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USM-60267

Guatemala

CENTRAL AMERICAN TRANSPORT STUDY

GUATEMALA

EXECUTIVE SUMMARY

This report evaluates transportation in Guatemala and recommends ways to reduce impediments to the export of non-traditional products (products other than the traditional bananas, coffee, sugar, and meat).

The full study consists of one regional report and six national reports (Belize, Guatemala, Honduras, El Salvador, Costa Rica, Panama). It was sponsored by the United States Agency for International Development (USAID) through the Regional Office for Central America and Panama (ROCAP) to help the USAID missions in the region understand the role of transportation in the export on non-traditional products. Reducing transportational limitations on these exports supports the Caribbean Basin Initiative (CBI) for a healthy regional economy based on greater and more varied exports to the United States and other nations.

Interviews and fact-gathering in Guatemala and in the United States showed that many factors, both physical and institutional, limit the transportation and export of non-traditional products.

Recommendations--Physical

1. Port Equipment for Santo Tomas
   Approximate cost: $3 million
   Approximate benefit: $28 million increased sales
   Time frame: by 1990

2. Review of Port Equipment Repair and Maintenance Facilities
   Approximate cost: $300,000 (study only)
   Approximate benefit: $5 million increased sales
   Time frame: study 1988
   implementation & procurement 1989-1994

3. Review of Road Repair and Maintenance
   Approximate cost: $500,000 (study only)
   Approximate benefit: $2.5 million increased sales
   Time frame: study 1988
   implementation & procurement 1989-1994

4. Container Freight Stations
   Approximate cost: $2.4 million
   Aproximate benefit: $10 million increased sales
   Time frame: location, design etc 1988
   construction 1989-1992

5. Refrigerated Warehouses
   Approximate cost: $400,000 (study only)
   Aproximate benefit: $4.5 million increased sales
   Time frame: study 1988/1989
   construction 1989-1993

Recommendations--Institutional

1. Contract Law Amendments
   Approximate cost: not known
   Approximate benefit: $13 million increased sale minimum per year
   Time frame: study 1988-1990
   immediate programs 1990-1995
   long-term programs 1990-on

2. Brokerage
   Approximate cost: included in above
   Approximate benefit: included in above
   Time frame: study 1988-1989
   implement 1989-1993

3. Overseas Representation
   Approximate cost: $500,000 per year
   Approximate benefit: $7 million increased sales
   Time frame: open office 1988/1989

4. Group Problem-Solving Assistance
   Approximate cost: $300,000 per year
   Approximate benefit: up to $4.5 million increased sales
   Time frame: start program 1988

5. Simplified Export Procedures
   Approximate cost: $250,000 per year (estimated)
   Approximate benefits: $7 million annual sales increase (target)
   Time frame: 1988 on

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6. Education Programs
   Approximate costs: $1 million total annual budget
   Approximate benefits: $1.5 million annual sales increase
   Time frame: 1988 on

7. Increase Number of Customs Inspectors at US Ports
   Approximate cost: $170,000 per year
   Approximate benefit: $0.85 million increased sales per year
   Time frame: 1987/88

4.

GUATEMALA

CHAPTER 1

INTRODUCTION

GENERAL PURPOSE

The general purpose of the Central America Regional Transport Study is to provide information and recommendations that will assist the Agency for International Development (AID) in the planning and implementation of a range of bilateral and regional transportation interventions intended to expand intra- and extra-regional exports of non-traditional products.

Prior interventions by the Regional Office for Central America and Panama (ROCAP) and the Central American bilateral USAIDs have revealed that transportation constraints limit the effectiveness of AID policies designed to assist the private non-traditional sector in Belize, Costa Rica, Guatemala, Honduras, Panama and El Salvador.

This Report sets forth a series of recommended transport sector improvements for Guatemala that are designed to accelerate the flow of non-traditional exports from the nation. Included with this report is a map of the region published by the National Geographic Society.

BACKGROUND

The political and legislative background for planned AID

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regional and bilateral programs in Central America is the 1984 enactment of the Caribbean Basin Initiative (CBI) and the follow up Central American Initiative (CAI).

Legislators, policy formulators and administrators and responsible observers--in both the public and private sectors--in the United States and in Central America have recognized that the recent economic decline in the region has deep roots and the resulting political, economic and financial disequilibrium is not likely to be self-correcting. A major surge in the primary commodity price levels so critical to the current economic health of the region is not a near term probability. Indeed, the December 1986 decision by the United States to reduce its sugar imports from Latin America and the Caribbean by 41% in 1987 will put downward pressure on world sugar prices. A comparable decision on meat imports from the region will also have a destabilizing impact on world prices.

Regional protectionism appears to be on the rise with the obvious negative impact on trade between the individual Central American nations. Political tensions--and the widespread, often exaggerated, perception of these tensions--serve to limit investor confidence in the countries of the region and restrain critical capital inflows.

The CBI and CAI programs are designed to stimulate investment and trade in the several Central American nations. The arch of the CBI and CAI programs is easier access to the US market. In order to add to the concrete value of this improved access, an increased program of foreign economic assistance is being undertaken by ROCAP and the Central American bilateral USAIDs.

This study is intended to set forth a range of transport improvements that will add to the efficiency of US agency efforts to contribute to economic stabilization and expanded trade via a well planned foreign assistance program for the region and the

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several individual countries.

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CHAPTER 2

STUDY METHODOLOGY

GENERAL APPROACH

The array of non-traditional products may be considered as--almost--open ended. Therefore, the analytical approach must be systematic, comprehensive and scientific. A less than comprehensive approach may neglect or overlook some non-traditional activities that are promising.

Throughout this investigation trade data has been analyzed on a volume and a value basis. Transport tariffs are customarily expressed in terms of tonnages moved, and shipment weights indicate the burden that cargo places on transport infrastructure and equipment. Transport capacity and design parameters are customarily stated in physical rather than financial terms. Value data are critical to measuring the transport cost burden facing exporters as well as the income generating effect of higher export volumes.

Another element in the general approach to this investigation was initial acceptance of the distinction between traditional and non-tranditional products as set forth in the Terms of Reference. That document identifies traditional exports as coffee, sugar, beef, cotton and bananas. This initial acceptance of the distinction between product types was subject to modification in individual countries if compelling reasons for such modifications existed. In the case of Guatemala the basic definition was accepted, but expanded to include molasses as part of sugar and to

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include both live cattle and frozen meat under the category of beef.

The distinction between traditional and non-traditional activity was seen as a structural rather than a semantic matter. Traditional exports are subject to world commodity agreements as to prices and market shares. They have been, historically, the major sources of income and employment in the region. The recent growth of preferential trade arrangements in concert with a per capita saturation of consumer demand for traditional products has led to price instability in free markets and a demand pattern marked by scant growth.

Accordingly, traditional economic activity and exports have proved to be an unreliable foundation for the economies of the nations in the region. A substantial shift to non-traditional activity requires social and cultural adjustments, capital investments, technical training, and major marketing and promotional efforts. This shift involves a fundamental structural adjustment within the individual economies. By definition, structural adjustments take place over long periods of time. This study is viewed as one element in a package designed to assist the economies of the region along this path of structural change.

A major portion of this assignment involved field surveys and documentation collection. The field interviews concentrated on Central American producers and exporters of non-traditional products and sought to determine their views about transport impediments and problems that limit their exports. However, every transport complaint obtained in these surveys was not automatically and uncritically accepted as definitive. Wherever appropriate and possible, the merit of the complaint raised by exporters was discussed with officials of the transport mode that users may have identified as a problem area. It was invariably necessary to analyze, evaluate and interpret the information generated in the survey to arrive at the real or underlying

problem as opposed to the perceived impediment.

Finally, the proposed country transport recommendations were--where feasible--discussed with responsible government officials. This review was designed to ensure that AID would not attempt to implement a recommended transport initiative in the face of government indifference.

DETAIL OF ANALYTICAL METHODOLOGY

The basic document for defining and quantifying the commodities which move in intra- or extra-regional trade is the Standard International Trade Classification, Revision 3 prepared by the Department of International Economic and Social Affairs of the United Nations, and accepted by all member countries.

The SITC lists all the items which enter into world trade. The SITC format is essential if the studies of the several countries are to be analytically comparable. Further, a soundly conceived regional report must be based on country investigations that are statistically and conceptually consistent.

The SITC data are set forth on several levels of detail. On the most aggregative--or single digit basis--there are ten categories of traded goods.

These categories are:

SITC Trade Categories, Single Digit Basis

Section #	Commodity Description
0	Food and Live Animals
1	Beverages and Tobacco
2	Crude Materials, inedible, except fuels
3	Mineral fuels, lubricants and related materials
4	Animal and vegetable, oils, fats and waxes
5	Chemicals and related products, nes
6	Manufactured goods classified chiefly by material
7	Machinery and Transport Equipment
8	Miscellaneous Manufactured articles
9	Commodities and Transactions not classified elsewhere in SITC

Source: Standard International Trade Classification, Revision 3, United Nations

The single digit categories--called sections--are further subdivided into divisions (67); groups (261); subgroups (1,033); and headings (3,118).

The level of detail used in this study was established by considerations of data availability and analytical requirements. In this study, for example, three, four and five digit levels of detail were used in order to meet analytical needs.

The current International Trade Statistics Yearbook--the only document which sets forth trade data for every country on a comparable, detailed SITC basis--was reviewed. The latest Yearbook published was for 1984. The field work in the several countries made it possible to obtain the most recent trade data and to verify or modify the information presented in the 1984 International Trade Statistics Yearbook.

As noted above, the definition of traditional products set forth in the Terms of Reference was deemed appropriate for Guatemala. When these traditional products were removed from the

detailed listing of exports shown for Guatemala, the remaining data indicate the export of non-traditional products.

As regards existing exports of non-traditional items, the sensitivity of these exports to the costs of transport are critical considerations. International studies suggest that, in general, transport costs average somewhat more that 20% of the factory value of export shipments. Transport cost percentages above 20% tend to identify industries of high transport sensitivity. Lower percentages indicate industries of lower than average transport sensitivity. Clearly, industries of high transport sensitivity are likely to be stimulated more than low transport industries by a given reduction of transport costs.

The transport sensitivity of major non-traditional exports are indicated on several bases:

1. international data, on a commodity basis, are drawn on to indicate the transport sensitivity of the various non-traditional export categories. These international data include the 1947 US Input-Output Study, the 1968 UK Census of Manufacturing, the 1969 UK Census of the Wholesale Trades, the 1982 US Census of Transportation, a study in Bolivia in 1982 presented to the 1983 Annual Convention of the Transportation Research Board in Washington, D.C., and a 1982 investigation by the International Monetary Fund on the freight and insurance costs incurred in foreign trade.

2. commodity values per ton are calculated. In general, the higher the value per ton the less likely that the product is transport intensive.

The bulk of the field survey activity involved discussions with the major enterprises in the area of existing non-traditional exports. Directories, industry associations, USAID private sector

staff and prior experience in the area were all drawn on to identify the firms which were significant participants in non-traditional export activity.

The transport problems, restraints or impediments generated by these interviews were then evaluated to determine if they could serve as the basis for a recommended transport initiative.

Before making a final decision about recommending transport improvements to regional and bilateral AID officials, efforts were made to assure that the government of Guatemala was supportive of such recommendations.

METRICATION

It should be noted that the metric system of weights and measures has been adopted for this series of reports. To clarify a table the expression "metric tons" may be encountered from time to time; this does not however imply that where the word "metric" has been omitted that the ton is not 1,000 kg: throughout this report, ton and metric ton are equivalent.

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CHAPTER 3

GENERAL

Geography and Climate

Guatemala is one of the largest of the Central American nations (108,889 square kilometers). On the north and west, it borders Mexico. It has a frontier with Belize in the north east and with El Salvador and Honduras to the south and south east. The country has both Pacific (320m) and Atlantic (112m) coastlines.

Despite the much greater length of the Pacific coast, however, the only navigable rivers are those flowing eastward into the Gulf of Honduras on the Atlantic coast. Partly in consequence, ports developed first on the Atlantic coast, with only the recently established Puerto Quetzal counting as a major Pacific Coast port. The greater reliance on Atlantic Coast ports is, however, common to the development pattern of all nations in the region.

The nation has three major topographical divisions. There is a narrow tropical coastal lowland along the Pacific; the cooler central highlands; and the northern lowland plains of Petén. The country lies within a volcanic belt with numerous volcanoes in the south. A major earthquake occurred in 1976 and destroyed many sections of Guatemala City.

The climatic zones reflect the major topographical features.

The lowlands are tropical with average temperatures around 28°C. The average is about 20°C in the temperate areas of the highlands. In Guatemala City, the average daily temperature in the hottest month, May, ranges between 16°-29°C. January is the coldest month with daily ranges of 12°-23°C. Rainfall in the capital varies considerably. It is lowest in February (3 mm) and highest in June (274 mm). On average, annual rainfall in the lowlands is four times that in the capital.

Highland cities like Guatemala City have attracted population because of this temperate, though sometimes rainy, climate. Overall, Guatemala's geography and climate have given it the settlement pattern typical of Central American nations, with population and many industries tending to cluster in the temperate highlands, at a distance from the coastal ports.

A map is enclosed showing the location of the principal agricultural and manufacturing activites in Guatemala.

