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# **Central America Regional Transportation Study**

## **Regional Report**

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## REGIONAL

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# CENTRAL AMERICA TRANSPORT STUDY

## REGIONAL REPORT

### EXECUTIVE SUMMARY

This report evaluates transportation in the region of Central America 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 of non-traditional products. Reducing transportation 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 the countries of the region and in the United States showed that many factors, both physical and institutional, limit the transportation and export of non-traditional products.

## LIMITATIONS

### Physical Limitations

Throughout the region the cost of road transport is made expensive by the poor state of the roads. Road crossings at frontiers are mostly inadequate for heavy trucks, and so long detours have to be undertaken, so adding to the cost of intra-regional trade. While all ports would benefit from some degree of operational improvements--particularly in the maintenance of cargo equipment--the condition of the Guatemalan port of Santo Tomás de Castilla was determined to be an impediment to increased exports at the regional level.

### Institutional Limitations

Factors that serve to limit the efficiency with which a transportation system is used, as distinct from limitations in physical facilities, are termed "institutional"; streamlining them can increase exports at no capital cost. The ports are placed in a difficult situation by the mandate to cover all port costs by user charges. Shipping lines incur needless cost when port tariffs emphasize vessel type, not cargo volumes. Shippers by truck pay for "vigilancia" (guards to carry customs papers). Because more refrigerated containers leave the region with maritime exports than return with imports, shipping lines import empty containers at extra cost. Trucks run empty to make pickups but do not consolidate partial loads from producers; coordination can cut costs. The system for resolving contractual differences throughout the region discourages exporters from collaborating for mutual benefit.

## THE BASIS FOR RECOMMENDATIONS

The report records numerous suggestions from persons interviewed, as well as programs devised by the study team itself, and should be viewed as a storehouse of possibilities. Prioritized recommendations, however, were made on a very specific basis: appropriateness for short-term actions and appropriateness for implementation on a regional level as opposed to the national level. Actions that might be best left for implementation by groups other than USAID/ROCAP are not omitted from the prioritized recommendations as these may attract the attention of groups other than USAID.

Relative costs and benefits were estimated for each recommendation, and recommendations were ranked within the two categories, physical and institutional. Relative benefits are estimated as the percentage by which each action can increase total exports 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. Regional Review of Cross-border Roads  
Approximate cost: \$750,000 (study only)  
Approximate benefit: \$12 million increased sales  
Time frame: study 1988  
implementation & procurement 1989-1994

Recommendations--Institutional

1. Contract Law Amendments  
Approximate cost: not known  
Approximate benefit: \$80 million increased sale minimum per  
year  
Time frame: study 1988-1990  
immediate programs 1990-1995  
long-term programs 1990-on
2. Overseas Representation  
Approximate cost: \$600,000 per year  
Approximate benefit: \$28 million increased sales  
Time frame: initial organization 1988  
open office 1988/1989
3. Group Problem-Solving Assistance  
Approximate cost: \$500,000 per year  
Approximate benefit: up to \$150 million increased sales  
Time frame: initial organization 1987/88  
start program 1988
4. Representation at Tariff Conferences  
Approximate cost: \$500,000 per year  
Approximate benefit: \$2 million minimum increased sales  
Time frame: set-up office 1987/88  
presentations 1989 on
5. Standardized Trucking Regulation  
Approximate cost: \$200,000 to \$600,000 per year  
Approximate benefit: \$80 million increased sales  
Time frame: preliminaries 1987-1989  
short-term programs 1989  
longer-term programs 1989 on
6. Increase Number of Customs Inspectors at US Ports or

Preinspection

Approximate cost: \$600,000 per year

Approximate benefit: \$2.4 million increased sales

Time frame: 1987/88

# CENTRAL AMERICA

## CHAPTER 1

### INTRODUCTION TO THE STUDY

#### SYNOPSIS

Parsons Brinckerhoff International, Inc., has been commissioned by USAID, as part of Contract No. OTR-0000-I-00-6071-00, to supply technical services in Central America in the form of a study for the Central America Regional Transport Project. The objective of the study was to produce a series of reports that would enable the Regional Office for Central America and Panama (ROCAP) and the USAID missions to understand more fully the role of transportation in the development and promotion of extra-regional and intra-regional trade in non-traditional exports, and to assist in the formulation of proposals for the removal of the identified transportation-related problems. Recent experiences in the region have concluded that initiatives by ROCAP and the Central American bilateral USAIDs in support of non-traditional exports have invariably encountered transportation-related problems which have dampened the anticipated impact of the programs.

To complete the contract requirements, a study team was proposed which, for the six countries given (Belize, Costa Rica,

El Salvador, Guatemala, Honduras, Panama), identified land, sea, and air transportation constraints inhibiting private sector exports of Caribbean Basin Initiative and Central American Initiative non-traditional products in both intra- and inter-regional markets, and to recommend means for removing these constraints. For the recommended means, order-of-magnitude costs and time frames were to be developed.

A non-traditional export was to be considered any product other than the traditional export products of coffee, sugar, beef, cotton, and bananas, though this list was re-evaluated for each country.

A constraint was to be considered any condition which served to lessen service quality, increase transport costs, or reduce producer incentives to generate non-traditional products.

The results of the study were to be contained in seven reports: one for each of the countries and one covering the region as a whole.

The study was conducted in three phases:

Phase I - US review of documentation, consultations and survey methodology development

Phase II - Field interviews, documentation research and survey research

Phase III - Analysis of needs and prioritization of recommendations.

A study team of one transportation economist and two transportation engineers provided services both in the USA and in Central America, while a third transport engineer provided additional services solely in the USA. A total of 21 weeks was allowed from the start of the contract to the submission of the draft final report to ROCAP. Work started on the project in the USA on Monday, September 29, 1986.

This report, then, presents the results of the study for the region of Central America as a whole. It contains a detailed review of the economic, institutional, physical, and operational aspects of the region and its transportation system and the effects that all these have on the exports of non-traditional products. The report identifies problems that are having an inhibiting effect on the export of the non-traditional products, and makes recommendations for their removal or amelioration. The report makes a particular effort to present the views of the exporters themselves regarding transportation, and discusses the accuracies and possible misconceptions contained in these views.

## **BACKGROUND**

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 that 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 to restrain critical capital inflows.

This critical--and potentially worsening--situation has given rise to the political and legislative background for planned AID regional and bilateral programs in Central America: the 1984 enactment of the Caribbean Basin Initiative (CBI) and the follow-up Central American Initiative (CAI).

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.

An important focus of the proposed interventions is on assistance to exporters of products that are "non-traditional" to the countries of the region. The "traditional" exports are the major commodities, such as bananas, coffee, cotton, sugar, and meat, while the "non-traditional" are all the other items of export that can compete in world markets.

Previous interventions and bilateral USAIDs have encountered serious obstacles that have been identified as being transportation-related. In an effort to investigate the validity and dimensions of the impediment, this study was commissioned.

The study sought to achieve its objectives by

- o A review of existing documentation related to sea, air, and land transportation and infrastructure distribution, including economic trends, cargo volumes, and previous Central American transportation studies.
- o Consultation with institutions, organizations, companies, and individuals in the USA who are or have been involved with the export of non-traditional products in the region.
- o Interviews in each of the identified countries with individuals and groups such as

Growers and exporters of non-traditional perishable agricultural products;

Exporters of other non-traditional export products;

Importers of inputs to the non-traditional sector;

Chambers of Commerce, industry, and manufacturing;

USAID private sector officers and rural development officers;

Government ministers with responsibilities related to the transport of non-traditional commodities;

Export promotion councils;

Shippers' councils;

Airlines, ocean shipping companies, truckers, and ports and airports;

Shipping agents, freight forwarders, customs brokers, and customs officials.

- o Identification of both institutional and structural constraints affecting the operating efficiency and cost of roads and road transport, railways, aviation, and ports and maritime transport.
- o Analysis and formulation of prioritized interventions that should be undertaken to improve the quality of transport service and to reduce its cost, as related to the movement of non-traditional products to market.

## OUTLINE METHODOLOGY

The approach adopted started with an analysis to derive a definitive list of non-traditional exports for each country. For this purpose, published trade statistics, such as those contained in the UN Yearbook of International Trade, were analyzed and abstracted.

Dividing work between the United States and Central America, the team recognized from the start that the transportation-related constraints on Central American industries may not be located in those countries themselves, but in the United States. The transportation chain from producer to market was seen as a long one, and solving a problem observed at one point in the chain may in fact depend on solving other problems far down the chain, perhaps in another country. The choice of the US importing port, for example, could affect transportation cost and efficiency as much as the choice of the exporting port in the country of origin. Thus time was spent in the early stages of the study interviewing US-based exporters, shipping company representatives, trade groups, international agencies, local embassy officials, and representatives of the major ports serving Central America.

The approach that was actually used in the field by the study team in this case was a studied compromise. While interviews with users, shippers, carriers, and agencies were being conducted in the USA, the export figures of the countries were studied to arrive at a definitive list of traditional and non-traditional

exports. The information collected in the USA was used to develop a first cut at a list of names of individuals and organizations in each of the target countries who would have to be interviewed to obtain greater details on the nature of the products and the nature of the constraints. Interviews in Central America sought to obtain an idea of the potential for the export product to grow, a measure of the relationship between the price of the product on the open market and the cost of remedial transportation-related work, and an idea of what products could be aggregated to benefit from the same improvements. Before formulating any recommendations for improvements or amendments, officials of national governments and international agencies were questioned, where appropriate, to ensure that no plans were being formulated by others that would pre-empt or otherwise override any proposals contained in the reports of this study. Hence, the final reports contain prioritized lists of recommendations, both physical and institutional, whose implementation could significantly increase export volumes. Modifications or improvements that would be better introduced on a regional basis, rather than country-by-country, are included in the regional report.

In addition to interviews, the study team used available documents, such as relevant studies, Central Bank reviews, ministry papers, USAID memoranda, and newspaper and magazine articles. On-the-spot investigations were made as needed. Thus major ports and airports were inspected, particularly since their efficiency would affect several industries at once. In many cases producers of similar export items had similar constraints, and the flexible interviewing schedule allowed the team to pursue such common concerns through directed questioning and on-the-spot inspections.

The results of the studies were written up in the USA under the following headings:

- o geography, climate, and demographics
- o the export of non-traditional products
- o national transportation
- o conclusions and recommendations
- o economy and trade

The analysis of each nation's non-traditional exports was done within the classification framework of the internationally accepted Standard International Trade Classification (SITC), Revision 3. The adoption of this system was considered fundamental to the study, in giving it a consistent and systematic framework within which to analyze the information collected regarding the wide range of non-traditional products.

The studies were produced in the form of seven separate reports: one each for Belize, Guatemala, Honduras, El Salvador, Costa Rica, and Panama, and one report covering the region as a whole.

### **Metriation**

The metric system of weights and measures has been adopted for this series of reports. Only where industry standards are normally quoted in pound-foot units (e.g. 20-foot containers) is this alternative system used. Thus tons and metric tons refer to 1,000 kg throughout.

## CENTRAL AMERICA

### CHAPTER 2

#### GEOGRAPHY, CLIMATE, DEMOGRAPHICS

##### GEOGRAPHY

For the purposes of this study Central America is taken to comprise the seven nations that lie between Mexico in North America and Colombia in South America. The countries are: Panama, Costa Rica, Nicaragua, El Salvador, Honduras, Guatemala, and Belize. It has been customary to exclude Panama from the regional context, though for all practical purposes Panama functions more as a part of Central America than South America.

The region comprises the connection of two mountain ranges that separate the Atlantic from the Pacific oceans. In the north rises the southern sections of the mountains of West North America, the Sierra Madre, with their relatives in the West Indies; while to the south the mountains form outliers of the Andes Mountains of South America.

The area is an active zone of volcanoes and earthquakes; it contains the Nicaragua Depression, which includes the huge lakes of Nicaragua and Managua. Tajumulco, a volcano in Guatemala, at 4,210 meters, is the region's highest peak.

In general terms, the region can be characterized by a narrow Pacific coastal plain at the foot of a steep rise to about 2,000 meters elevation; from the ridge of the chain the land slopes more gradually to the Atlantic ending in a wider coastal plain. The

mountain range acts as a watershed dividing the Atlantic and Pacific climate zones, and generates a large number of short but fast-flowing streams and rivers.

As a rule, the capital cities of the countries of Central America are located in the temperate highlands, as shown in Table 2.1.

Table 2.1  
Central America  
Elevations of the Capital Cities  
(meters)

<u>City</u>	<u>Elevation</u>
Guatemala City	1,490
Managua	46
Panama City	36
San José	1,172
San Salvador	700
Tegucigalpa	935

The total land area of Central America is 544,248 square kilometers; it is approximately 2,060 kilometers long; it is 60 kilometers wide at its narrowest point (Panama) and 485 kilometers at its widest (Nicaragua/Honduras). The average width from coast to coast is 265 kilometers.

## CLIMATE

The climate of the region of Central America is tropical throughout the year, with two seasons. The rainy season lasts from about the middle of May through October, with the balance of the year constituting the dry season. Maximum annual rainfall in

certain coastal areas can exceed 500 cm, while the minimum can reach as low as 75 cm in the interior. The eastern side of the region receives the heaviest rainfall, and can be subject to coastal hurricanes, particularly in the northeast.

The mean annual temperatures in the area are 26°C at sea level, 20°C at about 1,500 meters, while above 2,000 meters temperatures sometimes reach below 10°C.

## DEMOGRAPHICS

The total population of the region is about 24 million, with some of the highest birth rates in the world. Table 2.2 shows the average percentage population increase during the period 1973 to 1983.

Table 2.2  
Central America  
Birth Rates  
(percentage population increase)

Belize	1.9
Panama	2.3
Costa Rica	2.4
El Salvador	3.0
Guatemala	3.1
Honduras	3.5
Nicaragua	3.9

An average figure for developing countries would be 2.1 percent. Much of the increased birth rate has been a result of reductions in infant mortality, and in some cases increased life expectancy through better medical care.

The distribution of the population of Central America is predominantly along the higher elevations close to the Pacific coast, with major concentrations in and around the capital cities. Large tracts of the Atlantic coastal plain are virtually uninhabited, particularly so in eastern Panama, eastern Nicaragua and Honduras, Belize, and the northernmost provinces of Guatemala.

The three main ethnic groups in the region are the indigenous descendants of the Mayas, the Europeans, and the African Blacks. As a group, the Europeans do not predominate to any extent, being supplanted by the mixed Indian-European "mestizos". This group now dominates the region, with large parts of Guatemala still basically Indian, and with Indian pockets in Honduras, Nicaragua, and Panama. In Belize two Black groups predominate: those of pre-1850 colonial origin, and those of West Indian origin. To some extent, Black communities are represented all along the Atlantic coast of the region.

#### COMPARATIVE STATISTICS

- o the total land area, at 544,248 sq km, places it between Chile (756,946 km) and Paraguay (406, 752 sq km)
- o the total population at 24 million, places it at less than Argentina (30 million) and Columbia (28 million), but greater than Peru (19 million).
- o the total value of trade--imports plus exports--at \$11,000 million per year, places the region in a position equivalent to that of Argentina (\$12,500 million per year).

Thus the region, were it to act as a unit, would become one of the major Latin American powers, following behind Venezuela, Brazil and Mexico in economic activity.

Table 2.3 shows the relationship, in terms of different measurements of size, between Central America and Latin America.

Table 2.3  
Central America & Latin America  
Comparative Statistics

<u>Country</u>	<u>Area</u> <u>Sq Km</u>	<u>Pop</u> <u>Million</u>	<u>1983</u> <u>Exports</u> <u>FOB</u>	<u>1983</u> <u>Imports</u> <u>C &amp; F</u>
Argentina	2,807,560	29.6	7,836	4,505
Bolivia	1,098,580	6.3	790	500
Brazil	8,511,965	125.0	21,879	15,408
Chile	756,946	11.9	3,827	2,818
Columbia	1,138,618	27.5	2,530	3,500
Ecuador	283,520	8.1	2,365	1,261
Paraguay	406,752	3.5	269	517
Peru		19.2	3,015	2,722
Uruguay	186,926	3.0	1,045	740
Venezuela	912,050	16.0	14,655	6,800
Guyana		0.8	193	226
Suriname	163,820	0.4	367	402
Fr. Guiana	89,941	0.07		
Mexico	1,875,000	70.0	21,400	7,700
Guatemala	109,000	7.45	1,189	1,126
Belize	20,000	0.14	78	113
El Salvador	21,200	5.0	735	892
Honduras	112,088	4.1	676	775
Nicaragua	148,000	2.7	414	772
Costa Rica	51,100	2.5	861	994
Panama	82,860	2.1	320	1,350
Central America	544,248	23.99	4,273	6,022

Source: The World Bank Atlas, 1986

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## EFFECTS ON TRANSPORTATION

Central America's main trading partner is the United States, to which it has access by land. However, topography and climate combine to make land transport an expensive option: mountainous terrain with many streams makes road construction extremely expensive, steep mountain passes makes trucking an extremely slow option, frequent heavy rains wash out unpaved roads and deposit debris on paved roads, and earthquakes break up road and bridge structures.

The topography of the region encourages transportation from the highland down towards the coast, this being the orientation of the valleys. Thus there is a transportation emphasis in each country of a nominal east-west direction, and not in the nominal north-south direction that would be required for trade between neighboring countries. Only the Pan-American Highway, passing along the Pacific foothills, achieves any linking between the countries. A much-needed Atlantic Coast Highway has never been constructed because of a combination of low swampy ground over which it would have to be constructed and the sparse population of the areas through which it would pass.

As with the highways, railroads in the region have to have the basic east-west orientation. While some of the countries do have rail connections from the coast to the capital city, railroad systems lose a great deal of their potential when they have to cope with steep climbs. Since railroad grades are severely limited, steep climbs result in long distances. Again, earthquake activity can be disastrous for a railroad operation, probably more so than for road transportation because of the greater flexibility of truck operations.

Given the tendency to run from the highlands to the coast by the shortest route, it has been necessary to provide a large number of port facilities. Since the direction of trade is eastwards, most of the major ports are located on the Atlantic side.

The shortage of navigable rivers in the region has severely curtailed any river and coastal transportation: what there was soon gave way to road transportation, and now hardly exists. Thus ports are numerous and are all required to connect with international shipping. Difficulties clearly arise when the bulk of the population lives in the highlands adjacent to the Pacific coast while the ports are located on the Atlantic. Of further concern is the fact that most of the productive agricultural areas are on the Pacific littoral, the Atlantic being too wet to produce much more than bananas.

A further factor brought about by the population's preference to live at the higher altitudes is the matter of aircraft capacity: airplanes lose a great deal of their carrying capacity when they have to land and take off at high altitudes.

It can thus be said, right at the outset, that transportation in Central America is liable to be expensive, even under the best of circumstances.

## REGIONAL

### CHAPTER 3

#### THE EXPORT OF NON-TRADITIONAL PRODUCTS

##### IDENTIFYING TRADITIONAL AND NON-TRADITIONAL PRODUCTS

###### Traditional Products

For the purposes of the study, it was intended that the classification "traditional exports" signify rather more than just those items that had traditionally been exported. The classification was intended to separate:

- o those exports that had reached a level of sophistication and volume which enabled them to be managed with economic efficiency from those exports which were small in volume and were uncoordinated
- o those exports whose prices (and quantities) were under the control of international cartels from those whose prices were set by demand and supply or by agreement between buyer and seller
- o those exports that were the subject of quota restrictions from those that could freely be traded.

The rationale behind the definition was that exports defined as being traditional could be expected to be making use of transportation in an efficient manner as possible, as a result of their great volumes and international management expertise. The

producers and exporters of traditional products were not always free to fix their own prices and produce quantities according to demand.

On the other hand, exporters of what are defined as non-traditional might be expected to be experiencing correctable difficulties in their use of transportation facilities, they would also be freer to establish their own prices in the market, and could increase their exports in accordance with increases in demand. In short, non-traditional exports could be expected to benefit from programs of transportation improvements.

Table 3.1 shows a list of the major export items, together with the value of each in 1985 in US\$.

**TABLE 3.1**  
**Central America**  
**Principal Exports by Country**  
**1985**  
(US\$ million)

	Guatemala	Honduras	El Salvador	Belize	Costa Rica	Panama
coffee	323.5	185.0	452.4	-	308.3	12.9
cotton	59.5	6.8	24.4	-	-	-
bananas	42.8	273.5	-	3.2	189.4	74.7
cardamom	50.6	-	-	-	-	-
beef	73.8	18.2	1.7	0.2	56.2	1.5
citrus	-	-	-	12.1	0.2	-
sugar	33.3	21.4	29.3	22.9	5.1	35.0
seafood	7.4	40.9	9.2	6.8	27.6	57.8
armaments	2.6	0.7	8.0	15.7	8.1	9.3
ref. Petrol.	8.5	5.9	4.5	-	3.9	19.9
others	457.7	227.6	149.3	3.5	331.2	59.5
<hr/>						
TOTAL	1,059.7	780.0	678.8	64.4	930.0	256.3
Including (Others)						

Source: The Economist Intelligence Unit, Central Banks

Aggregating the above values to give the major exports from the region as a whole produces Table 3.2, where the percentage contribution of each item to the total is also shown.

**Table 3.2**  
**Central America**  
**Total Principal Exports**  
**1985**  
 (US\$ million)

<u>Product</u>	<u>Value</u>	<u>Percent</u>	<u>Cumulative Percent</u>
Coffee	1282.1	34	34
Bananas	583.6	15	49
Meat	151.6	4	53
Seafood	149.7	4	57
Sugar	147.0	4	61
Cotton	90.7	2	63
Cardamom	50.6	1	64
Garments	44.4	1	65
Refined Petroleum	28.4	-	-
Citrus	12.3	-	67
Others	1228.8	33	100
<b>TOTAL</b>	<b>3769.2</b>	<b>100</b>	

Source: Central Banks, Development by PBI

Using the definition mentioned earlier for traditional products--large volumes, pricing cartels, quotas--we would have to define the traditional products from this list as

- Bananas
- Coffee
- Sugar
- Meat
- Cotton
- Refined Petroleum

On the basis of this division, in 1985 the value of traditional product exports was \$2283.4 million, or 61 percent of total exports, and non-traditional exports was valued at \$1485.8 million, or 39 percent of the total.

## Non-Traditional Products

Non-traditional products are all the exports that remain once the traditional exports have been removed. Clearly, these run into several hundred different traded items, and so aggregation was necessary to facilitate the survey interviewing and subsequent analysis. The SITC (Standard International Trade Classification) basic (one digit) categories were used to establish preliminary grouping, with subsequent refinement being used where needed. The SITC one-digit categories are:

- 0 Food and Live Animals
- 1 Beverages and Tobacco
- 2 Crude Materials Excluding Fuels
- 3 Mineral Fuels, etc.
- 4 Animal and Vegetable Oils and Fats
- 5 Chemicals
- 6 Basic Manufactures
- 7 Machines and Transportation Equipment
- 8 Miscellaneous Manufactured Goods
- 9 Goods Not Classified by Kind

It should also be pointed out that treatment on an aggregated basis was also necessary because individual export items did not appear in the national statistics every year. It was clear from a study of the export figures, and it was confirmed in subsequent interviews, that factors combined differently each year to make export products either profitable or not. Exporters would thus be active in years of economic returns, and would be inactive in years where their product was not competitive overseas. For most exporters of non-traditional products there was little attempt at planning and putting into effect a program for increasing exports, it being considered that the future was far too uncertain for them to make such a commitment.

While the total list of products analyzed in this study included 50 separate export items, a significant number of items were exported but were not included in the list because their individual contributions to exports were small. When these were aggregated, however, considerable values were not accounted for.

Thus every year the region exports a whole range of products whose individual values are small, but in aggregate could account for between one fifth and one third of all non-traditional exports. Such a proliferation of small exporters makes analysis by industrial sector difficult, since trends can only be determined when there is enough activity within the sector to ensure some continuity. The figures imply that producers export one year and don't export the next year, depending on prevailing conditions--there is basically an absence within this group of a commitment to export, and it is serious because the group is so large.

The export profiles for each of the countries of the region (excluding Nicaragua) are shown in Table 3.3. The total profile for the group is also shown, although this has been compiled from adding different years. For comparative purposes, however, the totals are sufficiently representative.

