

PN ABF 3'19  
70452

RECONNAISSANCE SURVEY REPORT  
AGRIBUSINESS INVESTMENT OPPORTUNITIES  
IN GUATEMALA  
VOLUME I

PREPARED BY  
THE  
AMERICAN SOCIETY OF AGRICULTURAL CONSULTANTS INTERNATIONAL  
UNDER A GRANT FROM  
THE  
U.S. TRADE AND DEVELOPMENT PROGRAM

SEPTEMBER 14, 1987

## TABLE OF CONTENTS

	Page
I. INTRODUCTION . . . . .	1
II. ONE PAGE SUMMARIES . . . . .	2
A. Country Background . . . . .	2
B. Investment Climate . . . . .	3
C. Agribusiness Survey . . . . .	4
D. Potential Agribusiness Investment Opportunities . . . . .	5
III. COUNTRY BACKGROUND . . . . .	6
A. Geography . . . . .	6
B. People . . . . .	6
C. History and Government . . . . .	7
D. Defense . . . . .	8
E. Economy . . . . .	8
F. Infrastructure . . . . .	9
IV. INVESTMENT CLIMATE . . . . .	11
A. Major Emphasis on Investment Strategies . . . . .	11
1. Introduction . . . . .	11
2. Private Sector Investment Policies . . . . .	12
3. Changes in Taxation . . . . .	12
4. Export - Import Situation . . . . .	13
5. Advantages in Agribusiness . . . . .	13
B. The Guatemalan Economy . . . . .	14
1. Economic Indicators . . . . .	14
2. Economic Assistance . . . . .	14
C. Laws and Policy Affecting Foreign Investment . . . . .	15
1. Vehicles for Business Enterprise . . . . .	15
2. Foreign Investments . . . . .	16
3. Incentives . . . . .	16
4. Repatriation of Dividends, Profits, and Capital . . . . .	17
D. Regulations Governing Business Operations in Guatemala . . . . .	18
1. Export and Import . . . . .	18
2. Labor and Social Legislation . . . . .	19
3. Taxation . . . . .	20

IV. INVESTMENT CLIMATE . . . . .	
E. Investment Issues . . . . .	20
1. Land Reform . . . . .	20
2. Convertibility of Currency . . . . .	21
3. Availability of Capital . . . . .	22
4. Availability of Credit . . . . .	22
5. Availability of Insurance . . . . .	24
6. Adequate Transportation - Land, Sea and Air . . . . .	24
7. Investor Confidence . . . . .	25
F. Summary - The Status of the Four Factors of Production . . . . .	25
1. Land . . . . .	25
2. Labor . . . . .	26
3. Capital . . . . .	26
4. Management . . . . .	27
V. AGRIBUSINESS SURVEY . . . . .	28
A. The Agricultural Production Sector . . . . .	28
1. Its Importance in Guatemala . . . . .	28
2. Traditional Crops . . . . .	28
3. Non-traditional Crops . . . . .	28
4. Livestock and Poultry . . . . .	29
B. Climatic and Soil Resources . . . . .	30
1. Micro-Climates . . . . .	30
2. Soil Resources . . . . .	31
C. Human Resources . . . . .	31
1. Agricultural Workers . . . . .	31
2. Work Habits . . . . .	31
3. Management Skills . . . . .	32
4. Joint Venture Partners . . . . .	32
D. National Infrastructure . . . . .	32
1. Transportation and Roads . . . . .	32
2. Equipment and Repairs . . . . .	32
3. Taxes and Government . . . . .	33
4. Power and Fuel . . . . .	33
5. Irrigation Water Supplies . . . . .	33
6. Insects, Disease and Parasites . . . . .	33
7. Credit and Capital Availability . . . . .	34
8. Trade Concessions and Bilateral Agreements with Other Nations . . . . .	34
E. Agricultural Production Outlook . . . . .	36
F. Agribusiness Investment Potential in Guatemala . . . . .	36
1. Factors Favoring U.S. Investment in Agribusiness . . . . .	36
2. Factors Constraining U.S. Investment . . . . .	37
3. Recommendations to Prospective U.S. Investors . . . . .	37

VI. POTENTIAL PROJECT INVESTMENT OPPORTUNITIES . . . . .	39
A. Selection Criteria . . . . .	39
B. Description and Ranking of Project Opportunities . . . . .	39
C. Ranking and Description of Project Investment Opportunities	40
1. Winter Vegetables . . . . .	40
2. Tropical Fruits . . . . .	41
3. Ornamental Plants and Cut Flowers . . . . .	41
4. Marine Shrimp Farming . . . . .	41
5. Agribusiness Funding Corporation . . . . .	42
6. Hybrid Seed Production . . . . .	43
7. Growing and Packaging of Spices . . . . .	44
8. Growing and Processing of Cashew and Macidamia Nuts.	44
9. Textiles . . . . .	44
10. Animal Breeding Programs . . . . .	45
11. Meat Packing Plant . . . . .	45
12. Cacao Bean Production . . . . .	45
13. Growing and Processing of Non-Traditional Seed Crops	46
14. Distributorship for U.S. Agricultural Equipment . .	46
15. Rubber Latex Products . . . . .	46
VII. APPENDICES	
A. Economic Indicators . . . . .	48
B. Agricultural Statistics . . . . .	51
C. Primary Parties Contacted by Reconnaissance Team . . . . .	63
D. Resumes of Members of Reconnaissance Team . . . . .	70
E. Maps . . . . .	73

## I. INTRODUCTION

Working under a grant agreement with the U.S. Trade and Development Program (TDP), the American Society of Agricultural Consultants International (ASACI) organized a Reconnaissance Survey Team to begin the first phase of work to identify potential agribusiness projects in Guatemala for prospective U.S. investors. Members of the team were Gary Conley, team chairman, Perryton, Texas; Marshall Burkes, Washington D.C.; and Michael W. Hurley, ASACI, Director of International Agribusiness Teams.

To prepare the current report, the three man team first studied pertinent data available from U.S. sources, and then traveled to Guatemala for three weeks from August 3 - August 21, 1987 to conduct interviews, make on-site inspections, and gather first hand information. Taking the stance of a potential U.S. investor, team members assessed the investment climate, analyzed the agricultural sector, and made a preliminary evaluation and selection of prospective project opportunities.

In the second phase of grant activities, a follow-up team of ASACI consultants will review the Reconnaissance Survey Report, and then work for three weeks in Guatemala in December of 1987 to further evaluate and then select those prospective ventures of highest potential interest to U.S. investors. Project investment profiles on these preferred ventures will then be drafted by the team to form the report Agribusiness Investment Opportunities in Guatemala, Volume II: Project Profile Report. The investment profiles, upon approval by TDP, will then be made available through the marketing network of ASAC members to selected U.S. potential investors. Other prospective investors and interested parties may obtain the current Reconnaissance Survey Report at a nominal cost, and subsequently the Project Profile Report, by contacting ASAC headquarters at the following address:

ASAC International  
8301 Greensboro Drive, Suite 260  
McLean, Virginia 22102  
telephone: (703) 893-8303  
telex: 704419 ASACI MCLN UD

## COUNTRY BACKGROUND SUMMARY -- GUATEMALA

### Geography

Location: In Central America. To the west and north is Mexico. East of Guatemala lie Belize, Honduras, El Salvador and the Caribbean Sea. The southern border is the Pacific.

Size: 42,000 sq mi, four geographic regions--two coastal areas, the highlands and the northern Peten area.

Climate: Varied. From cool temperatures in the highlands, to hot and humid on the coasts. Many micro climates. Rainfall varies by region 20-200 inches/year. Wet and dry seasons.

### People

Population: 8.4 million, most populous of Central American republics. Heavy rural population, concentrated in highlands. Growth rate 3.1%/yr. 50% under 18 years old. Life expectancy 62 years. Per capita income \$1,100.