Population

Current population is estimated to be some 8 million. The most densely populated areas are the central highlands. The least populated area is El Petén province in the north. Some 68% of the nation lives in rural areas. Many of them are outside the cash economy and outside the dominant social and cultural patterns. Some 56% of the population is literate, though in some localities the population in totally illiterate.

Guatemala City has a population of almost 2 million and is the largest city. Quetzaltenango--200 kilometers west of the capital--has a population of some 95,000 and is the second largest city. About half the population is Indian. Most of the rest is of mixed Spanish/Indian blood known as "ladinos." The west and north tend to be inhabited by Indians while the ladinos are

concentrated in the south and east.

Population growth is high, with an average annual gain of 2.9% since 1970. Primarily as a result of declines in infant mortality, life expectancy at birth has risen to about 59 years.

AGGREGATE ECONOMIC ACTIVITY

Gross Domestic Product

Gross Domestic Product is the best single indicator of the economic health of the nation. Partly as a result of downward pressure on the prices of traditional products, there has been no significant growth in the Guatemalan economy since 1979. As the table indicates, the estimate of real Gross Domestic Product (GDP) for 1987 is below the level of national output in 1981:

Gross Domestic Product
(millions of 1982 Quetzales)

	1980	1981	1982	1983	1984	1985 (e)	1986 (e)	1987 (e)
Nominal GDP	7,879	8,608	8,728	9,035	9,397			
Real GDP (millions of 1982 Quetzals)	7,879	7,932	7,652	7,446	7,475	7,475	7,475	7,525
Percent Change in Real GDP	+.67	+.12	-5.58	+.62	0	0	+.67	

Source: Bank of Guatemala; estimates for 1985, 1986, and 1987 by PBI based on discussions with Bank of Guatemala officials.

Gross Domestic Product, by Economic Sectors. The following table sets forth the industrial origin of GDP in 1984, as expressed in percentage of the total.

Industrial Origin of GDP

Activity	% of Total	
	1980	1984
Agriculture	24.7	25.7
Mining	.5	.3
Manufacturing	16.6	15.8
Electr, Gas, Water	1.7	1.8
Construction	3.2	1.8
Commerce	27.0	26.1
Trans & Commun	7.0	6.9
Financial services	7.9	3.7
Other Services	6.1	11.5
Public Administration	5.3	6.4
	100.0	100.0

Source: Bank of Guatemala

Central Role of Agriculture. The table does not fully demonstrate the role of agriculture as the mainstay of the economy. While agriculture provides about a quarter of GDP, it accounts for as much as half the employment covered by Social Security. The manufacturing sector accounts for some 16% of GDP. However, its primary activity is processing farm products. Food, drink, and tobacco dominate the industrial sector.

In the initial stages of expanding the non-traditional sector in Guatemala the emphasis will likely be on agriculture-related activities. The structural effort to build significant non-agricultural processing and manufacturing activities will be a long, ongoing process.

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Inflation

Guatemala had relatively stable price levels during the early years of the 1980s. The exchange rate of 1 Quetzal per US was firm and accounted for the fact that there was negligible inflation in these years. The level of consumer and wholesale prices in 1983 was in fact below the level of 1981. Inflationary pressures were released in 1984 when the government legalized the parallel currency market. The situation worsened in 1985 as an increasing portion of foreign transactions were conducted at the parallel rate, which approached 4 Quetzales per US dollar.

The table below shows the trend of Consumer Prices and Wholesale Prices over the span 1980 through 1985.

Price Trends, 1980-1985

	1980	1981	1982	1983	1984	1985
Consumer Price (1980=100)	100.0	111.4	111.8	116.8	120.8	143.4
Wholesale Price (1980=100)	100.0	111.7	105.3	106.2	112.2	138.3

Source: IMF, International Financial Statistics, November 1986

The National Institute of Statistics has estimated that the consumer price index has risen more than 20% between December 1985 and June 1986. The continued deficit in the national budget, contracting markets for major export items, the erosion of a once thriving tourist industry, and labor pressure for wage advances all contribute to upward pressure on the general price level.

MAJOR ECONOMIC SECTORS

Agriculture

Unfavorable world markets for traditional export crops has exerted downward pressure on agricultural production in Guatemala since 1982. The major agricultural products are coffee, cotton, bananas, beef, sugar, and cardamon. These tend to be produced on a large scale, plantation basis and are destined for export markets. The crops produced as local staples are maize, beans, and rice. Most individual farmers are engaged in growing these staples for domestic consumption.

The table below shows agricultural production for selected crops over the period 1980 through 1984.

Production, Selected Crops, 1980-1984
(000 tons)

	1980	1981	1982	1983	1984
Coffee	163	173	159	153	140
Bananas	650	650	655	675	680
Cotton	156	114	71	48	59
Sugar	397	444	550	563	533
Dry Beans	80	82	84	89	90
Maize	902	997	1,100	1,046	1,038
Sorghum	78	86	77	100	82
Beef	79	95	75	63	64

Source: UN, Statistical Yearbook, 1985

Since 1984 agricultural output has shown some downward drift.

Forestry, Fishing, and Animal Herds

Forestry. Forest resources are rich and abundant, but only 30% of the timber areas are accessible. Conifers account for some

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20% of the forested area. The most valuable woods are mahogany and cedar. Commercial exploitation is limited by the absence of a Government policy supporting timber harvesting and reforestation.

Fishing. Offshore and freshwater fish resources are ample. However, exploitation of shrimp resources are lagging as stocks near the shore have been too intensively harvested. Fish and shellfish supplies in deeper water still constitute a major export potential.

Animal Herds. The total animal herd is on the rise as a result of a major FAO development program. At present there are some 2.6 million cattle, 660,000 sheep, 810,000 pigs, and some 100,000 horses. Exports of live animals were on a modest uptrend in the early 1980s. As a result of the recent rise in regional protectionism the level of animal exports in 1985 was only 2,000 metric tons, barely 15% of the 1981 animal export volume.

Mining and Energy

Less than one third of 1% of Guatemalan GDP is accounted for by the mining sector. While there is a range of minerals, production is low. Nickel exploitation--customarily the major mineral export--is held back by low world prices. Other mineral products include copper, iron, gold, silver, lead, zinc and marble. Output is insignificant and there are no exports.

Barely 50% of the nation's energy requirements are supplied by local petroleum and hydroelectric resources. Imported crude and petroleum products are needed to bring a balance between total energy demand and total energy supply. Recent major plans to expand hydroelectric capacity have been plagued with cost overruns and construction delays.

Manufacturing

As noted above, agricultural processing dominates manufacturing activities. The major non-agricultural elements in the manufacturing sector are printing and publishing and textiles and clothing. Non-agricultural manufacturing primarily serves local markets. Exports from this sector are mainly to the other nations of the region.

In the 1960s the Central American Common Market led to the establishment of a tire, steel and petrochemical facility in Guatemala. Building materials become major products as reconstruction began after the 1976 earthquake. In the 1980s regional economic and political tensions caused a decline in Guatemala's industrial output.

Foreign Trade

Guatemala's foreign trade balance was consistently favorable through most of the decade of the 1970's. Since 1979 the balance of payments has usually been in deficit. The deficit has been controlled by strict government efforts to restrain imports. However, depressed commodity prices and flat demand have served to limit exports.

The nation's major exports--all traditional products--are coffee, sugar, bananas and cotton. Major imports are transportation equipment, industrial machinery, chemical products, petroleum products and non-durable consumer goods.

The table shows the nation's trade balance for the span 1980 through 1984.

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Balance of Trade
(millions of Quetzals)

	1980	1981	1982	1983	1984
Exports fob	1,557.1	1,253.6	1,167.5	1,189.3	1,160.0
Imports cif	-1,598.2	-1,673.5	-1,388.0	-1,126.1	-1,277.4
Balance	-41.1	-419.9	-220.5	63.2	-117.4

Source: International Monetary Fund

The major role of the US as the destination for Guatemalan exports and the country of origin for imports is shown in this table:

Guatemala's Main Trading Partners
(% of total value)

Exports	1980	1983	Imports	1980	1983
US	27.3	30.1	US	31.1	31.6
El Salvador	17.0	17.2	Japan	5.2	4.9
W Germany	6.9	3.9	W Germany	5.6	4.9
Nicaragua	4.0	4.0	El Salvador	8.5	9.1
Costa Rica	4.6	4.6	Mexico	7.4	...

Source: Bank of Guatemala

For purposes of this study--as noted in the section on methodology--one research thrust was to analyze export trade volumes on an SITC basis, as set forth in the latest UN International Trade Statistics Yearbook.

Export Profile of Guatemala

The next table sets forth an export profile of Guatemala based on the lastest edition (1984) of the UN International Trade Statistics Yearbook. The latest Guatemala trade statistics shown in the Yearbook are for 1981.

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Clearly, trade data for 1981 are unlikely to be representative of current trade flows. But 1981 remains the most recent year for which rigorous SITC statistics are available for Guatemala. The field work in Central America has generated more current--if less rigorous--trade statistics. The combination of 1981 data plus more recent information displays recent trends in Guatemala's trade and provides a firm foundation for the field survey efforts.

The table employs selected SITC classifications to show the traditional and non-traditional exports which exceeded 10,000 tons. There are, of course, several hundred commodities involved in the foreign commerce of Guatemala. Additionally, the table presents the value per ton of the individual products based on data in the UN Yearbook on trade data as well as an indication of the transport sensitivity of each product.

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Guatemala Export Profile, 1981 Trade Data

1981	TOTAL EXPORTS	1,349,965 tons
	Traditional (T) Exports	982,395 tons
	Non-Traditional (NT) Exports	367,570 tons

List of Export Items above 10,000 tons (18 items)

			Metric Tons	Value per ton (US $)	Transport Sensitivity
1	T	Bananas	400,015	146	High
2	T	Raw Beets, Cane Sugar	195,569	430	High
3	T	Molasses	160,140	90	High
4	T	Coffee	103,261	2,607	Low
5	T	Cotton	97,886	1,138	Low
6	NT	Other Fresh Vegetables	58,386	290	High
7	NT	Chem Nitrog Fertilizers	56,239	80	High
8	NT	Glass Bottles	28,015	600	Average
9	NT	Potatoes, Excluding Sweet	23,345	237	High
10	NT	Oil Seeds, Nuts, Kernels	21,545	716	Average
11	NT	Other Fresh Fruits	17,931	257	High
12	T	Meat,Fresh,Chilled,Froz	15,088	2,075	Average
13	NT	Soaps, Cleaning Prepar	14,454	1,020	Low
14	NT	Pesticides, Disinfect	12,952	2,161	High
15	NT	Animal Feeding Stuff	12,091	270	High
16	NT	Paper and Paperboard	11,802	1,132	Low
17	T	Live Animals	10,136	1,315	High
18	NT	Lumber Shaped Conifers	10,317	272	High
		TOTAL METRIC TONS	1,249,469		

Source: Columns (1) and (2)--UN Yearbook of International Trade Statistics; Column (3) International data listed previously in this report.

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This table lists 7 traditional exports and 11 non-traditional exports for a total export volume in 1981 of almost 1,250,000 tons. This total constitutes some 93% of export tonnage in 1981. The more than 980,000 tons of traditional exports itemized account for 73% of national exports. The enumerated non-traditional exports in the table total almost 270,000 tons. These eleven commodities make up some three quarters of total Guatemalan non-traditional exports.

Trade data obtained in Guatemala for the period 1982 through 1985 were obtained and analyzed to ensure that the universal, detailed SITC data set forth in the UN Yearbook were valid and representative of current conditions. Total exports in 1985 were slightly below the 1981 level while the non-traditional component in 1985 was approximately the same as the 1981 level.

Selected 1985 trade statistics generated by the Bank of Guatemala follow:

Major Guatemalan Exports, by Volume, 1985
(Exports with Volumes of 10,000 tons or more)

Bananas	364,987 MT
Sugar, Related Products	283,277
Coffee	174,805
Cotton Lint	51,737
Meats	10,083
Vegetables and Products	104,995
Fruits and Products	32,999
Oilseeds and Products	36,960
Cut Flowers and Plants	15,773
Lumber and Mill Products	13,735

Source: Bank of Guatemala

The major export items shown in the table are generally consistent with the product listing shown for 1981. It does suggest, however, that Cut Flowers and Plants should be added to the list of non-traditional exports which were to serve as the basis for planning the field survey portion of the study. This statistical source, however, had its limitations: other exports

in the amount of 375,419 tons were shown without any disaggregation.

It was, therefore, necessary to obtain from the Foreign Exchange Department of the Bank of Guatemala a March 1986 tabulation of exports that listed some 200 items whose export volumes went as low as 100 kg a year. Careful review of that data confirmed that the non-traditional exports already listed in for 1981 and supplemented by the addition of Cut Flowers and Plants was an analytically sound foundation upon which to base the field surveys and investigations.

GUATEMALA

CHAPTER 4

TRANSPORT INFRASTRUCTURE

The transport infrastructure of the nation includes road, port, air transport, and railroad facilities. Roads to the Atlantic Coast have eliminated nearly all remnants of river navigation.