As can be seen from the table, the area is predominately agricultural, with 69 percent of exports being in the category of "Food and Live Animals". Taking SITC codes 0 through 4 together--representing basic activities of agriculture, mining, forestry, horticulture, oil drilling and so forth--82 percent of exports are at this low level. The remainder, 18 percent, derives from basic industries, with chemical industries and basic manufacturing predominating. Basic manufacturing, it should be noted, depends heavily on the working of basic raw materials such as leather and wood, which are also dependent on the land. More advanced manufacturing only accounts for 4 percent of exports. (In interpreting the figures in the tables it has to be borne in mind that trade figures require considerable interpretation, particularly when variable exchange rates are involved. Thus, figures from different sources may not always agree exactly, and will give different totals. For the purposes of this study absolute values are less important than comparative values.)

**Table 3.3**  
**Total Export Profile**  
(US\$ million)

SITC Code	El Salv.	Honduras	Belize	Panama	Costa Rica	Guatemala	Total
	'85	'85	'85	'84	'85	'84	
0 Food & Live Animals	506	601.2	47.6	206.5	656.0	603.3	2,620.6
1 Beverages & Tobacco	0	17.1	0	6.5	0.3	18.3	40.2
2 Crude Mat'ls	41	122.5	0.8	3.1	23.6	171.1	362.1
3 Mineral Fuels	14	6.0	0	5.6	3.9	34.3	63.8
4 Animal/Veg Oil/ Fats	3	11.9	0	0.4	0	1.5	16.8
5 Chemicals	35	5.1	0.4	8.5	66.1	109.0	224.1
6 Basic Manuf.	60	13.1	0.02	13.9	84.0	102.5	273.5
7 Mach. & Transp. Equipment	0	0	0	0.6	23.2	12.0	35.8
8 Misc. Manuf.	13	5.3	15.6	12.6	35.4	38.1	120.0
9 Others	7	0	0	0.6	0	32.2	39.8
Total	679	782.2	64.4	256.3	892.5	1,122.3	3,796.7

Source: Central Banks, distribution by PBI

**Table 3.4**  
**Export Profiles Compared**  
 (percent of Export Value)

SITC Code	Central America	Chile	Japan	USA
0	69	17	1	12
1	1	0	0	1
2	10	27	1	9
3	2	2	0	5
4	0	1	0	1
5	6	2	5	10
6	7	48	20	8
7	1	3	64	42
8	3	0	8	8
9	1	0	1	4

Source: Standard International Trade Classification, Statistical Papers

For comparison purposes, Table 3.4 has been included. This shows the percentage of total export values allocated to each of the SITC categories for Central America, Chile, Japan, and the USA. Japan was chosen to represent a predominately industrial exporter, Chile because of its position as a major competitor for US markets, and the USA as the major trading partner for the region. Clearly, Central America, with 69 percent of its exports in the food category, is entirely different from the other three countries. The region could be said to be a mirror-image of Japan, where exports are concentrated in machinery and transport equipment. Even Chile, whose reputation is that of an exporter of fruits and vegetables, relies far more for its foreign earnings on basic manufactured items. The USA, while exporting large quantities of machinery and transport equipment, manages to spread its profile throughout most categories.

To arrive at the export profile for non-traditional products, the traditional exports are removed from the overall profile. The results are shown in Table 3.5.

**Table 3.5**  
**Non-Traditional Export Profile**  
(US\$ million)

SITC Code		El Salv.	Honduras	Belize	Panama	Costa Rica	Guatemala	Total
		'85	'85	'85	'84	'85	'84	
0	Food & Live Animals	30	100.8	20.7	82.4	84.0	99.8	417.7
1	Beverages & Tobacco	0	17.1	0	4.5	0.3	18.3	40.2
2	Crude Materials	10	52.8	0.2	3.1	23.6	100.7	190.4
3	Mineral Fuels	0	0	0	5.6	3.9	0	9.5
4	Animal/Veg. Oil/Fats	3	11.9	0	0.4	0	1.5	16.8
5	Chemicals	35	5.1	0.4	8.5	66.1	109.0	224.1
6	Basic Manuf	60	13.1	0.02	13.9	84.0	102.5	273.5
7	Mach & Transp Equip	0	0	0	0.6	23.2	12.0	35.8
8	Misc Manuf	13	5.3	15.6	12.6	35.4	38.1	120.0
9	Others	7	0	0	0.6	0	32.2	39.8
	Total	158	206.1	36.9	132.2	320.5	514.1	1,367.8

Source: Central Banks, Distribution by PBI

The total regional profile shows that the non-traditional products are more evenly-distributed throughout the range. Food and Live Animals only account for 31 percent of exports, and industrial exports account for 51 percent of the total. This figure reflects the situation in most of the countries of the region, that non-traditional exports were fairly evenly divided between agriculture-based exports and industrial exports. Again, the industrial exports rely to an extent on agricultural activity.

## NON-TRADITIONAL AGRICULTURAL EXPORTS

### Food & Live Animals

This category is dominated by the fish and shellfish and fruits and vegetables. Of the US\$417 million exported from the region in this category in 1985, US\$220 million, or 53 percent, was accounted for by fish and shellfish and fruit and vegetables. Of the two, fish and shellfish accounted for US\$154 million, or 70 percent. It would not be unreasonable to claim that, of the non-traditional exports, the region relies most heavily on sea food.

**Table 3.6**  
**Central America**  
**Fish and Crustacea Exports**  
**1985**

<u>Country</u>	<u>Export Value</u> <u>US\$ millions</u>	<u>Percent</u> <u>of Total</u>
El Salvador	12.5	8
Costa Rica	27.6	18
Panama	57.8	38
Belize	7.5	5
Honduras	41.0	26
Guatemala	7.4	5
Total	<u>153.8</u>	<u>100</u>

Source: Central Banks

As shown in Table 3.6, more than one third of all exports of fish and shellfish originate in Panama, with less than one third coming from the next largest exporter, Honduras. While exports from this group form a significant part of the economy of El Salvador, on a regional basis the contribution is only about 8 percent. Belize and Guatemala only contribute about 5 percent each to the total.

Most of the fishing in the region takes place on the Pacific coast, though Caribbean fishing is common in Honduras and exclusive in Belize. As a rule, since the main destination for the catch is the USA, shipments are frozen and sent by refrigerated containers to Atlantic coast ports, from where they go by sea to US gulf ports--mostly Miami. A small part of the catch is sent fresh by air freight, but irregularities in airline service tended to discourage the use of this mode.

Fish and shellfish, particularly when sold fresh, are high unit value items. For this reason the cost of transportation forms a small part of the CIF price landed in the USA. Typically, transportation costs take up 5 to 10 percent of the sale price, though this will vary according to the mode selected. Exports from Panama and El Salvador had the least problems with air freight, and Panama managed a more international distribution, in spite of a comparative cost disadvantage. Exporters from Costa Rica and Guatemala had the greatest problems with the unpredictable service, while those from Honduras were only recently experimenting with air freight. Exporters from Belize had an acceptable level of service.

While refrigerated containers and sea freight were the industry norm for transportation, it was not considered to be the most advantageous. Most of the fishing cooperatives took a considerable time to fill a 40-foot container, and when full, the container represented a considerable part of the year's income--as much as half a million dollars in some cases. Consolidation and cooperation between cooperatives was not practised, and there was no communication between the cooperatives of neighboring countries. A transportation broker could assist the fishing industry to ship smaller quantities more frequently.

**Table 3.7**  
**Central America**  
**Exports of Fruits and Vegetables**  
**1985**

<u>Country</u>	<u>Export Value</u> <u>US\$ millions</u>	<u>Percent</u> <u>of Total</u>
El Salvador	1.7	2
Costa Rica	12.9	15
Panama	6.1	7
Belize	15.5	18
Honduras	19.2	23
Guatemala	29.5	35
<hr/>		
Total	84.9	100

The main exporter of fruits and vegetables from the region is Guatemala, accounting for 35 percent of the total. Belize, contributing 18 percent, as the third largest exporter after Honduras showed an importance out of proportion with its comparatively small size.

A whole range of tropical fruits and vegetables is exported from the region. Most of this is destined for the USA, though US Department of Agriculture requirements prohibits the import to the USA of such fruit as mangoes. All fruit that is susceptible to medfly infestation comes under the same ruling, and curtails considerably exports in this category.

The fruit and vegetable exports from the region fall into three broad groups:

- o fresh, highly perishable, fruits and vegetables, on ice or otherwise cooled, exported by air
- o Fresh, fairly perishable, basic fruits and vegetables, exported by sea in refrigerated containers
- o processed fruit and vegetables, in all forms from sliced and frozen, dried, canned, and bottled, to concentrate.

The largest single group is that of exports of fresh fruit and vegetables by sea in refrigerated containers. In the case of Belize, however, a significant proportion was in the form of frozen citrus concentrate. Costa Rica and Guatemala were major exporters of fresh product by air, though both countries did this in spite of conflicts with the airline services. The margin was better for the highly perishable items sent by air freight, but the risks were proportionately greater. Melons and pineapples were important sea consignments, both having only recently been cultivated in quantity.

Belize and Guatemala had a clear advantage over other countries in the region when it came to exporting to the USA: trucking products across Mexico was a cost-effective alternative to exporting by sea, even given the restrictions imposed at the Mexican frontier. Even exporting from Honduras across Guatemala to the USA, while an economic possibility, was not a practical solution because of the frontier delays and formalities between Honduras and Guatemala. A major impediment to increased fresh fruit and vegetable products to the USA is clearly to be found in the problems of intra-regional trucking.

The processing of fresh fruit and vegetables normally requires that the field heat be taken out of the crop soon after harvesting. This process is performed most effectively and efficiently in refrigerated warehouses constructed and located near the site of the harvest. At the time of the study, a loan had been agreed between Costa Rica and the government of Spain for the construction of a network of seven cold storage warehouses throughout the country. The total value of the loan was \$8.75 million. It was felt that the construction of these warehouses would significantly reduce the practice of the past whereby farmers would attempt to take the field heat out of crops by use of ordinary refrigerated containers: they would perform this function by loading the container with the harvested crop and turning the power up to its maximum level. The shipping companies and owners of the refrigerated containers claimed that this practice had two significant effects:

1. The containers were kept by the farmers for extended periods in order to cool the crop down sufficiently. This led to a chronic shortage of containers in the country.

2. Using containers with the refrigeration unit turned up to its maximum invariably led to unreasonable amount of breakdown, thus placing out of service the desperately needed refrigerated containers.

The larger exporters of fresh fruit and vegetables claimed that some of the smaller exporting companies got themselves into trouble because they were insufficiently experienced in international trade. It was claimed that these smaller exporting companies would sell their product in the USA purely on consignment: that is, that the price was fixed by the buyer on receipt of the shipment. The experienced exporters used 30 to 60

day standby letters of credits or used 50 percent payment on receipt of documents and 50 percent on arrival. This was considered to be an acceptable business arrangement and one that avoided the losses associated with shipments on consignment.

### Beverages and Tobacco

The export of beverages is mostly limited to exports within the region. All the countries within the region have well developed breweries and most produce their own extracts of sugar such as rum. There is therefore very little demand between the countries for beverages. Similarly, overseas demand for beverages is currently extremely limited. Successes, however, particularly in the case of rum from such countries as the Dominican Republic, have led to a reconsideration of this product by some of the producers within the region. Since the regional product would have no particular advantage to the consumer over competitive products from elsewhere, the only way that increased sales by exportation could be achieved would be through an extremely sophisticated and therefore expensive promotion campaign.

While tobacco leaf is a basic commodity, being bought and sold on the commodity exchanges, tobacco products are not. The overall exports of this group have been dominated by the world demand and supply of tobacco leaf, giving a steady fall over the period. For the cigar and cigarette group and other tobacco products the recent history has been considerably better.

The trade figures for the region show that every year a small quantity of cigars is exported to the USA. This is a specialized high price, low volume item. A certain amount of promotion is undertaken by the manufacturers of these items, and sales are generally on the increase. Advantage has been taken of the difficulty imposed on obtaining cigars from Havana by promoting

cigars from Central America as being of equal quality to the smoker. The demands on transportation imposed by this product are small and no serious complaints were registered by the producers. The product was sent to the USA quite often by air freight, since the space did not justify the use of containers and marine transportation.

Since the product was not perishable, the service offered by the existing air cargo companies was considered quite adequate.

### Crude Materials Excluding Fuels

This category includes virtually any natural or growing product that is not used directly for food. It includes, for example, wood and fresh flowers. It also includes such items as animal skins and pelts, ground nuts, beans, latex, synthetic rubber, wood particles, veneer, lumber, cotton, fibers, phosphates, clays, iron ore, copper, and so on.

The main contributors to this group were Honduras and Guatemala, accounting between them for 81 percent of the total. Most of the remainder came from Costa Rica.

Honduras' contribution came mainly from the export of wood and lumber, which while a significant US\$34 in 1985, had actually fallen 20 percent since 1981. While the whole region had great potential in its forest products, the main impediment to growth lay in an absence of a consistent policy towards its exploitation.

By far the single greatest contribution to exports in this group came from fresh cut flowers, plants, and seeds for horticulture. In 1985 Costa Rica exported approximately US\$21 million and Guatemala US\$9 million. Almost the entire shipment of flowers went by air to the USA, while tropical plants, bulbs and

seeds went to Europe. If the facilities were adequate all the countries in the region could become exporters in this category, but even those that exported successfully experienced considerable transport difficulties.

Fresh cut flowers are highly perishable, and need to be transported in cold conditions--not freezing--and not be exposed to sunlight. Air transport is the only viable transportation mode, but this needs to have frequent and reliable schedules, and short-term cool storage facilities are required at the airport. For the main exporter--Costa Rica--the unpredictability of flights and available space were a serious impediment to increased exports. Similar circumstances prevailed in Guatemala.

#### Animal and Vegetable Oils and Fats

The Central American region was not a significant exporter of products in this category. Honduras expressed interest in increasing exports of palm oil, for which it had determined some potential. The main impediment to increased exports lay in the lack of production facilities, though such basic and low-cost products have limited markets world-wide, and require cheap transportation.

#### NON-TRADITIONAL INDUSTRIAL EXPORTS

##### Chemicals

Products in this group include such items as pharmaceuticals, soaps, detergents, cosmetics, essential oils, and so forth.

Guatemala and Costa Rica are the main producers within this group, though El Salvador contributes a significant proportion of its total exports.

Most of what is produced in this category is sold within the region, and comprises mostly medicines, cosmetics, soaps and detergents. Most of the more basic detergents and soaps are exported by road, while some of the more sensitive and valuable pharmaceuticals went by air. Since products in this category are not normally perishable and have fairly high unit values, transportation is not an impediment. In fact, by distributing facilities around the region, exporters often manage to balance cargoes by exporting finished products and importing raw materials or containers.

Some producers of pharmaceuticals, particularly in El Salvador, have managed to find overseas markets. These are located in South America, Africa, and Asia, where there is a demand for low-cost generic medicines. El Salvador and Panama, as hubs of air transport, have considerable potential.

### Basic Manufactures

Products in this category are those whose chief classification is its material. Leather goods, rubber goods, threads, yarns, paper products, wood products, and so on are all typical of this group.

All countries in the region except Belize achieved considerable success in exporting from this group. A considerable amount went to other countries in the region, but countries such as Panama achieved \$9 million in trade of leather products-- principally to Italy and the US.

Guatemala and Costa Rica shared the position of being the region's producer of glass containers. Since the two companies, however, were under the same ownership, the supply of glass containers in the region was monopolistic. Distribution of bottles in the region was by road, though some exports went to the US and several Caribbean countries by sea. For the most part, Guatemala is the source of most of the raw materials for glass, and so this gets trucked south to Costa Rica, while finished products are trucked north. The manufacturer's main complaint was the waiting time required at the border crossings.

Most of the countries in Central America produce paper and cardboard products. Rolls of bulk paper are imported and are then processed into bags, toilet rolls, writing paper, cardboard boxes and so forth, and then exported to customers in the region. There is sufficient variety in the end product to support a considerable number of manufacturers.

### Machinery and Transportation Equipment

Only Guatemala and Costa Rica achieved any significant level of exports of products in this category. About \$35 million was earned in exports of small mechanical parts, switches, electrical equipment, and components. The regional shortage of activity in this category underlines many of the problems associated with the repair and maintenance of heavy transport equipment. The area is generally short of machine tool shops, and thus a major effort is required in appropriate investment and training.

### Miscellaneous Manufactured Goods

Of prime importance to the region of products in this category was textiles.

Most of the textile firms in the region that are involved with exporting are operating under USTS 806.30/807. In general terms, this system of tariff preferences permits the tax-free reimport into the USA of goods that were partially processed prior to exporting. In the textile industry the normal practice is to cut the cloth in the USA, export the cut cloth or partially assembled garment on a temporary basis to a country in the region, use local labor to complete the assembly, and then to reexport--or "drawback"--to the USA. In this way the producer can take advantage of the reduced labor and operating costs in the region, assuming this gain to be less than the additional cost of transportation.

The firms spoken to were either direct investors and managers, in that they had set up and operated their own factories in the region, or they contracted with local manufacturers for the work. Most interviewees preferred the security of direct investment, where the complete control of the operations was in the hands of the parent company.

All manufacturers reported that they were extremely busy, and most had plans for expansion in the near future. Bluejeans, shirts, and female undergarments were the main production items. While much business was directed to the USA, in recent months interest had been shown by companies in the Far East, and Costa Rica was already exporting 20,000 to 25,000 sweaters a month to Korea.

Exporters of textiles had two major concerns: they were concerned that, while labor at the time of the survey was economically efficient, inroads by labor unions had served to put up the cost of labor, and they were concerned that the USA might in the near future put quotas on textiles imported under the "drawback" program. It was felt that such quotas were likely on shirts and jeans. The economic cost of labor was a complex

combination of direct costs and efficiencies, and indirect costs. While labor was not cheap, it was considered productive, particularly when compared with other countries. While it took 17 percent longer to produce a garment in Costa Rica than in Tampa, the output was about double of what could be achieved in the Dominican Republic. As for indirect costs, a number of manufacturers stated that they were voluntarily providing a whole range of facilities for their workforce in order to induce them not to join labor unions. Margins were small in this industry, and all manufacturers were keeping an eye on these costs. It was felt that the assistance given to investors in textile factories by most governments in the region was inadequate, though firms with operations in other areas claimed that Central America was not without advantages in this respect.

Exporters of textiles used both air freight and sea freight, with 85 percent by sea and 15 percent by air as the common split. In their use of sea freight shipping lines they were mostly indifferent, using whichever line had the next scheduled stop at the port. While maritime transport took a considerable time to reach its destination, it was felt that this mode was at least predictable; while air freight could be quicker, perishable goods had priority over textiles, and so it was never certain just when a consignment would actually be delivered. Maritime transport was considered adequate for most purposes, and most firms managed to achieve a balance between the containerloads of imported materials and the containerloads of completed exported garments. Air freight was only used when absolutely necessary.

In spite of all the activity in textiles in the region, the value added in assembling textiles is very little, and resulted in a disappointing 9 percent contribution to exports from this category.

## REGIONAL

### CHAPTER 4

#### REGIONAL TRANSPORTATION

The transport infrastructure of the region includes roads, ports, airports and railroad facilities. Competition from road transportation has eliminated what was once a limited river navigation.

#### ROADS

##### Guatemala

There are some 11,390 kilometers of roads in Guatemala, and about 3,100 kilometers are paved. It is estimated that less than 2% of the paved roads are in good condition. More than 60% are classified as being in bad condition, while the balance is classified as average. More than two thirds of the dirt roads are classified 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 Petén with the rest of the nation and with Belize.

The major national road artery is the section of the Inter-Ocean Highway linking Guatemala City with the port at Santo Tomás. 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 virtually eliminated. Passing slower vehicles is also difficult and dangerous.

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.

**Table 4.1**  
**Guatemala**

**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	<u>213</u>
	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 them out of business.

Rarely is it possible for a small operator to enter the ranks of the secure, established firms.

The total length of road in relation to the size of the nation places Guatemala in a very low rank by international standards. World Bank data for 1970 show the nation with .095 km of road per square kilometer. This figure was virtually unchanged in 1986. In 1970 Guatemala had 10.7 vehicles per thousand population, the lowest in the region. The figure in 1986 was 24, a level that was exceeded by Costa Rica and Panama in 1970.

### Honduras

In 1983 there were 18,280 km of roads of all types in Honduras, of which 1,828 km were paved and 9,379 km were passable in all weathers. The penetration represented by the 1983 total is a marked improvement over the estimated 5,600 km total for 1976, and reflects the attention that the highway system has received in recent years. Except for the northeast, each section of the country participates in the highway network, though with many local gaps.

Unlike the other countries of the region, Honduras does not have the Pan American Highway passing through the capital city, Tegucigalpa, which fact has led to a very different pattern of highways in the country. The main paved roads are:

- \* The Northern Highway (Tegucigalpa--San Pedro Sula--Puerto Cortes) 302 km.
- \* The Pan American Highway (El Salvador--Nicaragua) 111 km.
- \* The Southern Highway (Tegucigalpa--Pan American Highway) 196 km.

- \* The North Coast Highway (San Pedro Sula--Progreso--Tela--La Ceiba) 147 km.
- \* The Western Highway (San Pedro Sula--Santa Rosa de Copan) 148 km.
- \* The road linking Choluteca on the Pan-Am Highway with the Nicaraguan frontier at Guasaule 44 km.
- \* The Eastern Highway (Tegucigalpa--Danli--El Paraiso--Las Manos) 158.5 km
- \* The Olancho Highway (Tegucigalpa--Catacamas) 223 km.

The net effect of the system is that Honduras has good access from Tegucigalpa to both Nicaragua and El Salvador by way of the Pan American Highway, with San Pedro Sula and Cortés being connected by road to Guatemala and El Salvador. Connections to Nicaragua from San Pedro Sula or Cortés would be via Tegucigalpa.

Of the international road connections, only the Pan American Highway is consistent on both sides of the border: the connecting roads to San Pedro Sula from both Guatemala and El Salvador are unpaved and in poor condition.

Inspections of the highway system revealed that the paved roads in most areas were still in fair condition, though poor construction practices had led to rapid deterioration in areas of greatest use--particularly around San Pedro Sula and Puerto Cortés in the north. All-weather roads were falling behind in their maintenance schedules in places, making passage by heavy trucks slow, dangerous, and expensive.

The global road statistic for Honduras is 0.16 km of road per square kilometer. Compared with other countries in the area, this is low for adequate access to all areas. The figure reflects that vast tracts of the country are virtually inaccessible by road. It also reflects the fact that the roads have been constructed principally to connect main population centers, and so most of the population had reasonable access to transport. For agricultural transportation, however, most of this will have to cover dry-weather roads and tracks, with all the consequences for costs.

In 1982 the trucking industry had a total of 5,715 regular trucks of all classes and 909 tractor trucks. There were also 811 trailers of all types registered, though this number was constantly supplemented by trailers in the country with temporary permits, particularly those of some of the major shipping lines.

Trucking rates were not fixed or published in Honduras, the individual trucking companies being free to make their own agreements with shippers. Typical charges from Tegucigalpa to Puerto Cortés for a 40 foot container were \$273. On a per kilometer basis, the following rates were being used by one of the major companies:

Loaded	\$0.73/km
Empty	\$0.65/km
"Bobtail"	\$0.63/km

There was not normally a charge by weight, though some companies published tariffs with charges by type of cargo, distance traveled, and total weight.

## El Salvador

El Salvador has about 12,500 km of roads, of which half are all weather. The most important roads in El Salvador are:

- o The toll road from San Salvador to Comalapa Airport. The link is about 36 km in length and connects the metropolitan area of San Salvador with the airport. It is a limited access road with only five points of entry.
- o The toll highway Comalapa--Zacatecoluca. When construction is complete--including an interchange for traffic going to and from La Herradura and Costa del Sol--the average daily capacity will be between 28,000 and 32,000 vehicles.
- o Highway CA-2, Comalapa--La Libertad. This 24 km road serves touristic, agricultural and commercial functions.
- o Comalapa--El Rosario--Zacatecoluca. This is the alternative to the toll road between Comalapa and Zacatecoluca.

The road maintenance plan outlays for 1987 are scheduled to exceed 64 million colones. Maintenance activities will be performed on about 9,500 kilometers of road. Almost 65 percent of the maintenance work will be performed on rural roads.

The number of motor vehicles in use within El Salvador is less than 150,000. About half are passenger cars and half commercial vehicles.

