) focus its strategy and concentrate its resources on key country development problems; 2) demonstrate how projects, nonproject assistance and policies relate to a program strategy; 3) place emphasis on results; and 4) assess and report on its program.

² See Annex A for a listing of individuals interviewed during the course of this consultancy.

Mission will monitor progress against established performance benchmarks and development impact targets; and

provide detailed and actionable recommendations for an appropriate information system for the collection, maintenance, analysis and use of data necessary for the evaluation of program progress and development impact.

II. Nature of the Problem to be Addressed by USAID/Guatemala's Trade and Investment Sector Program

At its most fundamental level, the focus of private sector development in general and trade development in particular is the establishment of a climate or an environment which rewards the initiative of private investors, managers, and entrepreneurs. Such a climate would be characterized by ready access to labor, capital, raw materials, and foreign exchange; by a system which relies on market forces of supply and demand to price these inputs and the outputs they produce; by a lack of administrative or other artificial barriers to market entry; by rational and relatively moderate fiscal and tariff structures; by adequate infrastructure services (roads, ports, airports, etc.); by a healthy, literate labor force; by relatively efficient and objective government administration; and by respect for property rights, both physical and intellectual.

In Guatemala, the reality of the circumstances in which the private sector operates is in relatively stark contrast to the above. Distortions and constraints exist at the macro, sectoral, and enterprise levels which impede the growth of trade as a principal engine of Guatemalan development. While a policy framework exists to address existing constraints to trade and investment, USAID/Guatemala seeks to enhance and strengthen that framework through its Trade and Investment Sector Program.

Although considerable progress has been made since the Serrano administration came to power in early 1991, a further reduction of the constraints and distortions binding trade development calls for a variety of initiatives on the part of the GOG. Broadly speaking, these initiatives amount to developing a public policy framework which allows competitive forces to function, and then reinforcing the capacities of government and private institutions to operate effectively within this framework.

U.S. Government strategy in Guatemala seeks to promote sustainable economic growth through close cooperation with the International Bank for Reconstruction and Development, which is working to overcome the country's inefficiencies relating to trade and investment by targeting policy reform and infrastructure rehabilitation, and the Inter-American Development Bank which has given priority to the development of the country's capital markets in order to correct distortions which affect domestic capital mobilization for export activities and investment decision making in the trade sector. USAID/Guatemala's intent is to address other inefficiencies in the country's trade and investment system through policy dialogue, technical assistance and

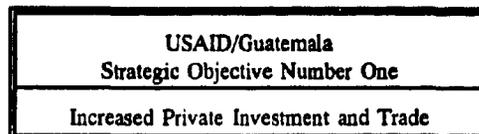
training. The proposed Trade and Investment Sector Program will include support for efforts to further encourage the removal of tariff and nontariff barriers and other disincentives, to foster legal and regulatory reform with the aim of attracting an increased flow of investment and improving the international competitiveness of Guatemalan nontraditional exporters. These actions would improve upon the country's comparative advantage in a number of product areas and establish a basis for long-term progress.

Among the most salient GOG-imposed measures and policies that restrict, prevent, or impede the international exchange of goods and services that the Trade and Investment Sector Program seeks to address are the following:

- unfavorable tariff and nontariff barriers and trade-related economic policies which currently inhibit the private sector from effectively confronting increasing competition in this emerging era of free trade;
- fiscal incentive laws which foster export subsidies, particularly in the agricultural sector;
- investment barriers such as taxation of exporters' earnings, cumbersome immigration procedures, restrictions on the transfer of technology, and a myriad of legal impediments to increased investment flows inherent in the country's archaic legal system; and
- lack of internationally acceptable intellectual property protection such as copyright, patent, and trademark regimes.

III. Managing Information at the Strategic Objective, Program Output, and Project Levels of the Mission's Trade and Investment Sector Program

Information, evaluation and reporting needs of the Trade and Investment Sector Program are reviewed below for each monitoring and evaluation level of the Trade and Investment Sector Program's Project Performance Assessment System. Graphically, the Trade and Investment Sector Program's PPAS can be visualized as a four-tier structure as depicted below:



Strategic Objective Indicator 1	Strategic Objective Indicator 2	Strategic Objective Indicator 3
Increase in Foreign Exchange Earnings from Expanded Production and Marketing of Nontraditional Exports	Increase in Private Investment	Increase in United States-Guatemala Bilateral Trade

Program Output 1	Program Output 2	Program Output 3
A More Open Trade Regime	A Sound Investment Environment	Increased Competitiveness of the Nontraditional Export Subsector

Project Activity 1	Project Activity 2	Project Activity 3	Project Activity 4
Expansion of Nontraditional Agricultural Exports	Increase in Small Coffee Farmer Income by Increasing Production, Productivity and Product Quality	Expansion of the Network of All-Weather Farm-to-Market and Tertiary Roads to Provide a Better Transportation System	Strengthen the Economic and Policy Role of Private Enterprise in Guatemala

In Sections A through H that follow, performance indicators are delineated at the strategic objective level, the program output level, and at the level of four ongoing Mission project activities which are to be incorporated into the Trade and Investment Sector Program. Included within each of these sections are discussions of: 1) conceptual and methodological issues and assumptions relating to the choice of specific indicators; 2) a description of any data gaps that may exist with regard to specific indicators; 3) a description of the data set(s) required for monitoring and evaluation and their source(s); 4) an explanation of special study requirements that may exist which would facilitate more accurate measurement of the impact of the T&I Sector Program specific to particular components; and 5) the Mission Office(s) responsible for data collection and funding source(s) for T&I Sector Program M&E activities.

Following these discussions of multi-level performance indicators, Section IV will present specific recommendations for: 1) a detailed management plan which assigns responsibilities for periodic collection and incorporation of both project and program level data, as well as data from other sources, into a data-based system; and 2) an appropriate computerized data-based program performance informational system for the monitoring and evaluation of the Trade and Development Sector Program's progress and impact.

A. Strategic Objective Level Performance Indicators

Table 1 is an illustrative means of monitoring the achievement of the Mission's first

Strategic Objective with regard to the Latin America and Caribbean Bureau's Objective of "Support[ing] the Achievement of Broadly-Based, Sustainable Economic Growth" which in the Guatemalan context has been designated as "Increased Private Investment and Trade". Three indicators have been chosen to measure implementation progress and program impact. These are:

- Increase in Foreign Exchange Earnings from Expanded Production and Marketing of Nontraditional Exports from US\$399.8 Million at End-1991 to US\$727.7 Million at End-1997;
- Increase Private Investment from US\$953.0 Million at End-1991 to US\$1,390.7 Million at End-1997; and
- Increase in Value of United States-Guatemala Bilateral Trade from US\$1,820.9 Million at End-1991 to US\$4,292.7 Million at End-1997.

Table 1 also designates yearly targets for the attainment of these increments in foreign exchange earnings from nontraditional exports, private investment and the value of bilateral trade. The targets for foreign exchange earnings are based on projections of annual growth in nontraditional exports developed by the International Monetary Fund which forecasts growth of 10 percent per annum for the 1992-94 period and 11 percent per annum thereafter. Projections for private investment and bilateral trade are based on historical annual average growth rates of 6.5 percent and 15.4 percent, respectively. The methodology employed and assumptions made are described in the following section.

1. Conceptual and Methodological Issues and Assumptions

As currently envisaged, the Trade and Investment Sector Program will largely consist of a policy agenda with the GOG and support to selected nongovernmental organization to advocate for legal and regulatory reforms at the national level to achieve, *inter alia*, improvements in the administration of export and investment incentives, maintenance of a favorable macroeconomic climate, and more aggressive pursuit of foreign capital and markets. In addition, the Trade and Investment Sector Program will encourage consensus building through a wide range of activities aimed at developing an "exporting mentality", garnering support of business, government, labor and academic interest groups, and restructuring roles and responsibilities of public and private sector institutions providing vital services to exporters. These USAID/Guatemala-financed activities are intended to attain the Mission's strategic objective of increased private investment and trade as measured by the aforementioned indicators.

As is the case with most development programs, the Trade and Investment Sector Program presents the Mission and external evaluators with the problem of attribution. Specifically, one cannot attribute with any reasonable degree of certainty future outcomes of individual trade policy reforms, legal and regulatory reform and other interventions envisaged by the T&I Sector Program without having understood and predicted them, and one cannot

USAID/Guatemala

Table 1
Strategic Objective Number 1: Increased Private Investment and Trade
 (millions of U.S. dollars)

Strategic Objective Performance Indicators	Baseline	Target	Actual								
	1991 Value ¹	End Year 1993	End Year 1993	End Year 1994	End Year 1994	End Year 1995	End Year 1995	End Year 1996	End Year 1996	End Year 1997	End Year 1997
1. Increase in Foreign Exchange Earnings from Expanded Production and Marketing of Nontraditional Exports	399.8	488.7		532.1		590.7		655.6		727.7	
2. Increase in Private Investment	953.0	1,081.0		1,151.2		1,226.1		1,305.8		1,390.7	
3. Increase in United States - Guatemala Bilateral Trade	1,820.9	2,423.5		2,795.8		3,225.4		3,720.9		4,292.7	

¹ Data Sources:

Foreign Exchange Earnings from Nontraditional Exports: *Principales Estadísticas Cambiarias y de Comercio Exterior de Guatemala*. "Ingreso de Divisas Por Exportaciones, Clasificados por Producto". Banco de Guatemala

Private Investment: *Estudio Económico y Memoria de Labores*. "La Actividad Económico Nacional. Inversión Geográfica Bruta". Banco de Guatemala

United States-Guatemala Bilateral Trade: National Trade Data Bank, U.S. Department of Commerce, Economic and Statistics Administration, Office of Business Analysis

predict these outcomes without some kind of broad conceptual model of Guatemala's macroeconomy and where it is going, with and without the package of reforms and interventions that are being advocated. As such, it is highly recommended that analyses be conducted to assess the potential impact of the T&I Sector Program. Such analyses should include the estimation of changes in export and import elasticities which are the consequence of various reform measures and other interventions in the sector. The resulting elasticities could then be employed to measure the potential impact of a range of policy and legal and regulatory reforms which would lead to the realization of the Mission's strategic objective of increased trade and private investment.³

In the absence of such analyses, one should, at the very least, attempt to employ a less rigorous methodology along the following lines: first, assert a future timepath for the economy and choose certain indicators of trade and investment absent the reforms and other interventions; second, predict the relative magnitude of the impacts of the prescribed reforms; and finally, make attribution on the basis of the *a priori* predictions and estimated magnitudes.