Ethnic Groups: Predominantly descendants of Maya Indians, and mestizos (Spanish-Indian), ladinos (westernized Mayans).

Language: Officially Spanish, many Indian dialects spoken in the highlands. Many business people also speak English. Literacy level 45%.

Work Force: 2.7 million--60% in agriculture, 26% industry, 11% services. Min. ag worker wage \$2/day. Small but growing union movement. Un-/Under- employment 45%.

### History, Government, Defense

History: Center of ancient Mayan civilization, Spanish conquest in 1524, independence 1821. Long history of dictatorships broken by brief periods of elected government.

Government: New constitution in effect January 14 with swearing in of new president Vinicio Cerezo and national Congress for 5 year term. Judiciary branch of government.

Defense: President, Commander in Chief of Armed Forces, 34,000. Since 1982, counterinsurgency operations successful to point where no threat to national security.

### Economy

GDP: \$8.9 billion (1985), annual growth rate 1.1%. Agriculture-26%, trade-25%, industry 16%.

Trade: Exports, 1985, \$1.1 billion, coffee, cotton, sugar, meat, cardamom, bananas, petroleum. Imports, 1985, \$1.2 billion, fuels, lubricants, machinery. U.S. major trading partner at about 35% of total trade. Access to U.S. market through Caribbean Basin Initiative.

Exchange Rate: floating interbank rate 2.6 quetzales=US\$1 (August, 1987), import-export rate 2.5q=US\$1, official rate ql=US\$1. Moderate inflation.

### Infrastructure

Transportation: Several flights daily to U.S., Europe--2.5 hours to Miami. Air cargo capacity increasing but still a bottleneck. Two ocean ports, Pacific and Caribbean. Paved roads connect major towns and ports, relatively good shape.

Power: Hydroelectric, abundant, \$0.05 kwh.

Communications: Good, international direct dialing.

## INVESTMENT CLIMATE SUMMARY-GUATEMALA

### Economic Policy and Measures

Policy: foster positive investment climate with necessary guarantees and securities for business to prosper.

Measures: a simplified exchange rate based on currency's free market value, an export tax as a temporary revenue measure, removal of many price controls, increase in interest rate to combat inflation and boost savings, new social programs balanced against revenues.

### Laws and Policy Affecting Foreign Investments

Establishing a Business: By registering company with mercantile registry and local IRS. Usual forms of business organization. Preferred business arrangement, joint venture with receipt of shares in joint stock company.

Foreign Investments: No restrictions on percentage of foreign ownership in a Guatemalan company.

Incentives: For businesses creating employment and generating foreign exchange--no import duties on equipment, supplies, fuel; income tax exemption 10 years, value added tax exemption on export products, tax exemption certificate for 15% of non-traditional exports.

Repatriation of Profits: No prohibition of repatriation of dividends, profits and original capital. However, past shortage of foreign exchange. Dollars available for export companies that generate dollars.

### Regulations Governing Business Operations

Export and Import: "One stop shop" for permits, CBI duty free access to U.S. market, technology/trademarks protected, SGS inspection group enforces quality and price controls on all imports and exports.

Labor and Social Legislation: Labor code, seasonal labor \$2/hr, unskilled \$2.50/hr plus 54% benefit package. 15% labor unionized, government favor increased unionization.

Taxation: Income tax, 12% withholding, scale from 5-48%. Corporate tax sliding scale 5-42%.

### Investment Issues

Land Reform: No large base of people in poverty by international standards, Maya Indians own lands. Isolated tracts of foreclosed land divided up for small farms.

Convertibility of Currency: With inter bank market, mechanism available to achieve convertibility with minimum uncertainty. External debt is modest.

Availability of Capital: Not available except from profits of established firms. No institution to issue stock in the local market. With 8% interest and inflationary conditions, no incentive to save and build a capital base.

Availability of Credit: Banks with excess liquidity, but rely on 200% collateral for loans, no cash flow lending. Intermediate funds needed for under collateralized operator.

Availability of Insurance: Overseas Private Investment Corporation OPIC provides political risk and currency exchange insurance, loan guarantees, and letters of credit.

## AGRIBUSINESS SURVEY -- GUATEMALA

### Agricultural Production Sector

Importance: \$807 million (1986) in ag exports accounting for 72% of total value of exports.

Traditional Crops: Domestic market--bananas, dry black beans, wheat, rice, yucca, squash, pumpkins, cabbage, many tropical fruits and vegetables. Export market--coffee, sugar, cotton, cardamom, bananas, tobacco.

Non-Traditional Crops: 7% of total agricultural products, but increasing rapidly--strawberries, pineapples, apples, melons, mangoes, broccoli, celery, lettuce, asparagus, cauliflower, sesame seed, cashew nuts, spices.

Livestock: Beef cattle 4th most valuable segment of ag production, exports to U.S. as boxed boneless beef. Swine, poultry for local market, no export potential. Shrimp farming has potential, is growing on Pacific coast.

### Climatic and Soil Resources

Micro-Climates: Many and varied with any combination of temperature and humidity available.

Soil Resources: Extremely variable from rich deep soils to rocky volcanic sand, from limestone to pure clay soils.

### Human Resources

Agricultural Workers: Over 55% of total work force.

Work Habits: Upland Indian population leave farms for one month to harvest coffee, cotton, sugar cane, pineapple, etc., then rotate with other Indians. Highly motivated group

Management Skills: Ag and business training from local universities. Consensus that graduates are competent.

Joint Venture Partners: Many young aggressive entrepreneurs working to build new businesses, receptive to U.S. partners.

### National Infrastructure

Roads: In good condition, 4 hours from Guatemala City to agricultural areas, 8 hours from Pacific to Caribbean.

Repair Parts: Can be found but very expensive.

Power and Fuel: Prices of agricultural fuel are competitive. Hydroelectric power available at reasonable rates.

Irrigation Water Supplies: Most areas--adequate rainfall and topography for storage of surface water. Ground water available at 50-1,000 ft.

Insects, Disease, Parasites: Few problems in highland area. Insects major problem for cotton, med fly for fruit, parasites for cattle. Modern laboratories producing sterile male flies, natural predators and viruses to combat pests.

## POTENTIAL PROJECT INVESTMENT OPPORTUNITIES -- GUATEMALA

### Project Selection Process

Steps: Analysis of written materials on economy, business and agriculture; interviews with owners and operators of agribusiness enterprises; visits and inspections of enterprises throughout the country; developing a list of potential projects including first hand recommendations; applying selection criteria to the potential projects.

### Project Selection Criteria

Market Needs and capacity of specific U.S. and European markets or regional markets for identified product.

U.S. Export Sales Potential of specific items, product or services from U.S. companies or individuals.

Non-Competitive Products: Assurance that potential imports into the U.S. market would not be competitive with U.S. products.

Good Rate of Return on Investment: A positive assessment that the project would provide a lock up of market share, sole source guaranteed delivery or a rate of return on investment in relation to action risk (after use of insurance).

Local Partner: Proper level of motivation and contribution.

Productivity Factors: The proper balance of quality, quantity and cost competitiveness.

### Ranking and Description of Project Investment Opportunities

Winter Vegetables: Good growing conditions, micro-climates, current exports, good margins, market window.

Tropical Fruits: Papaya, mangoes, pineapple. Fresh and concentrates. Joint venture partners ready.

Ornamental Plants/Cut Flowers: Currently produced for U.S., EC market, roses from higher elevations. Good margins.

Marine Shrimp Farming: 5,000 hectares of suitable land, 3 ventures being started up, good margins and markets.