## Belize

Belize has some 2,500 km of roads of which about 350 km are paved.

Major land routes include the Northern Highway that connects Belize City with Chetumal on the Mexican border. This Highway serves the sugar cane areas of Corozal and Orange Walk areas. Except for the 28 km nearest to Belize City, the 150 km Northern Highway is in better than adequate condition.

The Western Highway connects Belize City with Belmopan and continues to the Guatemala border. This 134 km, mostly paved, route is in fair to average condition for most of its length and the gravel surface for the 18 km before the border is in average condition.

This 163 km Southern Highway runs from Dangriga/Stann Creek to Punta Gorda and serves the Stann Creek and Toledo Districts. The road has a gravel surface and is subject to frequent flooding. World Bank and U.K. aid are funding improvements to some of the worst sections.

The 88 km Hummingbird Highway connects the southern districts to the rest of the country. A one-lane road with narrow one-way bridges, the highway is in poor and sometimes dangerous condition. Some improvements were carried out in 1985/86 but only to the 18 km in the Stann Creek Valley. Improvements to the mountainous section will be costly.

An alternative to the Hummingbird Highway, a coastal plain road directly south from Belize City to Dangriga, would be costly because of the swampy conditions. No feasibility studies have been performed.

Most feeder roads were originally built to serve a particular industry, as:

Corozal District	- Sugar Cane
Orange Walk District	- General Farming/Forestry
Belize District	- Rice Farming/General Farming
Cayo District	- Forestry/General Farming
Stann Creek District	- Citrus/Banana Industry
Toledo District	- Forestry/Rice Farming

and their condition is influenced by the fortunes of the industry for which they were constructed. Generally, the feeder roads are better in the south because of better construction materials. In 1984 there were no plans for new roads.

The trucking industry is simply a collection of small operations--usually owner-drivers, but with a handful of small fleets. This has come about because of the country's traditional trade through the ports to the U.S.A. and Britain rather than long hauls to Central American neighbors.

Typically the 6-ton capacity, 2-axle trucks and the 20- to 25-ton tractor/semitrailers that make up the fleet, are imported as 6-year old vehicles at the end of their depreciated life in the U.S.A.

In comparison with other countries, trucking costs are high not only because of bad roads but because of high costs of fuel, spare parts, and labor as well as short distances and lack of back hauls.

### Costa Rica

Costa Rica has a total length of highways and roads just short of 29,000 kilometers. It has been estimated that about 10% of the total highway system is paved.

The backbone of the highway system in Costa Rica is the Pan-American Highway, which runs along the western side of the country and connects Panama with Nicaragua. Within Costa Rica the Pan American Highway is well-constructed and well-maintained, and varies from being a wide two-lane highway to a four lane highway. The other major arteries are those connecting the capital, San José, with the major Atlantic port, Puerto Limón, and the single highway connecting the capital with the new port at Caldera on the Pacific.

About one fifth of Costa Rica's exports and imports cross the border by road. The main routes for exports and imports are by way of the customs posts at Peñas Blancas on the border with Nicaragua, and Paso Canoas on the border with Panama. By far the major part of Costa Rica's trade by road is with Nicaragua. Approximately 20% of the country's combined exports and imports value go to Nicaragua and Panama by road.

The following average rates were quoted as being in effect per metric ton of freight for the given routes:

**Table 4.2**  
**Trucking Charges in Costa Rica**

Route	\$ / T
San José - Puerto Limón	\$15.40/T
San José - Puerto Caldera	\$12.00/T
San José - Paso Canoas (Panama)	\$31.24/T
San José - Peñas Blancas (Nicaragua)	\$27.08/T

It was found, however, that rates were extremely variable, and not all truckers calculated on a ton-kilometer basis. Quite often the rate was given as a lump sum, and depended on the likelihood of a backhaul load.

## Panama

The total length of roadways in Panama in 1984 was 9,530 kilometers, of which 740 km (8 percent) had hard concrete or asphaltic concrete surfaces, 2,285 km (24 percent) were covered by asphalt, 3,940 km (41 percent) had some weather-proof surface treatment, and 2,558 km (27 percent) were dirt roadways. The total road system continues to expand. (There were 8,490 km in the network in 1980.)

Route #1 (the National Highway) is a segment of the Pan American highway and extends the length of the country. It is the circulation and communications spine of Panama, although the quality and passability of the roadway are quite inferior in the eastern section (through the Province of Darien toward Colombia).

The Peninsula de Azuero (Provinces of Herrera and Los Santos) has a secondary network in place, but all the other communities not directly on Route #1 are reached by branch roads that are most frequently dead-end links.

The most significant cross-link, and the only major roadway that runs from the coast to coast, is the highway connecting Panama City to Colón, the Trans-Isthmian Highway. This road is about 92 km long; for most of its length, the facility consists of two lanes only, although four-lane, divided sections exist at both urban ends. The highway is deficient at numerous places regarding dimensions, sight distances, and other features considered to be necessary under contemporary highway standards; in particular it lacks adequate shoulders. This creates sometimes dangerous conditions caused by stopped or disabled vehicles, and buses have no pull-out spaces for passenger loading.

The total number of vehicles in the country had reached 177,000 units in 1984. By far most of them are registered in the Province of Panama (66 percent), and the growth rate has been high. (The total fleet was 138,000 in 1980.)

The number of commercial vehicles was 41,300 units, while 10,400 were official cars and 125,300 were private automobiles. Many of the trucks are bought as used vehicles in the United States, but even these are subject to import tax.

There are two large trucking companies in the country (Panama and Chiriqui) that have been in operation for well over half a century. They have large fleets, and they operated in almost a monopolistic situation. Complaints about this state of affairs have been frequent. Recently, however, the large motor vehicle carriers have been experiencing financial difficulties. This is caused by union pressures, the loss of political connections, and, above all, competition from dozens of small trucking enterprises. The latter may only have one or two vehicles each (and they are not always bonded), but they are most vigorous in soliciting business.

The recent recession has led the trucking industry to press successfully for protection against foreign truckers and reinforced resistance to entry by new operators. The impact on costs may be illustrated by the example of an agroindustrialist who exports part of his output to Costa Rica and imports some of his raw material from Guatemala. Both importing and exporting is regular, thereby facilitating, in theory, the use of the same truck to bring the raw materials and carry the finished goods. However, foreign truckers are now prohibited from hauling cargo of Panamanian origin in Panama; consequently, the foreign truck

bringing in the raw material must return empty. Because of higher tariffs charged for both sections of the haul, and extra handling charges, the cost of the exported product c.i.f. Costa Rica is increased.

The cost of transport from the Colón Free Zone to ports and airports has increased by between 15 and 150 percent since 1982.

The truck tariffs, which amount to almost 30 cents per ton/kilometer, are among the highest in the world.

## **RAIL**

### **Guatemala**

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 railroad was operating with obsolete facilities, and requires an annual subsidy of some Q 3-4 million. The rail system burdens rather than assists the transport sector.

## Honduras

Honduras has a very limited railroad system of about 1,270 kilometers. It is operated by Ferrocarril Nacional de Honduras, and is located mostly on the Caribbean coast in and around the San Pedro Sula area. The system is used primarily for the movement of bananas from the plantations to the ports, though a passenger service is also operated on certain sections. The gauge is a narrow one--1.067 meters. There is no rail access to the capital at Tegucigalpa.

## El Salvador

The rail network of El Salvador (FENADESAL) extends only 600 kilometers connecting San Salvador with the port of Acajutla and the Port of Cutuco as well as with other major urban centers, including Santa Ana, San Miguel and Sonsonate. It also connects with the Guatemalan rail network and could permit direct rail transit from El Salvador to the Guatemalan ports on the Caribbean, though this connection is not currently operable.

FENADESAL has 10 diesel-electric locomotives and 4 steam locomotives. There are more than 500 wagons for moving cargo and about 40 passenger wagons. Rail service is offered on a daily basis and extra trains are provided to meet peak cargo requirements. The railroad--through contracts with several trucking companies--is currently promoting door to door freight service.

In 1985 FENADESAL carried 325,000 tons of cargo. Of this total, exports amounted to 67,000 tons and imports 120,000 tons. The remaining movements were local. The rail has an important role in carrying cargo to and from the Port of Acajutla. In 1985,

for example, FENADESAL carried almost 25% of the export cargo moved through the port and about 20% of the import cargos. Recent political unrest has led to periodic service interruptions and loss of equipment.

Both the track structure and rolling stock of the current rail system are in serious need of reconstruction and rehabilitation.

### Costa Rica

It was claimed that in 1983 Costa Rica had just short of 900 kilometers of railways. The bulk of these, 500 kilometers or more, were in the hands of the railway company in charge of the connection between San José and the Atlantic coast, 142 kilometers were run by the Pacific Coast Company, and approximately 250 kilometers were in private hands in the south.

Rail transportation in Costa Rica is mainly used for traditional exports, such as bananas and coffee. There is a mixture of private sidings and main lines to the ports, significantly the port at Limón. There is also a passenger service to both coasts.

According to the General Department of Statistics and Census, the distribution of rail freight in 1983 was:

**Table 4.3**  
**Tons of Rail Freight Carried in Costa Rica**

<u>Railway Co.</u>	<u>1983</u>
Pacific Line	314,421
Atlantic Line	1,218,719
Southern Line	276,717
TOTAL	1,809,857

Goods are not exported from the country by rail since there is no connection with the rail system of any neighboring countries. All the nation's ports, however, have dockside trackwork, facilitating the use of rail as the land transportation leg when convenient.

While the total railroad in place may be 900 kilometers, it is certain that some sections are inoperable due to their having been isolated from the main system. Much of the railroad system was badly damaged during the earthquake in the mid 70's and has not been repaired.

The following were quoted as the rates in effect for each fully-loaded railcar:

**Table 4.4**  
**Rail Freight Charges in Costa Rica**

	<b>Import US\$</b>	<b>Export US\$</b>
San José--Moin	157.29	123.96
San José--Caldera	115.62	86.46

Although the prices are quoted here in US\$ equivalents, they are done so for comparison purposes only: actual freight rates are charged in colones.

### Panama

The Panama City-Colón line is the principal rail line in the country and was built in 1855.

The line is 79 km long, and it carries both passenger and freight traffic. Passenger volumes have decreased considerably since most workers in the ports and particularly in the Colón Free Zone now depend on buses and private cars. Furthermore, total employment has decreased in general in the Colón area, thus reducing rail patronage.

The rail freight business consists of containers, bulk cargo, automobiles, and packaged goods. The rolling stock is in need of improved maintenance. The track is in a substandard condition as well. In some places the speed has to be kept below 10 mph. It is generally understood that the railroad is "sick" at this time, and some shippers say that it takes weeks to get a container to port via the railroad. In the process, the railroad has lost most of its business to trucks.

The other major rail line is the Chiriqui National Railroad that runs between La Concepción and Puerto Armuelles in the western part of the country. Its primary purpose was to move agricultural products. It carries passengers, but the ridership has dropped precipitously (156,000 patrons in 1980; 54,000 in 1984). Likewise, the total distance accumulated by trains in a year has decreased from 63,630 miles in 1980 to 39,500 miles in 1984.

Another small line exists in Bocas del Toro to serve banana-growing areas.

## **PORTS**

### **Guatemala**

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 unserviceable electrical connections in the port for reefer containers. There is unpaved 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 cargo, 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 percent.

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 four 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 seriously exceeded. Given also the growth of containerization, the delays arising from slow container handling will only get worse over the coming years.

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 transferred 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.

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 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 percent 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 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.

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.

### Honduras

The four main ports on the Caribbean are Puerto Cortés, which handles over half the export trade, La Ceiba, Tela and Puerto Castilla (inaugurated in May 1984). On the Pacific coast the major port used to be Puerto de Henecan. Work started on the construction of a new port at San Lorenzo, on the Gulf of Fonseca, in 1976 and was completed in 1980.

Puerto Cortés. Puerto Cortés, the Republic's principal port, located on the Atlantic coast at the mouth of the Ulúa river, is 58 km by road and rail from San Pedro Sula, 333 from Tegucigalpa, and two days' voyage from New Orleans.

The port is administered by the National Port Company (ENP), which organization also administers the other ports in the country.

The port has five berths with a total length of 1315 meters. The depth of water at the berths ranges from 7.5 to 12.8 meters. The port has available four transit sheds for the storage of cargo, with a total area of 15,500 square meters. The open storage area is of the order of 300,000 square meters, of which 83,000 square meters is for the use of containers, container trucks and trailers. The rest of the area is used for general open storage of cargo.

Within the port are located the following facilities:

- o a petrol/oil terminal
- o a molasses pier
- o two berths with transit sheds
- o two berths, served by a container crane
- o two container stradle carriers
- o storage area for 800 containers of 40 ft
- o electrical outlets for 30 refrigerated containers
- o a mechanical repair & maintenance facility
- o a hospital
- o fire-fighting equipment
- o computerized data-processing center
- o administrative facilities
- o extensive rail lines throughout the port
- o an integral free trade zone of 205,750 sq. m.

The port has the following equipment:

1 portal crane for containers with a capacity of 40 tons  
9 cranes with capacities of 5 to 100 tons  
80 forklift trucks with capacities of 3,000-15,000 pounds  
2 tugs and two pilot boats

The port has a tidal range of only 0.3 meters. It is also equipped with high-mast lighting that permits 24-hour operations.

The port at Puerto Cortés was constructed in 1966 with financial assistance from the World Bank. It was constructed on the site of an existing port, and took advantage of the natural harbor. In 1987 the port is a modern facility with all the services of a major port. It was reported, however, that the port was operating at only 60% of its capacity. This underutilization has led to problems in repayment of the underlying loan and the consequent need to charge what are considered inflated rates for the use of the facilities.

The Puerto Cortés Free Zone was created in 1976 to provide facilities for trade and industry. The zone is under fiscal control and has no resident population. It is administered by the National Port Authority. Both national and foreign trade and industrial enterprises that are basically engaged in export and in related or complementary activities may establish in the free zone.

**Puerto Castilla.** The modern port of Puerto Castilla is located on the Atlantic Coast.

In a natural harbor made up of a deep water inlet, the port comprises a concrete pier 150 meters long by 38 meters wide. The depth of water at the berth is 11 meters. The turning basin in the bay is 400 meters in diameter with a depth of 14 meters. At the time of the study, the port had available the following equipment:

Facilities for the handling of oil, diesel, bunker, gasoline and palm oil

600 square meters of open storage for the storage of wood and wood products

68,000 square meters of paved general storage areas

4 forklift trucks with capacities from 4,000-15,000 pounds

5 yard tractors

10 trailers

1 tug and 1 pilot launch

1 lift truck of 40 tons capacity

The road access to the port is poor, and unlike most of the other ports, Puerto Castilla is not connected to the rail system. The port is used mostly for the export of wood and palm oil.

Tela and La Ceiba. Tela is located on the Atlantic coast and consists of a finger pier of 472.4 meters in length and 12.19 meters wide. The depth of water at the berth is 10 meters. There is an open storage area for cargo of 518 square meters. This pier is used for general cargo, bananas, and coastal traffic.

La Ceiba, the country's busiest port for the export of bananas and pineapples, is 64 km. east of Tela, from which it is reached by air, sea, road (paved, but may be flooded in winter) or rail (85 km). The port consists of a finger pier of 424 meters in length by 15.7 meters wide. The depth of water at the berth is 7.3 meters. For the storage of materials, there is a total area (enclosed and open) of 1886 square meters.

San Lorenzo. San Lorenzo is located on the Pacific coast of Honduras in Boca de Henecan Bay. This is a well protected and natural port which is reached by means of an access channel approximately 32 kilometers long. The port consists of a T head pier of 300 meters length and 40 meters wide, with a depth of water at the berth of 8.53 meters.

There is available 9,012 square meters of storage area for wood, sugar, cotton, and general cargo. The total storage area is 39,000 square meters. This is all open storage.

The T-head pier at San Lorenzo is used mostly for the export of cotton, and has available a limited amount of equipment. Access to the pier for shipping is by way of access channels, the navigability of which varies according to the state of the tide. The port is not generally popular with shipping lines, and so much cargo destined for the Pacific goes by way of Puerto Cortés and the Panama Canal. The National Port Authority is looking at inducements for increasing the use made of this port.

Port Tonnages The following table illustrates the tonnages handled by the ports of Honduras in 1982.

Table 4.5  
Exports of Honduras  
Distribution By Ports  
Metric Tons  
1982

<u>Cargo</u>	<u>Port</u>				
	<u>Cortés</u>	<u>Tela</u>	<u>La Ceiba</u>	<u>San Lorenzo</u>	<u>Total</u>
Molasses	36,164			25,000	61,164
Minerals	66,800				66,800
Unref. Sugar	67,626				67,626
Bananas	427,232	181,038	289,605		897,875
Plantains	966				966
Meat	16,392		423		16,815
Wood	147,037			81,136	228,173
Cement	10,764				10,769
Pineapples ¶					
Coconuts ¶	4,812		39,531		44,343
Grapefruit ¶					
Coffee	55,558			2,342	57,900
Cotton				5,927	5,927
Tobacco	3,707				3,707
Banana purée	4,602	5,308			9,910
In transit	27,661				27,661
Other General	<u>156,687</u>	<u>6,752</u>	<u>3,551</u>	<u>2,405</u>	<u>169,395</u>
TOTAL EXPORTS	1,026,013	193,098	332,087	136,690	1,688,488
%	61	11	20	8	100

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As can be seen from the table, while Puerto Cortés handles only 61% of the country's exports, the remaining 39% is made up mostly from bananas being shipped out of Tela and La Ceiba. Taking all imports and exports together, Puerto Cortés accounts for 75% of all cargo handled in the country, a figure that illustrates that Puerto Cortés is now and will be the major maritime center for Honduras. Equally, the figure also signifies that any increases in exports will increase demands on Puerto Cortés.

Current figures for 1986 indicate that approximately 520 ships called at the port of Puerto Cortés. They called to pick up a total of about 620,000 tons of cargo; they offloaded about 700,000 tons.

Puerto Cortés is comparatively well-served by shipping lines, and there is significant spare capacity for further exports.

### El Salvador

El Salvador's major port is at Acajutla on the Pacific. In addition there is a port at Cutuco, on the Gulf of Fonseca. The principal outlet for Salvadoran exports to the eastern US or to Europe is the Guatemalan port of Santo Tomás de Castilla. Some cargo is routed via Puerto Cortés in Honduras.

The Port of Acajutla is due west of the capital, some 85 km by road and 103 km by rail.

The port had 8 berths spread along 3 piers. Pier A has two berths. It is 300 meters in length and 37 meters in width. Water depth varies between 10 and 12 meters. The two berths on this pier handle general, bulk and liquid cargo. There are two

moveable electric cranes and a pipeline at the pier. In addition, a transit shed with a covered area of 4,500 square meters is available.

Pier B is 380 meters long on the north side and 336 meters on the south side. The width of the pier is 28 meters and the water depth varies between 10 and 12 meters. While it handles general cargo and containers, Pier B is mainly used for bulk cargo. It has a bulk unloader which discharges into a conveyor belt system.

Pier C serves mainly as a breakwater and can handle tankers up to 40,000 deadweight tons. It is 301 meters long and 19 meters wide. Water depth averages about 13.5 meters.

The port has 32,000 square meters of covered storage areas. Open storage areas include a yard of 36,000 square meters for storage of automobiles, an area of 24,500 square meters for general cargo and 74,000 square meters for container storage. Bulk cargo warehouse capacity totals more than 30,000 tons.

About 1.1 million metric tons of cargo moved over the berths in 1985. Of this total, which excludes petroleum products, exports were 275,000 metric tons. Liquid bulk cargos, such as alcohol, were exported in a quantity of almost 13,000 metric tons. The other 262,000 metric tons of exports was divided almost equally between general cargo, primarily coffee, and bulk cargos such as sugar.

**Table 4.6**  
**Movements Through the Port of Acapulco, '85**  
**(metric tons)**

	<u>1985</u>
<b>Imports</b>	
General cargo	207,233
Grain	611,337
Liquids	<u>54,284</u>
Total	872,854
<b>Exports</b>	
General cargo	130,830
Grain	130,519
Liquids	<u>12,842</u>
Total	274,191
<b>Imports Plus Exports</b>	1,147,045
<b>Petroleum &amp; Products</b>	
Imports	644,213
Exports	10,134
<b>Total Cargo Movements</b>	1,801,392

More than 43% of all exports from the port are destined for the United States. These shipments are overwhelmingly to the western part of the US. Shipments to the eastern part of the US via the Panama Canal are limited. Other major destinations, primarily Europe and the Soviet Union, takes 40 percent of exports through Acajutla. In this instance, shipments are frequently routed via the Panama Canal.

The Port of Cutuco is located on the Gulf of Fonseca near the frontier with Honduras. The port is 185 km from San Salvador by road and 252 km by rail. The port has two berths for the handling of general cargo and dry bulk and liquid bulk cargoes. Berth lengths are about 160 meters and some 7 meters in width. Water depth is between 7.5 and 9 meters. The port has 26,000 square meters of covered storage area and an open yard of some 480,000 square meters. Traffic through the Port is modest with annual volumes of about 50,000 metric tons a year. Principal cargos are coffee and cotton exports and fertilizer imports.

### Belize

Several rivers and lagoons in Belize are navigable by shallow draft vessels, while logging activities use the Belize River. The most important use of barge navigation is by the sugar industry which uses the inland waterway network to bring sugar from the refinery in the north to the warehouse in Belize City and subsequent lightering to deep water vessels. Citrus fruit products are also lightered from Stann Creek district to Belize City, and bananas barged from Big Creek to Puerto Cortés in Honduras for shipment.

Before completion of the new port in Belize City in 1980, imported cargoes were also lightered ashore. Now, however, containerized imports are directly off-loaded at the new facility and many barge operators have switched to trucking. Exports, however, still make substantial use of the remaining barge fleet.

Major port facilities are Belize City Port and Commerce Bight (Dangriga). Several smaller ports and barge wharves are located at Big Creek (for banana barges in the south), the sugar refineries, and for fishing and coastal vessels at Corozal, Dangriga, Placentia, and Punta Gorda. Other facilities include small piers on the cays (offshore islands) and other localities as well as offshore mooring points for oil tankers, sugar and some other cargo vessels.

Belize City. The main port is at Belize City. The facility takes the form of a T-head pier connected to the shore by a trestle 762 meters long. The pier head has an area of 2,400 square meters, and is divided into two main berths: a general cargo or load-on/load-off berth, and a ro-ro berth. Heavy cargo handling is severely limited by the cramped space on the pier head. The depth of water alongside is about 6 meters, which restricts use of the pier to small vessels only. The shallow water depth problem has been studied recently, and it has been determined that increasing the depth by dredging is not an economic proposition. The normal procedure for handling cargo to or from larger vessels, such as container ships and sugar and molasses tankers, is lightering. The port operates two mobile cranes, and there are two electrical hookups for refrigerated containers.

Of particular concern at the port is the fact that the meeting of the trestle and the pier head is not at right angles, but skew. The angle involved makes turning a truck with a 40-foot container onto the pier head a very tight operation, often resulting in damage to the container.

Commerce Bight. This facility takes the form of 150 meters of approach trestle connecting to a T-head pier. Depth of water at the berth is about 7 meters. The pier is used to service the citrus industry.

Big Creek. Located about halfway between Dangriga and Puerto Gorda, the banana barge facility at Big Creek has a draft of about 5 meters. A large part of the bananas that go through this port are transshipped at Puerto Cortés in Honduras, the distance being about 50 miles. This distance is about the same as that to Commerce Bight, and less than half the distance to Belize Port.

A semiautonomous and self-supporting Port Authority has been set up as a statutory body with a board appointed by the Ministry of Trade and Industry. In effect, the Authority owns and operates the facilities at Belize City and Commerce Bight and is responsible for all maritime activities except stevedoring. Tariffs are set by the Authority but must be approved by the Government.

Stevedoring is organized privately by the consignee or shipper at the small ports, but by subsidiaries of shipping agencies at Belize City. Labor is unionized and must be requested from the Christian Workers Union when needed.

Most inbound cargo is shipped from Miami by a dedicated vessel operated by Hyde Shipping. The service is underutilized and demand could double before additional service is required. Service, primarily containerized, is also available by small vessels from a number of U.S. Gulf ports.

Service from Europe and the Caribbean is provided by the Carol consortium (Harrison Line, Hapag-Lloyd, CGM and NedLloyd) either directly or through transshipment in Kingston, Jamaica.