Lacking access to these types of analyses at the present time, this M&E Plan must rely on projections of the external sector that have been conducted by other donors or the international lending agencies, or on much less reliable projections of the external sector based on its historical performance.

The only readily available source of projections of Guatemala's external sector is the International Monetary Fund's (IMF) most recent medium-term balance of payments outlook. These forecasts are developed annually during the IMF's Article IV consultations with the Guatemalan authorities.⁴ Although the IMF's projections do not take into account the specific package of reforms and interventions envisaged by USAID/Guatemala's T&I Sector Program, they do, nevertheless, assume that the GOG will undertake a series of reform measures and thus serve as the only reliable basis for developing proxy targets for the Mission's strategic objective during the planning period. The IMF's June 1991 report provided projections of the medium-term balance of payments covering the period 1992-96 under the assumption of the implementation of a sustained and comprehensive stabilization program which USAID/Guatemala can influence with its Trade and Investment Sector Program. These projections are based on the following specific assumptions of actions to be taken by the Guatemalan authorities: a sharp reduction in the rate of inflation to a level compatible with that of its major trading partners (about 5 percent during 1993-96); a gradual increase in real GDP growth from 3.5 percent in 1992 to 5 percent in 1996; and a buildup of liquid reserves from US\$300 million (equivalent to 2.25 months of imports in 1992 to about US\$680 million (equivalent to 3.25 months of imports) in 1996. The projections for the 1992-96 period also assume that throughout the period: 1) the

³ Two econometric models currently exist which could carry out the types of simulations suggested. One has been developed by the Asociación de Investigación y Estudios Sociales (ASIES) and the other is the GRZ-funded macroeconomic planning model housed in the Secretaría General del Consejo Nacional de Planificación Económica (SEOEPLAN).

⁴ International Monetary Fund, Staff Report for the Article IV Consultation. Washington, D.C., June 10, 1991.

overall budgetary position of the nonfinancial public sector would remain in balance; 2) the real effective exchange rate would be maintained at a competitive level; and 3) that domestic interest rates would be positive in real terms. Furthermore, it is assumed that price projections through 1996 for the major primary export products and oil prices are based on the International Bank for Reconstruction and Development's World Economic Outlook commodity price forecasts. In particular, the price of coffee is projected to rise by approximately 6.5 percent in 1992.

Based on this series of assumptions, Table 2 illustrates the IMF's performance projections for both traditional and nontraditional exports during the 1992-96 period.

	1992	1993	1994	1995	1996
Exports	7.5	8.6	9.6	11.4	10.1
Traditional	5.3	7.3	9.2	11.8	9.3
Nontraditional	10.0	10.0	10.0	11.0	11.0

On the basis of these forecasts, it is further assumed that an 11 percent rate of growth of nontraditional exports will be sustained through 1997.

The reader is cautioned, however, that attainment of these projections is a function of complete compliance with the baseline assumptions and to date, coffee prices have not risen by the amount envisaged by the IMF and interest rates are not yet positive in real terms.

With regard to investment indicators, each of the components of private investment⁵ estimated on an annual basis by the Banco de Guatemala (BOG) are valid indicators to monitor. The BOG disaggregates private investment into six components: imported capital goods, domestically produced capital goods, permanent crops, physical land improvements, private construction, and changes in inventories. Although initial consideration was given to the deletion of the land and/or construction component on assumption that these might largely reflect hedges against economic uncertainty, it appears that for Guatemala, capital flight is a much better hedge and land and construction, as related to the expansion of export capacity in nontraditional subsectors, are in fact valid indicators to follow. Although the removal of residential and commercial facets of the land and construction components would improve upon these indicators in the context of direct correlation with increased export capacity, this disaggregation is not readily available from the Banco de Guatemala.

⁵ The Banco de Guatemala does not distinguish between domestic and foreign direct private investment.

The forecast for private investment expansion during the Mission's 1992-97 planning period is based on this indicator's historical growth rate since Guatemala began its economic recovery from recession in 1986. During the 1986-91 period, private investment increased at an annual average rate of 6.5 percent in nominal dollar terms.⁶ The fact that the 1986 base year also coincides with the initiation of the dismantling of the country's trade and investment constraints further justifies the use of this period as a basis for forecasting investment expansion during the 1992-97 period. It is suggested that this indicator be tracked as a separate value rather than as a proportion of gross domestic product (GDP) since the denominator of such a ratio, i.e., GDP, is, subject to numerous exogenous factors well beyond the control and manageable interest of USAID/Guatemala. The reader is warned, however, that application of the historical rate of growth of private investment to the 1992-97 period is merely informed speculation. More importantly, even if private investment does continue to increase at levels approaching those of the recent past, one will not be able to state with any degree of certainty the degree to which the Trade and Investment Sector Program contributed to that growth.

The lack of projections of United States-Guatemala bilateral trade by the U.S. Commerce Department or other U.S. Government agency also necessitates the use of historical growth rates in order to derive projections for the 1992-97 period. The dollar value of United States-Guatemalan bilateral trade (exports + imports) grew at an average annual rate of 15.4 percent during the 1985-1991 period. If one assumes that the same annual rate of growth will be maintained during the 1992-97 period then the value of bilateral trade would increase from US\$1,820.9 million at end-1991 to US\$4,292.7 million at end-1997.⁷ Again the reader is cautioned that use of such a projection methodology is not ideal and is subject to the same caveats regarding attribution already mentioned above.

2. Data Gaps

The quantity and quality of official GOG data to be used for monitoring and evaluation of the T&I Sector Program are highly variable. In particular the economic time series relating to production and international trade as compiled by the Banco de Guatemala leave much to be desired.

a) Production and National Accounts Data

Production data and national accounts are generated by yearly estimates of the BOG and are largely based on interviews with a number of business and GOG entities. Little primary information is available to the BOG for this exercise and as a result, some of the methods used in the development of these data are erroneous. In particular, the BOG calculates the value of the various components of the country's national accounts, including private investment and GDP, and the value added of agricultural and industrial production on the basis of coefficients

⁶ See Appendix E for a description of the procedure used for developing this projection.

⁷ See Appendix F for a description of the procedure used for developing this projection.

derived for 1958, the Central Bank's base year, which cannot possibly have any relevance today. As such, the overall quality of this data is questionable to say the least. Notwithstanding, as long as biases in data collection and construction remain stable, i.e., no one changes the coefficients during the life of the T&I Program, valid conclusions can still be drawn from the BOG's time series data relating to GDP, private investment and value added.

b) Export and Import Data

Trade information is gathered by the BOG primarily from the Guatemalan Customs Service and the country's commercial banking sector. The Customs Service sends the BOG all FOB (free on board) export and CIF (cost, insurance and freight) import documentation on a daily basis. Although errors are, no doubt, unavoidable, particularly with regard to bills of lading which the BOG receives in the form of a fifth copy which can be barely legible, the information is generally acceptable. However, the Customs Service data is incomplete owing to the fact that it inexplicably fails to include FOB and CIF trade data from approximately 672 firms involved in *maquila* and other industrial activities benefitting from Guatemala's export incentive laws, specifically Decretos 443, 30-79, 80-82, 21-84 and 29-89. For this reason, overall import data reported by the Customs Service is presumably underestimated to a considerable degree.

A more reliable source of export data is the country's commercial banking sector. All exporters are required by statute to surrender their foreign exchange proceeds to the BOG through the banking sector. To ensure compliance, exporters must obtain an export permit before they are allowed to ship their goods. Foreign exchange is then sold against the values indicated in these permits. The reporting of the foreign exchange value of Guatemalan trade is identified by export type and can be used as a more statistically reliable source of the value of Guatemalan exports. However, this source of information is also flawed. The foreign exchange value of the exports (including *maquila* and other incentive industry exports) recorded by the banking sector excludes all but a fraction of the value of Guatemalan trade with Central America. It appears that the majority of exports to these neighboring countries are exempt from the export permit requirement. A combination of FOB exports to Central America as reported by the Guatemalan Customs Service, and the foreign exchange value of exports to Central America as reported by the banking system should, therefore, adequately describe overall export performance in Central America.