Roads

There are some 11,390 kilometers of roads in the nation, and about 3,100 kilometers are paved. As part of the study, a major part of the road system was driven over, including nearly all the major links. Guatemalan highway authorities estimate that less than 2% of the paved roads are in good condition. More than 60% are described as being in bad condition while the balance is characterized as average. More than two thirds of the dirt roads are described as being in bad condition.

The Pan American, the Inter-Ocean, and Pacific Highways are the backbone of the system. The Pan American Highway segment consists of some 1,500 km and extends from the Mexican border to the frontier with El Salvador, passing through the Central Highlands and Guatemala City. The Inter-Ocean segment (392 km) passes through Guatemala City and connects the Atlantic ports with San José on the Pacific. The Pacific Highway (270 km) crosses the Pacific coastal plains and links Chiquimulilla, Esquintla, Mazatenango and Coatepeque. Badly deteriorated roads link El

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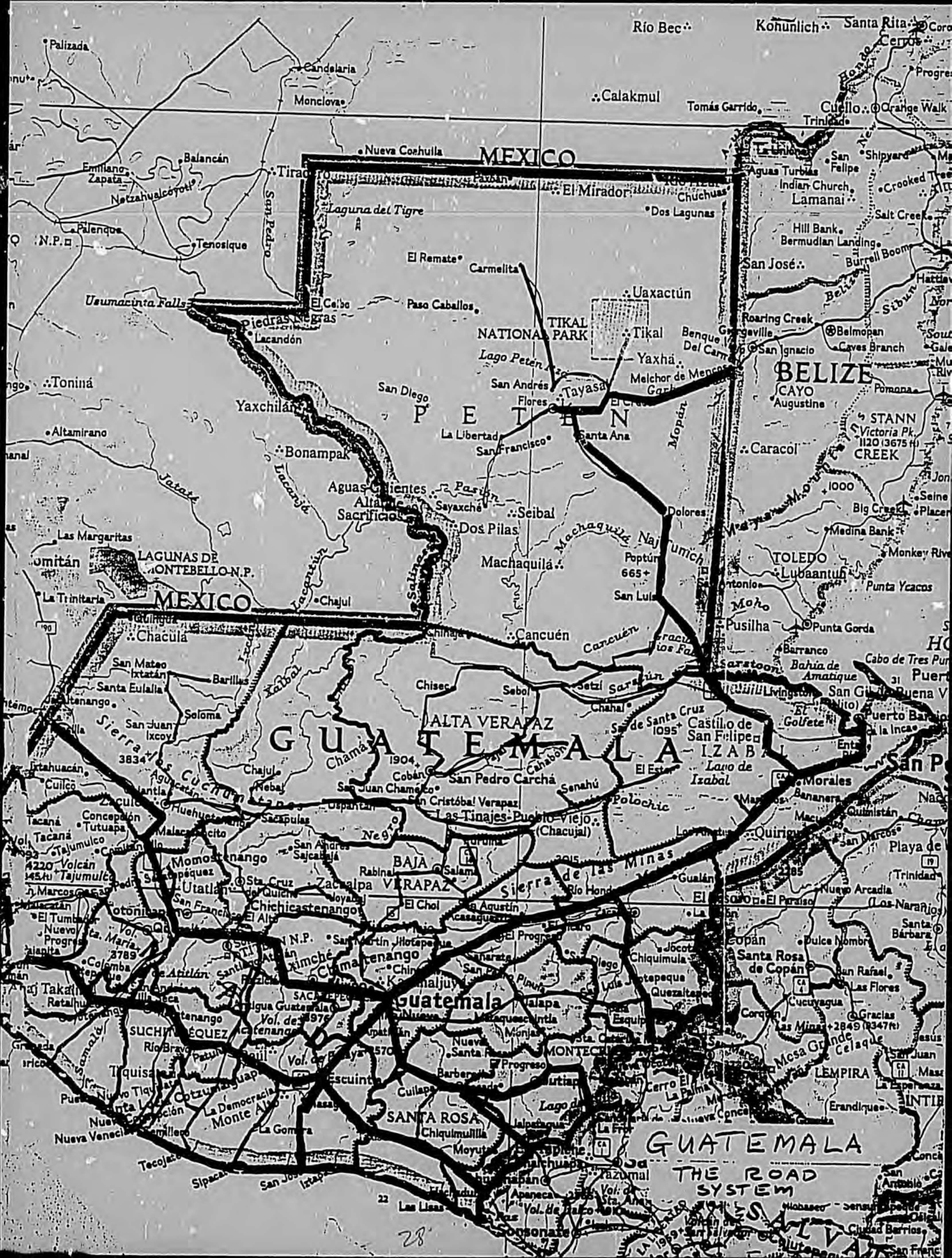

GUATEMALA
THE ROAD SYSTEM
MEXICO
GUATEMALA
BELIZE
PETEN
ALTA VERAPAZ
BAJA VERAPAZ
IZABAL
TIKAL NATIONAL PARK
Río Bec
Kohunlich
Santa Rita
Cerros
Palizada
Candelaria
Calakmul
Monclova
Tomás Garrido
Cuello
Orange Walk
Trinidad
Nueva Coahuila
Balancán
Emiliano Zapata
Netzahualcóyotl
Tiradero
El Mirador
Chuchuas
Dos Lagunas
Laguna del Tigre
San Pedro
Palenque
Tenosique
El Remate
Carmelita
Lamanai
Indian Church
Salt Creek
Hill Bank
Bermudian Landing
Burrell Boom
San José
Usumacinta Falls
El Ceibo
Paso Caballos
Uaxactún
Piedras Negras
Lacandón
Tikal
Yaxha
Benque Del Carmen
San Ignacio
Belmopan
Caves Branch
Roaring Creek
Lago Petén Itzá
San Andrés
Tayasal
Flores
Melchor de Mencos
CAYO
Augustine
Pomona
Toniná
San Diego
Yaxchilán
La Libertad
San Francisco
Santa Ana
Mopán
Caracol
STANN CREEK
Victoria Pk.
Altamirano
Bonampak
Lacanjá
Jataté
Aguas Calientes
Altar de Sacrificios
Sayaxché
Pasión
Seibal
Dos Pilas
Machaquilá
Dolores
Big Creek
Placencia
Medina Bank
Las Margaritas
Comitán
LAGUNAS DE MONTEBELLO N.P.
Poptún
San Luis
TOLEDO
Lubaantun
Punta Ycacos
Monkey River
La Trinitaria
Chajul
Salinas
Moho
Pusilha
Punta Gorda
Chacula
Chinajá
Cancuén
Barranco
Sarstoon
Bahía de Amatique
Cabo de Tres Puntas
Livingston
San Mateo Ixtatán
Barillas
Santa Eulalia
Xalbal
Chisec
Sebol
Setzi
Chahal
Soloma
San Juan Ixcoy
Sierra de los Cuchumatanes
Chamá
Cobán
San Pedro Carchá
Castillo de San Felipe
Lago de Izabal
El Estor
Puerto Barrios
Morales
Cuilco
Huehuetenango
Nebaj
San Juan Chamelco
San Cristóbal Verapaz
Senahú
Polochic
Tacaná
Tutuapa
Sacapulas
Uspantán
Las Tinajas
Pueblo Viejo
(Chacujal)
Quiriguá
Playa de
Tajumulco
Momostenango
Negro
Sierra de las Minas
Rabinal
Salamá
Gualán
Utatlán
Sta. Cruz del Quiché
Zacualpa
Joyabaj
Río Hondo
San Marcos
Chichicastenango
El Chol
San Agustín Acasaguastlán
El Paraíso
Nueva Arcadia
Santa María
Quetzaltenango
Totonicapán
Sololá
Iximché
San Martín Jilotepeque
Chimaltenango
El Progreso
Chiquimula
Copán
Santa Rosa de Copán
Santa Bárbara
Dulce Nombre
San Rafael
Las Flores
Takalik
Retalhuleu
Mazatenango
Atitlán
Antigua Guatemala
Guatemala
Kaminaljuyú
SACATEPEQUEZ
Jalapa
Quezaltepeque
Esquipulas
Cucuyagua
Corquín
Gracias
Las Minas
SUCHITEPEQUEZ
Río Bravo
Samalá
Tiquisate
Escuintla
Vol. de Pacaya
Mataquescuintla
Monjas
Santa Rosa
Progreso
MONTECRISTO
Mesa Grande
Celaque
LEMPIRA
Cotzumalguapa
La Democracia
Monte Alto
La Gomera
Cuilapa
Barberena
SANTA ROSA
Chiquimulilla
Lago de Güija
Cerro El Pital
Erandique
Nueva Venecia
Tecojate
Sipacate
San José
Iztapa
Moyuta
Jutiapa
Ahuachapán
Tazumal
Las Lisas
Apaneca
Sonsonate
Ciudad Barrios

Petén with the rest of the nation and with Belize.

The major national road artery, clearly, is the section of the Inter-Ocean Highway linking Guatemala City with the port at Santo Tomás. There are no major problems arising from the original design standards: grades, sight lines and road width do not pose difficulties. Neglected maintenance, however, is a major impediment. For the 100 kilometer segment before Santo Tomás, only one half of the road width is usable. Traffic in both directions tries to avoid the rutted and deteriorated side. This means two way traffic is vitrually eliminated. Passing slower vehicles is also difficult and dangerous.

The road to San José, particularly the section between Escuintla and the Pacific, also has a level of foregone maintenance that severely restricts travel speeds.

Some of the roads in the immediate area of the capital are new and are, therefore, in good condition. The roads more distant from the major metropolitan area are less satisfactory and show the effects of foregone maintenance.

In 1986 road maintenance budget was estimated to total about Q 3.5 million. More than 870 km of road were involved in these maintenance activities. A separate rural road program resulted in the construction of 400 km of roads and an estimated maintenance budget of more than Q 2 million in 1986. Most of these roads appear to be in the southwestern section of the nation, the agricultural area with considerable potential.

The 1986 motor vehicle fleet in Guatemala was estimated at 190,000 vehicles. The table below shows the vehicle types which make up this total.

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Composition of Motor Vehicle Fleet, 1986

Taxis	2,964
Automobiles	78,052
Jeeps/small trucks	13,297
Pick-ups	53,484
Panel trucks	2,889
Panel autos	8,661
Trucks	16,763
Microbuses	7,229
Buses	5,704
Other Cargo	1,992
Not identified	213
	191,248

Source: UN Advisor to the Ministry of Energy and Mines

The trucking industry is composed of two distinct classes of firms. The larger, better financed enterprises dominate the hauls to the ports and the intra-regional flows. Their contracts with shipping lines and with exporters and importers permit them to keep their fleets in good operating condition. The other segment of the industry is in constant turnover. It consists of small operators who try to survive on a price rather than a regular, quality of service basis. One major accident or the impact of neglected vehicle maintenance can put then out of business. Rarely is it possible for a small operator to enter the ranks of the secure, established firms.

Rail

Guatemala has a narrow gauge rail network of some 800 km. The principal line connects the Atlantic and Pacific coasts. The railroad also runs to the Mexican and Salvadoran borders.

At the time of the study almost 400,000 metric tons a year was moved by rail. The principal movements were bananas to the Atlantic for shipment to overseas markets. Inbound movements of

wheat and petroleum products were other significant cargo routings. There was some infrequent and low level of passenger operations.

The government was in the process of deciding on the costs and benefits that might justify allocating resources for a major railroad rehabilitation and modernization. In 1986, the very limited operations of the railway require a government subsidy of the order of Q 3-4 million per year.

Those in Guatemala who did not favor railroad rehabilitation and modernization claimed that efforts to revive rail service would be enormously expensive. Railroad proponents claimed that a basic rail infrastructure was in place and that modernization would bring benefits in transport costs, particularly the foreign exchange component of such costs. Major foreign financial assistance will be required to implement a railroad rehabilitation effort.

Ports

The major ports are Puerto Barrios and Santo Tomás de Castilla on the Atlantic and the new Pacific facility at Puerto Quetzal. All ports are served by rail and road.

Puerto Barrios--formerly the major port of the country--is now limited almost exclusively to sugar exports and wheat imports.

Santo Tomás is the most modern and principal port of the nation. The port is an autonomous body and not accountable to the Ministry of Transport.

The port is in the form of a marginal wharf, with a total berth length of 1,000 meters, though this total is classified as being 915 meters of general cargo and container berths, and space

for six Ro-Ro operations. The depth of water alongside is given as about 10 meters--a less than adequate depth for modern operations. There are two cranes in the port (one 30 ton and one 50 ton) and two straddle carriers (35 ton), though all of these were reported as being in a state of frequent disrepair and requiring ship's gear to load and unload cargo. The port also had 7 front handlers, 12 yard tractors, and 83 fork lift trucks.

There were no electrical connections in the port for reefer containers, though there were facilities for use of propane coolant. There is storage space in the port for the equivalent of 5,636 containers of 20 ft, and covered storage of 6,970 square meters.