Carol uses large ships with their own gear, so only sufficient water depth and wharf space are required at their port-of-call for them to be able to deliver and take on cargo.

Charter services move the main export products (sugar, molasses and citrus), and there are a variety of small trampers serving the region.

### Costa Rica

For historical reasons, Costa Rica has a number of ports on both the Atlantic and the Pacific coasts. The main ports at present, however, are the neighboring Limón and Moin on the Atlantic coast, and Caldera on the Pacific coast. The old port of Puntarenas on the Pacific coast is quite likely to fall into an unacceptable state of disrepair in the near future, and the cargo that it receives at present is liable to go through the nearby new port at Caldera.

The Combined Ports of Limón and Moin. The port of Limón, taken with its neighboring port of Moin, is one of the most advanced and possibly most efficient in the region. The complex has benefitted from some capital investment in new facilities recently, and is thus able to offer a fairly high level of service. The port is operated by a semi-autonomous body with the acronym JAPDEVA. This body is responsible for the operation of the ports under its jurisdiction on the gulf coast and it is also responsible for implementing certain regional development projects in the coastal provinces. This dual role of the authority has led to some controversy in the matter of setting rates.

**Table 4.7**  
**Total Cargo Moved Through the Port of Costa Rica Limón/Moin**  
**(metric tons)**

<u>Type of vessel</u>	<u>1984</u>
Conventional	254,387
Ro-Ro/Lo-Lo	540,822
Bulk cargo	29,744
Tankers	13,300
Others	---
Total	838,253
Fruit ships	732,218
Total including Fruit ships	1,570,471
Petroleum tankers	623,769
Gas tankers	19,625
Tankers total	643,394
GROSS TOTAL	2,213,856

**Table 4.8**  
**Costa Rica**  
**Container Movements**  
**Atlantic Ports**  
**1985**

	<u>Imported</u>	<u>Exported</u>
Full	11,969	21,815
Empty	14,552	4,752
TOTAL	26,521	26,567

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**Puerto Limón** The port of Puerto Limón is located on the Atlantic--Caribbean coast of Costa Rica. By road, the port is 129 kilometers from San José, and by rail 180 kilometers.

The port is noteworthy in being able to handle vessels of deeper draft than many other ports in the region. It includes the following installations:

- o **Pier "Muelle Setenta"**. This pier has a length of 320 meters and a width of 17 meters. There is a depth of 8 to 10 meters of water alongside. General and bulk cargoes are handled at the pier, with the assistance of a 10 ton portal crane. Both road and rail access are included.
  
- o **The Ro-Ro and Container Terminal ("Muelle Aleman")**. This terminal has 460 meters of berthing space and 130 meters of apron, covering a total of 7.5 hectares. Constructed with assistance from West Germany in the period 1979-82, it is the major general cargo-handling installation in the country. The berthing space is divided into two sections, for containerhips, and for roll-on roll-off (Ro-Ro) vessels (using a Ro-Ro ramp 19.8 meters wide). Containers can be loaded or offloaded using the port's own 40-ton Liebherr container crane, and stored in a container yard with space for 560 containers, and ground level electrical hook-ups sufficient for 80 refrigerated containers. Depths vary from 10 to 12 meters. Access is by road or rail.
  
- o **Pier "Muelle Metalico"**. This T-shaped pier is 230 meters wide by 320 meters in length. The trestle pier connecting the head with the land is 8.23 meters wide. The pier has three berths for handling general cargo. Depths of water are from 8 to 10 meters, and access is by rail only.

o **Storage Areas.** Storage at the port includes five transit sheds with a total covered area of 17,100 square meters. There is also a total of 11,520 square meters of paved open storage for the use of vehicles and general machinery.

o **Equipment.** The equipment available at Puerto Limón includes:

- 3 container straddle carriers, 3 high
- one 40-ton Liebherr container crane on rails
- 37 fork lift trucks of various capacities
- 10 yard tractors
- 24 trailers
- 10 container chassis
- one 30-ton crane
- one 50-ton crane
- 2 tugs

**Puerto Moin** The port of Puerto Moin is also located on the Atlantic--Caribbean coast of Costa Rica, only 7 kilometers from Puerto Limón. It is 120 kilometers from San José on the new highway, and 171 kilometers by rail, which makes the route from San José to Moin slightly shorter than to Puerto Limón.

Puerto Moin handles more than twice the annual tonnage of Puerto Limón and was designed principally for exporting of bananas and importing crude oil and its derivatives. The port has 400 meters of berths for banana operations, divided into two operating areas, one berth of 218 meters for tankers, and one Ro-Ro ramp 30 meters wide.

Aside from the pumping facilities installed for the crude oil operations, the port has two banana box cranes on rails. These were out of commission at the time of the study.

Depths of water are somewhat greater than at Puerto Limón, averaging 12 meters at the banana berths and 14.5 meters at the oil berth. Access to the berths is by both road and rail. For the most part, cargo handling is by ship's gear, including container load-on load-off (Lo-Lo).

Puerto Caldera Costa Rica's most important Pacific Coast maritime port is situated a short distance from the resort town of Puntarenas.

Puerto Caldera is a relatively new port that has not yet attracted sufficient shipping to use more than about half its capacity. Indeed, not all planned facilities are yet in place: while container crane rail systems were included with the construction, no crane has yet been procured.

There are adequate areas available for future extensions or additions to its container and conventional cargo terminals and warehouses. The present maximum water depth is 11 meters, which is below the maximum at either Puerto Limón or Puerto Moin.

Recent events in the region have enabled Puerto Caldera to take advantage of the reluctance of shipping lines to call at Puerto Corinto in Nicaragua. Considerable cargoes destined for Nicaragua are now handled at Caldera.

In total tonnage moved each year, Puerto Caldera now roughly equals the Atlantic Coast's Puerto Limón, but is far behind Puerto Moin; actual tonnages are shown in the accompanying table.

**Total Cargo Moved in Puerto Caldera  
(metric tons)**

Year	Bulk (Grains)	Wheat	Sugar	General	Total of Tons
1984	67,987	121,769	102,604	246,027	485,505

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## Panama

As is the case with most countries in Central and South America, particularly related to those settlements that were established in the Colonial era, Panama has a number of small ports and harbors along the long coastlines of the two oceans. There are many more of them on the Pacific side than along the sparsely inhabited Caribbean (Atlantic) shore.

Almost all of these ports have a purely local role, serving as fishing harbors and providing some means of marine linkage. Many excellent, sheltered harbors can be found, but the facilities and equipment are inadequate, even though (at least historically) these ports were the only practical means to transport agricultural products from several sections of the country.

The two exceptions are the port facilities at either end of the Canal.

The Port of Balboa. This facility has a long history of active operations, being one of the principal marine terminals of Panama, at the Pacific side of the Canal. It is fully equipped with wharfs, shoreside equipment, and warehouses, and it can accommodate all vessels able to transit the Canal. The Port of Balboa was originally administered by United States officials, but it is now the responsibility of the National Port Authority (Autoridad Portuaria Nacional).

There is an anchorage in the roadstead outside the Canal entrance, and the channel to the wharves is 14 meters deep. Four open wharf-type docks, with a combined length of 954 meters, are available, as is one covered steel and concrete pier (305 by 61 meters). Three oil berths are nearby; a drydock (317 meters long) is the central element of a ship repair capability. The limiting

water depth at the wharves is 12 meters. A container yard is also included in the port complex, as is a grain handling facility. A plan for the upgrading and expansion of this port, aiming to satisfy the demands expected in 1990, has been prepared.

The Port of Balboa has experienced much reorganization lately, shifting of activities, and conversion of existing facilities. Several of the older piers are now being used for container operations, either loading or storage. Much of the equipment is owned by various carriers or is leased. Space inside is quite constrained, and internal circulation is not efficient. Facilities in general, particularly those not managed by private companies, have a worn appearance and deficiencies in maintenance are quite obvious.

The Port of Cristobal (Colón). This port is the counterpart of Balboa on the Atlantic end of the Canal. The history and administration of both facilities are similar.

The principal facilities consist of three large concrete and steel covered piers and two docks, with a combined berthing length of 2,545 feet. The water depth here is 12 meters. Separate facilities exist for the handling of explosives, and four oil berths are available to tankers. A small ship repair installation is also present.

The Port of Cristobal has been undergoing major expansion directed toward the construction of a container terminal able to handle 1,500 units at a time. Continued work is expected in this area. The general cargo area of Port Cristobal is in a relatively fair condition. The internal circulation system could be improved, and motor truck movements should be better controlled, but the fixed facilities are most satisfactory. Docking areas are wide and clean, as are other spaces. Bulk storage facilities are well kept.

The following is a brief review of the secondary ports outlining their current service characteristics.

**Aguadulce.** Aguadulce is located in the Province of Coclé, 4 miles from the open sea, and the channel (Palo Blanco) requires significant dredging to maintain marine traffic. The principal commodities are sugar and molasses moving in export trade. Fertilizer and chemical products are handled as well. New shoreside facilities are being planned.

**Almirante.** Almirante, at the extreme northwest end of the country, serves almost entirely for the export of bananas and other food products. The two main quays (about 340 feet long), as well as other installations, are operated under a concession by United Brands.

**Armuelles.** Armuelles, near Costa Rica on the Pacific side, is also a banana port. The administrative agency is the National Port Authority, but operations are managed by the Chiriqui Land Company under a concession. There are problems with water depth, and a single 1,500-foot wharf is in use. A new grain handling facility is planned nearby.

(A few miles from Armuelles on the Bahía de Charco Azul is found the Petroterminal of Panama. It is privately owned, used only for the import of crude oil via three berths.)

**Bahía de Las Minas.** Bahía de Las Minas, 7 miles east of Cristobal, and next to Coco Solo, is a fuel loading and unloading facility associated with the Refinery of Panama. It has a reputation for efficient operation, as managed by the private corporation.

The port can handle also general cargo and is equipped with a roll on/roll off system. The channel is 12 meters deep, while the dry cargo dock can accommodate vessels with a draft of up to 8 meters. The usual freight consists primarily of steel, animal feed, apparel, and products of light industry.

**Coco Solo Norte.** Coco Solo Norte, near Colón City, is the hub of the coastal maritime trade along the entire Atlantic seashore. Further expansion and facility upgrading is planned by a multinational consortium.

**Pedrigal.** Pedrigal, in the western part of the country (Pacific side), has a single quay utilized for the movement of fertilizer, fish, and general cargo. The port is equipped for and occasionally handles international vessels. Piloting, anchorage, and stevedoring are available.

**Vacamonte.** Vacamonte, 17 miles west of Panama City, is the principal fishing harbor of the country. Tuna and shrimp are the main catches, and the movement of fishing boats is very active. Five quays are in operation, and the harbor is protected by a long breakwater. Boat repair and maintenance facilities are available; a processing plant and a 3,000-ton cold storage building are in operation; and a general cargo wharf and a fish market are components of the entire complex. The harbor depth ranges from 10 to 4 meters.

**External Trade.** As shown on the following table (which does not include several proprietary petroleum and cement terminals), the Ports of Balboa and Cristobal dominate external trade in terms of vessel movements, and, since Muelle No. 3 is a part of this complex, there is no other facility even near that volume. In terms of tonnage handled, on the other hand, the ports of Almirante and Armuelles in the western part of the country (specializing in an single commodity) match or exceed Balboa and Cristobal.

**Coastal Commerce.** In the sector of coastal commerce, the Port of Vacamonte stands out in terms of vessel movements (a large fishing fleet), while the largest tonnage is accommodated by the Muelle Fiscal in Panama City.

**Table 4.9**  
**Maritime Commerce Through Ports of Panama**  
**(1984)**

Port	<u>External Commerce</u>		<u>Coastal Commerce</u>	
	Number of Vessels	Amount of Cargo (in metric tons)	Number of Vessels	Amount of Cargo (in metric tons)
Aguadulce	56	125,950	10	12,191
Almirante	184	479,659	121	---
Armuelles	179	411,862	--	---
Bahia de Las Minas	155	137,194	--	---
Balboa	1,396	404,268	--	2,435
Bocas del Toro	24	280	145	14,378
Cristobal	1,061	416,021	--	---
La Palma	--	---	450	8,372
Muelle Fiscal Panama	62	1,061	863	29,036
Muelle No. 3	357	13,871	13	---
Pedrigal	24	52,038	18	426
Vacamonte	<u>103</u>	<u>28,307</u>	<u>4,434</u>	<u>6,369</u>
<b>Total</b>	<b>4,404</b>	<b>2,080,938</b>	<b>6,372</b>	<b>73,207</b>

Source: Panama en Cifras, Anos 1980-1984, Contraloria General de la Republica, Marzo 1986.

**Container Operations** Container facilities exist at Balboa, Cristobal, and Bahia las Minas. There has been almost no growth in the volume between 1980 (87,414 containers moved) and 1984 (89,051 containers moved).

The breakdown in container activity in 1984 is shown on the following table for the three facilities:

**Table 4.10**  
**Container Activity - Panama**

	<u>Full</u>		<u>Empty</u>		<u>Total</u>
	<u>20 ft. Size</u>	<u>40 ft. Size</u>	<u>20 ft. Size</u>	<u>40 ft. Size</u>	
Unloaded from Vessels	21,44	22,032	734	185	44,397
Loaded on Vessels	5,655	5,514	16,648	16,837	44,654
Total	27,101	27,546	17,382	17,822	89,051

It costs currently \$350 to move a 40-foot container (round trip) by truck between Balboa and Cristobal (\$320 for a 20-foot unit); although a tariff of \$250 may also be obtained. Heavy competition has served to reduce prices recently. The railroad charge is only \$78 for a 20-foot container, but this volume is quite low because of the time required to travel this short distance.

In international trade, Sea-Land will transport a 40-foot container of dry cargo to the USA for \$2,400; and will charge \$3,000 for frozen cargo. Crowley Consolidated Transport has tariffs within the same range, but quotes \$6,000 for a container of frozen shrimp (because of high insurance costs).

## AIR TRANSPORT

### Guatemala

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 can handle 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 1985 are shown on the following table:

**Table 4.11**  
**Air Passenger Movements**  
(number of passengers)  
1985

Arriving	225,545
Departing	<u>220,752</u>
 Total	
Passengers	446,297

Source: Direccion General de Aeronautica Civil

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

**Table 4.12**  
**Volume of Air Cargo Exports**  
**Exports**  
(kilograms)

	<u>1985</u>
Mixed passenger/ cargo	8,213,896
Freight only carriers	<u>2,452,427</u>
Exports total	10,666,323

**Imports**  
(kilograms)

	<u>1985</u>
Mixed passenger/ cargo	3,319,874
Freight only carriers	2,175,266
Imports total	<u>5,495,140</u>

Source: Direccion General de Aeronautica Civil

In Guatemala, while the demand for export space has risen considerably over the years, the demand for import space showed a marked drop in 1985. According to the latest figures, there is now twice as much demand for export space as for imports.

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 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 from the effects of exposure.

### Honduras

Honduras is well provided with air transportation, having three international airports and over 30 other airports.

The two main airports are Toncontin, located 6.5 km from downtown Tegucigalpa, and Ramon Villeda Morales, 13 km from San Pedro Sula. Goloson airport is located at La Ceiba, and acts principally as a tourist terminal for passengers to and from the resort areas. Between them, the airports of Honduras connect the country by regular flights to the other countries of Central America, the Caribbean, Mexico, Miami, and New Orleans.

The national airline of Honduras is Tan-Sahsa. It operates two Lockheed Electras DC-32 for internal flights, and B-727-200s for external flights. Other airlines include those of Panama and Costa Rica, TACA and LACSA, and the US line Challenge.

All airlines operate principally as passenger carriers, and only take cargo as space permits. Tan-Sahsa, however, does operate its Electras as freight carriers on a daily basis to Miami. As yet Honduras has not developed an industrial sector that relies on the speed and efficiency of air cargo--such as fresh cut flowers.

The relative importance of the country's airports can be judged from the following table showing tons of cargo handled at the principal airports in 1985:

**Table 4.13**  
**Principal Airports of Honduras**

<u>Airport</u>	<u>Loaded</u>	<u>Offloaded</u>	<u>Total</u>
Toncontin	1,374	3,005	4,379
Ramón Villeda M.	1,736	2,134	3,870
Golosón	673	343	1,016

Thus marginally more exports leave from the San Pedro Sula area by air than leave from Tegucigalpa. The capital, however, manages to consume more airfreight imports than the San Pedro Sula area, approximately 50 percent more. Other airports clearly supply only a few local needs, and do not compare with the two major facilities.

Of the cargo handled at Toncontin, 54 percent either came from or went to Miami, with Panama at 19 percent being the next most important overseas connection. From San Pedro Sula, 66 percent of the air freight came from or went to Miami, with Costa Rica being the second most popular connection.

Adjusting the above totals to remove domestic air freight, we arrive at 2,925 tons of exports and 5,152 tons of imports. Exports by air have increased approximately 23% since 1982, an annual growth of approximately 7%.

The current average daily demand for air freight export is approximately 8,000 kg (17,630 lb) per day, though the average working day demand is probably nearer 10,00 kg (22,000 lb). Reliable daily capacity is probably not much in excess of 30,000 kg, this being the capacity of the Electras, and discounting the unpredictability of the cargo space on passenger flights. Thus a peaking factor of only 36% is available, which would clearly be unable to handle such seasonal fluctuation.

There is thus a good probability that some perishable exports are being held back because of a shortage of air cargo space.

Published air freight rates from Tegucigalpa to Miami range from \$1.66/kg to \$0.92/kg, depending on weight. This gives a unit price of \$1660 to \$920 per metric ton. The tariffs from the coastal airports are not much different.

### El Salvador

El Salvador International Airport has direct access to the capital by way of a four lane highway. The journey takes less than 30 minutes in off peak hours, but about 50-60 minutes during congested peak periods.

Both a modern passenger terminal and a cargo terminal are located at the airport. The passenger terminal is a 3 level structure and offers a wide range of service facilities, including customs, immigration and health offices as well as administrative space for CEPA.

The cargo terminal has storage areas, including a refrigerated as well as a frozen food holding area. The refrigerated area is kept between 0 and 25 degrees Centigrade and the frozen storage area is held below 0 degrees Centigrade.

The main runway is 3200 meters in length and 45 meters in width. There is a secondary runway 800 meters long to handle small aircraft. The El Salvador airport is serviced by an omni-directional VHF radio beacon, an instrument landing system and approach lights systems.

More than 6 international airlines provide regular service at the El Salvador International Airport. TACA alone offers more than 100 international flights per week. Cargo moved by air has not shown appreciable growth in the 1980's. In 1980, for example, total cargo movements were just above 9,000 metric tons, divided almost equally between exports and imports. The 1985 total was some 10,600 metric tons with exports at 4,400 tons, or 41 percent of total movements.

Despite recent competitive reductions in rates, air freight represents an expensive mode of transportation for most agricultural products and other bulk products. For example, air freight rates to Miami offered by SAHSA, a low cost carrier, are \$1.35 per kilo for less than 45 kilos, \$1.02 kilo for shipments up to 300 kilos and \$0.79 per kilo for over 300 kilos. Due to high cost most cargos shipped by air are high value items such as medicines and personal household items.

More than 80 percent of air cargo exports are destined for Miami and New Orleans. Los Angeles, Houston and San Francisco, together, account for another 3 percent. The major destination point outside of the US is Costa Rica, representing 5 percent of air cargo. On the import side, Miami and New Orleans are points of origin for two thirds of total air cargo imports. Los Angeles, Houston and San Francisco account for another 2 percent. The major point of origin for air cargo imports outside of the US is Panama, which accounts for 15 percent.

### Belize

Belize International Airport, nine miles from Belize City, is served by three international carriers: Challenge, TACA and Tan Sahsa. There are direct flights to Miami, New Orleans, Houston and Central American destinations. Eleven municipal airstrips serve all the larger settlements except San Ignacio.

Air cargo does not appear to hold an attraction for the airlines serving Belize. TACA, however, is concentrating on greater cargo volumes in Belize.

### Costa Rica

Costa Rica has one major international airport: Juan Santamaria Airport at El Coco, 16 km from the capital, San José. A modern expressway links the capital to the airport. The total number of all classes of airstrips is 173, though 143 of these are basic gravel or grass runways. The number of airports operated by the public sector amounts to 26, the rest being in private hands.

The main function of Juan Santamaria Airport is the handling of passengers, the handling of airfreight being considered of secondary importance. Passenger services are offered by the national carrier, Lacsá, and:

Taca  
 Sahsa  
 Mexicana  
 Aeronica  
 SAM  
 KLM  
 Iberia

Air freight service is offered by Lacsá (3 to 4 flights per week) and Challenge (daily flights Miami-Panama-San José-Miami).

The annual volumes in tons of air freight imports and exports are shown in the following table:

**Table 4.14**  
**Costa Rica**  
**Air Freight**  
 Total Volumes (Tons)

	<u>1985</u>	<u>1986</u>
Imports	7,151	8,730
Exports	<u>9,914</u>	<u>13,724</u>
TOTAL	17,065	22,454

Thus, by 1986, the demand for export space exceeded import volumes by 57 percent, and was projected to increase to 64 percent in 1987.

The recent values of the main perishable air freight exports are shown in the following table:

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**Table 4.15**  
**Costa Rica**  
**Air Freight Exports**  
**Perishable Products**  
(thousands of US\$ FOB)

	<u>1985</u>
Fresh cut flowers	3,754
Fresh fish	8,018
Lobsters	2,048
Fresh fruit	322
Ornamental Plants	<u>17,076</u>
<b>TOTAL</b>	<b>31,218</b>

The list of products exported by air, in addition to the above, include live cattle, frozen meat, draw-back textiles, medicines, cloth, clothing and books.

However, the main air freight export item is draw-back textiles, which in 1984 was valued at \$42,771,799, and comprised 69% of the value of all air freight exports in that year.

The airport at Juan Santamaria had a small refrigerated storage warehouse for the use of cut flower exporters. Other open and closed storage areas are available, but are of small capacity. There is no covered storage area.

### Panama

The airport system of Panama is not very extensive, although it is reported that in the early 1970s there were 140 domestic airports. The principal international facility is Omar Torrijos Herera near Panama City (16 miles to the east). The other

airports have a local service role and include those found at Colón, David, Changuinola, Bocas del Toro, and on the Pearl Islands.

There has been a measurable decrease in air traffic of various types through the international airport of Panama in recent years.

**Table 4.16**  
**Air Traffic of Panama International Airport**

	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>
Commercial Flights	21,959	21,406	18,342	17,120	16,835
Passengers (in '000s)	1,183	1,185	1,132	1,040	1,135
Cargo Loaded (in metric tons)	37,500	38,900	37,200	28,000	26,300
Cargo Unloaded (in metric tons)	14,200	14,400	14,000	12,900	15,800

**International Passenger Traffic.** In this 5-year period, passengers coming from or going to North America have continued to increase at a modest rate (404,600 to 438,100), while those associated with South America have decreased in volume (517,500 to 394,200).

**International Air Cargo Traffic.** In the air cargo sector between 1980 and 1984, the total tonnage moving to and from North America has decreased somewhat (11,498 to 9,822), but the trade to South America has dropped to less than a half of what it was earlier (25,100 to 12,900 tons), while the air cargo unloaded from South America grew significantly (3,800 to 5,500 tons) from a small base.

**Internal Air Traffic.** Internal air operations in Panama experienced downward trends as well during this period. Passenger volumes dropped slightly, but the already small air cargo tonnage (2,000 tons in 1980) was cut almost in half (1,200 tons in 1984).

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## REGIONAL REPORT

### CHAPTER 5

#### DISCUSSION

This report on the regional aspects of the export of non-traditional products has attempted to show, in the first four chapters, the resources that the region could assemble. A major assumption in the presentation has been that the region is actually capable of acting as a whole, and that the resources are capable of being aggregated. Recent history has shown, however, that the countries of Central America are firmly independent, and will sacrifice any economic gain to exercise that independence. It is not to be expected that attitudes will change in the near future.

The discussion that follows, together with the conclusions and recommendations, all have therefore to consider both the region's potential in terms of making the export of non-traditional products more competitive in world markets, and the reality that the countries in the region have not managed any degree of regional integration in spite of the considerable efforts of bodies dedicated to the goal of integration.

## REGIONAL TRANSPORT: COMPARATIVE COSTS

### Maritime Transport

The following table indicates the comparative rates for a 20 ft 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 certain that some shippers paid more than these figures and some paid less.