The absence of data regarding the value of imports of the nearly 700 *maquila* and other special incentive industries which is not reported to the BOG by the Guatemalan Customs Service can apparently be corrected by comparing it with the value these firms' exports to the United States, the primary export destination of *maquila* output. The discrepancy between the imported value of these goods as reported by the United States Customs Service and the foreign exchange export value of these same goods as reported by the Guatemalan commercial banks to the BOG should approximate the value of raw material and intermediate goods imported into Guatemala for assemble into finished export goods.

3. Data Sets and Sources

a) Foreign Exchange Earnings of Nontraditional Exports

Data relating to foreign exchange earnings of nontraditional exports is available on a monthly basis from the BOG's Departamento de Estadísticas Económicas, Sección de Estadísticas Cambiarias, in a publication entitled "Principales Estadísticas Cambiarias y de Comercio Exterior de Guatemala" under the section entitled "Ingreso de Divisas Por Exportaciones, Clasificados por Producto". Appendix C lists the 111 products classified by the Banco de Guatemala as nontraditional exports. The major headings found in that listing are those that are found in "Principales Estadísticas Cambiarias y de Comercio Exterior de Guatemala".

b) Private Investment

The data to be used to track increments in private investment during the five year planning period is developed on an annual basis by the BOG and published in the bank's biannual publication entitled Estudio Económico y Memoria de Labores. The specific data base relating to the value of physical capital investment, (as distinct from financial capital), is found under the section "La Actividad Económica Nacional" as "Inversión Geográfica Bruta" and includes investments in the following items: domestic and foreign capital goods, in permanent crops, in land improvements, in construction, and in change in inventories. The Chief of the National Accounts Section of the BOG's Economic Statistics Department has indicated that these data could be provided to the Mission on an annual basis.⁸ The previous year's data on private investment is available in June of the following year.

c) United States--Guatemala Bilateral Trade

Data relating to U.S. Exports to Guatemala and U.S. Imports from Guatemala are available on a monthly basis in CD ROM disk format which is provided to the U.S. Embassy's Commercial Section by the U.S. Department of Commerce.⁹

4. Special Study Requirements

As defined herein, "Special Studies" are those research efforts which would facilitate more accurate measurement of the impact of the T&I Sector Program's actions specific to particular components. These efforts would provide T&I Sector Program managers with the basis to measure three particular aspects: first, to assess the relative efficacy of alternative actions to orient or reorient resources to the most successful interventions; second, to measure the impact of program actions specific to particular components that may be at an important

⁸ Lic. Osvaldo Méndez, Jefe, Sección de Cuentas Nacionales, Departamento de Estadísticas Económicas, Banco de Guatemala.

⁹ National Trade Data Bank, U.S. Department of Commerce, Economics and Statistics Administration, Office of Business Analysis.

turning point; and third, to measure the impact of interventions in terms of meeting key indicator targets.

The T&I Sector Program's success in complying with AID/Washington's new standards for monitoring and evaluation and plans for tracking the implementation of the program's various activities are important now—they will count for little at the end of the strategic objective planning period. The difference between a relatively satisfactory and an excellent monitoring and evaluation effort lies in "Special Studies".

As currently envisaged, the Trade and Investment Sector Program will consist of policy-based, non-project assistance in the amount of approximately US\$10 million, disbursed against a negotiated policy agenda with the GOG by the end of the first or, at the very latest, second year of program implementation. A proportion of local currency proceeds is to be used to support GOG agencies active in the execution of the policy agenda; a larger proportion is being considered for the creation of a T&I Sector Program Trust Fund to provide endowments and matching funds for participating nongovernmental organizations in support of trade development and investment promotion. In order to measure the potential impact of the foundation of the Trade and Investment Sector Program, i.e., nonproject policy-based activities, on an analytical basis, it would be well to undertake a special study at the outset to define the baseline situation, orient the program's resources to the most effective interventions and establish a strong analytic basis for estimating the T&I Sector Program's projected impacts. The Mission has defined a package of trade policy and legal and regulatory reforms that the T&I Sector Program will pursue. Without first attempting to predict individual policy, legal and regulatory reform impacts with some degree of rigor, any success that is attributable to USAID/Guatemala's support would be largely conjectural.

5. Responsible Mission Office(s) and Funding Sources(s)

Specific responsibility for data collection lies with the Mission's Trade and Investment Office (TIO); collection activities are to be financed with Trade and Investment Sector Program Funds.

B. Program Output Level Performance Indicators – Program Output Number 1

Table 3 is an illustrative means of monitoring the achievement of the first of three program outputs¹⁰ under the T&I strategic objective. Designated as "An Open Trade Regime", five indicators have been developed to monitor progress in achieving this output of the T&I Sector Program:

¹⁰ Program outputs are defined as those concrete, near-term results of Mission activities that are most likely to contribute to the achievement of a particular strategic objective, are directly attributable to Mission activities and which are suitable for monitoring and reporting at regular intervals (usually annually).

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Table 3
Program Output Number 1: An Open Trade Regime

Program Output Performance Indicators	Baseline	Actual	Actual	Actual	Actual	Actual	Data Source(s)
	Status/Value 1991	End Year 1993	End Year 1994	End Year 1995	End Year 1996	End Year 1997	
1. Decline in a Select Number of Remaining Tariff Barriers							Gremial de Exportadores de Productos No Tradicionales (GEXPRONT) and the Cámara Empresarial de Guatemala (CAEM)
2. Decrease in the Width of the Nominal Tariff Band							GEXPRONT, CAEM
3. Reduction of the Incidence of a Select Number of Nontariff Barriers							GEXPRONT, CAEM
4. Reduction in the Time Required to Secure an Export License							Ventanilla Unica de Inversión, Ministerio de Economía
5. Guatemala's Compliance with the Terms of Its Accession to the General Agreement on Tariffs and Trade (GATT)							Office of the United States Trade Representative "National Trade Estimate Report on Foreign Trade Barriers"

- decline in a select number of remaining tariff barriers;
- decrease in width of the nominal tariff band;
- reduction of the incidence of a select number nontariff barriers;
- reduction in the time required to secure an export license; and
- Guatemala's compliance with the terms of its accession to the General Agreement on Tariffs and Trade (GATT).

1. Conceptual and Methodological Issues and Assumptions

The principal issue with regards to the trade policy reforms envisaged by the T&I Program can be phrased as follows: "What do you want and how will you know what you got when you get it?" or in other words "What effect will these changes and reforms have and how will the Mission know when it is in place?"

In the absence of analyses which attempt to measure the costs and/or benefits of the various trade policy reforms envisaged by the T&I Sector Program and to prioritize those which would contribute most to "an open trade regime", it will be necessary to systematically track all efforts of the GOG to move away from protection of inefficient domestic industries and move toward an enabling environment which encourages production and marketing efficiencies. The set of trade policy reforms which would accomplish the most in the evolution of an open trade regime, and which appear to be in the manageable interest of the Mission to influence include those relating to reductions in remaining tariff and nontariff barriers. It should be noted, however, that the T&I Sector Program's monitoring activities with regard to enactment of trade-related policy reforms are totally a function of the outcome of the policy agenda yet to be negotiated with the GOG. Furthermore, the GOG is committed to the voluntary removal of a major part of its licensing and prohibitions of imports and exports by end-1992, and is currently in the process of finalizing the specifics of these planned actions.¹¹ Hence, this M&E Plan can, for the moment, only suggest that the Gremial de Exportadores de Productos No Tradicionales (GEXPRONT) begin to monitor the removal over time of extant tariff and nontariff barriers as identified in the trade regime analysis.¹² More explicit indicators vis-a-vis tariff and nontariff barrier removal and trade-related policy reforms will need to be developed once agreement is reached with the GOG regarding specific areas of T&I Sector Program interventions.

2. Data Gaps

¹¹ A listing of licenses and prohibitions affecting imports and exports together with their expected status at end-1992 is found in Appendix B.

¹² Marks, Siegfried. "Guatemala's Trade Policy Reform: Analysis and Recommendations." Paper submitted to the U.S. Agency for International Development Mission to Guatemala, July 1992.

Although the Trade and Investment Office's Concept Paper comprehensively developed the rationale for the T&I Sector Program, its appendix relating to constraints to trade and investment in Guatemala did not provide the requisite level of detail for one to identify the overall set of tariff and nontariff constraints at issue and to set about identifying the types of data that would be indicative of their removal. Fortunately, the trade regime analysis currently being prepared for the T&I Sector Program design document will provide a definitive description of both tariff and nontariff barriers. A subset of existing tariff and nontariff barriers that affect import and export products which are either licensed or prohibited is included as Appendix B.

3. Data Sets and Sources

- Indicator 1: Gremial de Exportadores de Productos No Tradicionales (GEXPRONT), Cámara Empresarial de Guatemala (CAEM)
- Indicator 2: GEXPRONT, CAEM
- Indicator 3: GEXPRONT, CAEM
- Indicator 4: Ministerio de Economía, Ventanilla Unica de Exportación
- Indicator 5: Annual publication of the Office of the United States Trade Representative entitled "National Trade Estimate Report on Foreign Trade Barriers"

4. Special Study Requirements

It would be well advised to undertake a special study at the outset to generate measurements of the costs and/or benefits of the various trade policy reforms envisaged by the T&I Sector Program and to prioritize those which would contribute most to "an open trade regime". By doing so, the program's resources can be allocated to the most effective set of interventions planned as part of the package of trade policy reforms that the T&I Sector Program will pursue. Without first attempting to predict the outcomes of the interventions envisaged, one will be unable to select with any degree of precision that set of reforms which will achieve the highest level of impact.