Agribusiness Funding Corporation: Intermediate term loans based on earnings, market contracts and borrower performance

Hybrid Seed Production: Efficient low cost labor, many micro climates, centralized production for worldwide distribution.

Growing/Packaging of Spices: Ideal climates, low cost labor.

Cashew Nuts: Expansion of current production, U.S. equipment for hulling and packaging.

Textiles: Draw back project using low cost labor.

Animal Breeding Programs: Urgent need to build cow herd.

Meat Packing Plant: Low cost export to Caribbean Basin.

Cacao Beans: Hershey's could provide tech assistance/market.

Non-Traditional Seed Crops: Currently produced at low cost.

Distributorship-U.S. Equipment: Ready spares/supplies needed

Rubber Latex Products: Natural latex and low cost labor.

### III. COUNTRY BACKGROUND

#### A. Geography

Located on the southeastern border of Mexico, Guatemala is the most populous of the five Central American republics. East of Guatemala are the nations of Belize, Honduras and El Salvador, and the Caribbean sea. Its southern border is the Pacific Ocean.

Guatemala covers an area of 42,000 square miles, and is divided into four regions: the two coastal areas, the highlands, and the northern Peten.

The heavily populated central highland region, where Guatemala City, the capital, is located, comprises about one-fifth of the country's land surface. The Pacific Plain, about 200 miles long and 50 miles wide, runs between the mountains and ocean. The fertile river valleys of the northeastern lowlands open into the Caribbean coastline which spans only 50 miles. The sparsely populated Department of Peten makes up the northern third of the country.

Although Guatemala is located in the tropics, its two coastal regions and the high, mountainous interior give it a variety of climates. These range from hot and humid weather on the coasts to cool and spring-like temperatures in the central plateaus. Guatemala has two seasons--wet (May-October) and dry (November-April). Annual rainfall country-wide averages about 100 inches, but ranges from 200 inches in the central highlands to 20 inches in an eastern semiarid region.

#### B. People

Sixty-five percent of Guatemala's population, estimated at 8.4 million in 1986, lives in rural areas. The rural population is comprised predominantly by descendants of Maya Indians who are gradually being integrated into the country's economy. The annual growth rate is 3.1% with over 50% of the people under 18 years old. A middle class is slowly

emerging following the country's economic development. Guatemala City has 1.8 million inhabitants, followed by Escuintla (87,000) and Quetzaltenango (72,000).

The major ethnic groups are Maya Indians, Ladinos (westernized Maya Indians) and Mestizos (Spanish-Indian). Roman Catholicism is the predominant religion, intermixed by the Indian population with their traditional beliefs. Spanish, the official language, is spoken nationwide, along with 23 Indian dialects in the highlands. English is understood and used by many business people.

About 60% of the work force, estimated in 1986 at 2.7 million, is occupied in agriculture, 26% in industry, and 11% in services. Average per capita income is US\$1,100. The minimum wage for agricultural workers is US\$2.00/day and US\$2.50/day for workers in commerce and industry. Only about 15% of the labor force is unionized, but organized labor is beginning a major unionizing effort. Unemployment runs about 13% and underemployment at 31%. The literacy rate stands at 45% and life expectancy is 62 years (much less among the Indian population).

### C. History and Government

A great Mayan civilization flourished in Guatemala and then waned before Spanish conquest in 1524. Spanish colonial rule lasted until 1821 when Guatemala gained its independence and first became part of the Mexican Empire and then of the American Federation.

Ever since Guatemala declared itself a Republic in 1839, the country has passed through a series of dictatorships broken only by short periods of representative government.

In May of 1985, the Constituent Assembly finished drafting a new constitution for the Republic of Guatemala which went into effect on January 14, 1986, with the swearing in of the new president and national Congress for a five-year term, initiating a civilian and democratic government after 15 years of military regimes.

Both local and international election observers agreed that both electoral rounds held the latter half of 1985 were honest and fair. The Christian Democratic Party of Guatemala scored major victories. Its candidate, Vinicio Cerezo, won the presidency with almost 70% of the vote. Its candidates for Congress won 51 of the 100 seats in the legislature. The party also won a vast majority of the country's 30 mayoral races.

#### D. Defense

The president, as Commander in Chief, exercises control of the Guatemalan Armed Forces (numbering 34,000) through the minister of defense.

When the army divested itself of its governing role through democratic elections, it rededicated itself to the professionalism of its forces and to combat against insurgents.

Since the early 1960s, the military has been engaged in counter-insurgency operations against Communist guerrillas. From 1982 on, the army has been successful in reducing the insurgency to a point where it does not currently threaten national stability. Counter-insurgency operations are expected to continue into the foreseeable future.

#### E. Economy

According to 1985 estimates, Guatemala's Gross Domestic Product amounted to US\$8.9 billion dollars (US\$9.6 billion estimated for 1987) and showed an annual growth rate of 1.1%. Agriculture leads the productive sector with a 25.7% share of the 1985 GDP. Coffee, corn, beans, cotton, cattle, sugar, bananas, timber, rice and cardamom are major crops.

Prepared food, textiles, construction materials, tires and pharmaceuticals are the mainstays of industry which represents 15.9% of the 1985 GDP. Trade, 25.5% of GDP, comprised US\$1.1 billion dollars

worth of exports including coffee, cotton, sugar, meat, cardamom, bananas and petroleum. The United States leads the list of major markets with a 35% share, followed by the former Central American Common Market-CACM (20%), West Germany (7%) and Japan (3%).

Imports in 1985, slightly higher than exports, totaled US\$1.2 billion and consisted principally of fuels, lubricants, industrial machinery, motor vehicles, iron and steel. Major suppliers were the U.S. (37%), CACM (8%), West Germany (7%), Venezuela (7%) and Japan (6%).

Though the Guatemalan currency, the quetzal, is officially tied at one to one with the U.S. dollar, the controlled rate for imports and exports is 2.5 quetzales=US\$1, and the floating interbank rate is 2.6 quetzales=US\$1 (August, 1987).

Inflation in Guatemala has traditionally been moderate but rose to 30% in 1985. Government's economic measures have the goal of reducing inflation to 25% in 1986 and to an estimated 12% in 1987.

#### F. Infrastructure

Guatemala City is a hub of Central American air traffic, and several airlines provide daily service to the United States, Europe and Latin America. Flying time to Miami is 2.5 hours, and 4.5 hours to New York or Los Angeles. Eastern and PanAm have daily flights.

Ocean shipping lines offer regular containerized and reefer service to the United States and Europe, though rates appear relatively high. There are two principal ports: Santo Tomas de Castillo on the Caribbean Sea, and on the Pacific Ocean a newly constructed port, Puerto Quetzal, which as yet does not have loading and unloading equipment installed.

There are 9,238 miles of roads of which 1,623 miles are paved connecting major towns and ports. The 336 miles of railroad lines do not appear to have much commercial freight use.

International telephone service is provided through the Central American Network (COMTELCA) microwave system. Direct dialing is available to most parts of the world. The local phone network is established but overburdened as anyone trying to make a phone call in Guatemala City will soon find out.

With the start-up of the Chixoy hydroelectric plant in early 1986, electric power is abundant and costs about US\$0.05/kwh. Rates of US\$0.037-.040/kwh are available in the ZOLIC Free Zone adjacent to Guatemala's principal port of Santo Tomas.

#### IV. INVESTMENT CLIMATE

##### A. Major Emphasis on Investment Strategies

###### 1. Introduction

Prior to the 1980's, Guatemala enjoyed decades of modest economic growth with the largest gross national product (GNP) in Central America. The disruption came in 1980-81 due to a combination of factors which included 1) the worldwide economic recession and 2) regional and internal political problems that effectively stagnated the government sector and reversed the private sector investment in the economy.