The basic figure is the door-to-US-port charge of major shipping lines operating within 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, port charges, sea freight, and port and 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 market rates for trucking operations. Port charges and stevedoring are based on estimates of costs to the average vessel loading or unloading.

To place these figures in the context of global conference liner rates: in April 1986 a typical charge for a 20 foot containerload of "machinery, parts, and accessories" was \$2,365 for Southampton, England, to Hong Kong, \$7,148 for any U.K. port to any port on the eastern seaboard of the USA, and \$5,734 for any UK port to any Australian main port.

**Table 5.1**  
**Typical Costs of Moving a 20 ft Container**  
**US\$ Per Container**

<u>Country</u>		<u>Door to US Port</u>	<u>Trucking To Port</u>	<u>Port Charges</u>	<u>Sea Freight</u>	<u>US Port Charges</u>
GUA	A*	2,018	363	100	1,200	355
	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.

4. Sea freight charges were determined to be the cost to the shipper of the purely maritime transport. The charge was arrived at in conjunction with estimates made by operators of the shipping companies.

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 lower than these, but for the inexperienced low-volume exporter the figures are not unreasonable.

The calculation of typical costs for a typical container requires careful consideration: door-to-US-port charges, on the one hand, are directly comparable because they are well established for a particular commodity on a particular route; port charges, on the other hand, are a function of the vessel size, the number of containers handled, the equipment used, and so forth. The door-to-US-port charge was the same for 25 containers or 50 containers, as was the trucking charge, but the port charges--evenly distributed between the containers--were very different for 25 or 50 containers.

One approach was to standardize the calculation by assuming that the same size vessel and the same number of containers was used on each occasion. This concept, however, conflicted with the reality in each country: adopting 50 containers might be representative in one port, but it could be excessive at another. The system adopted was to report the costs that interviewees reported as being their average. These were cross-checked in each country, and the most consistent amount was reported in the table.

The table shows that exporters from Costa Rica had a basic cost advantage in exporting to the USA. Recent introduction of service by one of the world's major container companies, Evergreen, served to introduce increased competition, and so rates were reduced considerably. This company is discussing further plans with the port authorities at Limón in connection with construction of a major transshipment terminal.

Panama, Belize and Honduras were all charged approximately the same for the 20 ft container service shown. It was felt that the small differences shown in the table demonstrated no real advantage of one country over another in this group.

Guatemala and El Salvador have a rate that is somewhat--though not by much--greater than for Panama, Belize, and Honduras. The Atlantic rate for El Salvador is greater than that for Guatemala, as might be expected since the port used was Santo Tomas in Guatemala.

There was found to be an unexpected consistency in the costs involved in trucking the container to the nearest port-- unexpected because the distances involved were so different. In Guatemala, Costa Rica, Panama, and Honduras the rates were comparable, though Costa Rica and Honduras profited from being at the lower end of the range (\$300), and Guatemala and Panama had the disadvantage of being at the higher end (\$350-363). For the exporters of El Salvador the trucking cost to Santo Tomas involves

an additional \$140 over the exporter from Guatemala City. The lowest in the region was the cost to the exporter from Belize, since the capital is adjacent to the port.

Port charges varied considerably, from \$100 at Santo Tomas and Acajutla to more than \$500 for Limón and \$450 for Puerto Cortés. Given the caveats regarding these figures, it would be safe to conclude that Limón and Cortés are comparable in terms of charges. The ports of Panama and Belize fell between these two extremes.

The charges shown for sea freight were the most controversial for the group, since the different lines operated differently, and thus considered that the costs were not comparable. The point was accepted. However, the figures were retained and serve to illustrate the approximate proportion of the door-to-door charge that is under the control of the shipping lines (i.e. ocean costs), and hence determine the range of reduction that negotiation at conferences could achieve. To attempt to negotiate a 10 percent reduction in a door-to-door charge of \$2000, for example, would fail when this signified a 20 percent reduction to a shipping line whose ocean costs were only \$1000.

The range of the sea freight allocation varied considerably, from of the order of \$325 per container from Costa Rica to approximately \$1,200 from Guatemala. Given the probable accuracy of the survey, it was concluded that sea freight on a 20 foot container to Miami was about \$1,000, more or less depending on other factors. Clearly, one major factor that influenced the cost was the efficiency of the port, with exporters from Panama and Honduras benefiting from better-than-average efficiencies.

The sea freight from Costa Rica was distorted by the fact that the major shipping line consolidated in Jamaica before carrying to the USA. Had this not been the case, costs would have been more in line with those of the other ports.

The exporters from Guatemala suffered the expenses involved in loading a considerable number of containers each year (over 46,000 in 1985) without the appropriate equipment and facilities. While the charges levied by the port reflected the absence of such equipment, the cost of slowly offloading each ship using ship's equipment is reflected in the sea freight component of the costs. Clearly, the port of Santo Tomas would benefit from the procurement of more appropriate equipment for handling containers.

On a regional basis it was concluded that the charges for exporting by sea reflected fairly closely the overall cost, but that there were areas where standardization could create improvements, including:

1. Standardized trucking in the region. The average cost of trucking from the capital city to the port was consistent, even though distances varied considerably. It should be possible to establish a region-wide ton-kilometer charge, so that the same service would cost the same everywhere.
2. Standardized port facilities to enable exporters from throughout the region to use the nearest port facility without penalty.
3. Standardized port charges, so that the same service would cost the same no matter where it was provided.

Once standardization is adopted each exporter will be able to plan transportation logistics based on rational alternatives, as opposed to the very variable situation that prevailed at the time of the study.

## Trucking

In Table 5.2 information gained in the countries of the study is used to demonstrate some of the comparative costs of trucking. As a basis for the table, the trucking figures from Table 5.1 were used, that is, the cost of trucking from the capital city to the port. In some cases these were adjusted to agree with the more competitive independent rate. These costs were divided by the distance to give the cost per kilometer. The figures were then reviewed and adjusted to apply to movement of 40-foot containers instead of the previous 20-foot units. In the case of Belize it was felt that the minimal distance to the port did not produce data that reflected the true cost of trucking in that country, so figures for trucking to the Mexican/US borders were used. The same international approach was included for El Salvador, where a considerable amount of produce went from San Salvador to Santo Tomás in Guatemala.

**Table 5.2**  
**Central America**  
**Comparative Costs of Trucking**

<u>Country</u>	<u>Diesel Cost US\$/Liter</u>	<u>Dist. to Port km</u>	<u>40' Container US\$</u>	<u>US\$ per km</u>
Belize	0.368	2811 <sup>(a)</sup>	3,000	1.07
Guatemala	0.180 <sup>(b)</sup>	307	360 <sup>(b)</sup>	1.17
El Salvador	0.331	85 400 <sup>(c)</sup>	170 550	2.00 1.37
Honduras	0.320	347	273	0.79
Costa Rica	0.304 <sup>(d)</sup>	170	192 <sup>(d)</sup>	1.13
Panama	0.312	78	350	4.49

(a) distance from Belize City to US/Mexican border

(b) at exchange Qz 2.5 = US\$ 1

(c) distance from San Salvador to Santo Tomás

(d) at exchange C/62.5 - US\$ 1

Source: PBI field interviews

To check on a basic cost of transport, the cost of a liter of diesel in each country is also shown. It will be noted that these charges at the pump are fairly consistent from country to country, except for Guatemala, which is about half the price elsewhere. For truckers in the region, these diesel prices may be exaggerated because of the different costs of exchange, but by and large, a Guatemalan trucker paying Qz 1.70 per gallon is paying less than his neighbors.

A common quoted rate in the region was US\$ 1.0 per kilometer run, and the figures show that this would be a reasonable average. The main exception is Panama, where history and monopolistic pricing have served to raise the cost to nearly US\$ 4.5 per kilometer. Of concern to this study is the cost of intra-regional and international trucking, where the conclusion is that, with better freedom of movement, costs would probably consolidate around US\$ 1.0 per kilometer.

Most truckers, however, were faced with the restrictive national requirements, limiting the activities of foreign-registered vehicles. It was virtually impossible for a typical vehicle to pick up a load in another country of the region, and so trucks returning empty was the norm. In order to recoup the loss on the return leg, shippers were charged for both legs, and so paid US\$ 2.00 per kilometer. This was particularly so in the case of Belize, where very little was imported by road. Individual operators tried to arrange return cargo, but in the height of the export season it was estimated that 90 percent of trucks returned empty.

To allow a rough comparison between the costs of sea freight and the cost of trucking to the USA, Table 5.3 has been included. This table shows the distances in kilometers from the capital cities of Central America to two points on the US/Mexican border, as well as distances in kilometers between major cities in the USA.

**Table 5.3**  
**Central America**  
**Road Distances**  
(kilometers)

	<u>Nogales</u>	<u>Nuevo Laredo</u>
Belize	3922	2811
Guatemala	3979	2868
Tegucigalpa	4570	3459
San Salvador	4253	3142
San José	5292	4181
Panama	6156	5045
	<u>New Orleans</u>	<u>Miami</u>
New York	2123	2092
Chicago	1488	2148
Houston	571	1939
Miami	1384	-

Source: Parsons Brinckerhoff International

As a rule-of-thumb the distances to the US border approximate to the cost in dollars for the one-way trip; in the USA, the cost per kilometer is approximately \$ 2.0. The average cost of a 40-foot refrigerated container of perishables from an Atlantic port of Central America to Miami or New Orleans is in the range \$4,000 to \$6,000.

A quick comparison shows that there is currently very little difference between trucking a consignment to Chicago from Tegucigalpa and sending it by sea. Either mode reveals an approximate cost of \$8,000. Thus, for Costa Rica and Panama, the advantage would be in sea freight, while for Guatemala and Belize the advantage would be in trucking. For El Salvador and Honduras, the two alternatives are indistinguishable. Actual experience in the region shows that exporters tend to respond in accordance with these results.

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The results are, however, more academic than real because they do not take into account additional costs associated with trucking across Central America. The advantage to Guatemala and Belize is that they only have to cross Mexico. All other countries in the region have to cross the border with at least one of their regional neighbors. It is at these frontiers that delays add significantly to the cost of trucking, and in the case of Honduras there is the "vigilancia" charge to be paid by truckers in transit. It is the costs associated with intra-regional border crossings that turn an otherwise viable transportation mode into a more expensive alternative.

### Air Transport

Table 5.4 shows typical air freight tariffs in effect at the time of the study from the capital city to Miami. The figures are given for comparison purposes only, and do not necessarily agree with figures paid by any individual exporters.

The rates given in the table are based on exporting a single shipment of 200 kg of general material. Lower rates can be obtained for greater quantities, while charges are higher for smaller amounts. Certain classes of freight also receive discounts depending on the desire of the airline to attract that commodity. Textiles, flowers, shrimps, and meat typically qualify for preferential rates, which can be one half to two thirds the normal rate.

Costs of carrying air freight are dependent of a number of factors, but in the case of Central America they can be combined into two: distance and altitude. It costs more to carry freight a longer distance and the higher the elevation of the runway the less the freight that can be carried. In the case of Panama, for

example, the highest rate in the region is a function of the distance to be traveled. Belize, on the other hand, is closest to Miami, and so pays one of the lowest rates.

**Table 5.4**  
**Central America**  
**Typical Air Freight Rates\***  
 (US\$ per kilo)

<u>City</u>	<u>Country</u>	<u>Rate</u>
Panama	Panama	1.55
San José	Costa Rica	1.40
Tegucigalpa	Honduras	1.20
San Salvador	El Salvador	1.00
Guatemala	Guatemala	1.20
Belize	Belize	1.00

\*based on 200 kg of general material to Miami.

Source: Published airline tariffs

Tegucigalpa and Guatemala City, both at considerable altitudes, made them two of the most expensive airports in the region. These can be compared with the rates prevailing from El Salvador International Airport: 17 percent less because of the near sea-level altitude.

Clearly, El Salvador and Belize both have comparative advantages for their air freight exports. El Salvador is particularly fortunate in this respect because of the modern and extensive facilities at the new airport, facilities which have attracted in excess of 15 airlines to offer services. Belize as yet has only basic facilities for air freight, being without any significant storage, but at the time of the study plans were in progress to expand the airport at Belize City.

Panama is another regional hub for air freight, with connections to most parts of the world. For flights to Europe and the Middle East, Panama would not be at any disadvantage compared with the other countries in the region. For flights to the USA, however--remembering that this is the region's main trading partner--Panama will always retain the disadvantage of distance.

#### REQUIREMENTS FOR INCREASING EXPORTS

The export of non-traditional products from the region of Central America could be improved by a number of actions. They are stated here in their complete form as a prelude to rationalizing them and working them into practical recommendations.

It should be noted that no consideration is given here for the regional rail system. The reasons for this are that there does not exist what one could describe as a regional rail system, and that the existing railroads are used very little by exporters of non-traditional products.

#### The Ability to Consolidate Across Frontiers

This activity would enable advantage to be taken of  
o increased volumes beyond national potential  
o shortest land routes from producer to port/airport  
o incentive rates for advanced contracting

This is the method of business of the major traditional exporters, but one that has not yet been followed by the smaller exporters.

For cross-frontier consolidation to be possible, there needs to be

- (a) better roads across frontiers connecting production areas directly to ports/airports
- (b) simple paperwork process at frontiers to reduce waiting time (as recommended in '76 Regional Report)
- (c) freedom to truck intra-regionally. This requires a standardization of costs and regulations to enable all truckers to operate on an equal basis
- (d) intra-regional contract dispute settlement system
- (e) encouragement of private-sector brokers

#### **A Standardized Port Tariff System**

Such a system needs to be developed within the region to allow genuine economic choice to the exporters. At present, they have no real incentive to use a neighboring port if that port's income is invested in non-port development. That would be pure aid from one country to the other. Or, if it is agreed that the development function is necessary, then all ports should do it equally.

#### **The Ability to Use Neighboring Facilities**

If the facilities available in a neighboring country are more advantageous, impediments should not be placed in the way of cross-frontier movements. The possibility of Honduran use of the airport at San Salvador is discussed later in the report. This possibility could be introduced as part of a deal over Salvadoran use of Puerto Cortés. There are also areas of western Panama that would find use of Puerto Limón advantageous, and other parts of the countries in the region find themselves better placed to use the facilities of the neighboring countries.

This needs:

- (a) better frontier roads
- (b) simple paperwork
- (c) trucking standardization
- (d) regional contract settlement
- (e) removal of unusual charges (vigilancia in Honduras)

### Reduce the Major Expense of Sea Freight

There are factors that affect the cost of sea freight, and if it is required to reduce the charge, then those factors have to be addressed.

Permit a reduced level of service. The cost of liner service, where the level is being provided at an uneconomic level, can be reduced by

- o accepting a reduced frequency. This could mean accepting increased time between calls, and would involve construction of storage facilities or the processing of perishable products.
- o accepting re-routing to call at fewer ports in the region. This would require the ability to move exports by land from country to country without delay to reach nearest port of call.
- o reducing peak demand. The level of service is based to a great extent on meeting peak levels of demand. Reductions in the difference between peak demands and average demand could enable sizes of ships and facilities to be adjusted downwards.

Permit a less costly service. The cost of liner service is based on the costs incurred by those companies in operating the service. These costs are passed on to the shipper and are not capable of being changed by the carrier. These include:

- o port tariffs so structured that they impede the ability of the carrier to adjust his costs or his operations. Such tariffs require restructuring

- o port operating inefficiencies which keep a ship in port. Even the best port in the region can improve the speed at which it unloads vessels. This can be done by:

- amending labor rules to encourage speedier loading or unloading

- improving maintenance on equipment so that peak performance is always achieved and no time is lost through breakdown

- procurement of new equipment--where this is really needed

- new port layout and construction where existing layout does not permit efficient operation

- o gratuitous charges for equipment or facilities not actually supplied

- o the cost of empty containers. Lowering of this requires

- forward planning, consolidation and brokerage to reduce the percentage of empty containers

- removal of import levies on empty containers--these are another form of export tax
- increase the tons per container by consolidation, brokerage, more appropriate use of unitization and packing

o shortages of customs and USDA inspectors in the ports of the USA. (It must not be forgotten that liner costs are also affected by conditions in the USA).

**Regional Representation at Conferences.** Since it is at the conferences that the rates get set, and since there is no restriction on any interested party making a case, the presence of the region at the conferences is necessary if real or imaginary abuses are to be corrected. Prior to attending such a conference, however, it will be necessary to:

- o gather standardized statistical data on port operations
- o gather standardized statistical data on ship operations
- o make an analysis of costs etc. to enable presentation of a logical tariff recommendation

This would require a small central group to perform this function and to negotiate on behalf of the region. It would also be able to report back to the ports any recommendations for change to secure lower tariffs. It would also need to be entrusted with getting the best deals for the region as a whole. Because conference tariff setting is done on the basis of costs involved in a particular route, not on the basis of serving an individual country, presentation and demands by individual countries do not carry the weight of a good presentation by a responsible regional

authority. The advantage of representation is also a psychological one in knowing that the region is involved in a matter which affects it.

### Reduce Peak Demands on All Transportation

All transportation in Central America is made more costly than it could be due to the fact that there are seasonal peaks in demand. These peaks result not only from certain crops requiring harvesting at fixed times of the year, but also from a desire to take advantage of "windows of opportunity" in the USA. The required effect could be achieved by:

- (a) planning and advanced notice by producers, facilitated by easier contractual agreements.
- (b) provision of facilities that avoid holding scarce containers (the import of empty containers is costing CA millions of dollars each year). These would include container freight stations, refrigeration units on farms, refrigerated warehouses.
- (c) encouragement of brokers to balance shipments and demands.

### Reduce the Cost of the Trucking Component

Virtually without exception, all the exports from the region are carried by truck at some stage. Thus any reduction in the cost of trucking, which accounts for about 15% of total transport costs, would benefit all non-traditional exports. It would also benefit traditional products and domestic transportation. The reductions would be achieved by:

- (a) fixing the roads that currently damage trucks
- (b) improving road maintenance to keep roads in good condition

- (c) introducing reasonably priced insurance against damage to cargo, with no-claims incentives
- (d) introducing better driver and mechanic practices for truckers
- (f) removing high import duties on spare parts.

### Reduce the Cost of Air Freight

A major potential exists in the region for the supply of increased quantities of fresh fruit and vegetables, cut flowers, fish, shrimps and lobsters by air to the markets of the USA. To determine the size of the market for these a detailed study is required. Interviews with current exporters of these products in the region resulted in conservative estimates of double the present volume if air freight facilities could be improved. These improvements would involve:

(a) general improvements to the storage and handling facilities at airports, including

- refrigerated storage
- covered areas
- loading equipment
- more paved areas

(b) general improvements to the quality and frequency of service, to be established by

- formation of legal representative bodies to negotiate on behalf of exporters
- negotiations with airlines currently providing service or with potential providers of the service.

## Reduce the Costs of Using the Ports

About one third of the cost of transportation is paid out in port charges when taking origin and desination ports together. These charges, if reduced, could thus make a considerable difference to non-traditional exports. To some extent the means for reducing port charges are the same in both Central America and the USA, however, North American ports compete with each other in a way that Central American ports do not, so it is normally considered that this competition forces those ports to be continually reviewing their charges. To reduce the cost the following is required:

- (a) removing the necessity for the port to subsidize local development projects
- (b) removing the requirement that each port needs to be fully self-financing by acknowledging the fact that the benefit of a port is not only in loading or unloading cargo
- (c) improvements in port management efficiency
- (d) improvements in port operational efficiency
- (e) removing low volume ports and uneconomical ports
- (f) encouraging more throughput through existing ports.

These requirements will be considered in more detail in the sections that follow, where some of the broader issues are discussed and their effects on the exports of non-traditional products are considered.

## **BETTER BUSINESS PRACTICES**

### Representation and Marketing

Representation. During the study many exporters claimed that they felt helpless in the hands of their agents in the USA, particularly when they were informed that products had arrived in

an unacceptable condition and that they had to be sold below market price. While no evidence was collected to confirm the allegation, the perception was nevertheless there throughout the region that exporters were being taken advantage of. The solution put forward was the establishment of a representative office in Florida for each country in the region to check incoming shipments, verify the condition, and to ensure that the exporter was dealt with fairly. At the same time, the representatives would have the longer-term goal of seeking better markets and conditions for each nation's products.

As Table 5.6 of Central America's trade with the USA shows, in 1985 over \$2 billion of exports arrived from the region to, mostly, the US Gulf ports. The average of all the exports from the region destined to the USA was 38 percent, reflecting that most countries counted US trade as between one third and one half of their total exports.

The individual country reports showed that the bulk of the exports from the region are high-bulk, low unit-value commodities, such as bananas and sugar, but that even excluding these traditional products, the non-traditional products shared many of the same characteristics.

Thus Central America is dependent on two billion dollars' worth of goods that are basic commodities, subject to the day-to-day fluctuations of supply and demand, and where the cost of transportation accounts for a large part of the revenue. Thus, aside from encouraging exports by reducing the transport costs, a clear benefit can be gained from ensuring that the best price is received for the product in the USA.

**Table 5.6**  
**Central America**  
**Trade with USA**  
**Exports**  
**1985**

	<u>\$million</u> <u>fob</u>	<u>%</u>
Guatemala	409.1	34%
El Salvador	395.6	39%
Honduras	375.3	53%
Nicaragua	41.0	22%
Costa Rica	501.3	33%
Panama	410.4	42%
Belize	<u>47.1</u>	<u>36%</u>
Total Exports to USA	2,179.8	38%

There is a case, however, for this proposal to be instituted on a regional basis rather than on the basis of each individual country fending for itself. The advantages to be gained arise out of the economies of scale that can be gained in being able to inspect and certify the perishable cargo of one complete shipload: when a vessel calls at Miami after doing the rounds of Central America, it is quite possible that it contains cargo from each of the seven countries. This situation would give rise to at least one representative at the port from each country, or seven inspectors. These seven inspectors could work no faster than the customs and USDA inspectors at the port, since the country inspectors would need to witness the work of the agency inspectors. Thus the rate of work would be dictated by the agency inspection rate, justifying the presence of not more than three country inspectors, depending on the number of agency inspectors allocated per ship. Thus individual country offices could involve a 50 percent underutilization factor.

The separate country offices would also require separate overhead of rental space and administrative staff.

The benefits that could be achieved in financial terms are speculative at this stage, but do have the advantage of being measurable when the program is in operation. Of the \$2 billion in exports from the region, some average of 65% is represented by traditional products, which would be outside the normal responsibility of the inspectors. Thus the region exports about \$700 million in non-traditional products to the USA, of which 75% go to Miami, or \$525 million. This figure could be further reduced to remove non-perishable items, but it would be safe to say that non-traditional perishable goods to the tune of \$500 million (fob) pass through Florida ports from Central America in a typical year.

If there could be just a 1% improvement in the prices obtained for the non-traditional items, the cash savings would be of the order of \$7.5 million--remembering that the total sales value of the goods is nearer \$750 million than the fob \$500 million. The annual cost of a regional office of, say, one individual from each country, plus a permanent office director, or 8 people, together with rental overhead, secretarial, and general stationery items would not exceed \$600,000. The annual benefit could therefore be of the order of 12 to 1 over cost.

The saving of about \$7 million would go back into producer's margin. If this margin is somewhere between 20% and 25% of the sale price, then there could be an increase in exports of \$28 million to \$35 million.

Clearly, if the price improvements achievable by the representative office is more than 1%, then it can be expected that exports will be increased accordingly.

Marketing. Selling anything in the USA is a difficult and potentially expensive exercise. Selling basic food commodities--fruits and vegetables--is not less difficult than for manufactured items. Basic foods are difficult to differentiate as to origin, and so it is hard to establish any brand loyalty. The major fruit companies have managed to produce just the right shape, size, and consistency of banana to capture the optimum market, and in so doing have even managed to associate brand names with the fruit. The cost of the required research and development has been huge, and the continuing promotion also consumes considerable funds each year. There is now considerable effort being expended in the US in trying to put labels on all fruit and vegetables, and for the companies that do this to promote their product by name. The competition in this field is fierce, and fruit and vegetable growers without the resources for this type of promotion will find it hard to establish themselves in the market. Central American exports are indistinguishable from the same exports from the rest of Latin America and the Caribbean. This means that the first region that promotes its products with regional promotion, and can produce a consistent range of products that are considered desirable by the U.S. consumers, this region will stand to corner a large part of the market. Even at the level of the individual exporter, much can be done to increase margins by targeting the product and its package to the intended consumer. Exporters have to realise that selling in the USA is not a larger version of selling to Central America.