While the monitoring of reductions in the number of tariff and nontariff barriers, tracking the narrowing of the nominal tariff band, and consulting the Office of the U.S. Trade Representative regarding Guatemalan compliance with its terms of accession to the GATT during the life of the T&I Sector Program appear to be relatively straightforward, the pursuit of increased efficiency in the export licensing process is another matter. What is not so clear is what the Ventanilla Unica de Exportación will look like once its administrative procedures are streamlined and its staff capabilities upgraded. These issues will need to be studied in order to define optimal units of measurement of the potential impact of such interventions.

5. Responsible Mission Office(s) and Funding Source(s)

Trade and Investment Office; Trade and Investment Sector Program funds

C. Program Output Level Performance Indicators – Program Output Number 2

Table 4 is an illustrative means of monitoring the second of the Mission's three program outputs to be achieved under the T&I Program. Designated as "A Sound Investment Environment", three indicators have been developed to monitor progress in achieving this output of the T&I Program:

- enactment of internationally accepted legislation regarding intellectual property rights covering copyrights and trademarks;
- adoption of improved foreign investment processing procedures; and
- inflows of foreign private investment attributable to USAID/Guatemala-supported investment promotion activities.

1. Conceptual and Methodological Issues and Assumptions

Guatemala is currently on the Office of the U.S. Trade Representative's "Watch List" of countries which need to upgrade their intellectual property rights legislation. The central issue in this regard is whether legislation is passed and put into practice or whether it is not. The only monitoring concern is whether the Guatemalan legislature adopts the requisite legislation sooner rather than later and whether the legislation contains the requisite enforcement provisions to make it work. It is assumed that the enactment of intellectual property rights legislation will contribute to the "sound investment environment" sought by USAID/Guatemala to realize its strategic objective of "increased private investment [and trade]."

The Ventanilla Unica de Inversión has been scheduled to become operational for some time. Publicity surrounding the Ventanilla's inauguration has been highlighting touting a reduction in the processing time needed for the authorization of an investment permit from upwards of hundreds of days to a mere three. Within that period, the applicant corporation or individual is scheduled to be granted a temporary commercial operating permit which will include the following: a certification of provisional registration; a tax identification number; and the assignment of an importer/exporter code number. When this new Ministry of Economy entity does indeed become operational, monitoring under the T&I Sector Program would presumably cover adherence to the aforementioned provisions. The "adoption of improved foreign investment processing procedures" would not, however, be attributable to USAID/Guatemala supported activities under the T&I Sector Program. Rather, a further reduction in the number of days required to process foreign investment applications over time could, presumably, be attributed to the T&I Sector Program.

The Fundación para el Desarrollo de Guatemala (FUNDESA), one of the nongovernmental organizations which has been identified as the potential lead actor in the investment promotion component of the T&I Program, was queried as to the levels of investment that it realistically believes possible to attract during the life of the program. FUNDESA based

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Table 4
Program Output Number 2: A Sound Investment Environment

Program Output Performance Indicators	Baseline	Actual	Actual	Actual	Actual	Actual	Data Source(s)
	Status/Value 1991	End Year 1993	End Year 1994	End Year 1995	End Year 1996	End Year 1997	
1. Enactment of Internationally Accepted Intellectual Property Rights Legislation							Office of the United States Trade Representative "National Trade Estimate Report on Foreign Trade Barriers"
2. Adoption of Improved Investment Processing Procedures							Ventanita Unica de Inversión, Ministerio de Economía
3. Inflows of Foreign Private Investment Attributable to USAID/Guatemala Support							Fundación para el Desarrollo de Guatemala (FUNDESA)

its response on the results of a consultancy by CARANA Corporation which estimated that it is realistic to expect that FUNDESA's investment promotion activities, without USAID/Guatemala support, could attract upwards of US\$66 million over a three year period (the methodological basis for such an estimate was not made known). Does this mean that with USAID/Guatemala support that FUNDESA will now be able to attract US\$100 million? US\$110 million? FUNDESA could not offer an answer based on anything other than speculation. Given the fact that FUNDESA is a relatively new organization which only very recently entered the investment promotion field, it does not appear to be methodologically possible to project dollar values for this organization's investment promotion activities with any degree of precision over the strategic objective planning period.

2. Data Gaps

Data relating to successful interventions in investment promotion and the magnitude of foreign investment that has been mobilized by various investment promotion activities funded by the donor community and the international lending agencies is not available at this time. Equipped with such information, Mission management would be able to more accurately assess the level of investment mobilization that can reasonably be expected from the investment promotion activities envisaged by the Trade and Investment Sector Program.

3. Data Sets and Sources

Indicator 1: Annual publication of the Office of the United States Trade Representative entitled "National Trade Estimate Report on Foreign Trade Barriers"

Indicator 2: Ventanilla Unica de Inversión, Ministerio de Economía

Indicator 3: Fundación para el Desarrollo de Guatemala (FUNDESA)

4. Special Study Requirements

As discussed above in Section A.4., optimization of the potential impact of the nonproject policy-based activities in support of legal and regulatory reform would appear to require additional study of the Mission's options during the design stage to define a baseline, orient the Program's resources to the most successful interventions and establish an analytical basis for estimating projected impact of the particular package of legal and regulatory reforms that the T&I Sector Program will pursue in order to create a sound investment environment. These criteria warrant careful consideration and methodological inquiry to achieve the highest level of impact in the shortest possible time period. Moreover, one must first attempt to predict legal and regulatory reform outcomes with some degree of rigor so that attribution of increases in private investment attributable to USAID/Guatemala support will be based on more than speculative assumptions. Such a study would provide T&I Sector Program managers with the basis to measure at least two particular aspects: first, to assess the relative efficacy of alternative actions designed to meet and attain a sound investment environment; and second, to establish a baseline from which to measure the impact of interventions with regard to legal and regulatory reforms.

As in the case of the interventions envisaged for improving the operational capacity of the Ventanilla Unica de Exportación, a special study is recommended in order to define optimal units of measurement of the potential impact of planned interventions to further improve the investment permit process of the Ventanilla Unica de Inversión once it is operationalized.

Finally, a review of the literature regarding the successes and failures of various investment promotion efforts sponsored by A.I.D., other donors and the international lending agencies would provide a basis for projecting annual targets of what is reasonable to expect from the level of support to be provided under the T&I Sector Program for similar activities. Otherwise, the outcome of the T&I Sector Program's support for investment promotion would largely depend on the initiative of the investment promotion entity and monitoring would be necessarily limited to merely correlating investments that are made during the life of the T&I Sector Program with companies that have received assistance from the investment promotion entity.

5. Responsible Mission Office(s) and Funding Source(s)

Specific responsibility for data collection lies with the Mission's Trade and Investment Office (TIO); collection activities are to be financed with Trade and Investment Sector Program Funds.

D. Program Output Level Performance Indicators – Program Output Number 3

The final program output of the T&I Program, "Increased Competitiveness of the Nontraditional Export Subsector." Table 5 presented an illustrative means of monitoring progress in achieving this program output which will be measured by five indicators:

- increased value added in the nontraditional agricultural export subsector attributable to USAID/Guatemala support;
- increased value added in the nontraditional clothing and textile export subsector attributable to USAID/Guatemala support;
- increased value added in other nontraditional export subsectors attributable to USAID/Guatemala support;
- new environmentally sensitive nontraditional export lines¹³ which are attributable to USAID/Guatemala support; and
- an increase in the proportion of women in the nontraditional export subsector

¹³ The Center for Development Information and Evaluation (CDIE)-sponsored PRISM Environmental Working Group is currently in the process of defining indicator guidelines for environmentally sensitive export-oriented industrial diversification.

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Table 5
 Program Output Number 3: Increased Competitiveness of the Nontraditional Export Subsector

Program Output Performance Indicators	Baseline	Actual	Actual	Actual	Actual	Actual	Data Source(s)
	Status/Value 1991	End Year 1993	End Year 1994	End Year 1995	End Year 1996	End Year 1997	
1. Increased Value Added in the Nontraditional Agricultural Export Subsector Attributable to USAID/Guatemala Support							Annual Sample Survey of the Membership of the Grenial de Exportadores de Productos No Tradicionales (GEXPRONT)
2. Increased Value Added in the Nontraditional Clothing and Textile Export Subsector Attributable to USAID/Guatemala Support							Annual Sample Survey of the Membership of GEXPRONT
3. Increased Value Added in Other Nontraditional Export Subsector Attributable to USAID/Guatemala Support							Annual Sample Survey of the Membership of GEXPRONT
4. New Environmentally Sensitive Nontraditional Export Lines Which Are Attributable to USAID/Guatemala's support							GEXPRONT
5. An Increase in the Proportion of Women in the Nontraditional Export Subsector Workforce							Annual Sample Survey of the Membership of GEXPRONT

workforce.