After fifteen years of military domination, a democratically elected civilian government was inaugurated in early 1986. It appears that Guatemala has begun a smooth transition toward constitutional rule. During this new administration, an economic reform program has been put underway to address those economic factors within the government's control and to restore private sector confidence in the Guatemalan economy.

These strategies include: 1) a simplified exchange rate system based more closely on the currency's free market value (an effective devaluation of the quetzal from q1 to US\$1 to q2.5 to US\$1, 2) an export tax as a temporary revenue measure, 3) a removal of many price controls, 4) an increase in the interest rate charged to lenders and borrowers (14%) to combat inflation (30% in 1985 and about 25% in 1986) and encourage savings (8% for deposits) and 5) new social programs balanced against revenue to maintain a manageable fiscal deficit.<sup>1</sup>

Last Fall, President Vinicio Cerezo stated "one of the priorities of my government is to foster a positive investment climate under which commerce and trade can flourish providing the necessary guarantees and

---

<sup>1</sup>Foreign Economic Trends and Their Implications for the U.S., U.S. Department of Commerce, FET 86-77, September 1986

securities for business to prosper. We are concerned with providing the infrastructure for growth and development -- roads, communication and the educational, health and other social services essential for a vibrant, thriving private sector." <sup>2</sup> There is considerable optimism that the new government and its appointees from the private sector have stabilized the financial situation as a prelude to renewed economic growth.

## 2. Private Sector Investment Policies

Guatemalans continue to look to the U.S. market as their primary market and are renewing their welcome to foreign investment. Few legal impediments are in place against the investor in actual practice but some bureaucratic uncertainty can be bothersome. The investor enjoys fairly low labor costs, and tax incentives are given for industries located outside the capital city or producing for export. A free zone next to the principal Atlantic port of Santo Tomas de Castillo offers a duty free entry for raw materials. There are no legal restrictions on repatriation of hard currencies, but there has been a shortage of foreign exchange for several years. Exports to the U.S. exceeded imports in 1981 and 1984 so the availability of U.S. dollars is improving for the Central Bank.

## 3. Changes in Taxation

The primary source of new revenue in 1986 was from the tax on traditional exports adopted by the new government. This tax, which is to be phased out by January 1989, was designed to ensure that exporters who receive more favorable foreign exchange rate treatment (q2.50 to US\$1.00) under the new exchange system, show a net benefit despite the new export tax. The tax is assessed on exports on a sliding scale of between 4 and 40 percent depending upon the export product and the world price of the commodity. Traditional products such as coffee are taxed

---

<sup>2</sup>Investing in Guatemala, November 1986, page 1.

at the higher level while non-traditional exports such as winter vegetables are taxed at lower rates. Drawback industries which tend to create employment are exempt from the export tax.

A Presidential commission is drafting a new tax code for adoption by the end of this year. The underlying philosophy is reported to be: 1) a progressive scale - the people who earn more income have to pay more taxes, 2) a more direct tax such as the existing Value Added Taxation (VAT), 3) the leaving of more resources to the discretion of the people such as with tax credits and 4) reduction in the level of taxes on exports to expand the economy. The expected results are regarded as "net positive" to the private sector investor.

#### 4. Export - Import Situation

About two-thirds of Guatemala's exports are agricultural products. Coffee, bananas, cardamom and sugar are the major exports. Guatemalan imports include petroleum, chemicals, transport equipment and manufactured goods.

Guatemala has suffered a slight deficit balance of payments in most years in the 1980's. Both exports and imports have exceeded \$1 billion since 1981. Table I, Appendix A shows the trend by major trading partners from 1983 to 1985. The U.S. is holding above the 35 percent level for both exports and imports as noted in the same table.

#### 5. Advantages in Agribusiness

The Guatemalan economy is based on a diverse agriculture which accounts for over 25 percent of the Gross National Product, employs over 60 percent of the labor force and accounts for two-thirds of exports. When related activities are included in the definition of agribusiness, its dominance of agribusiness is clear from village to village. Even in the industrial areas in and around Guatemala City, the ties to the agricultural base are strong and there is no indication of a major shift to an industrial or service economy.

Guatemala offers the U.S. investor a "location advantage" over the other Central American countries, Panama and South American, because of the distance to the major U.S. markets. The agriculture regions have a year round growing season. This means that the producers/marketers can take advantage of the off season U.S. market for many fresh fruits and vegetables. A portion of the land is fertile enough to crop twice a year. Thus, the land can produce two crops a year with separate marketing opportunities.

Supervision of an investment from the States is practical. For example, flying time is 2.5 hours from Miami. Regular international air and shipping service is available. Negotiations continue between Mexico and Guatemala to improve reciprocal inter-country trucking arrangements. However, a larger volume and regular shipments are needed to attract lower rates by land, sea or air.

## B. The Guatemalan Economy

### 1. Economic Indicators

The Gross National Product (GNP) increased four percent in 1986 and 1.1 percent in 1985. The sudden increases in consumer prices during 1985 and 1986 are being reduced by one half, to twelve percent in 1987. Industrial production has turned positive with a three percent increase this year. The trade balance registers a slight deficit which handicaps the foreign debt service. U.S. exports to Guatemala were less than imports for the first time in several years. The Key Economic Indicators for the last four years are presented in Table II. (Appendix A.)

### 2. Economic Assistance

Economic aid from the U.S. increased from a minor amount to over \$170 million in 1985 and renewed attention continues. Much of the USAID loan funds are directed to agribusiness activities.

C. Laws and Policy Affecting Foreign Investment

1. Vehicles for Business Enterprise

A legally constituted foreign company can do business in Guatemala by 1) registering with the mercantile registry and 2) registering with Guatemala Internal Revenue Service.<sup>3</sup> The fundamental documentation should contain no provisions contrary to Guatemalan law. The mercantile registrar publishes a notice of the request for registration in the official diary and a local newspaper. Should no opposition arise, the Ministry of Internal Affairs extends the official authorization to operate in Guatemala.

Both foreign and Guatemalan companies must file certified copies of annual financial statements. In practice, the printing fee is paid with the submission but the backlog represents at least a seven year delay in public release.

The forms of organization recognized under the commercial code for Guatemalan companies are 1) partnerships (unlimited liability), 2) mixed partnerships (some partners with limited liability), 3) limited liability partnerships (less than 20 partners) 4) joint stock companies (liability is limited to amount of shares subscribed), and 5) mixed joint stock companies (one or more shareholders, have unlimited liability).

A Fiscal Stamp Tax of three percent on the amount of the authorized capital is payable upon formation of the organization. Initial paid-in capital for a stock company must be at least q5,000. The value of shares contributed in payment of capital should be the lower of market price or book value. Furthermore, a Guatemalan company may be formed where all the partners or shareholders are foreigners. The preferred

---

<sup>3</sup>Investment - Guatemala, prepared for the Non Traditional Products Exporters' Association by Praun, Reyes, Adlana & Asociados of KPMG and USAID.

business arrangement would probably be a joint venture with receipt of shares in a joint stock company in Guatemala and give up shares of equal value in a stock company of a complementary nature doing business in the U.S. or elsewhere.

## 2. Foreign Investments

There are no restrictions on the percentage of foreign ownerships in a Guatemalan company. The utilization of some local management or advisors is recommended for problem avoidance at the local level. The present government has a positive attitude toward foreign participation. Private businessmen and their professional organizations are beginning aggressive education programs and solicitations for joint ventures primarily from the U.S. They are seeking market share without direct competition with U.S. products, marketing, technical and managerial assistance as well as capital.