In 1985 the port of Santo Tomás handled 2.05 million tons of cago, both loaded and unloaded. Of this total, 1.18 million tons was in imports, and 0.87 million tons was in exports. Of the exports, 356,913 tons was accounted for by bananas. Exports to the United States accounted for 275,770 tons of the bananas, or 83%. The principal import and export products are given in the following tables:

Santo Tomás
Import Tonnages
1985

Product	Tons
Fertilizers etc.	154,336
Diesel and fuels	130,450
Paper, paper products	111,685
Gasoline	84,008
Chemical Products	78,767
Wheat	74,588
Propane Gas	60,132
Plastic Fibers & Resins	45,374
Petroleum Distillates	43,084
Animal, vegetable oils, fats	41,778
Other foods	40,016
Basic Metal Products	37,212
Other Metal Products	36,615
Loaded Containers	35,176
Empty Containers	26,869
Loaded Ro-Ro Truck	24,647
Kersone	21,404
Textiles, clothing	20,069
Empty Ro-Ro truck	13,716
Earth, porcelain, glass	12,430
Machinery and Equipment	11,987
Insecticides	10,422
Other imports	62,003
Total Imports	1,176,773

Source: Empresa Portuaria Nacional Santo Tomás de Castilla

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Santo Tomás
Export Tonnages
1985

Product	Tons
Bananas	356,913
Coffee	199,018
Crude Oil & Natural Gas	64,965
Loaded Containers	48,662
Fruits & Produce	34,901
Ro Ro truck, loaded	31,604
Sesame seeds	17,042
Meat	16,152
Empty Container	13,271
Forest Products	12,500
Clay, porcelain etc	9,789
Cotton	7,741
Sawn wood	7,163
Cardamon	6,607
Empty Ro-Ro truck	6,215
Textiles, clothing	4,945
Machinery & Equipment	4,875
Bee Honey	3,669
Other food products	3,246
Other exports	27,616
Total Exports	876,894

Source: Empresa Portuaria Nacional Santo Tomás de Castilla

Deducting liquid bulk from the import total results in a 1985 dry bulk and general cargo tonnage of 837,690 tons. For exports, dry bulk and general cargo came to 811,929 tons.

Of the imports in 1985, 216,000 tons was containerized, and of the exports 282,000 tons was containerized. Of the 1,649,619 dry bulk and general cargo loaded and unloaded, 498,000 tons was containerized. This represented 30% containerized.

Of critical importance to the future of Santo Tomás has been the increase in containerization over recent years. From 1983 to 1984 there was a 23% increase in tonnage, and from 1984 to 1985 the increase was of the order of 12%. At a present level of nearly 70,000 TEUs (twenty foor equivalent units) the capacity of one container berth and one appropriate crane would be seriously strained--even under the best of operating conditions. Given that the crane is not always available, and that other means are used for container loading, the conclusion is inevitable that the container capacity of the port is being seriouly exceeded. Given also the growth of containerization, the delays arising from slow container handling will only get worse over the coming years.

The number of full and empty containers moving through the port in 1985, by container size, are shown in the following table:

Santo Tomás
Container Movements, 1985

	Imports			Exports		
	20'	35'	40'	20'	35'	40'
Full	5,370	4,790	5,647	5,372	4,790	5,647
Empty	2,212	581	1,615	2,212	591	1,615
TOTAL	7,582	5,371	7,262	7,584	5,381	7,262

These data demonstrate that of the total of 40,442 containers handled in 1985, 8826 were empty. This represented 22% empty, and was not considered unreasonable as an average. This percentage says nothing about the interchangeability of the containers--refrigerated containers are not interchangeable with dry containers--but given the fact that empty containers are unavoidable, a proportion of up to 25% is considered acceptable.

The port is required to contribute revenue to the Treasury, the costs ascribable to port operations are not easily determined. Port officials doubled tariffs in January 1987 to generate more revenue. These revenue requirements include the funds transfered to the Treasury. These transfers do not reflect the costs incurred in performing normal port functions.

International shipping lines maintain regular, scheduled service to Santo Tomás. Among the major lines are Sea Land Service, Seaboard Marine, Coordinated Caribbean Transport (CCT) and Hapag Lloyd. New Orleans and Miami are the major US ports linked to Santo Tomás. Sea Land is, by far, the major carrier and they offer direct service to Miami every Tuesday and direct service to New Orleans every Sunday.

Santo Tomás
Import/Export Cargo
Origins and Destinations
1985
% of Total Tonnage

Imports		Exports	
USA	67%	USA	75%
Jamaica	7%	Germany	7%
Sweden	7%	Greece	7%
Belgium	5%	Saudi Arabia	4%
Venezuela	4%	Holland	3%
Germany	3%	France	1%
Holland	2%	Puerto Rico	1%
Antilles	2%	Great Britain	1%
France	1%	Poland	1%
Brazil	1%		

Source: Empresa Portuaria Nacional Santo Tomas de Castilla

Puerto Quetzal on the Pacific just began operations and has not yet established an extensive schedule of regular shipping service. The port is responsible to and under the control of the Ministry of Transport. The layout of the port is shown on the following page. The wharf length is 900 meters and the draft is 13 meters. Somewhat more than 400,000 tons of cargo is handled in a year, with exports accounting for some 75% of the total. Major exports are sugar and molasses, coffee, maize, and cotton. Principal imports are fertilizers, chemicals, and vehicles.

Container movements are rising. In 1985 full 20 foot containers moved through the port totalled 1,300--double the year earlier level. The number of full 40 foot containers in 1985 was 400--four times the level of a year earlier. General cargo exports in 1985 totalled 300,000 metric tons, up from 250,000 in the previous year. General cargo imports are about 80,000 metric tons a year. Solid bulk imports dropped to 30,000 metric tons in 1984 from 55,000 in 1984. Liquid bulk exports are running about 60,000 metric tons a year.

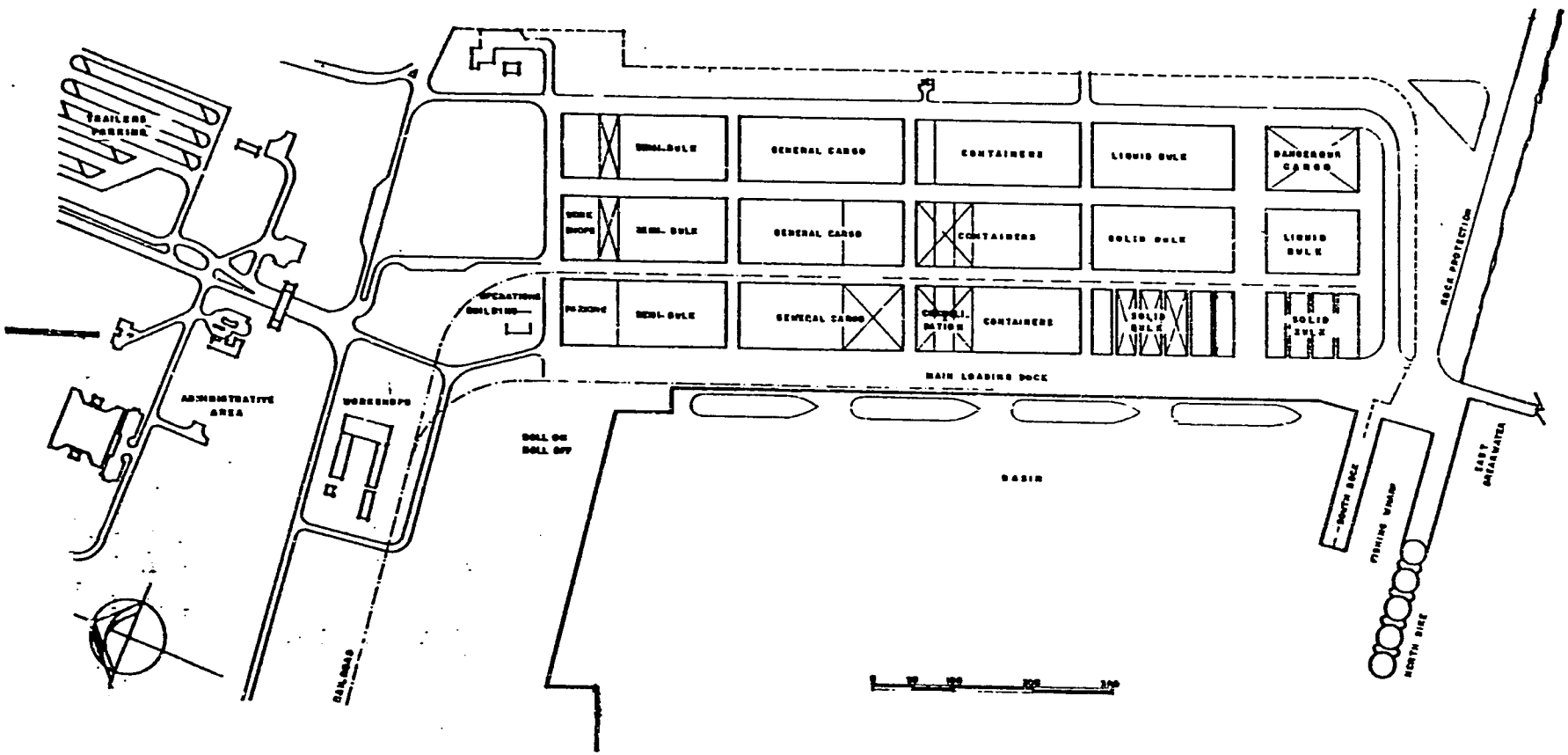
The table below shows container movements through the port by container size.

Puerto Quetzal
Container Movements, 1985

	Container Size	
	20'	40'
Full	1,280	400
Empty	880	275
TOTAL	2,160	675

The imbalance in export and import volumes, noted above, makes it almost inevitable that there will be a flow of empty containers.

Port officials consider themselves trapped when it comes to



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PUERTO QUETZAL

substantially expanding operations. There is no promotional budget for the facility and its range of services are not widely known in maritime circles. This restricts cargo movements which, in turn, limits the frequency of service offered by shipping lines.

The port is short of pilot vessels, tugs, and electric outlets for refrigerated containers. There is no refrigerated storage space at the port. There is ample space for future expansion.

Improvements to the service that Puerto Quetzal can offer will bring lower transport costs. At present the outward bound products moving through the facility are largely traditional exports. A reduction in transport costs can reasonably be expected to have a stimulative effect on that category of exports. It is also probable--and this is the focus of the present study--that a beneficial impact will be felt by exporters of non-traditional products. Puerto Quetzal is nearer to the capital which is the centroid for economic activity in Guatemala. Lower sea freight charges and lower port costs can be expected to generate some additional volume of non-traditional exports which cannot now penetrate markets in the western part of the United States, the west coast of South America and Asia.

Since Puerto Quetzal began operations, Guatemalan use of the El Salvador Pacific Port of Acajutla has dropped sharply. Total Guatemalan general cargo and bulk exports via the Port of Acajutla fell from 114,000 metric tons in 1979 to less than 5,000 metric tons in 1985. As Puerto Quetzal develops and becomes more established it may lead to some cargo diversion from Santo Tomás. But the likelihood of generating new export flows--as noted above--is the impact most relevant to this study.

The tables which follow show the major export and import flows through Santo Tomás, Puerto Barrios and Puerto Quetzal.

Selected Major Exports by Port of Exit, 1985
(metric tons)

	Santo Tomás	Puerto Barrios	Puerto Quetzal
Bananas	305,271	0	0
Sugar	3,003	32,909	220,548
Coffee	118,849	34	3,440
Cotton	10,947	0	59
Meat	8,224	0	0
Vegetables	12,420	0	0
Fruits	7,976	0	0
Oilseeds	12,444	0	1,345
Cardamon	6,802	0	55
Flowers & Plants	9,714	0	0

The table below presents comparable data with respect to imports.

Selected Major Imports by Port of Entry, 1985
(metric tons)

	Santo Tomás	Puerto Barrios	Puerto Quetzal
Wheat	68,551	47,647	0
Dairy Products	14,656	0	236
Vegetable Oils	27,387	2,870	0
Tallow	24,601	0	0
Vegetables	2,116	0	71
Mfgd Fertilizers	151,388	2,197	19,521
Resins & Plastics	33,991	721	454
Other Chemical Products	63,873	44	5,953

It is thus clear that, for the short-term at least, concentration on reducing costs and incresing efficiencies will have a greater impact than investment at Puerto Quetzal. However, for the future it is clear that unless some attention is paid to providing Puerto Quetzal with the facilities it needs it will never be able to offer the much-needed access to the markets of the Far East.

Air Transport

Guatemala has a total of about 650 runways, ranging from 500 meter grassy landing strips to the principal international airport at La Aurora. The airport at Flores handles international flights, though these are more for the purposes of tourism related to Tikal National Park.

Passenger services were provided by the following lines in 1985:

Aviateca (the national line)
Panam
Taca
Sahsa
Copa
Lacsa
Mexicana
Iberia
KLM
SAM
Eastern

Charter flights, private planes and official planes also contributed to passenger movements. Passenger movements for the period 1980 to 1985 are shown on the following table:

Air Passenger Movements
(number of passengers)

	1980	1981	1982	1983	1984	1985
Arriving	296,829	251,124	208,664	216,016	224,422	225,545
Departing	294,588	251,827	206,786	210,202	221,094	220,752
Total Passengers	591,417	503,951	415,450	426,218	445,516	446,297

Source: Direccion General de Aeronautica Civil

It is clear that demand for passenger flights has fallen off significantly since its peak in 1979 (625,330 passengers), though of recent years demand has levelled out at about 445,000 passengers per year. It is worth noting that the demand for passenger flights is a

clear function of the relative economic health of the country--the fall off in demand parallelling closely the economic downturns of the early 1980s.