1. Conceptual and Methodological Issues and Assumptions

The issue here is one of refining the most comprehensive indicator of the impact of various Mission-supported business assistance interventions envisaged by the T&I Sector Program at the individual firm and multi-firm level. Domestic value added, the difference between the value of goods and the cost of domestically produced (as opposed to imported) materials or supplies that are used in producing them, is the best money gauge of the relative economic importance of an industry (or sector) because it measures that industry's contribution to the economy rather than its gross sales. Measurement of changes in domestic value added over time also offers insight into the efficiency with which a firm or group of firms converts domestic raw materials, domestic intermediate goods, electric energy, labor and other inputs into final products and thus would serve as an indicator of Guatemala's increasing (or decreasing) comparative advantage in the production of specific nontraditional exports. For example, increasing domestic value added in the *maquila* apparel industry over time would be an indication of the transformation of the industry from one which relies on imported cuttings for assembly to a more vertically integrated industry relying more and more on in-house cutting of domestically or foreign sourced material. An increasing comparative advantage would be indicative of Guatemala's ability to produce specific nontraditional products relatively more cheaply than other products thus increasing its competitiveness vis-a-vis other countries in the production of that same nontraditional product or products.

The Mission's Office of Rural Development has demonstrated the feasibility of measuring domestic value added at the product level with relatively minimal resource requirements. The same methodology employed to calculate value added in the agricultural sector and illustrated in Appendix E can easily be applied to the industrial sector.

Another measure of the success of the T&I Sector Program's support to GEXPRONT for trade promotional activities would be an expansion of existing nontraditional export lines over the strategic objective planning period. Appendix D provides a listing of 111 products currently classified by the Banco de Guatemala as nontraditional exports. Agreement will need to be reached with GEXPRONT regarding realistic targets for product line expansion that are environmentally sensitive based on pragmatic assumptions of the ability of GEXPRONT to play a leading role in export diversification.

2. Data Gaps

As discussed in detail in Section III.A. above, no reliable baseline currently exists with regard to domestic value added in the nontraditional agriculture, *maquila* and other nontraditional export subsectors. If such a baseline is beyond the ability of the GEXPRONT to construct, some manner of proxy baseline could possibly be extrapolated from the existing BOG agriculture and industry value added database.

A study was commissioned in 1991 by ROCAP's Nontraditional Agricultural Export Support Project to assess the impact of women's participation in the workforce of that subsector.¹⁴ This monograph includes data on the ratio of women to men in Guatemala's nontraditional agricultural export subsector by product and type of work performed. Not only would the findings serve as a definitive baseline for the nontraditional agricultural subsector but the methodology employed could be replicated to assess women's participation in the *maquila* and "other" subsectors.

3. Data Sets and Sources

- Indicator 1: Annual Sample Survey of the Membership of GEXPRONT
- Indicator 2: Annual Sample Survey of the Membership of GEXPRONT
- Indicator 3: Annual Sample Survey of the Membership of GEXPRONT
- Indicator 4: GEXPRONT
- Indicator 5: Annual Sample Survey of the Membership of GEXPRONT

4. Special Study Requirements

An initial sample survey of the membership of GEXPRONT together with followup surveys on an annual basis will have to be undertaken to track domestic value added in three nontraditional export subsectors. The same surveys would also be used to track the participation of women in the nontraditional export workforce.

5. Responsible Mission Office(s) and Funding Source(s)

Specific responsibility for data collection lies with the Mission's Trade and Investment Office (TIO); collection activities are to be financed with Trade and Investment Sector Program Funds.

E. Project Level Performance Indicators – Project Activity Number 1

Table 6 presents an illustrative means of monitoring the achievement of the first of four project level interventions supporting the Trade and Investment Program. Defined as an "Expansion of Nontraditional Agricultural Exports",¹⁵ two indicators will be used to measure

¹⁴ Alberti, Analia M. "Impact of Participation in Non-Traditional Agricultural Export Production on the Employment, Income, and Quality of Life of Women in Guatemala, Honduras, and Costa Rica." Paper submitted to U.S. Agency for International Development, Regional Office for Central American Programs, Guatemala, 1991.

¹⁵ This is an extrapolation of the end-of-project status of USAID/Guatemala Cooperative Agreement number 520-0274-A-00-0222-00 with the Gremial de Exportadores de Productos No Tradicionales (GEXPRONT) which provides for a grant to GEXPRONT to promote nontraditional agricultural exports by improving its market information system, export and investment promotion activities, agribusiness training and by establishing a research fund. The assumption here is that "promotion" of nontraditional agricultural exports implies increased production.

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Table 6

Project Activity Number 1: Expansion of Nontraditional Agricultural Exports

Project Level Performance Indicators	Baseline	Actual	Actual	Actual	Actual	Actual	Data Source(s)
	Value 1990	End Year 1993	End Year 1994	End Year 1995	End Year 1996	End Year 1997	
1. Increase in the Value Added of Marketable Cash Crop Output							Highland Agricultural Development (HAD) Project Management Information System and Annual Sample Survey of HAD Project Beneficiaries
2. Increase in the Proportion of Marketable Cash Crop Output Attributable to Nontraditional Agricultural Exports							Annual Sample Survey of HAD Project Beneficiaries

progress during the remaining life of this project to measure progress in achieving this end-of-project status:

- increase in the value added of marketable cash crop output; and
- increases in the proportion of marketable cash crop output representing nontraditional agricultural exports attributable to USAID/Guatemala support.

1. Conceptual and Methodological Issues and Assumptions

The major assumption at play here has to do with attribution. The methodology to be employed to develop the second indicator

2. Data Gaps

No baseline currently exists with regard to value added of the nontraditional agriculture products currently being produced by the beneficiaries of the HAD project. A baseline was established during 1990 which will allow for the measurement of increases in cash crop production by means of annual sample surveys.

3. Data Sets and Sources

Indicator 1: Highland Agricultural Development (HAD) Project Management Information System and Annual Sample Survey of HAD Project Beneficiaries

Indicator 2: Annual Sample Survey of HAD Project Beneficiaries

4. Special Study Requirements

A followup to the 1990 baseline production profiles of HAD project beneficiaries will be required to assess increases in the production of marketable cash crop output. Attribution of that output to nontraditional agricultural exports can be estimated by the project beneficiaries themselves and corroborated through discussions with various buyers of produce for export. The first baseline followup sample survey would be the appropriate instrument to use for the development of an additional baseline for value added in the production of cash crops.

5. Responsible Mission Office(s) and Funding Source(s)

Specific responsibility for data collection lies with the Mission's Rural Development Office (RDO); collection activities are to be financed with Highland Agricultural Development Project Funds.

E. Project Level Performance Indicators - Project Activity Number 2

The second project level intervention supporting the Trade and Investment Program is defined as an "Increase in Small Coffee Farmer Income by Increasing Production, Productivity and Product Quality" (Table 7). Two indicators will be monitored during the remaining life of the progress to measure progress in achieving this end-of-project status:

- number of small coffee producers receiving a higher proportion of FOB price for arabica coffee;
- increase in the value of small producer coffee output in representative production pockets attributable to USAID/Guatemala support; and
- increased value added in coffee exports attributable to USAID/Guatemala support

1. Conceptual and Methodological Issues and Assumptions

The first harvest from the new planting of coffee trees introduced by the project is due later this year. Over 500 small coffee farmers received loans to upgrade their coffee plots, remove old growth and to plant new trees. The new growth is expected to yield two to three times that of the old growth. A comprehensive data base has been developed for these growers, nearly all of whom maintain plots at higher altitudes which allows for the production of premium quality "hard bean" coffee. Each loan recipient has been profiled in terms of land in production, cultural practices and prices received in prior years. It is not known at this time whether the individual producer profile contains sufficient information to establish a value added baseline. All data has been coded and entered into a computer database but unfortunately the database is not yet in the proper format to be manipulated. The project estimates that nearly half of all small coffee farmers producing coffee at the higher altitudes are participating in the project and hard bean production represents approximately 12 percent of Guatemala's total coffee production. Assuming that the project's estimates are correct, approximately 6 percent of the output of improved hard bean production can be attributable to the Small Farmer Coffee Project.

2. Data Gaps

The adequacy of the producer profile database for development of a value added baseline is unknown at this time.

3. Data Sets and Sources

Indicator 1: Annual Sample Survey of Small Farmer Coffee Project Beneficiaries
Indicator 2: Annual Sample Survey of Small Farmer Coffee Project Beneficiaries
Indicator 3: Annual Sample Survey of Small Farmer Coffee Project Beneficiaries

4. Special Study Requirements

A followup to the baseline profiles of the project's credit recipients will be required to

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Table 7

Project Activity Number 2: Increase in Small Coffee Farmer Income by Increasing Production, Productivity and Product Quality

Project Level Performance Indicators	Baseline	Actual	Actual	Actual	Actual	Actual	Data Source(s)
	Value 1990	End Year 1993	End Year 1994	End Year 1995	End Year 1996	End Year 1997	
1. Number of Small Coffee Producers Receiving a Higher Proportion of FOB Price for Arabica Coffee							Annual Sample Survey of Small Farmer Coffee Project Beneficiaries
2. Increase in the Value of Small Producer Coffee Output in Representative Production Pockets Attributable to USAID/Guatemala Support							Annual Sample Survey of Small Farmer Coffee Project Beneficiaries
3. Increased Value Added in Coffee Exports Attributable to USAID/Guatemala Support							Annual Sample Survey of Small Farmer Coffee Project Beneficiaries

assess increases in farm gate price for the new growth harvests, increases in the value of overall production and value added. If the producer profiles do not contain sufficient information to generate a value added baseline, the first sample survey to assess prices received and value of production will need to collect the requisite information regarding inputs into the production process for value added calculations.