## 3. Incentives

The law on incentives for export producing companies as issued in March 1984 is to encourage the establishment of companies dedicated to the production of goods for export which would create employment and generate foreign exchange. The primary incentives are:

- a. The temporary suspension of all import duties on materials, supplies, machinery, spares, and accessories.
- b. Exemption from import duties on fuel (except gasoline) and lubricants.
- c. Exemption from income tax for 10 years on profits from exports.
- d. Exemptions from Value Added Tax on products that are exported.
- e. A tax exemption certificate is granted to exporters on non-traditional products for 10 to 15 percent of export value.

4. Repatriation of Dividends, Profits, and Capital

Even with the recent reduction in the value of the U.S. dollar and the impact of inflation on the quetzal, the official exchange rate continues to be US\$1 to q1, unchanged for sixty years. However, the monetary laws for repatriation were modified in June 1986 to accept the practical implication of devaluation and try to honor prior debt and convertibility.

The three legal markets and exchange rates are:

- a. Official market - US\$1.00 = q1.00. In order to prevent exchange losses on public debt and private sector obligations, full convertibility is maintained on debts registered before this legislation.
- b. Regulated market - US\$1.00 = q2.50. This rate is set by the Monetary Board of the Bank of Guatemala. This control mechanism is to facilitate international trade. Both importers and exporters have access to this hard currency window. The primary source of foreign exchange is the proceeds from exports. Also new private foreign financing registered with the Central Bank is protected.
- c. Bank market - US\$1.00 = q fluctuating rate. In order to discourage the "black market," this modified free market is supervised by the Bank of Guatemala and conducted by the commercial banks. The approved transactions include the repatriation of private funds.

With a decrease in currency speculation, the regulated market is to be omitted in favor of the bank market but the transition date is being reset. Regardless of which market is utilized, Guatemala does not prohibit the repatriation of dividends, profits and original capital. There are reports that the "capital flight to Miami" is beginning to return into Guatemala's private sector.

D. Regulations Governing Business Operations in Guatemala

1. Export and Import

The primary provisions for doing business are set out in the commercial code, civil code and constitution. The main fiscal obligations are contained in the Income Tax, Value Added Tax and Fiscal Stamp Laws. These laws are regarded pro-private sector business. Last year a diagram of the steps in the export procedure revealed the requirement of over 40 signatures; a new "one stop" arrangement is being implemented this fall.

a. The Caribbean Basin Initiative (CBI) includes Guatemala. The CBI was established about four years ago to encourage economic revitalization and private sector opportunities. The incentive is duty free access to the U.S. for most products. Agribusiness items are ideal. With minor participation to date, Guatemala has good prospects for investments in fresh and frozen vegetables and fruit, shrimp and light manufacturing including drawback arrangements. So far, most of the drawback operations are in textiles which are labor intensive and continue to expand.

The stronger prospects for U.S. exports, according to the U.S. Department of Commerce, are agricultural and industrial chemicals, agricultural machinery, paper, petroleum products and food products.

b. The Central American Common Market was established by treaty in 1962 between the five Central American Countries. The promotion of industrial development was to be achieved with tax incentives which represented total or partial exemption on import duties, income tax and other taxes. After years of unequal utilization and strife between some of the countries, the agreement terminated in 1986.

c. Technology and trademarks are protected by the court system. The long-standing activities of the multinational firms are

evident. No prohibitions were noted but there has been violations of U.S. quality standards at the local level.

d. Trade barriers are in place on a few national treasure items and rare seed stock which can not be exported. The prohibition on imports of certain commodities pertain to unwanted disease and insects.

e. The Societe Generale de Surveillance (SGS) was hired by the government in October 1986 to enforce quality and price controls on all imports and exports. The second objective was to enhance the reputation of Guatemalan inspections by employing a professional organization. A local staff was hired and trained as the process was implemented. With lack of data on the prices of some items and some processing delays, many businessmen objected to the first one year extension of the contract by the Minister of Finance. The Reconnaissance Team was told that the scope of the SGS assignment would be more specifically focused next year and that the shipper was becoming more sophisticated in handling the shipping objective. There were no reports that revenues to the government had increased due to professional and independent administration.

## 2. Labor and Social Legislation

With a population of nearly 9 million people Guatemala claims a labor force of 2.7 million with a large supply of unskilled and semiskilled workers. At least 35 percent remain in agriculture and out of the cities. A large member of the Indian farmers do own their land but continue on a subsistence basis. They perform seasonal labor for commercial operators many times 50 to 100 miles away with limited transportation sources. These workers do not represent the poor peasant of a typical developing country even if they fail to take advantage of the required six years of education.

Seasonal labor is paid about US\$2 per day in cash and US\$.25 per day in benefits and food items. A rather specific Labor Code outlines the shifts, rate of pay, vacation, severance and payroll burden for the

manufacturing industries. The unskilled worker is paid about \$2.50 per day plus a 54% percent benefits package that does not include a retirement plan (the life expectancy is 62 years). The adult literacy rate is 45 percent and the unemployment rate is 13 percent.

About 15 percent of the labor force is unionized. The current government wants to expand labor unions (in companies with more than 25 employees) and claims that more unions were formed last year than in the previous 18 years. The Ministry of Labor may call a halt to a strike if the national economy is seriously affected.

### 3. Taxation

Personal income tax is payable by all individuals, resident or nonresident on income obtained from Guatemalan sources. The scaled rate ranges from 5 percent on q1,000 of taxable income to 48 percent in excess of q500,000 (The withholding tax on salaries is at the 12 percent level). Also, capital gains are treated as ordinary income.

Corporate income tax is levied on the taxable profits of corporations and partnerships on a base rate of 5 percent on the first q5,000; 12 percent on the next q18,000; and 42 percent in excess of q2,000,000. A value added tax is levied on most transactions and services at the rate of 7 percent. A fiscal stamp tax of 3 percent is payable on most documents such as debt notes and receipts. The real estate tax is based on the value inscribed in the Registry of Real Estate and rates reach \$8 per \$1,000 on a value over \$50,000.

### E. Investment Issues

#### 1. Land Reform

For countries with a landed class and a large class without land, the topic of land reform continues. Even after six years of recession, this country does not have a large base of people in poverty by international standards. Guatemala has attempted at least two partial land reform programs which were failures.

The government owned land is not suited to farming or is too far from the few population centers. There is not a large number of large tracts of privately owned land and those that exist are in the warmer, coastal areas which are less attractive.

Since the government does not have revenue to pay for confiscated land, some existing property owners fear both the loss of land and nonpayment. The banks are reported to use this fear as an explanation for not making long term loans on land and fixed assets, and for not allowing more than 50 percent of the market value for collateral purposes.

Land reform does not fit the needs of the economy or the employment needs of the people. There is some indication that the government may take isolated tracts of surplus or foreclosed land and divide them for politically active groups. The government can quickly get the attention of the landed class for trade-off purposes and the subject continues to have a destabilizing effect on long term planning and economic growth.

## 2. Convertibility of Currency

Guatemala has not been able to provide hard currencies since 1983. Stabilization bonds were issued with a five year balloon payment to commercial creditors in lieu of prompt payment. By opening up the regulated market and bank market, a mechanism is now available to achieve convertibility with minimum uncertainty. Each transaction should be registered with the Central Bank.

When compared to other Latin countries, the external debt is modest, with only a minor negative balance of payment in recent years. The government has earned only enough foreign exchange to keep the interest paid current on the \$2.7 billion external debt. Commercial bankers and the private sector owe only seven percent of this foreign debt, so capacity for expansion is available.

### 3. Availability of Capital

Capital is not available except from the profits of established firms (which are now expanding) and "sweat equity" of recent entrepreneurs. There is no institution to issue stock in the local market or help attract risk or joint venture capital. With an eight percent interest payment on saving deposits under inflationary conditions, there is no incentive to save and build a capital base.