The movements of airfreight in and out of Guatemala is shown in the following table:

Volume of Air Cargo Exports
Exports
(kilograms)

	1983	1984	1985
Mixed passenger/ cargo	5,323,184	9,413,735	8,213,896
Freight only carriers	2,184,636	2,056,131	2,452,427
Exports total	7,507,820	11,469,866	10,666,323

Imports
(kilograms)

	1983	1984	1985
Mixed passenger/ cargo	4,548,518	5,126,336	3,319,874
Freight only carriers	2,184,636	2,425,411	2,175,266
Imports total	7,507,820	7,551,747	5,495,140

Source: Dirección General de Aeronautica Civil

It is clear from the table that while the demand for export space has risen considerably over the years, the demand for import space showed a marked drop in 1985. As the latest figures show, there is now twice as much demand for export space as for imports.

Of significance is the fact that a greater part of the increase was taken up by space on passenger flights, with very little being taken by additional space on dedicated cargo flights.

The subject of air freight in Guatemala was somewhat controversial, with exporters adamant that the service was not adequate and that the demand far exceeded the supply. It was considered that the national airline had a duty to provide the country with an adequate service. Representatives of both private sector and public sector air cargo services claimed that the demand was hard to confirm. The demand was also largely one-way and could not support a regular service at the rates in operation.

It was claimed that the volume of exports by air freight had dropped every year since 1980, during which year three times as much freight was carried as in 1985. The fall in exported freight followed a withdrawal over the years of regular cargo space, in the form of substituting passenger planes with less cargo space and the withdrawal by Panam of its regular 747 cargo service. Since that withdrawal in 1983 a number of exporters had ceased to export, claiming that there was too much risk involved in sending consignments to the airport on the offchance that there might be some space.

It was also claimed that the irregular service was not helped by the absence of refrigerated storage facilities at the airport, and the absence of any covered area to protect perishables form the effects of exposure.

There is no doubt that where the bulk of air freight is taken in passenger services, that the space available becomes less as

changes are made to service a lower demand for passenger space. Clearly, the passenger services have responded within their abilities. The difficulty lies in the lack of response from the cargo services. The figures show that the cargo services are operating to balance their imports against their exports, and that with import falling off there is little incentive to provide increased export space at current rates. Increased space could be made at higher rates, or it could also be made available by transferring import cargo from the passenger flights to the freight lines. There is also a possibility that freight could be lured from the maritime route--a strategy that has worked elsewhere.

EVALUATION OF EXISTING TRANSPORT SYSTEMS

The table below, shows the role of the several transport facilities and modes in Guatemala in moving and serving the flow of exports and imports in 1985.

Share of Transport Routes in Flow of Exports and Imports, 1985
Metric Tons of Exports, 1985

Total	Atlantic Ports	Pacific Ports	Air	Land
100%	44%	31%	1%	24%

Imports, 1985 (1)

Total	Atlantic Ports	Pacific Ports	Air	Land
100%	66%	8%	1%	25%

(1) excluding petoleum products

Source: Bank of Guatemala

The major reason for the prominent role of Puerto Quetzal in handling exports is its role as the outlet for virtually all the sugar moving to foreign markets. With land transport accounting for 25% of the nation's exports and imports, the remaining flow of traded items is by water with points of entry and departure at the ports on the Atlantic and Pacific Coasts. Land transport of exports reflects intra-regional flows and involves products of relatively low value where shipment times are not critical.

Historically, traditional exports have moved to market by maritime transport. As regional integration grows it it likely that the share of products moving by land will display a relative advance. As structural changes permit meaningful expansion of non-traditional exports, there will likely be some relative growth in the now insignificant air transport sector. This growth

assumes that regular, reliable demand for this service will induce carriers to provide the required level of service. It is likely, however, that waterborne commerce will long remain as Guatemala's principal route to overseas markets.

The present transport infrastructure of the nation is flawed. Road length--whether measured on a total or paved basis--in relation to the size of the nation places Guatemala in a very low rank by international standards. In 1970 Guatemala had low road density in comparison with its Central American and Caribbean neighbors. World Bank data for 1970 show the nation with .095 km of road per square kilometer. This figure is virtually unchanged today. In 1970 Guatemala had 10.7 vehicles per thousand population, the lowest in the region. The figure today is 24, a level that was exceeded by Costa Rica and Panama in 1970.

Road travel between urban areas and the ports is unsatisfactory. It is also difficult to open up the unexploited regions of the country without increasing and improving the highway network.

Truck drivers are competent but wages are low. The result--according to fleet owners--is substantial unreliability in the quality of service. As noted above, competition is fierce among the smaller truckers and rates are forced down to levels that makes it very difficult to provide for vehicle maintenance and replacement.

The railroad is operating with antiquated facilities. It now requires a subsidy of some Q 3-4 million and this reflects the fact that it burdens rather than assists the transport sector. Nevertheless it operates and will likely to continue to operate for some time. Therefore, attempts to improve its efficiency are desirable, though the effect of this on non-traditional products over the short term will be marginal.

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The port situation has potential strengths, but substantial improvements are required. Santo Tomás has high cost stevedoring and severe equipment deficiencies. Exporters seek to contract stevedoring on a tonnage rather than on an hourly basis. Hourly contracts mean stevedoring is carried out in a desultory manner, but a tonnage contract is only available for those with sizable loads. Santo Tomás is also saddled with a financial responsibility by the Treasury that leads, inevitably, to port charges that are higher than they would otherwise be for the services provided. Puerto Quetzal can become an efficient and substantial port, but a major promotional effort and more basic facilities are required. The road deficiencies noted above are burdens port users that serve to raise overall transport costs.

Guatemalan ports are served by international shipping lines that belong to one or another of the major "conferences". The result of this is that tariffs are standardized among the conference members so that the same product over the same route carries the same tariff. When there is substantial competition at a given port from non-conference vessels, the response has generally been for the conference lines to initiates a "rate war" to regain lost custom. Conditions have to be particularly favorable for a rate war to be initiaited by a major non-conference line, such as Evergreen in Costa Rica; the normal situation involves a small operator offering cut-price service for a limited time before withdrawing for lack of profit margin.

Guatemala does not appear to be in a position that would attract a major non-conference line: the cost to the operator of using Santo Tomás does not leave enough margin for suitable inducement. Improvements to the port efficiencies and handling rates could conceivably increase the difference between the conference tariff and the true cost of operation to attract an independent operator. At the moment, however, that difference appears to be small.

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Air transport has declined in recent years in the face of potential export demand increases. This sector can be strengthened by inducing more carriers to come to the airport. The major association of non-traditional exporters is calling for an "open skies" policy with respect to air transport. In practice, however, limited and infrequent demand for air cargo service is not an attraction from the carrier point of view. The evidence is not clear that potential demand for air transport can prove to be a major profit element for carriers. When peak passenger demand coincides with high demand for air cargo, the passenger operation invariably gets priority. Passenger movements are the basic money making operation for nearly all commercial airlines.

GUATEMALA
THE RAIL
SYSTEM
MEXICO
GUATEMALA
BELIZE
PETEN
ALTA VERAPAZ
BAJA VERAPAZ
IZABAL
TOLEDO
CAYO
SACATEPEQUEZ
SUCHITEPÉQUEZ
SANTA ROSA
LEMPIRA
TIKAL NATIONAL PARK
LAGUNAS DE MONTEBELLO N.P.
Sierra de los Cuchumatanes
Sierra de las Minas
Maya Mountains
Laguna del Tigre
Lago Petén Itzá
Lago de Izabal
Usumacinta Falls
Río Bec
Kohunlich
Calakmul
El Mirador
Uaxactún
Tikal
Yaxhá
Yaxchilán
Bonampak
Flores
Caracol
Seibal
Dos Pilas
Machaquilá
Cancuén
Comitán
Huehuetenango
Cobán
San Pedro Carchá
Sta. Cruz del Quiché
Chichicastenango
Momostenango
Totonicapán
Quezaltenango
Chimaltenango
Guatemala
Antigua Guatemala
Escuintla
Jutiapa
Jalapa
Chiquimula
Copán
Santa Rosa de Copán
Puerto Barrios
Livingston
Punta Gorda
San Ignacio
Belmopan
Sonsonate
Ahuachapán
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MEXICO
GUATEMALA
BELIZE
EL SALVADOR
PETEN
TIKAL NATIONAL PARK
ALTA VERAPAZ
BAJA VERAPAZ
IZABAL
SANTA ROSA
Guatemala
Santa Ana
Sonsonate
Tikal
Uaxactún
Flores
Tayasal
Sayaxché
Seibal
Dos Pilas
Machaquilá
Bonampak
Yaxchilán
Piedras Negras
Tenosique
Palenque
Tulum
Chichicastenango
Quetzaltenango
Totonicapán
Momostenango
Huehuetenango
Cobán
San Pedro Carchá
Las Tinajas-Pueblo Viejo (Chacujal)
Puerto Barrios
Livingston
Belmopan
Chetumal
Mérida
Tapachula
Escuintla
Mixco
Jutiapa
Chiquimula
Copán
Santa Rosa de Copán
PUERTO QUETZAL

GUATEMALA

CHAPTER 5

ANALYSIS AND INVESTIGATION OF NON-TRADITIONAL ACTIVITIES

The trade data developed in Chapter 3--as noted above--were the basis for planning the field surveys. The major firms in the various non-traditional sectors were identified in discussions with officials of trade and industry associations. In addition, directories and listing of business firms were obtained.

The following groupings of non-traditional activities were identified in Chapter 3 as the appropriate foundation for the field surveys.

Fruits and Vegetables
Fertilizers and Pesticides
Glass Bottles
Oil seeds, nuts and kernels
Soaps, cleaning preparations
Animal feeding stuff
Paper and paperboard
Lumber shaped conifers
Cut flowers and plants

These nine groups were derived from the foreign trade profile of Guatemala developed from the latest (1984) United Nations International Trade Statistics Yearbook plus review of less rigorous data on trade flows from 1982 through 1985. The analysis of United Nations data led to the identification of 11 non-traditional export categories. These were reduced to eight groups by including potatoes in a newly combined fruit and vegetable category and by joining the fertilizer and the pesticide export flows. Cut flowers and plants were added to the list after

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reviewing current trade estimates.

The material, information and findings generated in the field surveys is presented, below, in the following manner: first, identify the export activity; second, indicate its importance in the non-traditional export spectrum; third, indicate number of firms interviewed; fourth, indicate the transport sensitivity of the industry. Finally, present the findings of the survey along with an evaluation of the responses.

FRUITS AND VEGETABLES

General Observations

More than 15 firms producing a range of products including melons, broccoli, snow peas, stawberries, blueberries and okra were interviewed. Products were either in fresh, processed or frozen form. Fresh products such as berries, okra and broccoli must be routed by air. As a group, this category accounts for almost 25% of total non-traditional exports from the nation of almost 400,000 metric tons. Over the span 1981 through 1985 export tonnages have risen by 30%.

Immediately after harvesting, products have to be held in refrigerated areas to remove field heat. Then the fresh and frozen products require refrigerated containers for shipment, first by road from producing areas to the airport or the port.

This is clearly an industry where transport costs tend to be a significant element of CIF values. To cite one example, honydew melons have a CIF value in Miami of about US $ 165 per ton. The transport cost per ton exceed US $ 121.

Survey Findings

While each firm had an individual approach to a discussion of transport impediments, several themes or points of view were repeatedly expressed.

The most common complaint was that Guatemalan exporters were at a disadvantage with respect to producers elsewhere in the region because tariffs between Santo Tomas and Miami were higher than rates for the other countries in the region.

Other major complaints include:

~agricultural products arrived in Miami on Friday and Saturday whereas Monday and Tuesday were considered the best marketing days.

~producers of perishables--strawberries, blueberries, okra--said air service to Miami was so unreliable that production was being cut back. (On the other hand exporters to Los Angeles said TACA air cargo service was reliable and cheap--$0.15 a pound.)

~refrigerated containers were in short supply.

~Santo Tomas charges were high and shippers had to pay for services not always provided.

~the airport lacked refrigerated holding areas.

~the smaller producers have more severe transport problems than larger enterprises.

~some producers--by no means all--said cost of moving products to the ports was excessive.

~the excessive amount of documentation required for exporting

Evaluation

High Tariffs for Sea Freight. Transport costs are neither fixed nor standardized. Tariffs vary with the type, volume and timing of cargo shipments. They vary with the level of the exporter's inbound cargo and, indeed, with his management and negotiating skills.

Nevertheless, it appears--as will be demonstrated below--that there is substance to the view that fruit and vegetable producers face a higher tariff structure than exporters in other countries in the region. This reflects--among other considerations--a longer distance between production centers and the ports plus higher charges for sea freight which reflect both modest cargo volumes and delays due to inefficiencies at Santo Tomas. The supporting evidence on this point and a range of transport improvements designed to overcome these disadvantages is presented, with the recommendations.

Lack of Direct Service to Miami. The lack of direct service to Miami as well as the timing of product arrivals in that port was a problem and a major shipping line announced in early December that it would begin direct weekly service to Miami as of December 15, 1986. In February 1987 the shipping line advised that volumes to Miami were disappointing and below expectations.