5. Responsible Mission Office(s) and Funding Source(s)

Specific responsibility for data collection lies with the Mission's Rural Development Office (RDO); collection activities are to be financed with Small Farmer Coffee Project Funds.

G. Project Level Performance Indicators – Project Activity Number 3

The third project level intervention supporting the Trade and Investment Sector Program is depicted in Table 8 and is defined as an "Expansion of the Network of All-Weather Farm-to-Market and Tertiary Roads to Provide a Better Transportation System". Two indicators will be monitored during the remaining life of the project to measure progress in achieving this end-of-project status:

- increase in the number of farmers engaging in new or significantly expanded cash crop production in representative production pockets; and
- annual increases in the proportion of marketable cash crop output representing nontraditional agricultural exports attributable to USAID/Guatemala support.

1. Conceptual and Methodological Issues and Assumptions

An attempt was made to develop proxies for monitoring the aforementioned indicators of this project on the basis of correlating detailed maps of the areas traversed by Mission-financed roads with purchases by formal sector buyers of produce for export. Discussions were held with two principal buyers¹⁶ and although these firms were able to identify a number of areas which had been opened up by these farm-to-market roads as sources of various types of produce for export, specific magnitudes of production for export attributable to the beneficiaries of these roads could not in any way be reliably estimated.

Excellent baseline information based on pre-construction sample surveys exists which describes in surprisingly extensive detail the socio-economic characteristics of the populations

¹⁶ Frutas Tropicales de Guatemala, S.A., FRUTESA and ALCOSA, a Division of Hanover Foods.

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Table 8

Project Activity Number 3: Expansion of the Network of All-Weather Farm-to-Market Roads to Provide a Better Transportation System

Project Level Performance Indicators	Baseline	Actual	Actual	Actual	Actual	Actual	Data Source(s)
	Value 1990	End Year 1993	End Year 1994	End Year 1995	End Year 1996	End Year 1997	
1. Increase in the Number of Farmers Engaging in New or Significantly Expanded Cash Crop Production in Representative Production Pockets							Dirección General de Caminos, Programa de Caminos Rurales con Uso Intensivo de Mano de Obra Baseline Socio-Economic Survey and Annual Sample Survey of Farm-to-Market Roads Project Beneficiaries
2. Increase in the Proportion of Marketable Output Attributable to Nontraditional Agricultural Exports							Annual Sample Survey of Farm-to-Market Roads Project Beneficiaries

in the immediate area of where roads were to be built or rehabilitated.¹⁷ In particular, these baseline surveys provide detailed information regarding agricultural production by type of crop, the cost of inputs used by crop type, the cost and form of transporting that production to market, off-farm income generating activities, crop diversification plans, and perceived environmental impact of the roads constructed or improved. Only followup sample surveys would provide for reliable measurement of increase in the number of farmers engaging in new or significantly expanded cash crop production and the proportion attributable to exports in representative production pockets. Once this information is collected, principal buyers of produce for export could then corroborate the results of the sample surveys with regard to the proportion of marketable output attributable to nontraditional agricultural exports.

2. Data Gaps

No data gaps exist with regard to the socio-economic baseline surveys.

3. Data Sets and Sources

Indicator 1: Dirección General de Caminos, Programa de Caminos Rurales con Uso Intensivo de Mano de Obra-Generated Baseline Socio-Economic Survey and Annual Sample Survey of Project Beneficiaries

Indicator 2: Annual Sample Survey of Project Beneficiaries

4. Special Study Requirements

A series of followup sample surveys will be required for comparison with the baseline surveys regarding, *inter alia*, cropping patterns, cost of production, and cost of transport. In addition, the sample surveys will need to query beneficiaries regarding sale of their production of nontraditional crops to various intermediaries and direct buyers of produce for export and corroborated through discussions with these buyers.

5. Responsible Mission Office(s) and Funding Source(s)

Specific responsibility for data collection lies with the Mission's Rural Development Office (RDO); collection activities are to be financed with Farm-to-Market Access Roads Project Funds

H. Project Level Performance Indicators - Project Activity Number 4

Table 9 presents an illustrative means of monitoring the final project level intervention supporting the Trade and Investment Sector Program which is defined as "Strengthen the

¹⁷ See "Tabulador de Información Socioeconómica", Formulario TAB-2-86, Dirección General de Caminos, Programa de Caminos Rurales con Uso Intensivo de Mano de Obra, Asistencia Técnica Proyecto AID 520-0274.

Economic and Policy Role of Private Enterprise in Guatemala in Stimulating Increased Trade and Investment". Two indicators will be used to measure tangible progress in encouraging trade and investment during the remaining life of the project:

- increased value added in the output of beneficiary firms producing nontraditional exports attributable to USAID/Guatemala support;
- increase in the number of small- and medium-scale enterprises involved in the production of nontraditional exports receiving business loans from both public and private financial institutions

1. Conceptual and Methodological Issues and Assumptions

The recently revised Private Enterprise Development (PED) Project currently counts five end-of-project status indicators: 1) strengthened financial market system; 2) establishment of a market-driven training center for small- and medium-scale enterprises with a cost recovery factor of 80 percent; 3) increased value added in the nontraditional export subsector attributable to USAID/Guatemala support; 4) more efficient operation of the Ministerio de Economía with greater responsiveness to the private sector; and 5) increase in the number of small- and medium-scale enterprises receiving business loans from both public and private financial institutions. Despite the intent of PED to stimulate trade and investment through interventions to enhance the country's financial sector, entrepreneurial training and public sector efficiency, it appears that only indicators 3 and 5 are truly measurable performance indicators during the limited remaining life of the PED project which are in the manageable interest of the Mission and which contribute to attainment of the Mission's strategic objective of increased private investment and trade.

However, phrased in their present form, indicators 3 and 5 above can not fully measure the impact of the PED project on trade and investment *per se*. It is therefore recommended that these performance indicators be expressed in more explicit terminology allowing for measurement of USAID/Guatemala-supported interventions impacting directly on firm engaged in the production of nontraditional goods for export as follows: increased value added in the output of beneficiary firms producing nontraditional exports attributable to USAID/Guatemala support; and increase in the number of small- and medium-scale enterprises involved in the production of nontraditional exports receiving business loans from both public and private financial institution.

2. Data Gaps

As discussed in detail in Section III.A. above, no reliable baseline currently exists with regard to domestic value added in the nontraditional agriculture, *maquila* and other nontraditional export subsectors.

USAID/Guatemala

Table 9

Project Activity Number 4: Strengthen the Economic and Policy Role of Private Enterprise in Stimulating Increased Trade and Investment

Project Level Performance Indicators	Baseline	Actual	Actual	Actual	Actual	Actual	Data Source(s)
	Value 1991	End Year 1993	End Year 1994	End Year 1995	End Year 1996	End Year 1997	
1. Increased Value Added in the Output of Beneficiary Firms Producing Nontraditional Exports Attributable to USAID/Guatemala Support							Initial and Followup Survey of GEXPRONT, AGG and CAEM Member Beneficiaries
2. Increase in the Number of Small- and Medium-Scale Enterprises Involved in the Production of Nontraditional Exports Receiving Business Loans from Both Public and Private Financial Institutions							Banco de Guatemala Records Regarding the Use of USAID/Guatemala Guaranty Fund

3. Data Sets and Sources

- Indicator 1: Initial and Followup Sample Survey of GEXPRONT, AGG and CAEM Member Beneficiaries
- Indicator 2: Banco de Guatemala Records Regarding the Use of the USAID/Guatemala Guaranty Fund

4. Special Study Requirements

A sample survey of the firms receiving either technical assistance or credit under the PED project will be required to develop a value added in the production of goods for export baseline and at least one followup sample survey will have to be conducted during the remaining life of the project to measure change.

5. Responsible Mission Office(s) and Funding Source(s)

Specific responsibility for data collection lies with the Mission's Trade and Investment Office (TIO); collection activities are to be financed with Private Enterprise Development Project Funds.

IV. Recommendations for an Information System for the Collection, Maintenance, Analysis and Use of Data for the Evaluation of Program Progress and Impact

The above sections of this Monitoring and Evaluation Plan have accomplished two purposes: delineated the Mission's strategy for attaining its strategic objective of increased private investment and trade; and defined valid performance indicators, identified data bases and recommended special studies to reliably track the various levels of performance indicators in order to verify USAID/Guatemala's attainment of increased private investment and trade by end-1997. In addition, performance indicator targets have been established for Trade and Investment Sector Program tracking at the strategic objective level for the 1993-97 period.

The next immediate requirement of this Monitoring and Evaluation Plan is to recommend a functional data management system. The reader should be aware that data management activities required for the effective monitoring and evaluation of the private investment and trade strategic objective will, by necessity, be significant but not formidable. The strategic objective indicators must be tracked and reported over a five-year time horizon. Program level indicators, although not expected to reflect impact until year two of implementation, must also be collected annually while project level indicators must be tracked and reported semi-annually to comply with the Mission's SARs requirements.