During the last year, a bond market has been established on a trial basis. This will provide the government with a vehicle to market debt beyond the commercial banks. Some private companies will be encouraged to issue corporate bonds. However, there is a major question whether the established families will release the minimum financial and operating statements for prudent analysis and professional decision-making by the investor. That attitude will postpone the benefits that would be available when a near monopoly firm goes public and provides a blue chip stock.

### 4. Availability of Credit

Traditionally, agribusiness is regarded as a capital intensive industry but that does not hold true for most of Guatemala. Little new capital has gone into land and equipment at the higher values following the recent inflation. Also, the amount of capital dedicated to agribusiness has been rationed for years since credit has not been available for the leverage effort. Furthermore, the level of production investment, both domestic and foreign, has been declining for years. Although agriculture is the largest contributor to GDP (at least 25 percent), it received only 13 percent of loan funds in 1985. In contrast, industry had 34 percent of the nation's loans.

The government is a minor lender to agribusiness. The Central Bank serves as a conduit for the international financial institutions which loan funds for specific purposes. The commercial banks have the charter to serve agribusiness. However, the banks still rely on collateral as the criteria for a sound loan rather than the estimated earning power of the assets being financed. Also, the banks rely on the experience of the established families and capacity of other assets to guarantee the

debt. Guatemala has a broad selection of both domestic and foreign banks which are described as "status quo" with excess liquidity or an abundance of lendable funds now. The banks that have financed agribusiness had an interest in only one or two commodities and did provide a complete budget and capital improvements financing package.

The country has four finance companies, one of which was supported by USAID to assist agribusiness with long term loans. It sells bonds (one month to five year certificates of deposit) to the public and borrows from a local bank. It appears that the finance company has reached maturity as limited interest was expressed in new business. The interest is 14 percent plus 3 percent tax, and 11 percent is paid for the certificates of deposit so a 6 percent spread is earned.

The development banks aim for the small to medium size farmer with small amounts of lendable funds. The foreign banks service their multinational customers. The Citibank charter application is being challenged as not needed in this over banked city. USAID is the major donor type organization that is active. It has several loan funds available for specific purposes through commercial bank channels. Because of the 200 percent collateral requirement established under the Banking Law and the excess liquidity of the banking system, these funds go largely unused.

It appears that the representative of established families can obtain loans by pledging other collateral or by signature. The Indian farmers do not use formal sources of credit which restricts their level of activities. There is an expanding number of middle income agriculturalists who are well trained but blocked from the financial community because they lack prior experience and 200 percent collateral or insurance. When asked about the Banking Law, one successful operator stated that "the country had four different constitutions in 40 years but was unable to change the Banking Law."

Thus, a dependable source of operating, intermediate and long term funds is needed for the under collateralized operator. A locally managed agribusiness funding corporation is needed with some equity and revolving fund loans or guarantees provided by USAID.

5. Availability of Insurance

The Overseas Private Investment Corporation (OPIC) provides political risk insurance and coverage against losses resulting from expropriation, war/revolution/insurrection, civil strife, terrorism and sabotage. Loan guarantees can be arranged up to \$50 million on loans by U.S. financial institutions to U.S. sponsored projects. Also, OPIC will issue letters of credit. In fact, OPIC completed an investment mission in Guatemala the week before the Reconnaissance Team arrived.

6. Adequate Transportation - Land, Sea and Air

The requirements of the non-traditional products have highlighted the need for well coordinated transportation alternatives. Since Guatemalan export advantages arise from growing conditions, proximity to the U.S. and crop timing, but not necessarily lower costs of production, the efficiency and cost of transportation are important factors in the success of an operation. (Current costs of air and sea freight and FOB prices of non-traditional products are given in Appendix B, Tables 6, 7, and 8.)

For non-perishables, trucking across Mexico should be the lower cost choice. However, Mexico seems to regard Guatemalan products to the U.S. as competitive. The cargo has to be off loaded to Mexican trucks at the border. The arrangement has not proved dependable.

The country has two ports, one on each coast. The roads are rough. Currently, freight volumes are too low and inconsistent to insist on lower sea rates and a more frequent schedule, both of which need improvement. The use of barges from the north coast of Guatemala to Houston and New Orleans might have potential.

The government airline controls air freight arrangements and competes with the international carriers. The ornamentals and cut flower association persuaded the government to authorize the expansion of flights offering reefer service from two to four flights a week beginning next month. As fresh fruit and vegetable products come into production, volumes will be sufficient, but coordination needs will

become more substantial. With dependable flights, back hauls can be arranged for further rate reductions.

#### 7. Investor Confidence

Investments are considered long term even if the payback is only five years or so. The inherent characteristics of agribusiness reinforce the need for long term planning, particularly when new and fragile markets are involved.

In a new relationship, three important factors are: 1) the product, 2) the joint venture partner and 3) the country. In Guatemala, agricultural products are receiving professional technical assistance under quality management, but the timing of market delivery is crucial. The potential joint venture partners should have both mutual and complementary needs with full examination of both principals. The country situation in Guatemala is greatly improved for the private sector based on present circumstances. The new government by effectively addressing the underlying issues of labor strife, inflation, land reform, communist influence in Nicaragua, and guerrillas is encouraging a growing confidence among private sector investors.

The business leaders interviewed by the Team were optimistic about the future of their product, their country and the U.S. Land reform is not a major issue. However, there was a note of concern expressed about uncontrollable changes of the type beyond both individual and national control. The August 1987 agreement between the five Central American Presidents occurred in Guatemala City during the Team's mission.

#### F. Summary - The Status of the Four Factors of Production

1. Land. The soil and climate of Guatemala has produced an abundance of crops for at least three thousand years. The descendants of both the highland and lowland Maya Indian continue to work the land. Many customs remain unchanged except for the recent use of chemicals which has polluted some of the vital water supply in the lowlands of the coastal areas.

The present farming lands, which represent a small percent of the rolling mountain terrain, are divided into small plots, primarily for subsistence family farming. The composition of the soil and the climate conditions vary greatly and should be carefully reviewed. The commercial potential of speciality crops for export is just beginning to emerge.

The land when properly improved is expensive. In fact, most of the developed land is not for sale. Short term leases are common with the lessee taking full responsibility.

The threat of land reform seems to serve as a check and balance between two classes but would be destructive to the economy of both. Their more realistic concern would be the loss of the ability to govern themselves and the resulting stagnation. The results of recent adversities in Central America and elsewhere may provide a clear reminder for prevention. In Guatemala, the positive will of the people and the belief in the private sector is strong.

2. Labor. With a tradition of self-sufficiency in family agriculture, the availability of labor is seasonal or part time. The use of the labor pool in Guatemala City is adequate for agribusiness in nearby areas but too far from major agricultural production. Transportation of people and family products is primarily handled by converted school buses. The more progressive managers are providing housing and schools on the premises to attract permanent labor and increase their standard of living. The cost of unskilled labor is about one tenth that of the U.S. Considerable training for new tasks is needed because of the lack of high school technical education.

3. Capital. This is not a country of the "haves and have nots". Both the established families and Indian workers have access to land for production purposes. However, because of early commercial activities, the established families have large amounts of capital tied up in agribusiness and industry. These established families have built financial institutions to serve their needs. The banker's

interpretation of local lending standards is not discriminatory but so cautious that new entry without outside capital or assets is unlikely.

Non-traditional products are both capital and labor intensive. Of the two, the major requirement is for needed technical and managerial skills. Currently these skills are coming from a fairly well educated middle class and from the younger generation of the established families. New projects involving non-traditional crops are creating a demand for financial systems to supply the capital and loans in a prudent manner but over a longer, more reasonable time period. This objective can be accomplished in a combination of ways: 1) modify the existing Banking Laws and banking institutions, 2) develop both a stock and bond market, 3) encourage private companies to expand by public stock issue, 4) facilitate joint venture arrangements, 5) expand the capacity of the major finance corporations and 6) create one or two agribusiness funds within the financial community to lend to the agribusiness industry.