The impediment to following through on a program of marketing is that there is not sufficient margin for the individuals and small groups involved in exports to undertake the necessary research and promotion. At the regional level, however, there is sufficient volume to make marketing and market research a definite possibility.

In 1985 the total value of non-traditional exports was \$1,752 million (see Appendix B). Taking only 1 percent of this as a marketing and promotional budget gives \$17.5 million (5%-8% is a common range for such a budget). Such a sum spent every year would pay for

- o detailed market research for a number of Central American products
- o Central American representation at trade fairs and conventions world-wide
- o introduction of promotion campaigns for selected products.

The budget is not big considering the range of products and the number of countries in the world in which they are being sold. The budget is, nevertheless, 4 to 5 times bigger than a budget raised at the same level in any of the Central American countries.

The normal effectiveness of a marketing program is measured in its ability to increase sales, and sophisticated techniques are used to compute the increase attributable to the program. If \$17.5 million is taken from margin for the program, then for the investment to do no more than pay for itself, sales of non-traditional products should increase by four times this figure, or \$70 million. If the marketing program were to achieve a modest 4 percent annual growth in non-traditional sales, the benefit in cash terms would be \$280 million.

Clearly, in terms of return on investment, better marketing and sales can produce some of the more significant results.

## Strategy Formulation

The individual country reports concluded universally that there was no shortage of talent within each country with a wealth of information and experience, quite capable of analyzing the problems of transport and exports. It was also noted that the people of region gave generous amounts of their time to conferences, meetings, forums, discussions and so on to try to resolve issues that were confronting them. What was lacking, however, was the ability to work out a detailed solution with implementation strategies.

It was not just an opinion of the project team: interviewees stated repeatedly that the most common course of action was to take a list of demands to the most highly-placed person who was accessible. Since this person was invariably a politician of one form or another--with no direct experience of the problem in hand--a resolution to the problem was rarely obtained.

The country reports showed that many of the problems received could be resolved by logical analysis of all the relevant data and the formulation of a practical course of action with measurable goals. In some cases it was necessary, in order to arrive at the complete list of options, to include the experience of someone from outside the region.

Group problem-solving techniques are widely used in the USA. They involve assembling a group of the qualified personnel under the direction of a "facilitator." This person may have very little knowledge of the problem or its resolution, but his function is to lead the group through the logical sequence from problem definition to strategy formulation and target-setting. A major function of the facilitator is to stimulate members of the groups to contribute full measure, and to encourage consideration of every possible solution--no matter how absurd it may seem at

first. The process of "value engineering"--currently mandated on many government projects--is heavily based in group problem-solving techniques.

It is therefore recommended that either:

1. Selected individuals from the countries of the region be sent to the USA for training in group problem-solving techniques. These individuals would return to the region on completion of the course, and would set up a center of facilitators available to assist with problem resolution in the member countries.

or

2. Experienced facilitators or one of the firms providing problem-solving services be hired to work in the region for a period. During this time the group would demonstrate the techniques by direct involvement in selected problem areas, and would at the same time instruct a seed group of individuals from the region to take over the functions at the end of the contract period.

The training process for value engineers requires a period of working for an already qualified and established value engineer. It is considered that experience of a variety of different problems and situations is necessary for adequate training. For this reason, the second alternative is recommended over the first.

As stated in the country reports, a major part of the success of any training program is the ability of any trainee to return to his country of origin and feel that he has the ability to contribute positively to the nation's welfare. It is felt that an assistance program such as this will place into the hands of the people of the region a tool for the solution of their own problems with their own resources.

The direct measurable benefit of a program of training in group problem solving would be hard to assess--at least, in general terms. In specific terms, however, the success would be simple to assess: specific tasks would be assigned to the group and a record would be kept of how well the strategic plans were being implemented. The following areas would benefit from practical strategic plans, with identifiable goals:

- o the air freight impasse in Guatemala.
- o the air freight impasse in Costa Rica.
- o labor rules and practices in the ports of Cortés, Limón, Balboa and Colón.
- o provision of private-sector refrigerated warehouses at strategic locations throughout the region.

The benefits of the individual programs listed are elaborated in the country reports, but the contribution of the new techniques would be to bring the solutions into the near term rather than the long term.

Approximate cost of three professionals for a year to set up the instruction and assist at sessions should be budgeted at \$500,000 per year.

### The Contractual Foundation

The role of government in transportation is not purely that of providing physical infrastructure, but also in providing a legal and institutional environment that permits the economic operation of transport facilities. The major environmental obstacle encountered in the region was a legal one: in other countries contract of carriage are typically entered into by shipper and carrier to reduce the risks involved.

Some use of contracts was made by some organizations in the region, more often between major producers and major truckers, but also between major maritime shipping companies and truckers. It was not normal for the typical exporter of non-traditional products to enter into a contract with a carrier ahead of time, The request for transport was often made just prior to harvesting. While this practice will be discussed later, it is relevant to consider here the role of government in producing a situation where contracts are avoided.

There is a close correlation between the history of contract law and the history of international trade: security in trade was greatly dependent on enforceable contracts. Trade without contracts places all the advantage in the hands of the strongest party. For contracts to work, however, the outcome of default has to be fairly predictable, and the cost of a claim has to be reasonable in comparison with the value of the merchandise. In the region exporters expressed reluctance to involve their operations in legal formalities. They avoided as much as possible any action that would require settlement in a court of law. The impression was that the procedure was expensive, time-consuming, and often with unpredictable outcomes.

For transportation systems to operate efficiently there has to be legal parity between the shipper and the carrier: neither must be allowed an unfair advantage over the other. For the most part, this parity does not exist in the countries of the region, and the major disadvantage is that of the shipper--the owner of the merchandise. Because of the absence of contracts, there is very little liability borne by the carrier.

To improve the situation, the government of the region need to look at the process for dealing with contracts of the region. For trade to be given the best chance to improve, contracts between parties must be routine, but the methods of settling disputes must also be routine. The responsibility of government in this respect must be to encourage the use of contracts, but it should also set up procedures whereby the contracts can be fairly, quickly, and economically enforced.

The survey showed that a lack of trust and confidence pervaded the whole of the business fabric, and crippled the ability of groups with similar interests to get together to solve their problems in concert. This is not to say that the business community of the region is operating in a cloud of acrimony and mistrust: just that there is a marked reluctance to collaborate for genuine mutual benefit.

It is not suggested that contracts be introduced at every stage of trade in the region. There is no need for business to be made any more complicated than it is. It is, however, felt that the business community's ability to act together to obtain better service would be improved if the consequences of binding agreements were consistent throughout the region and were better understood.

### Planning and Cooperation

All other factors being equal, the per ton cost of transport can be reduced if the quantity shipped is increased. There is a distinction that has to be made between increased marginal demand, where costs can be increased, and true bulk handling. One additional producer, acting as an individual in demands for transport, is a user at the margin--even if the product being shipped is the same one being shipped by all the others. Where a significant volume can be handled at any given point in the

transportation chain, and where there is one representative of the shipper and one representative of the carrier, then the nature of the transportation changes and the costs can be negotiated downwards. As an example of this one can look at the pineapple situation in Costa Rica: a number of small producers have entered the export market, and a major fruit company has planted a massive acreage. The individual producers are producing at the margin and will eventually push up the cost of transport; the major company has chosen the quantity so that fleets of trucks can be contracted and refrigerated ships can be chartered. The pineapples from the two groups of producers are destined for the same markets; the price demanded by the major producer will set the price for the smaller producers, and so the margins for the smaller producers will be far smaller than for the major producers.

Thus it is essential for the exporters of the region to act in concert and cooperation to take advantage of the reduced costs that can come with bulk transport.

It is not sufficient just to act as a group; however, the group has to act ahead of time. The group has to plan.

The normal situation for the exporter of non-traditional products from the region was to act independently of his neighbor, and to request carriage services a short time before they were required. The combination of these two acts created considerable peaks in demand for trucking, containers, ships and so on, all of which could have been avoided if reasonable advanced notice had been given.

There was an assumption that carriers planned for the demand by some process of investigation. It was found that the data that would assist such an investigation--accurate planting surveys issued frequently throughout the year, for example--were not available. It was also found that demand for services from the previous year was a poor predictive base for the subsequent year

because of the volatility of the sector: exporters one year did not always export the next year. Thus most carriers had no idea what the demand might be in the coming months. This required them to maintain an inventory of equipment, such as containers, in case there was an abnormal demand. Quite often the demand exceeded all expectation and the exporter complained of a shortage of equipment and poor service.

The normal system in operation in other parts of the world is for the producer to give advanced notice to the carriers of the time and quantity of the harvest. It is also usual for the details of the agreement to be agreed contractually. This permits the carrier to make the necessary preparations, and ensures that the producer has the service required. Investigations in Central America revealed that there was no unwillingness on the part of the carriers to enter such agreements, but it was found that the producers were reluctant to commit themselves to a particular plan of action.

### Transportation Logistics

The discipline of transportation logistics requires complex analysis. The main objective of the exercise is to make the margin remaining for the exporter as large as possible. The analysis involved the balancing of quantities, times, different markets, alternative transportation modes, and mixes of products until the maximum margin has been identified. In the case of Central America the main export market was the USA; it was normally assumed that exports meant the USA. When exporters were asked if they had investigated markets farther afield it was found that they had not. One of the main advantages that Central America has over other regions is its Atlantic and Pacific Ocean access: to export from this region in only one direction is to ignore a major potential. It is not inconceivable that markets exist for Central American products as far away as Australia and the Middle East. Interviewees tended to consider transportation

costs to such regions as prohibitively expensive, without considering whether local prices obtainable for Central American products might not justify the extra cost. Where there is a considerable amount of one-way traffic, bargains may be struck by providers of cargo in the return direction: there is a Far East connection for imports by way of a number of Pacific ports, though very little gets picked up as exports. It might be possible to arrive at a creative negotiation by supplying cargo for these vessels so that they could return directly to the Far East. The transportation cost to cross the Pacific can, under the right circumstances, be less than the cost to ship to the USA.

Increased analysis along these lines at the regional level would serve to increase the levels of non-traditional exports.

## **TRANSPORTATION ISSUES**

### **The Central American Study on Transportation (1974-76)**

In the mid-1970s a study was undertaken by the governments of Central America of the transportation needs and projected needs within the region. The principal objective of the study was the formulation of an investment plan for the period 1978-1990 in highways, railroads, ports, maritime transport, interior navigation and coastal trade, and air transport and airports. In addition to the main objective, the study also planned to contribute to the formulation and implementation of a transportation policy for the region, to promote the development of Central American integration, to contribute to the execution of the national development programs, and to promote those technological changes that are relevant to the conditions of Central America.

The project was undertaken jointly by the governments of Guatemala, El Salvador, Honduras, Nicaragua, and Costa Rica, together with the Central American Bank of Economic Integration (BCIE), the Interamerican Development Bank (IDB), the United Nations Development Program (PNUD), and the Permanent Secretariat of the General Treaty on Central American Economic Integration (SIECA).

The work of the study was wide-ranging and thorough, and contained a list of recommendations at the regional level. Having looked at the developments that had taken place since the 1960s, the study concluded that the network of roads, ports and international airports was essentially mature, in that development project investments had been made and transportation services had evolved to the point of functioning in relative efficiency. Thus the study concentrated on identifying those investment projects required for the expected economic growth of the countries and to contribute to the growth.

The investment plan proposed in the study recommended that a total of 1,438 million Central American pesos be spent on a combination of highways, railroads, ports, airports, and airplanes for a Central American air fleet. The funds were to be spent over the period 1978 to 1990.

It was recommended that the funds be spent as follows:

Highway Projects--the construction of 1,978 km of new highways and improvements to 2,304 km of existing highways.

Railroad Projects--rehabilitation, construction of workshops, purchase of equipment, cars and locomotives.

Port Projects--construction and equipping new ports at Quetzal in Guatemala, and Castilla in Honduras. Also included development of Cortés, Limón, Caldera, Corinto and Acajutla.

Airport Projects--the construction of a new international airport at Tegucigalpa, and additional infrastructure and navigation aids for La Aurora, Ilopango, Villeda Morales, Las Mercedes, and Juan Santamaria.

Regional Air Fleet--the purchase of a total of 11 airplanes over the period 1978-1990, and the formation of a Central American Air Transport Company.

In addition to the recommended capital investments, the study also proposed a series of programs, which included regional cooperation, institutional reorganization of the transport sector within member countries, highway planning studies, weight and measures control of trucking, closing of a number of railroad lines, implementation of a uniform port statistics system, establishment of common criteria for port tariffs, collection of ship costs, institution of training programs, simplification of documentation procedures, and implementation of a uniform airports statistics system.

The report also contained an analysis of the benefits that would be derived from the implementation of the programs and recommendations.

This report had, and still has, considerable influence on the development of transportation within Central America. Many of the recommendations it contained, particularly concerning ports and highways, were followed through in the few years following the report, and no study of Central American transport would be complete without taking into account this continuing influence.

Equally no study would be complete without an appreciation of the efforts of SIECA in trying to implement the regional recommendations aimed at more efficient transport through increased cooperation.

With very few exceptions, the present study found that the main conclusions of the 1976 study were still valid ten years later. It was noticeable that, while the investment recommendations were carried out--excepting only additional railroad investment and the new Tegucigalpa airport, though this project will probably be started before the end of the period--it was more difficult to achieve the planned programs of cooperation. On a regional basis, this difficulty is significant, because the main improvements required at a regional level can only be brought about through cooperation. The present study specifically endorses the following programs that were contained in the 1976 study:

- o to continue the necessary efforts to facilitate intraregional transport through the gradual adoption of means to make the applicable processing and documentation easier to handle.
- o to establish regional systems for the training of Central American personnel who participate in the management and operation of institutions in the transport sector.
- o the establishment in each country of a Transportation Ministry that would absorb all the responsibility from other ministries and state organisms for coordinating and formulating transport policies and for supervising their application. Within this concept, the execution of these policies, and administration and operation of services, should be under the authority of only one institution for each means of transportation.

- o to organize a National Port Authority to operate the Port Limón, the port of Caldera and the other ports of public property in Costa Rica.
- o to organize the railroads of Costa Rica into one firm exclusively for that purpose.
- o to strengthen the Civil Aeronautic General Division so that it can more actively participate in the general planning of air transport. In the same way it would gain more operational discretion.
- o studies to determine policies and criteria to set taxation levels based on national objectives for the development of the road system and the policies on distribution of incoming funds.
- o intensify efforts to effectively fix a weights and measurements control system to prevent the premature destruction of the highways.
- o policies should be established to give Central American railroad firms a greater flexibility in setting their tariffs.
- o adequate studies on railway transport costs are lacking to serve as a base for establishing more reasonable tariffs. Consequently, detailed cost studies are deemed necessary for each railroad. Reforms should be introduced to the systems along with modern statistical procedures. The structure and principal operative costs should also be reformed.

- o to finish implementing a uniform Central American Statistical information system in all the ports.
- o to establish common policies and economic and financial criteria on which to base port tariffs and adopt these at the level of all Central American ports.
- o for each authority or firm to revise its tariffs, taking the criteria defined in the previous recommendation into account and with better cost information that differentiates the costs for each port service.
- o to collect and analyze reliable statistics related to the operational costs of the ships visiting the region. These can serve as the basis for Conference negotiations.
- o for the countries to give greater support to institutions for training regional experts in maritime transport.
- o to simplify procedures and documentation to increase the efficiency of freight mobilization for importation and exportation via the ports.
- o programs and statistical systems should be designed and used for the airport administrators and operators to become familiar with the costs of each service offered in order to establish reasonable tariffs.

The considerable benefits of the programs are detailed in the '76 report, though these need to be revised downwards to correspond more closely with the less favorable than forecast economic conditions. The dilemma facing the present report is that the length of time required to bring these programs of cooperation to fruition puts most of them outside the five-year time frame being considered.

Recent figures also show that intra-regional trade has fallen off considerably over recent years, not from the impediments of cost of transport but from causes arising out of the economic crises being experienced by the countries and from the conflicts between them. Thus non-traditional exports on a regional basis will only respond to the recommended programs as and when the conflicts are removed and economic conditions improve.

The programs contained in the 1976 report are thus not recommended in their entirety for implementation as part of this study, though they are heartily endorsed for continuing efforts by SIECA, BCIE, and the various bilateral working groups.

### The Central Port Concept

During the course of the present study arguments were put forward by interests in Panama for the creation of a central port. The general concept was that there were savings to be made by using the port facilities at Panama as a main collection point for containers from the region, from where cargo could be loaded on vessels to almost any part of the world.

The advantages included:

- o the fact that Panama is one of the centers of world maritime trade routes.
- o the ability to move containers from one coast to the other overland, thus saving the need to consign to vessels that would need to transit the canal.
- o the existence in Panama of a whole range of international services and representatives supporting international trade.

o the ability to take advantage of the process of consolidation that the system would involve.

Much consideration was given to the concept, but it was determined that insufficient cost information was available to permit a systematic analysis. Some of the reservations included:

1. At present the major shipping lines operating in the countries of the region offer a "door-to-door" service, which is very popular. These lines will continue to operate according to their existing arrangement, and will thus be in direct competition with the coastal vessel operators. It is unlikely that these operators will have the resources to operate a trucking service, and so would not offer "door-to-door." Either way, it is far from certain that exporters would choose the alternative over the established international operators.
2. One regular complaint heard during the interviews was that an excessive amount of time was spent by some lines in calling at other ports in the region before arriving at Miami. Unless port efficiencies in the region were to improve considerably, and unless the export tonnages increase sufficiently to eliminate more than a minimum amount of consolidation time in Panama, the typical export might take longer to reach its destination.
3. Considering that exporters in the region are very nervous about losing control over their shipments, it is inevitable that there will be a fear that shipments could go astray in Panama, or that preference was being given to other countries or cargoes.

4. The import/export balance in the region is extremely one-sided: removing banana exports, which are handled outside the normal liner system, one is left with very little in the way of exports and a considerably greater amount of imports. Thus the establishment of a central port would benefit the exporters of products from the USA much more than the exporters from the region.
5. Much of the non-traditional exports are perishable, and must move in refrigerated containers("reefers"). Any intermediate consolidation of reefers runs the risk of accident and damage to the crop. It should be noted that the main shipping companies that use transshipment terminals in the region do not accept perishable cargo.
6. For the combined reasons of limited exports and the need for refrigerated containers, the central port concept would cost the exporter more: it would not be possible for a major shipping company to subsidize the supply of empty refrigerated containers as at present. The full price would have to be paid.

The study did not conclude that a central container port in Panama was not feasible, only that it would not benefit the export of non-traditional products from the region. At the time that this report was being compiled, a study was taking place in Panama under international lending agency funding to determine the feasibility of the centerport concept. The conclusions of that report will determine the outcome of the idea.

## Port Training Programs

During the period of the study an investigation was completed by the Ports and Waterways Institute of Louisiana State University for the U.S. Department of Transportation. The purpose of the study was to assess the training needs of port personnel in the Caribbean region, including Central America.

It was concluded that the ports in the region were not keeping training programs up to the level required for the increasing sophistication and complexity of modern port operations. The recommendation was that a wide-ranging training program be introduced for all levels of port administration and operation, and that assistance with the training be sought from a number of organizations, including maritime shipping lines and port authorities in the USA.

The proposals for training were reviewed as part of the non-traditional export study, and it was concluded that there was, indeed, a critical requirement for increased training of management and operations of ports in the region. The assessment of present levels of training as against optimum training levels are given in detail in the Louisiana State University study, and in general terms, it is recommended that the training program be undertaken as outlined.

The relationship between the training program and non-traditional exports was also considered to determine if there was any direct benefit in terms of potential for increases in the next five years. Overall it was concluded that the short-term benefit would be small.

Where there is competition within an industry--as with trucking--training programs give operators a competitive edge, and can result in short-term cost reductions. Ports, however, are not competitive organizations in the same sense, and in the Central

American region the port authorities were not always at liberty to make their own decisions regarding costs and charges. Thus while it may be possible to instill in the management of a port a deeper understanding of the complexities of a modern terminal, the changes required to implement the newly-acquired techniques have to be approved by one arm or another of the central government, a process that can be extremely lengthy. Thus port charges, port tariff structures, and liner tariffs would not be expected to reflect more efficient operations in the short term.

Training is always needed, and always to be recommended for those in charge of day-to-day port operations, the stevedores and the equipment operators in order to increase general port efficiency. The net effect is to reduce transport costs by reducing the time the ship has to stay in port. An analysis of port operations in the region showed that the main impediment to faster turnaround was not poor use of equipment, but rather poor labor rules. While efficiencies in loading and unloading could reduce stays in port by a few percent, amendments to labor practices could reduce stays by considerable factors.

A major source of delay is considered to be that stevedores are almost universally paid on an hourly basis; in most ports work was suspended during meal breaks; and in most of the major ports it was necessary to pay for a whole shift, even when only a part had been worked. The latter practice led to ships delaying arrival to coincide with the start of a shift, and led to stevedores dragging out operations to ensure extending into the next shift. Even with well-trained operators, the structure of labor rules made it worthwhile to operate at less than peak efficiency.

Thus for training programs for operators to have a chance of succeeding the working environment has to be changed to benefit the conscientious operator. For this reason, and because each country has a different set of labor laws, it is recommended that

the resolution of port inefficiencies be best dealt with at the level of the countries concerned, and that assistance be given in formulating detailed plans to cope with the problem. The suggested nature of the assistance is given in the individual country reports.

### Regional Containerization

Approximately 420,000 twenty-foot-equivalent units (TEUs) of containers a year are handled by the main ports in the region, with an almost equal division between imports and exports: 210,481 entered the region in 1984, and 210,633 left. Between them they imported 1.24 million tons and exported 1.34 million tons.

Of the containers that entered the region, 37% were empty, while the same percentage were empty of the containers that left.

The regional containerized tonnages and the regional container movements are given in Tables 5.7 and 5.8.

Comparisons of containerization figures require a great deal of rationalization, because containers are not used for the same purpose in different areas. The ports of Limón/Moin and Cortés handle large quantities of bananas, a significant quantity of which leave the country in refrigerated containers. These containers are not used for any other purpose, and so they have to be brought in empty. The typical banana carrier will offload one empty container in exchange for one full container; at the destination port it will exchange a full container for an empty one. This process clearly results in figures that have a high number of empty containers among the imports. A port such as Santo Tomás, which is not a major banana port, imports and exports about 25 percent of its containers empty.

**Table 5.7**  
**Central America**  
**Regional Containerized Tonnages**  
**1984**  
(metric tons)

<u>Port</u>	<u>Import</u>	<u>Export</u>
Belize City	47,680	3,698
Limón/Moin	269,121	400,766
Acajutla	53,693	59,570
Santo Tomás	221,409	223,314
Puerto Cortés	175,034	559,077
Corinto	n.a.	n.a.
Bahía las Minas	65,702	15,884
Balboa	180,729	35,317
Cristobal	<u>226,088</u>	<u>44,954</u>
Total Tonnage	1,239,456	1,342,580
Average per TEU	9.4 Tons	10.2 Tons

Table 5.8  
Central America  
Regional Container Movements  
1984  
TEUS

	<u>Imports</u>	<u>Exports</u>
<u>Loaded</u>		
Belize City	4,060	475
Limón/Moin	18,091	33,593
Acajutla	4,491	3,894
Santo Tomas	17,211	17,353
Puerto Cortés	22,860*	60,155*
Corinto	n.a.	n.a.
Bahia Las Minas	8,556	3,013
Balboa	26,296	6,844
Cristobal	<u>30,658</u>	<u>6,826</u>
	132,223	132,153
<u>Empty</u>		
Belize City	19	3,377
Limón/Moin	23,735	8,145
Acajutla	832	1,799
Santo Tomas	6,155	5,848
Puerto Cortés	46,413*	8,989*
Corinto	n.a.	n.a.
Bahia Las Minas	58	5,715
Balboa	183	20,397
Cristobal	<u>863</u>	<u>24,210</u>
	78,258	78,480

\*estimate by PBI

Source: based on Containerization Internation Yearbook 1986  
Elaborations by PBI

Importing and exporting an empty container, without the cost of the container's loss of income etc, is of the order of \$600. The annual cost to the region of these is thus about \$94 million.