In order to respond effectively to its monitoring and evaluation responsibility, USAID/Guatemala must have a computerized data-based information system for the regular accrual and management of the T&I Sector Program's performance data at the three levels. Such

a system, together with a detailed management plan which assigns responsibilities for periodic collection and incorporation of both project and program level data, as well as data from other sources, into a data-based system, will provide Mission management with timely information for reporting and decision making.

A. Data Management Plan

As for assignment of responsibility for data management, it appears that the Private Investment and Trade Strategic Objective Team is the most appropriate working unit. Furthermore, such an arrangement would have a functional advantage in light of the fact that the various projects which contribute to the Private Investment and Trade strategic objective are located in more than one Mission office.

It is highly recommended that the Private Investment and Trade Strategic Objective Team (or similar entity designated by Mission management) adopt a clear plan for data collection and analysis. Such a plan should consist of the following elements:

- early adoption of the recommendations for the choice of strategic objective, program output and project level indicators relating to the Trade and Investment Sector Program contained in this report, taking into careful consideration ease of collection, measurement reliability and validity of the indicators chosen;
- a timely decision on the level of effort to be expended on the recommendations regarding special analyses/surveys to improve upon the measurement reliability and the validity of performance indicators relating to the Mission's interventions envisaged for policy and legal and regulatory reforms;
- assignment of specific responsibility for the management of the information collection, data flow and data analysis relating to each of the strategic objective, program output and project activity level indicators;
- allocation of individual project resources from the four ongoing projects to be incorporated into the Trade and Investment Sector Program to collect and analyze additional program performance information which will contribute to attainment of the private investment and trade strategic objective;
- provision for collection and analysis of information not currently being collected should be included in the T&I Sector Program's design, delegating to the government implementing agency, nongovernmental organizations and their contractors specific responsibility for this activity;
- provision for the periodic review of the M&E plan to ensure that the appropriate information is being collected for strategic objective, program output and project level indicators; and finally

a prompt decision as to the choice of a computerized data-based program performance information system, such as that to be recommended below, and provision for the training of staff for data entry and report generation.

B. Computerized Data-Based Information System

USAID/Guatemala's Trade and Investment Office has good reason to be wary of any recommendation for a computerized monitoring system. The sophisticated hardware configuration and customized software developed for the Private Enterprise Development (PED) Project represented a powerful tool designed so that the project's institutional participants could share a considerable body of information to be used for the promotion and expansion of Guatemalan's private sector. Unfortunately this monitoring system promised far more than it delivered and has largely fallen into disuse. The impression that one comes away with after discussing this elaborate monitoring system with representatives of the government entities and nongovernmental organizations participating in the PED project is that of an implicit reluctance to share information among themselves. Moreover, it appears that within both the public and private sector, the possession of reliable (i.e., scarce) information represents power and thus is to be shared with a very select few. Although only an impression, this suggests that the PED system is unlikely to be resuscitated by the Cámara Empresarial de Guatemala, the entity responsible for its operation and maintenance. This phenomenon further suggests the need to keep the T&I Sector Program's information system within USAID/Guatemala which has the leverage to solicit, *and acquire*, information from all quarters.

Fortunately for the Trade and Investment Sector Program, no such sophisticated hardware configuration and customized software is needed for the monitoring and evaluation of program performance indicators. The Mission currently has an extensive personal computer environment and many staff have developed considerable capability in the use of commercial off-the-shelf software which is readily available and is relatively easy to learn to use, especially given the type of computer training resources available through A.I.D./Washington or, more importantly, readily available locally.

One such "off-the-shelf" personal computer software application is DBase IV, an Ashton-Tate product, currently serving as the basis for the Mission's Highland Agricultural Development (HAD) Project Management Information System (MIS). The HAD MIS is an impressive monitoring and reporting system which is capable of storing and manipulating data and generating reports far in excess of the monitoring and evaluation requirements of the Trade and Investment Sector Program.

Given the existence of such a system already housed within USAID/Guatemala, its modification for use as the basis for the T&I Sector Program's MIS is a logical recommendation. Maria Martorell, HAD Project MIS specialist, has spent several hours assessing the monitoring needs of the T&I Sector Program, its various data requirements and reporting criteria and has indicated that the HAD MIS could be modified within a relatively short period of time (and at a relatively modest expense) to accommodate the specific data collection, analysis and reporting

needs of the T&I Sector Program.

It is highly recommended that the Private Investment and Trade Strategic Objective Team (or similar entity designated by Mission management to oversee the T&I Sector Program's monitoring and evaluation responsibilities) arrange for a demonstration of the HAD MIS to assess its powerful capabilities and offer suggestions for improvements in areas, for example, such as additions, deletions and/or rearrangements of the entry screen fields and specifications for report generation. At the same time, members of the Private Investment and Trade Strategic Objective Team could make a first-hand assessment of the post-modification training requirements.

Appendix A

List of Persons Contacted

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**Paul F. Novick
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**Maria Martorell
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USAID/Guatemala Highland Agricultural Development Project**

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**Landa Ketty de Siliezar
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Jorge Eduardo Cruz

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Gerente de Operaciones
Gremial de Exportadores de Productos No Tradicionales

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Juan Maldonado
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Comisión de Fabricantes de Muebles de Madera y Productos Forestales
Gremial de Exportadores de Productos No Tradicionales

Maria Regina Barillas
Coordinadora Ejecutiva
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Gremial de Exportadores de Productos No Tradicionales

Haroldo Zaldivar
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Cámara Empesarial de Guatemala

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USAID/Guatemala

Appendix B
Existing Non-tariff Barriers in Guatemala at End-June 1988

Products	Imports			Exports		
	License	Prohibitions	Status at End-1982	License	Prohibitions	Status at End-1982
1. Grain Grains - Yellow Corn - Rice - Sorghum - Soybeans - Soft Wheat - Wheat Flour	X X X X X	X	Tariff band with basic tariff to be raised from 6% to 20% GATT agreement to convert to maximum tariff of 20% within 3 years	X		Maintain
2. Oil Seeds - Cottonseed - Cottonseed Meal/Cakes - Sesame Seeds - Peanuts - Animal Feedstock	X		Remove	X X X X		Maintain Remove Remove Remove
3. Agricultural Inputs - Nitrate Fertilizers - Biological Veterinary Products	X	X	Maintain Maintain			
4. Agricultural Products - Sugar - Molasses - Kava Seeds - Cotton	X		Remove	X X X		Remove Remove Remove
5. Livestock Products - Cattle on the Hoof - Animal Fats - Animals/Animal Products/Subproducts - Hides Cured and Uncured - Hides and Leather - Fresh/Refrigerated/Frozen Meats - Powdered Milk	X X X X	X	Remove Remove	X X X X		Maintain Maintain Maintain Remove
6. Other Agricultural Products - Fruit Pulp - Fresh Apples/Pears/Grapes - Natural Rubber - Rubber Seeds - Synthetic Rubber - Seeds - Non-Iodine Salt - Many Roots - Fruits/Flowers from Mexico - Coffee - Cocoa - Flower Bulbs and Roots - Poultry Meat and Eggs - Shrimp	X X X X X	X X X X X	Remove Remove Remove Remove Remove Maintain Maintain Maintain Maintain Maintain Remove Maintain	X X		Remove Maintain Remove

7. Other Products						
- Tree Ferns					x	Maintain
- Orchids					x	Remove
- Dicotyledonous and						
Amaryllidaceae Plant Roots					x	Remove
- Blood Plasma					x	Maintain
- Turtles					x	Maintain
- Citron Tea					x	Remove
- Margarine and Vegetable Oil				x		Remove
- Forest Flowers				x		Maintain
- Puli Oxen				x		Remove
- Wood				x		Maintain
- Wicker				x		Remove
- Sand		x	Maintain			
- Domestic and Wild Animals		x	Maintain			
- Christmas Tree		x	Maintain			
- Bees		x	Maintain			
- Scrap Metal				x		Maintain
- Paper for Recycling				x		Maintain
- Cyclamates		x	Maintain		x	Maintain
- Weapons and Ammunition		x	Maintain			
- Lithium Phosphorous		x	Maintain			
- Firecrackers		x	Maintain			
- Camouflage Cloth	x		Maintain			
- Transmitters/Transmission Equipment	x		Maintain			
- Potassium Chloride	x		Maintain			
- Dynamite and Gunpowder	x		Maintain			
- Lead Tires		x	Maintain			
- Methuene and Opium		x	Maintain			

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Appendix C

Existing Classifications of Nontraditional Exports by the Banco de Guatemala End-June 1992 n=111

Aceites Esenciales

Aceite de Cardamomo
Aceite de Citronella
Aceite de Té de Limón
Otros Aceites Esenciales

Ajonjolí

Algodón, Derivados de

Semilla de Algodón
Aceite de Semilla de Algodón
Borra de Algodón
Mota de Algodón
Torta de Semilla de Algodón

Artículos de Vestuario

Artículos de Vesturio
Calzado
Manufacturas de Pieles
Ropa de Cama, Mesa, Tocador, Cocina y Baño
Sombreros, Praguas, Tapasoles, Otros

Artículos Típicos

Artículos Típicos de Cerámica
Artículos Típicos de Joyería
Artículos Típicos de Madera
Artículos Típicos de Materiales Textiles
Artículos Típicos Diversos