Restrictions on Air Freight Availability. The problem of air transport is complex. Perishable fruit and vegetable supplies peak in December. This coincides with the high season for passenger travel. Accordingly, it is not always easy to have available cargo space for relatively modest volumes during the busiest time of year for the air lines. The irregularity of this demand for air transport from one year to the next complicates the problem of providing assured service. Exporters tend to reduce output when spoilage results from failure to get products to market at peak quality.

High Port Charges. Port charges at Santo Tomas are high for several reasons. The port is obliged to transfer a portion of revenue to the Treasury. This cuts down on the port's availability to finance major improvements. The stevedoring is so inefficient that exporters try to contract on a total tonnage rather than on an hourly basis. However, this option is limited

to those moving substantial cargo volumes. Charges are levied for the use of cranes at the port although they are in frequent, if not constant, disrepair. Despite these problems the charges at Santo Tomas are lower than at most other ports in the region. The inefficiencies at the port mean that port charges are higher than they would otherwise be. It also means that loading and unloading delays require shipping lines to raise their charges for sea freight.

Lack of Refrigerated Facilities. The export of fresh fruits and vegetables, fresh fish, shrimps and lobsters, and flowers all require that facilities for refrigeration be made available. In the first place, refrigeration is required at or near harvest areas to remove field heat, and to store until transportation is in place. This process requires a considerable amount of heat exchange. For transportation to market the product requires container that can maintain the low temperature. The container requires electrical outlets to be available at any location where waiting will take place. Neither Santo Tomás nor Puerto Quetzal have electrical hookups available--a lack which must be made up if the refrigerated container (reefer) system is to operate effectively.

With the highly perishable products that go by air, it is essential that refrigerated storage facilities be available near the airport. These facilities are extremely sophisticated, involving the maintenance of temperatures at different levels and involving the removal of gases that get released by the products that can easily contaminate.

There was no basic infrastructure for refrigeration available in Guatemala, and it was considered that this was becoming--both directly and indirectly--an impediment to increased exports.

The supply of refrigerated containers available for transport is seriously reduced as a result of the lack of refrigerated

storage space available to fruit and vegetable producers. Many producers request, and receive, refrigerated containers which they then proceed to use for storage rather than transport purposes. This creates an artificial scarcity of refrigerated containers available for transport. Also aggravating the container supply situation is the fact that some 25% of the output of fruit and vegetable producers takes place in January.

Problems of Small Producers. Clearly, smaller producers have more transport problems compared to larger enterprises. It is likely that if smaller firms engage in promotional, marketing and transport activities on a cooperative basis, important transport gains can be achieved.

Roads. The roads to Guatemalan ports are bad. This is indisputable. But the evidence for the region suggests that Guatemalan fruit and vegetable exporters are by no means the only nationals suffering from this problem. The poor condition of the roads means--simply--that transport costs are higher than they would be if the roads were in satisfactory shape. Travel time would be shortened, breakdowns would be reduced, maintenance needs would be smaller and vehicle operating costs would be lower. Road improvements hold out the real promise of leading to lower transport costs, particularly in the case of the highway from Guatemala City to the port at Santo Tomás.

Export Documentation. There was a general complaint from all exporters that the amount of documentation required for exporting was excessive. Coupled with this complaint was the added burden of the recently-introduced SGS inspection requirement. This inspection organization, the Swiss-based Societé General de Surveillance, had been appointed by the government to lead a task force with the role of reducing irregularities in export documentation. It was estimated that the savings resulting from more accourate export accounting would more then pay for the cost of the hire. The move also created of the order of 750 jobs as

SGS recruited its inspectors.

In comparison with the other countries of Central America, Guatemalan exporters were found to have to face an inordinate amount of red tape for an export to be approved. Exporters who had been in business some time estimated that potential exporters were being discouraged from starting, since dealing with export paperwork became a major occupation in any export office.

The addition of the SGS inspectors added further steps to the process, at a time when other countries in the region were close to establishing the "ventanilla unica," or the single step for export documentation.

While exporters generally felt that the shortage of foreign exchange in the early 80s may have forced some exporters to falsify customs documents, the easing of the situation and the closing of the parallel exchange rates virtually eliminated the need for such practices.

It was concluded that the exporter from Guatemala was certainly at a disadvantage when compared with his neighbors, and that without some reduction in the number of steps required to complete export documentation it would never be possible for exporters to give quick responses to rush orders placed by clients.

Communications. A difficulty encountered by most exporters was the difficulty experienced in coordinating activities using the existing telephone system. While steps were being taken by Guatel to provide extra phone lines, the bulk of the existing lines were in and around the city. Non-traditional product exporters required connections with their farms in the provinces, and were resorting to the use of radio communications. As a solution, this was expensive, particularly when it required that an exporter keeps an office in the city merely to serve as the

communication link between his radio and the telephone network.

FERTILIZERS AND PESTICIDES

General Observations

Some 5 firms were identified as the major participants in this field. This group accounts for more than 15% of total non-traditional exports. Fertilizers and pesticides are industries where transport cost levels are crucial to the industry's competitive position. Therefore, these products tend to be produced for local markets or for exports to neighboring countries. Long distance routings are usually not feasible. Exports since 1981 have risen by about 50%.

Survey Findings

The field surveys indicated that virtually all exports are by road to the nations of Central America. The road conditions, the tariffs, the reliability and timeliness of delivery were all considered satisfactory. Producers tended to use their own trucks for shipments within Guatemala and to rely on contract truckers for exports.

Evaluation

It was virtually impossible to extract a complaint from this group of exporters. Nevertheless, the need for road rehabilitation and accelerated maintenance in the country is well known. Transport improvements that improve managerial and driver skills in the trucking industry will also benefit fertilizer and pesticide exporters.

GLASS BOTTLES

General Observations

This industry consists of one firm. Its dominant position reflects control of the essential raw materials for glass manufacture. This industry accounts for about 8% of Guatemala's non-traditional exports. Glass is an average industry in terms of transport intensivity. Its exports are not confined to nearby nations because of burdensome transport costs. Exports have advanced some 30% over the period 1981 through 1985.

Survey Findings

This firm can serve as a model as to how to get transport productivity. It has professional transport management. Its markets are in Central America, the Caribbean and the hinterland areas of Miami and of New Orleans.

Land transport of exports to other nations in Central America is problem free. The Carolina conference offers acceptable service and tariffs to the Caribbean, and their shipping volume enabled them to reduce the sea freight charge for a 40 foot container to Miami down to $1,080 from $1,600. The crane situation at Santo Tomas was an annoyance and served to raise transport costs. But ships' gear got cargos loaded and unloaded at a satisfactory rate, according to industry managers.

The only transport improvement they suggested was shifting the stevedoring function at Santo Tomas to private hands.

Evaluation

The field interviews elicited the response that the firm had

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very few transport problems, and it was confident in its ability to resolve any tranportation problem--or at least, to minimize its effect.

It was noted, however, that as the glass bottle supplier for Central America the firm was virtually in a monopoly position, so the question of competition was not a serious consideration. In many of the other countries of the region the complaint was heard that consideration could not be given to the processing of fruits and vegetables because of the high cost of the container. Those producers who did bottle their product could only sell on the local market. Investigation revealed that the cost of glass containers, and the tops that go with them, was considerably more than in the USA. To some extent, then, the cost of glass containers in the region is a function of the cost of moving these from factory to user, and a function of the cost of moving the raw materials around the region. Thus any reduction in the costs associated with land transport in both Guatemala and the region would serve to make the cost of glass containers more in line with costs elsewhere.

The question of "privatizing" stevedoring at Santo Tomas is as much a political as a transport issue. Clearly, such a change would bring greater efficiency.

OIL SEEDS, NUTS AND KERNELS

General Observations

There are about six principal firms in this field. One of the major enterprises was interviewed. The export items are sesame seed, cotton seeds, and peanuts. The industry accounts for some 5% of total non-traditional exports and is of average transport intensity. Exports have risen by 80% between 1981 and 1985.

Survey Findings

Two thirds of the exports move by land to the other nations of the region, particularly El Salvador, Costa Rica and Honduras. These flows move smoothly and efficiently and there were no complaints about the service or the tariffs charged by contract truckers.

The other third of the exports go to the Miami area via Santo Tomás. Producers say high maritime rates limit their ability to penetrate the Miami hinterland.

They did not believe the road transport to the port posed any problems and they were not critical of operations at the port.

Evaluation

The exporters' complaint was a generalized one about their perceived competitive disadvantage in reaching Miami. They had no idea why they were in such a cost predicament. Their only explanation was that Guatemala does not subsidize exporters, whereas both Honduras and, particularly, Costa Rica do use

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national shipping lines and other subsidies to assist their exporters. Charges of this nature surface in many countries of the region and are generally without foundation. Neither Honduras nor Costa Rica has a national shipping line and the exporters in those nations certainly do not believe they are enjoying a subsidy of any sort.

The concerns and complaints noted by this industry indicated a general deficiency in management. They were not aware of the range of options open to them--such as joining together to negotiate more favorable transportation rates or trucking to ports in Honduras or Costa Rica--to make the best possible transport decisions.

Any improvement to the regional road network, to port operations or to management capabilities will improve the competitive position of these exporters.

SOAPS, CLEANING PREPARATIONS

General Observations

The dominant firm in this field was interviewed. The industry contributes less than 4% of total non-traditional exports. This is a lower than average industry as far as transport sensitivity is concerned.

Survey Findings

Guatemalan products are exported to El Salvador, Honduras, Costa Rica and Panama. The first three countries are served by road transport and there are no problems, according to the exporter. Contract truckers offer timely, reliable, secure and reasonably priced service. Panama is served by air and Iberia offers outstanding service. This firm could not be induced to identify any aspect of the overall transport system that it would like to see improved.

Evaluation

Despite the unwillingness of the firm to identify transport problems, they will benefit from any actions, policies or facility improvements that make road or air transport more efficient.

ANIMAL FEEDING STUFFS

General Observations

One major exporter was interviewed. This industry accounts for some 3% of total non-traditional exports. It is a transport intensive activity. In other words it finds it difficult and costly to penetrate distant markets which involve relatively high transport costs.

Survey Findings

Exports normally go to the nations of the region, principally Belize, Costa Rica and El Salvador. The firm uses contract truckers for these movements and did not wish to suggest any transport impediment.

Evaluation

Clearly, transport improvements that make road transport more efficient will assist this exporter. The road to Belize, for example, is in deplorable condition. Exporters who do not complain about obvious transport deficiencies, in all probability, have made peace with existing conditions and have learned to cope with and adjust to deficiencies in the transport sector.

PAPER AND PAPERBOARD

General Observations

Interviews were conducted with the six firms that constitute, virtually, the entire paper and paperboard industry in Guatemala. This industry supplies some 3% of total non-traditional exports. Because of its high value to weight relationship it tends to be relatively insensitive to transport costs. Export volumes have shown no appreciable growth since 1981.

Survey Findings

The industry markets primarily to other Central American nations with Belize, El Salvador and Honduras as major destinations. Road transport is considered adequate to these neighboring countries. When pressed industry officials said the roads from Guatemala City to Belize were somewhat less than satisfactory. They said rail transit to Belize would be ideal.

The industry imports rolled paper from the US, Canada and Europe and exports paper bags, cartons, toilet tissue etc. They work--on the import and export side--with limited volumes. And their negotiating leverage is small since imports come by water and exports go by truck. Several firms have joined together to improve marketing and transport activities. However, even in concert, shipping volumes tend to be modest. (Note: 1985 import total was 111,000 tons. This gives about 9,300 tons/month. Assume export.)

Industry representatives seem quite knowledgeable. They realize that their limited exports to Panama by ship cannot command bargain tariff levels. With limited volumes, stevedoring at Santo Tomas must be contracted on an hourly rather than on a

total tonnage basis. And--they say--the stevedores work at a leisurely pace. The January 1987 tariff increase at Santo Tomas is considered a major blow to their operations.

Evaluation

This group had capable management and was aware of the transport limitations associated with the scale and directional flow of their product and raw material shipments.

Transport gains for these producers need not await a substantial increase in their operations or a change in their pattern of product flows. Improvements to the road and trucking sectors will assist them. Further, any increase in efficiency at Santo Tomas will be beneficial. The possibility of a rail link to Belize is remote.

LUMBER, SHAPED CONIFERS

General Observations

There are some half dozen relatively modest firms in this field which accounts for less than 3% of total nontraditional exports. One of the larger firms in the group was surveyed. The industry is of average transport intensivity. Over the period since 1981 export volumes have dropped by more than 20%.

Survey Findings

This industry exports to Central America and to the Tampa area in Florida. The survey indicated that road shipments to El Salvador and Belize are without major problems, although the road to Belize is far from satisfactory. Flagship provides regular service to Port Manatee at $900/container. Producers have no complaint about the frequency or cost of this service. It is claimed that the standard container height of 8 feet poses a problem. Industry officials would like the less conventional 9 foot--or, at a minimum, 100 inches--container to be more widely available. At present container stuffing is a difficult and time consuming process.

The limitation on more exports from this sector turns on the nation's unwillingness to adopt a sound policy of commercial exploitation of timber resources in concert with a reforestation program. Until such a policy ensures future raw material availability, the industry will be hesitant to increase capacity.