It is not possible to eliminate the empty container: the carriage of these is part of the cost of the system world-wide. It is increasingly difficult to achieve a balance where the containers are not interchangeable (20 ft vs 40 ft; dry vs reefer etc.). The aim should be to take the best advantage of the system, and a comparison with Chile illustrates the concept:

In 1984 Chile imported 417,000 tons of goods in 32,904 TEUs, and exported 362,000 tons in 18,836 containers. Of the imported containers 26% were empty, while as much as 55% of the exports were empty, representing over \$21 million in transportation costs.

Of the containers that were loaded, however, Chile averaged 13 tons per TEU on imports and a massive 19 tons per TEU on exports. This clearly reflects a utilization of containers that puts them nearer their capacity than the average of 10 tons per TEU achieved in Central America.

The cost of transportation to the region could thus be reduced by:

1. reducing the percentage of empty containers to an absolute minimum. This requires a combination of planning, brokerage, and appropriate imports and exports.
2. increasing the payload of containers actually used. This requires consolidation in container freight stations, better allocation of imports and exports to appropriate unitization, and the consolidation of freight to avoid use of containers by substituting whole ship chartering.

## Regional Air Freight

The country reports looked in detail at the air freight facilities and services available in the countries of the region. There was almost universal criticism on two basic issues:

1. The facilities at the international airports did not include adequate facilities for the proper handling of perishable exports.
2. The service provided by the companies that carried air freight was unpredictable and of insufficient capacity to meet demand.

Consideration was given to the possibility of regional programs for the correction of these, but it was concluded that the most appropriate actions would be the ones described in the appropriate country report.

For the most of the countries, the effect of any regional programs on the air freight of non-traditional products would be extremely limited, with the exception of Honduras and El Salvador.

The airport at San Salvador is of recent construction, and includes refrigerated storage of the type not currently available at Tegucigalpa. The airport at Tegucigalpa is scheduled for relocation in the near future, with the provision of the facilities that are currently lacking. Until that time there will certainly not be any cold storage at Tegucigalpa to facilitate the export of fresh fruit and vegetables, the shrimps and lobsters, and the expected fresh cut flowers.

A real encouragement to the exporters of non-traditional products from Honduras could be given if they were able to routinely avail themselves of the facilities at San Salvador. For many Honduran producers San Salvador is closer than Tegucigalpa, and if border formalities could be reduced to a minimum, and if there was complete freedom for truckers to move in and out of the countries, the preferred choice would be San Salvador.

This study did not conclude that a recommendation should be made to institute a specific program to assist Honduras exports through San Salvador. The correct line of action in this case would be through bilateral diplomatic channels. The issue does, however, demonstrate just one of the possible cost-reducing options that exporters from the region could consider if the program of reduction of frontier delays were introduced.

### The Regional Air Transport Company

The 1976 Regional Transportation Report recommended the establishment of a regional air transport company, in place of the proliferation of national airlines. The main benefit was to be the reduction of duplication of both service and facilities.

Movements towards the establishment of such a regional enterprise have not proceeded very far, and the probability is that there will not be much progress in the near future. The question remains as to whether this should be a recommendation for a program. The considered conclusion was that, while benefits could be considerable, the actual benefits for non-traditional products were liable to be extremely small.

Firstly, at the time of the study, the predominant world view was that there was a social advantage in a national airline. While some countries had made moves towards privatization of the national airline, the overwhelming attitude was that the national airline was here to stay. In fact, the history of the airline business had regional organizations established prior to the national airlines. In that sense a regional airline company would be a step backwards. Thus the concept is at considerable variance with the world view.

Secondly, while there is no doubt that six or seven nations, each operating its own airline, is bound to lead to duplication and sub-optimization, it is also true that the system tends to operate for the benefit of the passengers from each country. A more rational system would favor some nations more than others. As it stands, the present system allows the national of most of the countries to fly direct from the capital city to Miami at the most popular hours of the day; a more economic system would attempt to level out the demand more evenly throughout the day and the week. If the present schedules were maintained, then one of the chief economic benefits would be lost.

Thirdly, the main source of income for any airline is passengers. Passengers are also in the majority when it comes to complaints about services and prices. Users of air freight are very much in the minority, and the income that could be generated from even the best forecasts of demand is a fraction of the income from passengers. Thus--and current experience of all airlines in the region, both national and private, have shown--any line that provides both passenger and freight service offers a very limited consideration to the quality of the freight service.

The conclusion is thus, for the exporter of non-traditional products, that he would not only not achieve an improvement on his current indifferent service, but he would be liable to lose his reasonably frequent direct access to his main market.

At the present level of demand there is an argument that could be made for the establishment of a regional air freight company, in the expectation that this might respond to exporters' demands more than a passenger or mixed passenger/freight airline. There is, however, no shortage of private-sector companies that could provide the service economically, and would also provide it on the basis of economics and not at the direction of a committee.

If a private firm could be found that would be willing to provide such a freight service, it would avoid the not inconsiderable capital investment and the organizational problems involved in creating a managing authority responsible to all the different countries of the region.

The study determined that the indifferent service did not result from any failure on the part of the airlines, but principally from the users' inability to combine and negotiate as a group.

### Regional Air Freight Hubs

The question was raised during the course of the study as to whether a regional air freight system could be introduced using a "hub and spoke" system. Under this system air freight would be collected from minor airports within the region, and would then be flown to a major central facility. At this facility the cargo would be consolidated according to destination, and would be loaded onto the appropriate plane.

The advantages of such a system, it was felt, would be that cargo could be consolidated in sufficient quantities to justify dedicated frequent service to specific destinations.

On the surface this seemed like a viable proposition, but upon analysis it was discovered that the characteristics of the cargo did not support the system. The following arguments were against such a scheme:

- o Hub and spoke is rarely used for perishables. This type of cargo requires direct flights in as short a time as possible. Double handling would also increase the risk of damage resulting in the possibility of piles of rotting fruit or vegetables at the hub airport, with no responsible representative to be charged with its removal.
- o For such a system to operate economically there has to be two-way traffic. Cargo must go from the hub to the satellites as well as vice versa for there to be sufficient income to justify the operation. The country reports showed that air freight was essentially one-way within the region.
- o The distances involved and the configuration of the countries defeats most of the potential advantages. The concept would see, for example, small planes leaving Guatemala, San Salvador, Tegucigalpa, Belize, Managua, and Panama, and flying to San José, Costa Rica. These small planes would then unload, pick up cargo, and return to their origins. The cargo at San José would be loaded onto a larger freight plane and fly to, say, Miami. But since the distances between Guatemala, Tegucigalpa, San Salvador, Managua and San José are so short, and since one has to fly over one to reach another, the most effective operation is the one currently employed.

The current air freight situations in the countries of the region are best solved by the countries themselves. The added dimension of regional coordination that would be required for this system is several steps ahead of the national cooperation and coordination needed for the present problems.

REGIONAL

CHAPTER 6

RECOMMENDATIONS

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 regional basis, or that would make sense from the perspective of a regional policy, are considered. Those matters that are best handled at the country level are left for the country reports.

The recommendations listed are then reconsidered and prioritized in the final sections of this chapter. The way in which the benefits for the various prioritized recommendations are computed is contained in Appendix B to this report.

### Physical Recommendations

- o construct or improve road access across frontiers between production areas and nearest ports and airports
- o procure additional equipment for the port at Santo Tomas to bring its efficiency into line with the other ports in the region.

### Institutional Recommendations

- o formulate and introduce a simplified procedure at frontiers that will reduce customs delays
- o standardize existing trucking legislation to permit freedom of movement between nations (includes uniform duties on spare parts, and standard gasoline prices)
- o formulate and introduce a simplified system for entering into and settling contracts on a regional basis
- o formulate and introduce a legal code that would permit the introduction of regional export brokers
- o review the port tariff structures within the region and put into operation a program for the introduction of a standardized system of port tariffs within the region
- o standardize institutional charges within the region regarding movement of freight, such as the "vigilancia" charge in Honduras
- o set up a regional representative body to collect port statistics and negotiate on behalf of the region as a whole at tariff conferences

- o make available reasonably priced insurance for carriers
- o set up and run seminars in better business practices for managers of trucking companies
- o set up and run schools for truck drivers and mechanics
- o set up and run seminars in port management for senior port operators
- o set up and run schools for port equipment operators and mechanics
- o set up regional representation office in Miami to check arrivals and look for buyers
- o introduce and implement assistance programs for group problem solving
- o set up a regional marketing and promotional organization

#### PRIORITIZED PHYSICAL RECOMMENDATIONS

##### 1. Equipment for Santo Tomas

The cost of the inefficiencies at Santo Tomas have a significant effect on the cost of exports, not only from Guatemala, but from El Salvador and Honduras as well. 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. Regional Review of Cross-border Roads

The individual country reports contain recommendations that the national road maintenance and construction programs should be upgraded. For the most part, the national programs are aimed at improving internal circulation. On a regional basis, a program is required to ensure that road freight can cross from one country to the next without difficulty. It is therefore recommended that a review be undertaken of the most important road connections between the countries of the region, that programs be established for the improvement and maintenance of these roads, and that the efforts of the various nations involved be coordinated. Without such a program it is unlikely that road access between countries will be increased or improved.

The purpose of the program will be to make intra-regional road transport cheaper and easier. This will be achieved by eliminating long detours, reducing damage to cross-border trucks, improving journey times, and reducing damage to the cargo. The benefits will accrue to both intra-regional trade and regional exports.

Land transport for non-traditional exports absorbs about \$215 million per year. This figure includes both intra-regional trade and regional trade. Improved cross-border access might affect one third of the cost, or about \$70 million; about 10 to 15 percent of this is made up of repairs and maintenance, say \$10 million; if improvement could be effected to the total of 30 percent, savings would be about \$3 million. Thus non-traditional exports could be expected to increase by \$12 million per year.

At the moment, the only agency with the regional authority for such an undertaking is SIECA (Secretaria Permanente del Tratado General de Integracion Economica Centroamericana) through its organization REMITRAN (Reunion de Ministros Responsables del Transporte en Centroamerica). At the meeting of this group in Guatemala in February of 1987, a number of resolutions were adopted which were aimed at improving roads in the region. However, for the shorter term, it is suggested that SIECA consider the recommended program for the maintenance of targeted roads on both sides of the border.

#### Non-Priority Recommendations

Much thought was given to a range of other physical programs for the improvement of exports from the region. Possibilities such as the construction of regional container consolidation facilities, regional refrigerated warehouses, regional port equipment repair programs, and so on were reviewed for their feasibility, but were assessed to be of a low priority. Given the present level of regional cooperation, it was difficult to calculate any short-term benefits that might accrue, and so these recommendations were left for either treatment on a national basis or for setting-aside for the future.

## PRIORITIZED INSTITUTIONAL RECOMMENDATIONS

### 1. Contract Law Amendments

The export of non-traditional products on a regional basis 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 in the region would be resolved automatically. At the time of the study there was found to be a definite disadvantage to cooperating even within each country; cooperating across national boundaries was doubly risky, and was rarely done.

It is therefore recommended that a program be formulated to review the status of contracts in the countries of the region and determine how a legal contractual integration 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 regional cooperation, the benefit would be of the order of \$80 million increase each year.

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

- o the introduction of regional 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 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.
  
- o the formation of regional exporters' groups. It is recommended that negotiating teams be set up to acquire preferential rates for members of the groups, who may be located in different countries in the region. 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 commitment 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. The potential for freight negotiations is quite considerable, and could reduce the transport cost by up to 25 percent, particularly if volumes could be increased.
  
- o regional transportation brokerage. In the absence of appropriate legal remedies, the services of regional transportation 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

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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 on a regional basis.

The ideal implementing agency for the program would be SIECA. Through REMITRAN, this agency takes considerable interest in transportation matters. They have so far not undertaken a specific program for integrating regional contract law as related to transport, but have all the facilities and contacts for such a program. A source of funding would need to be sought.

## 2. Overseas Representation

It is recommended that an overseas regional 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 region's products.
3. Train nationals 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 are elaborated in the main text, and came to cost of \$600,000 per year and increased exports at not less than \$28 million.

The representation could be established in the very short term, just as soon as the arrangements are agreed with the countries of the region.

A regional group with responsibilities for improving exports is FEDEPRICAP (Federacion de Entidades Privadas de Centroamerica y Panama). Given its private-sector composition, it would be the ideal organization to set up and operate the overseas office for the benefit of its members. Some funding would be required, and it is recommended that ROCAP provide some organizational assistance, possibly in conjunction with CCAA.

### 3. Group Problem-Solving Assistance

A major weakness in the region 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. The costs and benefits are elaborated in the main text. Costs would be about \$500,000 per year, for, say, three years, and benefits would be derived from measuring successes with specific problem areas. The Instituto Centroamericano de Administracion de Empresas (INCAE) would be well placed to administer this program.

### 4. Representation at Tariff Conferences

At the time of the study the normal representation at tariff conferences was on a country-by-country basis. For the major shipping conferences the most appropriate level of representation is at the regional level.

It is thus recommended that a small permanent office be set up in the region to collect regional port statistics and shipping costs and to prepare presentations or depositions to the conferences.

The annual cost of such an office should not exceed \$500,000, though additional amounts would be required in addition to this for travel and overseas expenses. The increase in exports needed to pay for this would be only \$2 million--a fraction of one percent. Considering that the annual expenditure on this one item by the region exceeds \$600 million, the benefits of even a marginally successful operation are well assured.

The establishment of the office could be immediate, and its first function would be to collect all the statistical data available from the region's ports. The facilities for setting up such a center have been offered to SIECA by the Direccion de Transporte Maritimo in San José, Costa Rica. It is suggested that COCATRAM investigate the offer and see if funding is available.

##### 5. Standardize Trucking Regulations

For costs of transport to be reduced to their most economic level it is essential that land movements of cargo take place without hindrance. It is therefore recommended that a program be formulated for the standardization of trucking regulations within the region, including the introduction of simplified border formalities.

The introduction of such a program would be an essential part of the preparation required for the operation of regional brokers. The benefits would thus be included in the \$80 million export increase per year.

Much preparation along these lines has already been done by such groups as SIECA, and so the program would take the form of assistance to existing programs by the provision of expert assistance. Depending on the level of assistance that would be appropriate, an annual budget of between \$200,000 and \$600,000 should be established.

While the time frame for the program may be long-term, short-term solutions could include the formulation of the simplified customs formalities at the border.

#### 6. 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 shortage was contributing to the costs of their operations.

Of the \$642 million spent on sea freight in one year by non-traditional exporters, an estimated \$60 million of this represents the cost while in US ports. A mere 1% improvement in turnaround time could save \$600,000 in a year, increase exports by \$2.4 million, and pay for of the order of 100 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. Of greater long-term benefit would be greater use of pre-inspection on a regional basis. The cooperation of the USDA needs to be sought to see if a

regional approach would be possible. It is already established that pre-inspection is feasible at the national level, but to date no regional approach has been formulated. Clearly a ROCAP-USDA liaison would be beneficial.

### Non-Priority Recommendations

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. However, should SIECA follow up on the proposal by COCATRAM that increased use should be made of coastal shipping in conjunction with central ports, then a port tariff structure review would have to be included with this program. 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**

**REGIONAL ECONOMY**

## APPENDIX A

### CENTRAL AMERICA

#### REGIONAL ECONOMY

##### ECONOMIC OVERVIEW

The sections following describe in greater detail the economics of each of the Central American countries, particularly as they relate to each other. Listed below is a brief summary of the major points contained in those sections.

- o In general, growth in Gross Domestic Product (GDP) in each country was strong in the 1970s, declined in 1981 and 1982, and had slight increase in 1983-85.
- o Imports and exports from each country followed the same general trend.
- o Unemployment was about 17 percent in 1983 for all six countries combined.
- o The "underemployment" rate was considerably higher.
- o At least a third of the employees in each country are in agricultural industries.
- o Inflation was low in 1983-84. It was much lower than in the early 1980s.
- o Inflation was high in El Salvador and Guatemala in 1985 due to a devaluation of their currencies.

- o Bananas are the major crop by volume in Panama, Honduras and Costa Rica.
- o Coffee is the major export crop by value in Guatemala, El Salvador, and Costa Rica.
- o Maize is the major crop in El Salvador and Guatemala. It is mostly for domestic use.
- o Agricultural production is affected by weather, foreign demand, military actions, political upheavals, land reform programs, and land invasions.
- o Fishing is a major industry in most countries. Shrimp is the second leading export for Panama.
- o All countries except Costa Rica import more than half of their energy (Costa Rica imports 49%). Panama imports 94% of its energy.
- o Hydroelectric plants produce most of the internally-generated power. Costa Rica and El Salvador also use geothermal energy.
- o Most of the countries are attempting to build new power plants, but financing is a problem.
- o Besides agriculture, there is no other major industry which is common through all of the countries.
- o Little mining is done even though most of the countries have mineral deposits of several types.
- o Costa Rica and Honduras are the only countries with a significant mineral export trade.

- o Panama has large copper deposits, but several attempts to develop a copper mining industry have failed.
- o Only Panama has more than 13 percent of its roads paved.
- o In some countries, only half of the roadways are considered "all-weather".
- o The Inter-American Highway provides good north-south access, but there are few roads which connect both coasts.
- o Rail lines do not permit inter-country connections.
- o Only Guatemala and Costa Rica have rail lines which provide coast-to-coast service.
- o Several new ports have been constructed in the past four years.
- o Costa Rica and Panama have 70% of the telephones in the six countries.
- o Coffee, bananas, sugar, and cotton are the principal regional exports, in that order.
- o Primary imports are capital equipment and construction materials, energy, and other raw materials.
- o Each of the region's countries has substantial trade deficits. In 1984, the regional deficit was about \$2.2 billion.
- o Coffee tends to be the most stable of the region's export commodities in terms of price and volume.

- o Except for Costa Rica, the countries of the region seek to maintain fixed exchange rates. Generally, this leads to an overvaluation of their currencies, which inhibits their export sector.
- o Merchandise trade deficits are compounded by negative balances for services. Current account deficits are sizeable.
- o The region's main trading partner is the U.S.
- o Intra-regional trade is also significant, being enhanced by the Central American Common Market.
- o Intra-regional trade grew dramatically in the 1970s, declined slowly after 1980, and has declined more precipitously in recent years.
- o Foreign debt increased in the region by over one hundred percent between 1979 and 1987.
- o Guatemala's debt position is the least unfavorable; Costa Rica and Nicaragua have the highest foreign debt burden.

#### **NATIONAL ACCOUNTS**

The Central American countries had a general decline in Gross Domestic Product (GDP) in 1981 and 1982, and experienced slight increases in GDP in 1983, 1984 and 1985. This is a marked difference from the late 1970s, when most of these countries enjoyed healthy economic growth brought about by a strong agricultural export trade. Since that time, however, lower prices for exports, increased governmental debt, and political strife have contributed to the general economic stagnation.

The modest increases in GDP between 1983 and 1985 were brought about by a combination of fiscal policies and improvements in foreign trade. Efforts to control inflation, government spending and foreign debt have resulted in some progress towards improving country economies, while some of the countries have also been helped by a more favorable balance of trade.

As Tables A.1 and A.2 show, these trends are not applicable to all of the Central American countries. For example, Panama had an increase in GDP between 1981 and 1982 while all other countries had a decline. Similarly, Guatemala and Honduras had a decline in GDP in 1983, as opposed to the increase experienced in the other countries. All of the countries also had a steady decline in imports and exports between 1980 and 1982, except for Panama and Costa Rica (Costa Rica reported almost a four-fold increase in export value). All of the countries reporting 1983 figures showed increases in both imports and exports, except for import declines in Belize and Panama.

**Table A.1**  
**Central America**  
**Gross Domestic Product (GDP)**  
(in Millions)

<u>Country</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
Belize (1973 Bz\$) <sup>1</sup>	124	129	131	130	131	132	NA
Costa Rica (1980 colones) <sup>2,3</sup>	41,097	41,406	39,518	36,792	37,070	NA	NA
El Salvador (1980 colones) <sup>2</sup>	9,763	8,917	8,178	7,720	7,766	7,882	8,008
Guatemala (1980 quetzales) <sup>3</sup>	7,595	7,879	7,932	7,652	7,651	NA	NA
Honduras (1980 lempiras) <sup>2</sup>	NA	4,976	5,034	4,945	4,921	5,058	5,190
Panama (1980 balboas) <sup>2</sup>	NA	3,559	3,708	3,911	3,927	3,911	4,040

Sources: 1) Central Statistical Office; Ministry of Finance  
2) IMF, International Financial Statistics  
3) Inter-American Development Bank

**Table A.2**  
**Central America**  
**Exports and Imports Generating Gross National Product**  
**(in Millions)**

		<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>
elize (Bz\$)	Exports	177	219	203	176	188	203
	Imports	226	267	291	253	246	240
osta Rica colones)	Exports	9,311	10,963	24,707	42,038	NA	NA
	Imports	12,863	15,245	27,510	38,072	NA	NA
l Salvador colones)	Exports	3,182	3,046	2,307	2,042	2,178	NA
	Imports	3,197	2,964	2,904	2,553	2,663	NA
uatemala Quetzales)	Exports	1,474	1,748	1,471	1,289	NA	NA
	Imports	1,784	1,963	2,032	1,634	NA	NA
onduras lempiras)	Exports	NA	1,860	1,735	1,505	1,547	1,700
	Imports	NA	2,261	2,126	1,629	1,818	2,028
anama balboas)	Exports	3,182	3,046	2,307	2,042	2,178	NA
	Imports	3,197	2,964	2,904	2,553	2,663	NA

## EMPLOYMENT

One economic characteristic which is shared by all of the Central American countries is high unemployment. A total of 6.8 million people were considered "economically active" in all six countries in 1983. Over 1.1 million of these were unemployed, for an overall unemployment rate of almost 17 percent.

The unemployment rates vary considerably by country. Guatemala and Costa Rica had only eight and nine percent unemployment rates, respectively, while El Salvador had a thirty percent rate. These figures can be somewhat misleading, however, since they do not include "underemployed" persons, or those who are working at jobs below their skill or education level. Guatemala, for example, has the largest work force (2.4 million people) and the lowest unemployment rate (8 percent), but it is estimated that an additional one-third of the workers are underemployed.

**Table A.3  
Central America  
Employment**

	<u>Economically Active Persons</u>	<u>1983 Unemployment Rate</u>	<u>1983 Underemployment Rate</u>
Belize	47,000	14%	NA
Costa Rica	843,800	9%	11%
El Salvador	1,630,000	30%	NA
Guatemala	2,392,000	8%	34%
Honduras	1,206,000	24%	18%
Panama	681,000	15% <sup>1</sup>	NA

<sup>1</sup> 1986 rate

A large share of the employed persons in these countries are in agricultural industries. Panama, Costa Rica and Belize have about 30 percent of their employment in agriculture. El Salvador's share is 45 percent, and 54 percent of the Honduras work force is in agriculture. In general, this agricultural share has been decreasing as the manufacturing and service industries have grown. In at least one country (Costa Rica), however, demand for labor in agriculture has risen slightly since 1980.

## INFLATION

Inflation in Central America had been relatively low between 1980 and 1984 due in large part to the fixed exchange rate of most of the currencies against the U.S. dollar. Out of the six countries being studied, only Costa Rica does not tie its currency directly to the U.S. dollar.

In 1984, consumer prices rose in a range of 16 percent in Panama to 12 percent in Costa Rica. In all cases, the inflation rates in 1984 were considerably lower than had been experienced in the early 1980s. In addition to parity with the U.S. dollar, other reasons for the slowing of inflation included government austerity programs, wage controls, and decreased demand for domestic goods and services. While these factors helped reduce inflation, unemployment remained high as a result.

In 1985, inflation results were mixed. Honduras and Panama saw even lower inflation rates, and Belize had a slight deflation due to fluctuations in the U.S. dollar. Costa Rica's inflation increased slightly, while El Salvador and Guatemala had major jumps in the inflation rate due to devaluations of their currencies.

**Table A.4**  
**Central America**  
**Consumer Price Increases**

	<u>1980-81</u>	<u>1983-84</u>	<u>1984-85</u>
Belize	15%	5%	-0.3%
Costa Rica	37%	12%	15%
El Salvador	15%	12%	22%
Guatemala	11%	5%	19%
Honduras	9%	5%	4%
Panama	7%	2%	1%

Sources: UN, Monthly Bulletin of Statistics  
IMF, International Financial Statistics

#### **ECONOMIC ACTIVITIES**

There are five categories which include the major industries in Central America: Agriculture, Forestry and Fishing; Energy; Manufacturing; Mining; and Transportation and Communications.