Cacao

Camarón, Pescado y Langosta

**Camarón y Langosta
Pescado y Moluscos**

Caucho Natural

Chicle y Chiquibul

**Flores, Plantas y Similares
Frutas y Sus Preparados**

**Fruta Fresca, Seca o Congelada
Manzana
Plátano
Bebidas, Líquidos Alcohólicos, Vinagre
Preparados de Frutas**

Madera y Sus Manufacturas

**Madera en Troza
Manufacturas de Madera**

Miel de Abeja

Miel de Purga (Melazas)

Minerales

Productos Alimenticios

**Arroz
Cereales Eiversos, Centeno, Cebada, Avena y Sorgo
Especias, Vainilla, Canela, Nuez Moscada, Anis, Cilantro
Huevos de Aves
Pimienta
Trigo
Alimentos Preparados para Animales
Aves de Corral Beneficiadas
Azúcares y Artículos de Confitería
Café Soluble y Molido
Grasas y Aceites Comestibles
Harinas de Cereales
Leche y Otros Productos Lácteos
Preparados a Base de Cereales
Preparados de Carne, Pescado, Crustáceos y Moluscos**

**Preparados de Legumbres y Hortalizas
Salsas, Condimentos y Sazonadores Compuestos**

Productos de Vidrio

Productos Metálicos

**Clavos y Tornillos
Herramientas, Artículos de Cuchillería y Cubiertos de Metales Comunes
Lámina y Alambre
Otras Manufacturas de Metales Comunes
Tubería y sus Accesorios
Aluminio y sus Manufacturas
Cobre y sus Manufacturas
Estaño y sus Manufacturas
Plomo y sus Manufacturas
Zinc y sus Manufacturas**

Productos Químicos

**Abono y Fertilizantes
Detergentes y Jabones
Glicerina Cruda
Insecticidas, Fungicidas y Desinfectantes
Pinturas, Barnices y Tintas
Pólvora, Explosivos y Artículos de Pirotecnia
Productos de Perfumería, Tocador y Cosméticos
Productos Diversos de la Industria Química
Productos Farmacéuticos
Combustibles y Aceites Minerales
Diesel
Gases Industriales
Gasolina
Gas Propano
Kerosene
Otros Derivados del Petróleo**

Tabaco en Rama y Manufacturas

**Tabaco en Rama o sin Elaborar
Tobaco Elaborado**

Tejidos, Hilos e Hilazas

Hilos e Hilazas
Materiales Textiles (tejidos o telas)

Verduras y Legumbres

Ajo
Cebolla
Frijol
Legumbres y Hortalizas
Maiz
Papa
Tomate
Yuca

Otros

Aparatos Electromecánicos de Uso Doméstico
Aparatos de Registro y Reproducción de Sonido
Aparatos Transmisores y Receptores
Armas y Miniciones
Baterías Eléctricas
Discos, Matrices y Cintas de Grabación
Instrumentos y Aparatos de Optica y Fotografía, Cinematografía, Relojería, Música
Joyería de Fantasía
Juguets, Juegos y Artículos de Recreo y Deportes
Manufacturas de Caucho
Manufacturas de Cuero
Manufacturas de Papel y Cartón
Manufacturas de Piedra, Cemento, Yeso
Manufacturas de Piedra y Metales Preciosos y Semipreciosos
Manufacturas Diversas
Máquinas
Materiales Plásticos y sus Manufacturals

APPENDIX D

Value Added Calculations in the Nontraditional Agricultural Subsector

EVALUACION ECONOMICA DE LA INFRAESTRUCTURA DE RIEGO, BAJO EL CONCEPTO DEL COSTO DE OPORTUNIDAD DE LA TIERRA; EL ANALISIS INCLUYE LA RELACION DE INGRESOS Y EGRESOS POR CULTIVO QUE INCLUYE LA SEPARACION DE LOS COSTOS DE ORIGEN INTERNO Y LOS ORIGEN EXTERNO, QUE PERMITE EVALUAR DESDE EL PUNTO DE VISTA ECONOMICO LA RAZONABILIDAD DE LA INVERSION. LOS CULTIVOS ANALIZADOS SON MAIZ COMO CULTIVO TRADICIONAL Y ARVEJA CHINA COMO CULTIVO SUSTITUTO.

MAIZ

VALOR BRUTO DE LA PRODUCCION 1780

CATEGORIA DE GAST JORNALES VALOR EN Q.

MANO DE OBRA 60 720

INSUMOS

LOCALES

SEMILLA 25

TRANSPORTE* 25

SUBTOTAL 50

IMPORTADOS

FERTILIZANTES 385

PLAGUICIDAS 126

TRANSPORTE 75

SUBTOTAL 586

TOTAL INSUMOS 636

COSTO TOTAL 1356

VALOR AGREGADO 1114

ARVEJA CHINA (POR CICLO, ES POSIBLE 3 CICLOS POR ANIO)

VALOR BRUTO DE PRODUCCION 34800

MANO DE OBRA 412 4872

INSUMOS

LOCALES

FERTILIZANTE ORGANICO 552

CAL DOLOMITICA 150

POSTES 312

RIEGO 337

MAQUILA 1920

SUBTOTAL 3271

IMPORTADOS

FERTILIZANTE QUIMICO 1380

PLAGUICIDAS 1786

EMPAQUE 3638

PITA 1786

MAQUILA 1920

SEMILLA 488

TRANSPORTE AEREO 10683

SUBTOTAL 21837

TOTAL INSUMOS 25108

COSTO TOTAL 26980

VALOR AGREGADO 9820

SI SE CONSIDERA QUE CON ALTA PROBABILIDAD DOS CICLOS DEL CULTIVO PUEDEN SER DESTINADOS A LA EXPORTACION EN FRESCO, ESTO IMPLICA QUE ANUALMENTE CADA MANZANA BAJO RIEGO SOLO CON EL CULTIVO DE ARVEJA CHINA DA UN VALOR AGREGADO A LA PRODUCCION DE Q 18384/ANI POR MANZANA, QUE AL COMPARARSE CON EL VALOR AGREGADO DE UNA M DE MAIZ POR ANIO QUE ES DE Q 1114 HAY UN VALOR AGREGADO ADICIONAL Q 18270/ANIO.

USAID/Guatemala							
Appendix E							
Calculations of the Strategic Objective Level Investment Performance Indicator Projections							
Variable	1986 (millions)	1987 (millions)	1988 (millions)	1989 (millions)	1990 (millions)	1991 (millions)	Average Annual Percentage Change 1986-90
1. Gross Domestic Product in Quetzales ¹	15,838.1	17,711.1	20,543.0	23,646.0	34,290.7	46,987.7	
2. Private Investment/GDP ²	0.081	0.097	0.099	0.089	0.101	0.085	
3. Change in Inventories/GDP ³	0.003	0.016	0.004	0	0.003	0.007	
4. Average Quetzal/Dollar Exchange Rate ⁴	1.8750	2.5000	2.6196	2.8161	4.4858	5.0269	
5. Private Investment $(((2+3)^{1/4})$	709.5	800.5	807.7	747.3	795.0	953.0	
6. Percentage Change $[(t-(t-1)/A)]$		0.12824	0.00898	-0.0748	0.0638	0.1988	0.065005761595

Projections of Private Investment ⁵ (millions of U.S. dollars)	1992	1993	1994	1995	1996	1997
	1,015.0	1,081.0	1,151.2	1,228.1	1,305.8	1,390.7

¹ Source: Banco de Guatemala

² Source: International Monetary Fund, Guatemala: Recent Economic Developments, June 1991.

³ Ibid.

⁴ Source: International Monetary Fund, International Financial Statistics, Item "rf", Period Average.

⁵ Calculated by applying the average annual percentage change in private investment during the 1986-91 period and increasing private investment in 1991 by that factor on an annual basis.

USAID/Guatemala								
Appendix F								
Calculations of the Strategic Objective Level Bilateral Trade Performance Indicator Projections								
Variable	1985 (US\$ thousands)	1986 (US\$ thousands)	1987 (US\$ thousands)	1988 (US\$ thousands)	1989 (US\$ thousands)	1990 (US\$ thousands)	1991 (US\$ thousands)	Average Annual Percentage Change 1985-90
1. Total United States Exports to Guatemala ¹	396,478	392,311	463,251	568,544	647,033	743,533	926,633	
2. Total United States Imports from Guatemala ²	399,600	614,700	487,300	432,800	608,280	790,900	892,280	
3. Total Bilateral Trade (1+2)	796,078	1,007,011	950,551	1,001,144	1,255,313	1,534,433	1,820,913	
4. Percentage Change $[(t - (t-1)/t)]$		0.26180	-0.05607	0.05323	0.25388	0.22235	0.18670	0.153647264223

Projections of Bilateral Trade ³ (thousands of U.S. dollars)	1992	1993	1994	1995	1996	1997
	2,100,691.3	2,423,456.8	2,795,814.3	3,225,383.5	3,720,954.8	4,292,669.4

¹ Source: National Trade Data Bank, U.S. Department of Commerce, Economics and Statistics Administration, Office of Business Analysis

² *ibid.*

³ Calculated by applying the average annual percentage change in bilateral trade during the 1985-91 period and increasing bilateral trade in 1991 by that factor on an annual basis through 1997.

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