Evaluation

The shipping line has agreed to increase the supply of the

nine foot container unit.

Again, despite disclaimers about transport problems the industry will benefit from improvements to the road to Santo Tomas and to efficiencies at the port.

The inhibiting impact of the lack of a national policy on timber harvesting and reforestation is indisputable. For this reason the immediate prospect for a significant growth in non-traditional furniture manufacture and export is deemed slight.

CUT FLOWERS AND ORNAMENTAL PLANTS

General Observations

This industry accounts for less than 3% of non-traditional exports. The major firm in this field was surveyed. Because of relatively high values of product the industry is considered to be average in terms of transport sensitivity. Refrigerated containers are necessary to ensure the required quality of ornamental plants upon arrival in consumer markets. No plants in soil can enter the US. These products are routed primarily to European markets. Cut flowers require air transport and can enter the US. Export levels have risen by 50% between 1981 and 1985.

Survey Findings

The industry ships to the United States by air and by sea. Air shipments go via Traslados, Aviateca, Pan Am, TACA and Eastern Airlines. The major shipping lines provide maritime service to Miami. Shipments to Europe are usually routed by water. Shipping rates to the United States are considered excessive. Industry officials cite the fact that water transport to Miami is some two thirds of the rate for shipments to Europe despite the substantially greater distance to Europe.

Industry officials argue that air freight rates to Miami from Guatemala City are 51 cents (US) a kilo, while the comparable figure in Costa Rica is 41 cents and in Honduras 31 cents. When shipping to Los Angeles the firm finds that Mexican Airlines tariffs are so low that a routing Guatemala-Costa Rica-Los Angeles is advantageous. The lack of refrigerated storage facilities at the airport were cited as a problem. It made the timing of the arrival of cut flowers and plants at the airport a critical consideration. Refrigerated holding areas would, it is claimed,

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make it possible to have a bit more flexibility in bringing products to the airport.

The industry is certain that any cost reduction in transport costs will lead to an increased flow of exports. That is, if the desired level of air transport service is available on a timely basis.

Evaluation

The industry clearly has capable management and is well versed in all phases of transport sector operations. As noted earlier the view that costs of transport from Guatemala are higher than in many other countries in the region is demonstrable.

However, it is not appropriate to conclude that Guatemalan exporters are being victimized. There are three working ports and distances from the capital to the ports are relatively long. The frequency of shipping service may be less than in some neighboring countries but there are no restrictions limiting the number of lines which may offer shipping servics.

Overall, the industry operates efficiently within the existing transport structure. They are aware of all options and quick to select the most advantageous. Perhaps their most precisely focused transport problem turns on the lack of refrigerated storage facilities at the airport.

GUATEMALA

CHAPTER 6

TRANSPORT RECOMMENDATIONS

The transport initiatives set forth in this chapter are based on the prior portions of this study. Chapters 1 and 2 presented the purpose and analytical approach to the investigation. Chapter 3 set forth the economic restraints and limitations--as well as the potential--of the Guatemalan economy. Chapter 4 reviewed the existing transport infrastructure and noted the major deficiencies. Chapter 5 presented the results of the field surveys along with an evaluation of those findings.

Fundamental Concern of Transport Users

A pervasive complaint of transport users in Guatemala--particularly those who export to Miami by ship--was that their costs are higher than those paid by exporters in neighboring countries.

This charge was investigated in the course of the study. Data on transport costs are neither fixed nor standardized. Sea freight charges, in particular, vary with the product shipped, the size of shipments, the timing of shipments, the extent of competition among shipping lines, the balance between an exporter's inbound and outbound cargo volumes as well as his management and negotiating skills. In order to cut through these variables it was decided to investigate the costs of moving a 20 foot container--containing 12 tons of an average dry cargo--from the capital city of each country to the port of Miami or, in the

case of Pacific ports, to Los Angeles. The data thus compiled were considered representative of the pattern of comparative transport costs in the region.

The following table indicates the comparative rates for a 20 foot container of dry cargo from the various ports of the region to Miami, or an equivalent Gulf port. The table contains a number of assumptions, needed to make the figures comparable, and it is certian that some shippers paid more than these figures and some paid less.

The basic figure is the door-to-door charge of major shipping lines operating withing the country. This figure is the one-time charge levied by the shipping line for carriage from the producer's factory to the dockside in Miami. The charge includes land transport to the port, documentation charges, stevedoring charges in the USA. Estimates were made of the current cost of each of these activities in the chain, emphasizing the fact that these separate charges have to be met even if the same company handles the consignment from start to finish. Even shipping lines that operate their own trucking fleets have to pay close to market rates for trucking operations. Port charges and stevedoring are based on estimates of costs to the average vessel loading or unloading.

Typical Costs of Moving a 20 ft Container
US$ Per Container

Country		Door-to-US Port	Trucking To Port	Port Charges	Sea Freight	US Port Charges
GUA	A*	1,970	310	100	1,200	360
	P*	2,500	240	100	1,800	360(LA)**
C.R.	A*	1,475	300	550	325	355
PAN	A*	1,700	350	150	850	350
	P*	1,900	300	200	1,040	360
BEL	A*	1,790	40	300	1,100	350
HOND	A*	1,800	300	450	700	350
EL S	A***	2,150	500	100	1,200	350
	P*	2,330	60	100	1,800	360(LA)**

* Atlantic or Pacific port.
** Los Angeles
*** Routing through Santo Tomas de Castilla in Guatemala.

Notes for Container Costs Table.

1. Door to US port charges were based on actual quoted rates for a 20 ft container of typical non-perishable product. Origin was taken as within a 40 km radius of the capital city, and destination was taken as the container yard of a typical US Gulf port (mostly Miami).

2. Trucking to port charges were based on quoted rates for collecting the full container and delivering it to storage at the Atlantic or the Pacific port.

3. Port charges were based on typical per-container costs levied by the port of the country for loading the container from storage to the vessel. Stevedoring charges are included, as are vessel charges. Fixed costs were allocated per container depending on typical volume loaded/offloaded.

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4. Sea freight charges were determined to be the cost to the shipper of the purely maritime transport. The charge was arrived at by deducting all other transport-related costs from the door to US port charge.

5. US port charges were based on typical per container charges payable at the typical Gulf port. Fixed costs were distributed according to typical volume loaded/offloaded.

6. The purpose of the table is to enable a general comparison of the relative costs of exporting non-traditional products from each of the countries. All estimates are conservative: most exporters could obtain rates which were lower than these, but for the inexperienced low-volume exporter the figures are not unreasonable.

The principal sources of information for the Guatemalan data were the major lines serving Santo Tomás and Puerto Quetzal. The trucking costs at the port were based on what the shippers charged exporters who wanted this service. The truckers were selected by the shippers and represented firms with a demonstrated record of safe, reliable and timely service. Each of the firms was considered financially responsible.

The port charge covers wharfage and stevedoring costs. The line between local port charges and sea freight is not hard and fast. Inefficiencies and delays at port not reflected in direct port charges are burdens for shippers and must be included in sea freight charges.

This table demonstrates that, with the exception of El Salvador, Guatemalan exporters are faced with higher transport charges than other countries in the region. The data indicate that higher transport costs from Guatemala are higher charges for sea freight. Since there are no restrictions on providing

shipping services at Guatemalan ports the conclusion is inescapable that the high seas freight charges reflect the high costs of providing the service. Analyzing the table, on a section by section basis the following observations can be made:

~trucking costs to Guatemalan ports are relatively high but so are the distances--on a cost per km basis the Guatemalan trucking costs of (US)$1.21 to Santo Tomas and $1.36 to Puerto Quetzal compare with figures of $1.76 and $3.00 to Costa Rica's Atlantic and Pacific ports, respectively. The figure for Panama is a substantial $7.00.

~Guatemalan port charges are among the lowest in the region.

~sea freight charges from the ports of Guatemala are the highest in the Region.

~Guatemalan exporters face the same US port charges as do exporters from the other countries.

These observations are factual. They do not contradict the judgments, for example, that the roads to Guatemalan ports are in disrepair or that the ports operate with many limitations and inefficiencies. On the other hand, the data do not indicate the shipping lines are taking advantage of Guatemalan exporters. There is relative ease of entry into the maritime transport business. If Guatemalan trade was so profitable, there would be an influx of shipping lines to serve the nation. Quite the contrary, several shipping lines have reduced or eliminated their service to Guatemalan ports because such service was not profitable.

The comparative cost data set forth above can serve as the transport panorama against which recommended transport initiatives can be evaluated.

RECOMMENDATIONS SUMMARIZED

The recommendations contained in the previous sections are listed here under the headings of "physical" recommendations and "institutional" recommendations. The first group requires the use of funds to construct or improve items of infrastructure, while the second requires a program to bring about changes in operation, environment or legislation to effect an improvement in the use of transportation.

Only those items that could be considered on a national basis, or that would make sense from the perspective of national policy, are considered. Those matters that are best handled at the regional level are left for the regional report.

The recommendation listed are then reconsidered and prioritized in the final sections of this chapter.

When possible, figures for costs and benefits are included with the prioritized recommendations. These are based on the method for computing benefits contained in Appendix A to this report.

Physical Recommendations

* complete reconstruction of the deteriorated section of the highway to the port at Santo Tomás

* procure additional equipment for the port at Santo Tomás to bring its efficiency into line with the other ports in the region (one 40 ton container crane, electrical outlets for refrigerated containers).

* review the repair and maintenance procedures for all port equipment and develop an assistance and training program to

improve the efficiency of equipment use.

* construction and operation of strategically located container freight stations. Requires study to determine location, size, and recommendations for appropriate operation system.

* review airport facilities. Draw up and implement program for provisions of refrigerated storage, covered areas, loading equipment, etc.

* procure the equipment that is lacking for Puerto Quetzal (one container crane, pilot boats, tugs, electrical outlets for refrigerated containers).

* review existing road repair and maintenance procedures. Formulate program to make all roads passable in all weather and improve maintenance of rural roads.

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Institutional Recommendations

* formulate and introduce a simplified system for entering into and settling contracts

* formulate and introduce a simplified export procedure

* formulate and introduce a legal code that would permit the introduction of export brokers

* formulate and introduce port labor rules that would permit more efficient operations

* assist with setting up legally constituted bodies for exporters

* set up and run seminars in better business practices for managers of trucking companies

* set up and run schools for truck drivers and mechanics

* set up and run seminars in port management for senior port operators

* set up and run classes for port equipment operators and mechanics

* set up national representation office in Miami to check cargo arrivals and look for buyers

* introduce and implement assistance programs for group problem solving

* set up a national marketing and promotional organization

PRIORITIZED PHYSICAL RECOMMENDATIONS

1. Equipment for Santo Tomás

The cost of the inefficiencies at Santo Tomás have a significant effect on the cost of exports, not only from Guatemala, but from El Salvador and Honduras as well. A study is currently under way of the needs of the port, as a result of which detailed costs will be known. The cost of installing a 40 ton container crane will be $3 million, assuming no additional work is needed on the dock structure. The project could reasonably easily be included within the five year time frame. The benefit would involve reducing costs by reducing ship times in the port, with the target of bringing the maritime component into line with that of other ports. A reduction of the equivalent of $150 per container could be expected. The annual saving would be nearly $7 million, indicating an increase in exports of possibly $28 million.

The recommended capital outlay would need to be accompanied by a program of retraining, maintenance improvements, and operations optimization if the investment is to have the best results.

2. Review of Port Repair and Maintenance

Both the nation's ports require improvements to the equipment maintenance and repair procedures. What is needed is an investigation of the procedures, the facilities available and the level of mechanic training. The program thus requires an initial study to determine the requirements, followed by programs of procurement and training. The study could take place within the next year and would cost of the order of $300,000. The subsequent stage would involve short- and long-term programs, the costs of which would be determined in the study.

Port and sea freight charges of non-traditional products amount to $182 million per year. The effect of improved equipment operation would reduce ship stays in port, cut down on stevedoring costs, and reduce delays of moving cargo within the port. Even an efficiency improvement of one half a percent would save of the order of $0.8 to $1.2 million per year, and could increase exports by up to $5 million.

3. Review of Road Repair and Maintenance

As with the region's ports, the region's roads were determined to be in need of improved levels of maintenance. The determination of the investments needed to improve surfaces on a national basis was beyond the scope of this study: this would be a function of existing maintenance programs, operational efficiencies, and the combination of private and public sector contracting. Before a program could be introduced it would first be necessary to review current levels of capability--reviews of public sector equipment and personnel, the condition of the equipment, the condition of repair and maintenance facilities, and so on--to determine the skills and facilities that are lacking. An immediate study with a budget of $500,000 would be able to review the situation and propose programs for improvements.

Land transport for non-traditional products absorbs $31 million per year. Of this, truck maintenance and repairs could account for $5 million. Improved roads could benefit this figure by up to 10%, or $0.5 million a year. Non-traditional exports could be expected to increase by a possible $2.5 million.

4. Container Freight Stations

A major impediment to consolidation of container freight was

the absence of container freight stations. It is therefore recommended that a program of construction of strategic container freight stations be undertaken around the country. The first step in the program would be the construction of one station at Santo Tomás followed by one in the vicinity of the capital city.