## Agriculture, Forestry and Fishing

Although agriculture is the dominant industry in most of the countries, the amount of land set aside or available for agriculture is generally small. While about 34 percent of El Salvador is arable land usable for permanent crops, only 8 percent of Panama is classified as arable. Costa Rica and Honduras have about 13 and 16 percent arable land.

The dominant crop in Central America is bananas, which is among the major agricultural commodities in five of the six countries (El Salvador does not produce a significant amount of bananas). In terms of crop volume, bananas are number one in Panama, Honduras and Costa Rica. Although bananas are a major export crop, they are not always the dominant export in terms of value. Bananas are the largest export item by volume and value for Panama and Honduras, but coffee accounts for 30-60 percent of export value in Guatemala, El Salvador and Costa Rica, due to its higher value by volume. Sugar accounts for over one-third of the exports from Belize, with citrus products another major export crop.

Another major crop in these countries is maize, which ranks first by volume produced in El Salvador and Guatemala. This crop is mostly produced for domestic consumption, however. Sugar is also produced in large volumes in all six countries. Other significant crops produced are mangoes (Belize), cotton (El Salvador), and rice (Costa Rica and Panama).

Although agriculture is the major industry in most of the countries, the industry's ability to provide stable economies is heavily dependent on several factors. Weather is always important, as evidenced by a drought in Honduras in 1986 which destroyed a major part of the grain harvest. In Central America, however, other factors have contributed more heavily to variations in agricultural output. The export market has major impacts, and

reduced foreign demand for such crops as sugar and coffee have had substantial negative impacts on some countries, particularly Belize, El Salvador and Guatemala. Military actions and political upheavals have disrupted farming in some areas especially in El Salvador. Lack of productive farm land has hindered progress in countries such as Honduras. Unequal distribution of land in most of the countries has spawned land reform programs and land invasions, which have also disrupted agriculture.

Steps are being taken to improve agricultural industries, including irrigation projects in Honduras and World Bank loans to Costa Rica to increase production of cocoa and coconut. It is hoped that such measures can provide additional stability to the Central American economies.

Livestock breeding is another part of the farming industry which has importance in Central America. Guatemala, Costa Rica and Honduras each have over 2.5 million heads of cattle. Guatemala and Honduras have over 700,000 pigs each. El Salvador, Guatemala and Honduras have over 100,000 horses each. Guatemala has over 600,000 sheep. While most of the livestock productions is for domestic use, some exporting is done. Costa Rica exported almost 30,000 tons of fresh meat in 1982, and Belize, which has been attempting to expand its livestock industry, produced about 1500 tons in 1984 (not all for export).

Forestry is only a minor industry in most of the countries, and only one derives significant revenues from wood exports (Honduras: \$45 million). Annual wood production does not exceed 2.2 million cubic meters in any country.

Fishing has become an important industry in most of the countries. Shrimp is the major commodity, with lobster and conch also important in Belize. Shrimp is the second leading export for Panama, which caught 126,000 tons of shrimp in 1981. Shrimp is

also one of the leading export commodities for El Salvador. Investment in new fish hatcheries, canneries, and other fishing facilities is being made in several countries.

**Energy**

All but one of the Central American countries rely on imports for more than half of their energy needs (Costa Rica produces 51 percent of its energy). Panama imports more than 90 percent of the energy supplies. While all of the countries have attempted to attract oil companies for oil exploration within their boundaries, significant amounts of oil have only been found in Guatemala. Several wells have been found in Guatemala, and over one-third of the country's energy needs are provided by these wells.

**Table A.5  
Central America  
Energy Sources**

<u>Country</u>	<u>% Produced</u>	<u>% Imported</u>
Belize	NA	NA
Costa Rica	51%	49%
El Salvador	42%	58%
Guatemala	43%	57%
Honduras	29%	71%
Panama	6%	94%

In almost all of the countries, hydroelectric plants are the dominant producers of electricity. Geothermal power is another source in Costa Rica and El Salvador, while wood is also heavily used (Belize depends mostly on wood and charcoal as energy sources).

All of the countries except Belize have recently completed new power plants or have plans for new plants. Costa Rica is building both hydroelectric and geothermal plants, which are all expected to be finished by 1990. Guatemala has plans for several

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hydroelectric plants, but financing problems are likely to delay them. Honduras completed a new hydroelectric plant in 1985. El Salvador has increased its energy production capacity in the last few years, but sabotage of power plants by guerilla forces has seriously interrupted power supplies at times.

### Manufacturing

Food processing and packaging of agricultural products are major industries in all six countries, and is virtually the only major industry in Panama. Besides food processing, there are only a few other industries which contribute significantly to the local economies.

In Belize, garment manufacturing is the only major non-food industry, and it contributes about one-fourth of the country's total exports. Several smaller industries, including woodworking, soft drinks, brewing and fertilizer blending, produce mostly for the domestic market.

Costa Rica's manufacturing output is concentrated in beverage production, chemicals, textiles, plastics, and wood and leather products. While manufacturing output in Costa Rica advanced rapidly in the 1960s and 1970s, there was a sharp decline between 1980 and 1982. Since then, production has expanded somewhat, partially because of new investments in areas such as pulp milling, electronics assembly, and clothing.

El Salvador is more highly industrialized than the other countries. Textiles and clothing are the major industries. The civil war in El Salvador and the country's balance of payments problems have caused a decline in manufacturing production since 1980. An export development law and free trade zone established in 1974 have only had light success in spawning industrial expansion.

Guatemala's manufacturing industry is dominated by food, beverage and tobacco products, but there is also substantial output in the publishing, printing, textile and clothing industries. The country has benefitted from the Central America Common Market (CACM), with the first regional industry, a tire company, located in Guatemala in 1958. A steel plant, petrochemical plant and Kellogg cereal plant have also been established in the country. Value added in manufacturing had a steady rise between 1976, after the earthquake, and 1980. Guatemala was able to benefit from weakness in the other Central American countries and exported goods to them worth US\$440 million in 1980. Since then, however, the region's problems have adversely affected Guatemala, and industrial output has been on a decline.

Industry in Honduras is primarily limited to production of light consumer goods, and is largely based on the wood, sugar, and dairy industries. In the early 1980s, the industrial sector had a general decline in output due to the country's economic recession. In 1982, about 300 firms closed and private investment in manufacturing was sharply reduced. A small 2 percent increase in industrial output was projected for 1984.

As already stated, Panama's only major industry is food processing. Despite government programs designed to support private sector industrial investment, the ready availability of imported consumer goods has stifled such investment. In the 1980s, industrial output has had minor rises and declines each year, with a small one percent increase estimated for 1986. Trade with the CACM countries grew by 6.1 percent in 1985, but a tariff dispute with Costa Rica (its most important CACM trading partner) in 1986 halved trade between the two countries.

## Mining

Although most of the countries have deposits of many types of minerals, some of them substantial in size, little mining is done. Only gold and silver are mined in Costa Rica, even though iron ore, sulphur, bauxite, manganese, and mercury deposits are also present. Gold exports in 1984 were estimated to be worth US\$22 million. The government holding company (Codesa), which was to be responsible for developing the sulphur and bauxite deposits, was to be disbanded, leaving much uncertainty as to the future of the country's mining industry.

In El Salvador, only gold, silver, and limestone are mined, even though there are also small deposits of copper, sulphur, mercury, lead, zinc, salt and lime.

Mining contributed only 0.3 percent of GDP for Guatemala in 1983. Nickel extraction was the leading mining activity from 1977 to 1980, when the mining company suspended operations due to low world prices for nickel. Several other mineral products are present in Guatemala, but production of these are very low.

Only silver, lead, zinc and gold are mined in Honduras, even though considerable reserves of tin, iron, copper, coal, pitchblende and antimony are also reported. In 1983, 2.2 million troy ounces of silver, 33.0 million pounds of lead, and 47.0 million pounds of zinc were exported from Honduras.

Mining has only been carried out on a small scale in Panama, although gold, silver, copper, and coal deposits are present. Several attempts have been made to develop a copper mining industry to take advantage of a few major deposits, but negotiations and agreements with several Canadian, American, and Japanese companies have failed to produce any significant copper production.

## Transportation and Communication

Auto travel is the dominant means of transportation in Central America, but the existing roadway networks are generally inadequate to provide an effective transportation system. Out of all six countries, only Panama has more than 13 percent of its roads paved, while all of the other countries average about 11 percent paved. Flooding and other weather problems eliminated the availability of many roads, such that in Honduras and El Salvador, for example, only half of the roadways are considered "all-weather".

**Table A.6**  
**Central America**  
**Roads Inventory**

	<u>Roadways</u>	<u>Paved Roadways</u>	<u>Percent Paved</u>
Belize	2,575 km	340 km	13%
Costa Rica	28,932 km	NA	10%
El Salvador	10,000 km	NA	NA
Guatemala	26,429 km	2,850 km	11%
Honduras	18,280 km	1,828 km	10%
Panama	5,320 km	1,800 km	34%

The Pan American Highway is the primary roadway link through Central America. This road provides access to all of the Central American countries, and runs in a general northwest-southeast direction, primarily along the Pacific Ocean side of each country. The major deficiency in the road networks of most of the countries is the lack of major east-west roadways which would connect both coasts, and also lack of roadways along the Caribbean coast.

There are only about 3500 km of public railway link in the six countries. Honduras has about 1000 km, and Costa Rica, El Salvador and Guatemala have 750-800 km each. Panama has only a 200 km line.

For the most part, the rail lines are internal only and do not provide connections between countries. Costa Rica's two rail lines connect the capital of San José with port cities on both coasts. There are plans to link these rail lines to provide a cross-country service. Guatemala's railroads also connect the capital with both coasts, and have north and south branch lines. El Salvador's railroad is all narrow-gauge and needs considerable rehabilitation.

In order to facilitate ocean-going trade, several countries have developed new ports to supplement existing facilities. Guatemala finished the new port of Porto Quetzal in 1983; Honduras inaugurated Puerto Castilla in 1984; and Costa Rica built a new port at Caldera on the Pacific coast. Panama has a new container port under construction at Coco Solo Norte.

In 1983, there were 700,000 telephones in all six countries as a whole. Costa Rica, with 275,000 phones, and Panama, with 213,000 phones, accounted for 70 percent of this total. The remaining countries were in a range of 9,000 phones in Belize to 98,000 phones in Guatemala.

The number of radio stations in each country varied widely, from 1 in Belize to 187 in Honduras. The number of television stations ranged from zero in Belize to 13 in Panama. There are only a few daily newspapers, with 6 in Panama, and more in Belize.

## REGIONAL TRADE AND BALANCE OF PAYMENTS

### Foreign Trade

Central America is heavily dependent on the export of a few basic agricultural/foodstuff commodities in exchange for much of its capital equipment, fuel, durable consumer goods, and non-durable consumer goods. The table following indicates that,

for the region as a whole, exports of coffee, bananas, sugar, cotton, and meat and fish products account for almost 60 percent of the value of Central America's merchandise exports. In contrast, capital equipment, fuels, and durable and non-durable consumer goods account for 70 percent of the value of the region's merchandise imports.

**Table A.7**  
**Central America**  
**Primary International Trade Commodities - Regional Totals**  
**(1983)\***

<u>Commodity</u>	<u>U.S. Dollars</u> (millions)	<u>% of Regional</u> <u>Total</u>
<u>Exports</u>		
- Coffee	1,287	29.3
- Bananas	608	13.9
- Sugar	328	7.5
- Cotton	205	4.7
- Meat	107	2.4
- Fish Products	58	<u>1.3</u>
		59.1
<u>Imports**</u>		
- Capital Equipment, Construction Materials, Intermediate Goods	2,053	31.4
- Fuels	1,266	19.3
- Raw Materials	1,198	18.3
- Non-durable Consumer Goods	804	12.3
- Durable Consumer Goods	491	7.5

\* Where required, imports or exports converted to U.S. dollars using the official exchange rate.

\*\*Where required because of data aggregation, some import amounts were disaggregated by splitting totals equally among various commodity groupings.

Recently, the value of exports of other raw materials-- especially bauxite/alumina and refined petroleum from Panama--have declined because of significant or even declining worldwide demands. Overall, none of the Central American nations maintains a positive trade balance. As indicated in the next table, the overall merchandise trade deficit for the region is in the neighborhood of \$2 billion, with yearly fluctuations owing largely to changes in commodity prices, the availability of foreign exchange, and currency valuation fluctuations.

More important than yearly fluctuations, however, are the more systemic pressures in worldwide markets for some of Central America's main commodity exports. While trade of some primary commodities, notably coffee, are organized under international trade agreements designed to maintain prices, there is often an excess supply or weak worldwide demand for these products. This tends to result in consistent downward pressure on prices and limits the effectiveness of cooperative trade arrangements.

**Table A.8**  
**Central America**  
**U.S. Dollar Value of Merchandise Exports and Imports**  
**(1984)**

Country	Exports		Imports	
	Value (millions)	Percentage	Value (millions)	Percentage
Belize*	93	2.1	130	2.0
Guatemala	1,127	25.7	1,277	19.5
El Salvador	725	16.5	977	14.9
Honduras	766	17.5	844	12.9
Nicaragua	393	9.0	808	12.3
Costa Rica	1,006	22.9	1,088	16.6
Panama	276	6.3	1,423	21.7
Regional Total:	4,386	100.0	6,547	100.0

Source: EIU Country Reports

\*Converted to U.S. dollars using official exchange rate.

Another systematic factor which tends to limit the volume of exports is the generally overvalued currencies of most of the Central American countries. With the exception of Costa Rica, each of the countries attempts to sustain a fixed exchange rate with respect to the U.S. dollar, although there are also depreciated "parallel" or unofficial exchange rates. These unofficial rates reflect the chronic shortage of foreign exchange on the part of Central America, and are used for some international transactions and in some cases for repayment of debt.

Of the major Central American export commodities, coffee is probably the most stable in terms of world prices and demand. Producers in the region are governed by the 1983 International Coffee Agreement, which seeks to stabilize prices by adjusting the export quotas of member nations in accordance with fluctuations in demand. According to the Economist's 1985 intelligence unit report on the regional economy:

"Despite problems with sales of coffee to non-members of the agreement, the pact works reasonably well, and the region's producers can look forward to slow but steady growth in export volume, at fairly stable prices."\*

\*The Economist Intelligence Unit, Mexico, Central American and the Caribbean: Economic Structure and Analysis, 1985.

More recent projections show that this view may be optimistic.

Sugar and bananas, on the other hand, are not organized under similarly successful international cooperative arrangements. No quota system yet exists for bananas, and thus large supplies worldwide keep prices low for that commodity.

Sugar, unlike coffee, has direct product substitutes, such as corn syrup and artificial sweeteners. As a result, attempts to maintain high prices via quota arrangements have tended to induce product substitution by consumers with prices remaining low at a lower overall demand. Price affects aside, growing concerns with health and diet on the part of the developed consumer nations (e.g. the U.S. and western Europe) will likely continue to depress demand for sugar in the near future.

The merchandise trade deficits of the countries of the region are generally compounded by negative balances in services (i.e., an excess of service imports over exports). (An exception to this is Panama, which earns substantial income from services associated with the Panama Canal.)

As a consequence, the negative balance of payments on current account is considerably greater than the trade deficit for most of the Central American countries. Guatemala, for example, experienced a current accounts deficit of almost \$400 million in 1983, compared to a trade deficit of \$150 million. Without substantial infusions of foreign aid, the current accounts deficits would be even greater.

With regard to the direction of international trading, the United States is by far Central America's single most important trading partner: about 40 percent of its exports and about 31 percent of imports, are to and from the U.S. (see table). Western Europe is also a primary recipient of Central America's exports, but it supplies a considerably smaller share of Central America's total imports. Japan, Venezuela, and Mexico also supply a significant share of the regions imports, with the latter two nations providing much of Central America's petroleum and other petroleum-based fuels. Finally, intra-regional trade represents a significant share of import and export activity. (Note that the intra-regional share of imports is lower than the export share because of the substantial overall trade imbalance.) With the

exception of trade with Japan, trade activity is oriented toward the north and east, or is conducted with other Central American countries.

The concentration of trade activity with the U.S. and among the Central American countries reflects, to a significant degree, various international trade arrangements and historical, commercial, political, and cultural ties which are not likely to change significantly--at least not without a significant political realignment within Central America.

In particular, most of the countries in Central America are in a "most favored nation" status with the U.S., and thus are able to export most of the major export commodities duty-free, although some major commodities such as sugar, meat, and coffee are subject to quota limits.

**Table A.9  
Central America  
Main Trading Partners**

<u>Exports to:</u>	<u>Percentage of Total Value</u>
U.S.A.	39.9
Western Europe*	11.8
Japan	3.2
Intra-Regional (Within Central America)	17.0
 <u>Imports from:</u>	
U.S.A.	31.2
Western Europe	2.7
Venezuela	4.4
Mexico	4.5
Japan	9.0
Intra-Regional (Within Central America)	9.6

Recently (1984) the Caribbean Basin Initiative was formed in order to broaden the access of Central America and the Caribbean nations to U.S. markets (Cuba and Nicaragua are excluded).

The CBI provides duty free access to the U.S. for twelve years for all products except textiles and clothing, footwear, handbags, luggage, flat goods, leather apparel, work gloves, canned tuna, petroleum and petroleum products, and watches and watch parts. The CBI agreement increased the duty-free share of Central American exports by about 15 percent--it had already been around 80 percent under the most-favored nation status. Following implementation of the CBI initiative, U.S. imports from the region increased by 17 percent, and U.S. exports to Central America increased by 6 percent.

Another agreement--the San José Pact--was formulated in 1980 with Mexico and Venezuela, with the objective of providing oil to Central America on concessionary terms. However, due to the drop in world oil prices and the ensuing economic difficulties of Mexico and Venezuela, the agreement has had limited success, and is now in abeyance.

From the standpoint of intra-regional economic development, the most significant organization is the Central American Common Market (CACM), which has historically provided for duty-free trade among the member nations. A major objective of the CACM is import-substitution--i.e., substituting regionally produced goods for imported goods--by providing free access to the entire regional market. In addition to free trade, the CACM has attempted to promote regional development through internal monetary policies and regional "integration". The policy of regional integration seeks to allocate growth industries to the various countries within Central America, on the theory that the market is not large enough to support more than one firm producing goods that need a wide market to obtain economies of scale.

In general, the period between 1960 and 1980 was one of considerable overall success in promoting intra-regional trade: the value of intra-regional trade rose at an average annual rate of 19 percent between 1960 and 1980. Since 1980, however, internal trade has dropped off considerably, due in large part to the political warfare in Nicaragua and El Salvador. Also, Honduras effectively withdrew from the CACM, and has remained outside the agreement since then.

Most recently, the slow decline of the CACM has, in the words of the Economist, "turned into a rout in 1985, when intra-regional trade declined by 25 percent." Efforts to revive the CACM have been made, primarily in the form of a new intra-regional exchange currency which is to substitute for the ever short-supplied U.S. dollar. Revival of the CACM and intra-regional trade, however, remains a difficult challenge, given the political instability in the region and the problems of foreign exchange.

Trends in the value of intra-regional trade are shown below.

**Table A.10**  
**Central America**  
**Intra-CACM Imports**

<u>Year</u>	<u>Value (US\$ millions)</u>
1960	32.7
1965	135.5
1970	297.5
1975	517.7
1977	719.8
1978	881.0
1979	885.8
1980	1,160.0
1981	1,018.5
1982	784.1

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## Foreign Debt

As with many developing countries in Latin America, the problem of foreign debt remains a continuing source of economic problems. And also like much of Latin America, the IMF has sought to reschedule debt payments in several of the hardest pressed countries.

The rescheduling of debt is not without a price--fiscal austerity measures represent the "flip-side" of the coin, and such measures place a particular burden on the ability of Central American governments to finance social expenditures and government investment.

Foreign debt for each of the countries of Central America is shown in the next table. For the region as a whole, foreign debt increased by 125% between 1979 and 1983. Debt service increased by a smaller percentage--about seventy percent.

Debt burdens are not uniform across all of the nations of the region. Guatemala's debt is the smallest in the region when measured relative to the size of its population and the output of its economy. Guatemala's per capita debt was \$177 in 1983, compared to \$203 in El Salvador, and \$1,392 for Costa Rica. Nicaragua's debt burden is the heaviest in the region, representing 101 percent of the nation's GDP.

**Table A.11**  
**Central America**  
**Foreign Debt**  
(millions of U.S. dollars)

<u>Country</u>	<u>1979</u>		<u>1983</u>		<u>1984*</u>	
	<u>Debt</u>	<u>Debt Service</u>	<u>Debt</u>	<u>Debt Service</u>	<u>Debt</u>	<u>Debt Service</u>
Belize	34	1	56	8	78	NA
Guatemala	427	37	1405	141	1513	NA
El Salvador	405	33	1065	66	1389	NA
Honduras	760	109	1570	121	1841	NA
Nicaragua	1127	54	3417	83	3835	NA
Costa Rica	1305	255	3315	595	4106	NA
Panama	<u>2078</u>	<u>387</u>	<u>2986</u>	<u>472</u>	<u>NA</u>	<u>NA</u>
Total:	6136	876	13814	1486	-	-

Source: World Bank, World Debt Tables

\*Estimated

## APPENDIX B

### CENTRAL AMERICA

#### 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 Central America, 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 region.

Since the focus of the study is on non-traditional products it was first necessary to abstract the value of non-traditional products for the region. The table "Non-Traditional Exports" shows that, of the \$4,309 million exported in 1985, approximately 60% could be classified as traditional and 40% was non-traditional. Thus the recommended improvements will be required to increase non-traditional exports over the \$1,752.3 million exported in 1985.

**Table B.1**  
**Central America**  
**Non-Traditional Exports**  
**1985**  
**\$million**

	<u>Total</u>	<u>Traditional</u>	<u>Non-Traditional</u>
Honduras	835	Bananas 232.3 Coffee 169.1 Sugar 25.6 Meat <u>21.2</u>	386.8
El Salvador	752	Coffee 452.6 Cotton 38.4 Sugar <u>35.0</u>	226.0
Guatemala	1060	Coffee 451.5 Cotton 73.1 Bananas 70.9 Sugar <u>48.0</u>	416.5
Belize	90	----	90.0
Nicaragua	307	Cotton 96.0 Coffee 113.0 Meat <u>17.7</u>	80.3
Costa Rica	930	Coffee 310.0 Bananas 212.0 Meat 56.0 Sugar <u>9.0</u>	343.0
Panama	335*	Bananas 78.1 Sugar 27.3 Refined Crude <u>19.9</u>	209.7
TOTALS	4,309	2556.7	1752.3
Percentage	100	60%	40%

\*Excluding reexports from Colon Free Trade Zone

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 the country reports showed that the typical non-traditional export from virtually all the countries was agricultural--mostly food--it was felt that the breakdown contained in the cost allocation table 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%.

**Table B.2  
Central America  
Typical Export  
Cost Allocation  
1986**

	<u>% of total</u>
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.

**Table B.3  
Central America  
Typical Export  
Transport Profile  
1986**

<u>Mode</u>	<u>% of total</u>
Land to port 1	13-18%
Port charges 2	10-20%
Sea freight 3	40-50%
Port charges USA	<u>16-21%</u>
 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 Central America. It shows the approximate amount spent on each cost category in 1985.

The total value of transportation for non-traditional exports from Central America is of the order of \$1,300 million, with about \$640 million being spent on sea freight and about \$215 million being collected by the ports of Central America. The trucking industry accounted for about \$215 million.

About \$875 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 \$13 million, the margin is increased from \$875 million to \$888 million, or 1.5%. If the same cost profile is maintained overall, then a margin of \$888 million should support a

total value of exports of about \$3947, or an increase of \$53 million. On this basis there is about a 4 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. Throughout the region forces are at work 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.

**Table B.4  
Central America  
Typical Export  
Total Cost Profile**

	<u>Percent</u>	<u>Value US\$ million</u>
Production cost	33-48%	1,557.6
Transport cost	35-40%	1,343.43
Land	5-6%	214.17
Port C.A.	3-8%	214.17
Freight	15-18%	642.51
Port USA	6-7%	253.11
Admin. Costs	2-4%	116.82
Margin	<u>20-25%</u>	<u>876.15</u>
Total c.i.f.	100%	\$3,894.0