An 8 percent saving rate, a 14 percent interest plus a 3 percent tax coupled with a 20 to 30 percent inflation would be disastrous to the private sector. A correction is urgent and must be effected in months not years. Otherwise, the commercial banks will continue to sit with excess liquidity making short term loans in an economy where investment capital is scarce and sorely needed.

4. Management. Guatemala is ready to benefit from a number of young individuals who are from the established families and the better educated professional families. The individuals presently have training from the local universities, technical institutes and U.S. graduate programs. They are equipped with progressive tools and want to apply them. However, they need seasoned management to direct them in the international commerce of non-traditional product. Middle management is probably not readily available and considerable training of local talent will be needed. Several firms and organizations are using technical consultants and other assistance from the more reputable sources of the world. As agribusiness activities become more specialized, all of these management needs will expand.

## V. AGRIBUSINESS SURVEY

### A. The Agricultural Production Sector

#### 1. Its Importance in Guatemala

As in most developing countries, both land ownership and agricultural production are the major economic and social forces within Guatemala. Tradition places land ownership in a primary position as a means to obtain credit and to maintain social position. Agricultural production is very important to the government because it provides food to the population and accounts for over 60 percent of the total value of exports from the country. (See Appendix B Tables 1 & 3)

#### 2. Traditional Crops

##### a. Domestic Consumption

Corn has been the major crop for the Guatemalan farmer ever since the Mayan Empire introduced it in the 14th century B.C. Also important are bananas, dry black beans, wheat, rice, yucca (cassava), squash, pumpkins, cabbage and many other tropical fruits and vegetables.

##### b. Export Consumption

The traditional export crops include coffee sugar, cotton, cardamom, bananas and tobacco. Coffee accounts for more than 60 percent of all exports from Guatemala while bananas and plantain which follow in importance represent less than ten percent of the exports. The U.S. market receives over 60 percent of the total agricultural exports from Guatemala. (See Appendix B Table 2)

#### 3. Non-traditional Crops

Introduction of new crops has been recent but is expanding rapidly. The two factors responsible for this increasing activity are Guatemala's micro-climates and the Caribbean Basin Initiative (CBI) which

facilitates entry of products into the U.S. market. Most of these non-traditional products are appearing in the local markets and are being introduced into the domestic diet. These crops include but are not limited to the following fruits, vegetables and crops:

Fruits:           strawberries, apples, pineapples, melons  
                    (cantaloupe, honey dew), and mangoes;

Vegetables:   broccoli, celery, lettuce, asparagus, cauliflower;

Crops:           sesame seed, cashew nuts, spices.

The export of non-traditional crops comprises only seven percent of total agricultural products, (Appendix B Table 3) but shows signs of increasing rapidly. A major boost to export potential would result from developing a market system to expedite the movement of these new products. Presently the volume of new products is usually too small to utilize the most efficient transportation method, not large enough for many U.S. markets which require considerable volume for entry. These problems are being resolved with increased volumes. Many opportunities exist in this activity for U.S. investors to provide expertise in processing, cooling, packaging, shipping and marketing of these non-traditional products. The location of production areas of these crops is given in Appendix B Tables 5 and 5a.

#### 4. Livestock and Poultry

Beef cattle are either the third or fourth most valuable segment of agricultural production, only exceeded in value by coffee, cotton and sometimes sugar as a percent of gross national product. All cattle exports go to the U.S. as fresh boxed, boneless beef (Appendix B Table 1). The national herd was reduced during the period 1977-84 because of the illegal movement of live cattle into Mexico to obtain U.S. dollars.

Swine production has remained stable for many years and prices are equal to those for beef cattle. The current price of corn and protein meal does not encourage expansion for the export market.

Poultry production is utilizing modern technology with imported chicks and micro nutrients from the U.S. The cost of corn is US\$.20/lb, sorghum US\$.12/lb, while live broilers are sold by producers at \$.56/lb. This is a profitable venture but increased supply would force broiler prices down very rapidly. The cost of production is not competitive with U.S. or world prices.

Rabbit production has potential for producing meat at a much lower cost since local forage from the mountain regions could provide most of protein and energy needs.

Shrimp farming in ponds is developing on the Pacific coast. Currently less than 2,500 acres are farmed, of a potential 12,000 acres suitable for shrimp culture. One limitation on potential sites is that some of the rivers which drain the southwest coast and its foothills may be contaminated with pesticides from cotton production and not suited to shrimp farming. Total exports of shrimp, fish and other crustaceans average over \$10 million annually.

## B. Climatic and Soil Resources

### 1. Micro-Climates

Guatemala is made up of mountains, valleys, plains and contrasting coastal lands. Within each altitude, depending on location, there are many levels of rainfall and humidity. Because of these factors, it is possible to locate any combination of temperature and humidity needed for crop or livestock production, with the exception of a true desert climate of very low relative humidity and rainfall. But even the desert climate is available for a six to seven month period.

Within the temperature zone needed for pineapple and citrus production there are separate areas in the country which provide ideal rainfall during most of the year. Irrigation water is available in most areas to supplement the rains during the dry season which is between November to May in part of the country and only from January to April in other areas. The south coast and the southern range of mountains has the most reliable rainfall while the central and northeastern areas

receive the least rainfall. The norther plains are the least predictable as to amounts and time of rainfall.

## 2. Soil Resources

The soils of all areas are extremely variable as to parent material, fertility and water storage capacity. Within a small field the soils may change from a very rich clay loam to a rocky volcanic sand and back to a pure clay. Also there are limestone soils present within the same areas as typically tropical acidic soils. Rich deep soils exist in the southwestern and south central highlands. These soils resist erosion even on exceedingly steep slopes. Any purchase or lease of land would need a soil survey which would detail the whole field.

## C. Human Resources

Guatemala is unique among the developing countries because of the large indigenous Indian population who are landholders and self-employed entrepreneurs.

1. Agricultural workers are over 55 percent of the total work force in Guatemala. Over one half the population of Guatemala is less than 18 years of age, and approximately 65 percent of the total population are descendents of the Maya Indian civilization.

2. Work habits in Guatemala agriculture are very different than those of other tropical countries. Nearly all seasonal agricultural labor is provided by the upland Indian population who leave their farms for one month to harvest coffee, cotton, sugar cane, melons, pineapple, etc. They then trade places with other upland Indians so they may return to their own property and crops. Observation of the Indians' crops indicate a highly motivated and technologically receptive group of farmers. These farmers' corn and wheat fields are neat, weed-free and terraced where possible. They also utilize inter-cropping - planting melons, squash, and beans within the corn field. The Indians stake tomatoes and cucumbers.

### 3. Management Skills.

There are several universities in the country which provide training in business, management, agronomy and animal science. These graduates must spend two years in a business as a trainee before receiving their degree. The general consensus among producers is that these graduates are well prepared to enter their specific fields as managers.

### 4. Joint Venture Partners.

The Guatemalan business tradition has always placed major emphasis on free enterprise even during adverse political situations. Most Guatemalans would agree that the desire of the people for private ownership is stronger than ever. Many young aggressive entrepreneurs are working to build new businesses. This has created a large pool of potential joint venture partners who would welcome capital, technology or marketing skills from a U.S. partner.

## D. National Infrastructure

### 1. Transportation and Roads.

Since the government has policies which encourage agricultural production and exports, it also has programs which maintain roads in relatively good condition considering the rough terrain. Four hours driving will reach all areas of developed agriculture from Guatemala City, while eight hours on the road will move products from the Atlantic to the Pacific (Caribbean) Coast.