For this study it has been assumed that 10% of containers at the port would use the container freight station, or about 4,000 containers per year initially. This quantity would require a ten-door facility of about 60 x 45 meters. The facility would also require a considerable amount of land for parking (say 5 hectares) services, equipment, and so on. A budget of $1.2 million for each of the seven facilities is recommended, or $2.4 million initially. Benefits would result from an effective reduction in road, port and sea freight costs, possibly an effective $500 on the 10% using the facility. Total annual benefit would be $500 on each of 4,000 containers, or $2 million, resulting in increased value of exports of $8 million.

5. Refrigerated Warehouses

As with the container freight stations, a serious impediment to the increased export of perishable products was the absence of refrigeration facilities. Unlike container freight stations, refrigeration facilities are needed within a short distance of the harvest areas, and cannot just be constructed near the port or the capital city. The only facility that would be predictable in this way would be one located at the airport.

Refrigerated warehouses are expensive items, and require careful studies to determine demand, sizes, compartments, power, location and so forth. Such studies were outside the scope of this investigation. Thus it is recommended that such a study be undertaken to determine refrigerated storage requirements. The study might take 4 months and cost of the order of $400,000.

The benefits could include a more efficient use of refrigerated containers and an increase in exports of perishables by air. Total increased exports would be of the order of $4.5 million per year, a large proportion coming from an immediate increase in air freight.

6. Non Priority Items

* the reconstruction of the road to Santo Tomás was not included in the list of priorities because the project is already under way and requires no additional intervention.

* the provision of equipment for Puerto Quetzal was not considered worthy of priority status until non-traditional export markets that would require the port had been identified. There is no doubt, however, that traditional exports and all imports are being hampered by the shortage of equipment.

* the review of the airport facilities would not be a priority until a solution had been found to the problems of infrequent service and undependable demand.

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PRIORITIZED INSTITUTIONAL RECOMMENDATIONS

1. Contract Law Amendments

The export of non-traditional products from Guatemala is not likely to become a major and permanent force in the economy unless the risks of doing business can be apportioned by contracts. Contracts are fundamental to transport, and if these can be entered into easily and if disputes arising can be resolved cheaply and consistently, then many of the other problems relating to transport would be resolved automatically. At the time of the study there was found to be a definite disadvantage to cooperating.

It is therefore recommended that a program be formulated to review the status of contracts in Guatemala and determine how a legal contractual simplification process can be set in progress. Since such a program was outside the experience of the project team, no attempt was made to estimate the cost. The benefits would take the form of a steady year-by-year increase in non-traditional exports. At a reasonable minimum of a 2% increase in sales per year attributable to increased cooperative efforts, the benefit would be of the order of $13 million increase each year.

While a complete overhaul of the national contract law would clearly be a long-term project, improvements and clarifications were determined to be possible over the short term. These would include:

* the introduction of contracts of carriage. A simple form should be introduced that would enable a shipper and a carrier to enter into agreement regarding date, quantity, and cost. The penalties for default should be unambiguous and should be easily collectable. The benefit would be

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that the carrier could plan his operations well ahead of time to provide the most economical service. As a long-term goal, since such a measure would benefit both truckers and steamship companies, a reduction of up to 10 percent in transportation costs could be achieved. The costs of the program were not estimated, but it was determined that the most significant part would be in the promotion of the system.

* the formation of exporters' groups. It is intended that a negotiating team be set up to acquire preferential rates for members of the groups. While the organization of such groups can be easily thought out, a weakness always lies in the contractual arrangement between the group and the members: without committment on the part of the exporters, the negotiators would find themselves looking for tariff deals without any assurances of volume. Again, it is recommended that a program be followed to determine the best legal structure that would permit a management group to bargain on behalf of prospective exporters. Given the volume, the potential for freight negotiations is quite considerable, and could reduce the transport cost by up to 25 percent.

2. Brokerage

In the absence of appropriate legal remedies, the services of brokers are almost unknown. These services, however, would be essential if full advantage were to be taken of the contract law revisions: brokers are traditionally the ones who take advantage of the difference between regular rates and bulk rates.

It is therefore recommended that, as part of the contract law amendment program, a legal framework be established for the operations of brokers in Guatemala.

The costs and benefits would be those of the previous program.

3. Overseas Representation

It is recommended that an office be set up in, say, Miami to:

1. Inspect shipments arriving to certify condition etc.
2. Investigate to determine better markets and buyers for the Guatemalan products.
3. Train Guatemalans of the region in the practice of international trade, with the possibility that some trainees may take over the role of regional brokers.

The costs and benefits of this proposal were determined to be: cost of $300,00 per year and increased exports at not less than $7 million.

The representation could be established in the very short term. There is the possibility that SGS could offer many of these services at a lesser cost than that of setting up a separate office.

4. Group Problem-Solving Assistance

A major weakness in the country was seen to be the lack of experience in group problem-solving techniques. An improvement in this field, when taken with the previous three recommendations, could put all the factors in place for genuine improvements to the problems of non-traditional exports.

It is therefore recommended that experts in this field be contracted to train a seed group of individuals in the processes of logical problem definition, consideration and selection of

solutions, strategy formulation, and implementation programming. Costs would be about $300,000 per year, for, say, three years, and benefits would be derived from measuring successes with specific problem areas.

5. Simplified Export Procedures

Of all the countries in the region, Guatemala clearly has the longest process for export documentation. The cost of this to the country is the impediment it becomes to the potential exporter, and the cost to an existing exporter of all the administrative staff required for the processing. There is also the loss of those contracts that cannot be honored because of the inability to respond quickly enough. The regional acceptable average for export paperwork is between 24 and 48 hours for a reasonably efficient firm, with the current trend aiming towards 3 or 4 hours.

The benefits from such a program are not easily derived. The costs of the required investigation are also not easily determined, and could be in the form of on-going programs aimed at reducing the process one step at a time. It should be realised, however, that many of the benefits cited for other programs assume that there are no impediments to entering the export business. Thus the other programs are dependent in part on the success of this one.

6. Education Programs

It is recommended that education and courses be made available to all those involved in the export process. This is not to take away from any of the education programs currently implemented their due recognition, but rather to recommend that they be supplemented by:

* A training program for truck drivers. It is recommended

that a school for Guatemalan truck drivers be set up in Guatemala City. This should be a collborative project between the Guatemalan trucking companies, manufacturers of trucks, and an enabling agency such as USAID. The aim of the school would be to turn out drivers who were aware of the role that they play in the trucking industry, and how correct driving habits can lead to more efficient use of equipment. The graduates of the course would receive a diploma that would be recognized as a sign of superior ability. The cost of such a school would depend to a great extent on how much assistance could be found from the major equipment manufacturers.

A training program for mechanics. It is recommended that a school for Guatemalan mechanics be established in Guatemala City under the same arrangement as the drivers' school. The aim of the course would be, not only to teach mechanics the details of repair and maintenance of heavy equipment, but also to demonstrate how to recognize and measure the results of a successful maintenance program. Again, graduates would receive a diploma of competence. The cost of buying equipment for and setting up such a school would easily reach $2 million, but as with the drivers' school, assistance is available from equipment manufacturers.

A training program for managers of trucking companies. It is recommended that a series of seminars be arranged for the managers or would-be managers of trucking companies. The purpose of the seminars would be to introduce ideas for improving efficiency of operations. In the long term it is expected that such a class, correctly conceived and executed, could end up in eliminating empty back-hauls, and thus cut the cost of trucking by half. A more realistic estimate would be a 15% reduction in trucking costs through generally improved managerial practices.

The speakers would have to be recognized experts in the field, and should clearly be able to deliver the seminar in Spanish. An annual budget of $75,000 would be sufficient for six speakers per year. If the speakers could visit more than one country, then the per-country cost would be less. A training program for port managers could be run on the same lines.

7. Increased Number of Inspectors in US Ports

A major item of cost for the average non-traditional export is the cost of maritime transport. Any program that reduces this cost can have a significant effect on increasing exports. The shipping lines complained that there was a shortage of US Customs and Department of Agriculture inspectors at US ports, and that this shorage was contributing to the costs of their operations.

Of the $172 million spent on sea freight in one year by non-traditional exporters, an estimated $17 million of this represents the cost while in US ports. A mere 1% improvement in turnaround time could save $170,000 in a year, increase exports by $0.85 million, and pay for of the order of 3 additional inspectors.

It is recommended that a program be established to investigate how the current shortfall can be made up, though it is known that the regional shipping lines are already bringing pressure to bear to resolve the issue.

The remaining items on the list were not considered priority items on a regional basis. Port tariff structure review, while of regional benefit, was considered a longer-term objective, with a country-by-country approach more appropriate for the short term. The same argument applied to the formulation of more effective port labor rules: much work was required within each country before a regional rationalization could be effective.

Seminars and training sessions would be difficult to establish quickly on a truly regional level. It was concluded that these should first be established within countries, followed by reviews to determine how best these services or resources could be shared and the costs spread through the region.

APPENDIX A

Economic Model for Benefit Estimates

In order to prioritize recommendations it is necessary to arrive at some estimate of benefits. Such a computation in the case of Guatemala, to be entirely valid, would require a degree of analysis that is beyond the scope of this study. Therefore a simplified model was adopted which, if used consistently, would at least enable the prioritization to be achieved. The assumptions that are basic to the model involve a great deal of aggregation and broad treatment, but the general results were found to be consistent with observations and experience within the country.

Since the focus of the study is on non-traditional products it was first necessary to abstract the value of non-traditional products for Guatemala. The table "Non-Traditional Exports" shows that, of the $1,060 million exported in 1985, approximately 61% could be classified as traditional and 35% was non-traditional. Thus the recommended improvements will be required to increase non-traditional exports over the $416.5 million exported in 1985.

Guatemala
Non-Traditional Exports
1985
$million f.o.b.

	Total	Traditional		Non-Traditional
Guatemala	1060	Coffee	451.5	
		Cotton	73.1	
		Bananas	70.9	
		Sugar	48.0	416.5
			643.5	
Percentage	100		61%	39%

Source: Economist Intelligence Unit, Quarterly Report

The next assumption answered the question: if the 1985 non-traditional exports could be represented by a single product, what would be the cost breakdown associated with its exportation? It is clearly not sensible to consider that transport equipment and bananas would have the same cost profile, but since this report showed that the typical non-traditional export was agricultural--mostly food--it was felt that the breakdown contained in the cost allocation table, below, was sufficiently representative.

Of significance in the table is the fact that transportation can account for between 35 and 40% of the c.i.f. price of the product, and margins are typically 20 to 25%.

Guatemala
Typical Export
Cost Allocation
1986

	% of total
Production cost	33-48%
Transport cost	35-40%
Admin. costs	2-4%
Margin	20-25%
Sale price c.i.f.	100%

Based on figures obtained for typical non-traditional agricultural export.

To determine the benefit of programs directed at improving the various transportation modes, it was necessary to assess the contribution of the modes to the total cost of transportation. Again, this process involved a considerable amount of aggregation of dissimilar items, but for comparative purposes the breakdown shown in the table "Transport Profile" was found to give results that were acceptable.

Guatemala
Typical Export
Transport Profile
1986

Mode	% of total
Land to port (1)	10-15%
Port charges (2)	3-6%
Sea freight (3)	65-75%
Port charges USA	12-16%
Total transportation	100%

Notes:

1 Includes collection from main production area and delivery to dockside

2 Includes all charges payable to port authority, stevedores etc., allocated to cargo loaded

3 Includes vessel operating costs from CA port to USA port

The table entitled "Total Cost Profile" gives a cost profile of the typical export from Guatemala. It shows the approximate amount spent on each cost category in 1985.

The total value of transportation for non-traditional exports from Guatemala is of the order of $258 million, with about $172 million being spent on sea freight and about $10 million being collected by the ports of Guatemala. The trucking industry accounted for about $31 million.

About $155 million was returned to the producers to pay for overheads and profit. This sum went to make interest payments, pay for depreciation, management, general equipment and so on, and what was left was profit.

If a recommended program manages to reduce transportation costs by 1%, or $2.6 million, the margin is increased from $155 million to $157.6 million, or 1.7%. If the same cost profile is maintained overall, then a margin of $157.6 million should support a total value of exports of about $700 million, or an increase of $13 million. On this basis there is about a 5 to 1 benefit to be obtained in non-traditional product exports for each percentage point decrease in the cost of transport.

Clearly, for the model to work accurately all other factors would have to remain equal: there would have to be no change in production cost, and rates of interest--a large component of margin--would also have to be unchanged. There are efforts being made in Guatemala to reduce both these factors, in the face of which there is probably some small capacity to absorb increases in the cost of transportation. The individual reports have shown, however, that non-traditional exports are extremely sensitive to both economic conditions and cost of transportation, and factors that have served to reduce the amount available for margin have also served to reduce the total value of non-traditional exports.

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Guatemala
Typical Export
Total Cost Profile

	Percent	Value US$ million
Production cost	33-48%	274.9
Transport cost	35-40%	257.7
Land	3-6%	30.9
Port C.A.	1-2%	10.3
Freight	20-30%	171.8
Port USA	4-7%	37.8
Admin. Costs	2-4%	20.6
Margin	20-25%	154.6
Total c.i.f.	100%	$687.23