### 2. Equipment and Repairs.

Most small equipment and repair parts can be found within the country but are very expensive. Equipment and supply stores will need to be encouraged to maintain inventories at reasonable prices, so that each producer will not be forced to import his own supplies and repairs as needed.

3. Taxes and Government Incentives.

New export companies are encouraged through income tax exemption and tax credits. These tax laws are currently under study and it is expected that the current laws will be expanded to include traditional and existing companies to encourage exports of all types.

Inflation has been brought under control by the present government, with the dollar - quetzal rate fixed at \$1.00 to q2.50 for import and export transactions. This exchange was traditionally at \$1.00 to q1.00 but had reached a street rate of one to four by 1985, but has now nearly stabilized on the free market at q2.6 to \$1.00.

4. Power and Fuel

Although Guatemala must import its petroleum, the prices of agricultural fuel is competitive and in adequate supply. Furthermore, a large hydroelectric system provides power at reasonable rates which should be lowered as a large construction cost overrun is repaid. Some rural lines are of an inadequate size for large new installations, so one would need to evaluate the possible installation of a small hydroelectric generator for a specific project.

5. Irrigation Water Supplies

Most areas have adequate rainfall and topography for storage of surface water. These reservoirs may be used for supplemental irrigation during the dry season. In addition, ground water for irrigation is available in most regions at depths from 50 feet to 1,000 feet. The deeper wells normally produce hot water and no major mineral problems have been observed.

6. Insects, Disease and Parasites

There are few serious problems with pests or disease in the Altiplano or high country regions above 4,000 feet in elevation. Winter freezes may occur at any elevation above 4,000 feet depending on geographic location. Insects have been a major problem for cotton

producers in the foothills or low hot regions. Below 1,000 feet the tropical climate and humidity may be intense. The south coast (Pacific) and northern interior (Peten district) both have high humidity and year long tropical heat. Cattle are traditionally raised in these regions where both internal and external parasites are a serious problem. Currently eradication programs are underway to eliminate major pests such as the cattle screw worm, the citrus Mediterranean Fly, the cotton boll worm, and others. There are modern laboratories producing sterile male flies, natural predators and viruses to maintain pest control.

#### 7. Credit and Capital Availability

There seems to be a surplus of funds available in the banking system, but it is only available under very conservative conditions. The Reconnaissance Survey Team was told that the banking system requires 200 percent collateral and that the appraised value of property would be only 50 to 70 percent of market value.

The long term finance companies also have the same requirements and do not seem interested in new accounts outside of their traditional family clients.

There are, of course, loans made on signature and guarantees. These loans are only made to established clients or to those who have adequate guarantees. This points to the importance that selection of the appropriate Guatemalan partner would have for a prospective U.S. investor.

A new corporation to make funds available to new ventures based on feasibility studies and cash flow analyses might be considered to supply the credit needs of projects, especially for the under collateralized entrepreneur.

#### 8. Trade Concessions and Bilateral Agreements with Other Nations

Imports and exports of most products have traditionally been tightly controlled, but the new government has relaxed the controls and streamlined the procedure for obtaining permits. Guatemala in contrast

to other developing countries has a simple procedure to obtain import and export permits. While several government agencies are involved as is true in all developing countries, Guatemala has created a "one window" system where all agencies are brought together to issue the permits rapidly.

The Societe Generale de Surveillance (SGS) during its first year created many practical problems for both importers and exporters. With experience, these problems are being resolved and the new SGS contract reduces the role it plays. This company has had a good international reputation and may prove to be an aid to quality control for export from Guatemala.

The Overseas Private Investment Corporation (OPIC) is a self-sustaining U.S. Government agency which provides a variety of services to encourage private-sector investment in Guatemala and in the growing markets of the developing world:

Direct Investment Fund - loans up to \$4 million.

Loan Guaranties - guaranties up to \$50 million on loans by U.S. financial institutions to U.S. sponsored projects.

Insurance - insurance for loss due to expropriation and damage caused by political violence. OPIC offers expropriation and war damage coverage on a case-by-case basis. Inconvertibility coverage is not currently available in Guatemala.

Letter of Credit Insurance - many countries require exporters and contractors doing business with them to post bid, performance and advance payment guaranties. OPIC will insure these guaranties against arbitrary drawings.

Investment Mission Program - an opportunity to learn about the investment climate and economic and political outlook of developing countries through meetings with host country officials, the U.S. ambassador and embassy staff and local business leaders. Such a mission visited Guatemala in late July, 1987.

E. Agricultural Production Outlook

Optimism of Guatemalan producers is very high and increasing. Local investors are increasing their investment in new ventures and reinvesting profits from their traditional businesses into new plants and equipment especially in the non-traditional crops.

Although Guatemala is considered a tropical country, it has climates which vary from the ideal for palm oil production to areas with winter freezes for excellent apple production. With these various climatic production areas, the country can supply the winter fruit and vegetable market in Europe, Canada, Japan and the U.S. as well as exports of temperate fruits to truly tropical countries.

The recently elected Government of Guatemala is encouraging increased investment in production and processing of agricultural products, especially those destined for hard currency exports. If this trend of government continues, the tradition of private enterprise will lead Guatemala into the production, processing and export of winter vegetables, fruit and tropical plants.

The Caribbean Basin Initiative (CBI) has been a major stimulus for the increase in export projects. With this impetus, the country will be at a competitive advantage even if the CBI is phased out. This will be aided by the tri-level exchange rate program which will maintain the quetzal at its true market value. Because the current cost of producing wheat, sorghum, corn, pork, poultry and other traditional U.S. crops is not competitive with U.S. or world prices, this should permit shifting of resources (land, labor, etc.) into special crops which are not produced in the U.S. or to those which are consumed fresh and produced seasonally in the U.S. In turn, Guatemala may use the trade surplus generated to import wheat, corn, milk, etc. from the U.S.

F. Agribusiness Investment Potential in Guatemala

1. Factors Favoring U.S. Investment in Agribusiness. Advantages offered to U.S. investors by Guatemala include the entrepreneurial spirit of the country, its government, and people. Also the free

exchange of currency is very promising. This is the only soft currency country where none of the business or service people encountered wanted to buy dollars. In fact, the small retailer did not want dollars but would ask for quetzales. The potential for easy access to the U.S. market under the CBI along with improved transportation options will lead to low cost entry to the U.S. market as volumes increase. A government attitude and practice of tax incentives and reduced bureaucratic red tape make Guatemala a country of unique opportunity among the Latin countries. Most risks can be controlled by utilizing OPIC insurance along with careful selection of the joint venture partner. The micro-climates, soils and water resources of Guatemala offer the producer the opportunity to market a complete line of produce from one plant in one country.

2. Factors Constraining U.S. Investment. Constraints and challenges to the development of successful agribusiness projects in Guatemala center around available credit within the existing system of banks and finance corporations. Adequate credit may have to be arranged either with a U.S. bank, OPIC, or other external sources. Also, supplies of fertilizers, repairs, tools, etc. should be located before the investment and not later when they are needed but not available. Transportation contracts should be negotiated in advance based on projected volumes rather than hoping that costs will go down as volume increases. Costs of production will not be automatically lower than in the U.S. But, yields can be higher, and labor and tax costs lower for export products which, given good product selection and management, will give the investor a comparative advantage.

3. Recommendations to Prospective U.S. Investors. Recommendations would include all of the normal procedures under taken for selection of a new agribusiness investment in the U.S. Selection of a Guatemalan joint venture partner will probably prove to be equal in importance to the selection of the product and the area for producing. The partners need to complement each other. As for example, one would have the market while the other would be a producer, or one would provide

equipment and technical expertise while the other would supply financing and the production unit. Before committing to an investment, a complete feasibility study and project analysis should be completed by an independent consultant who is experienced in the product and country conditions. The market should be researched before the project is funded so that variations in demand and price may be accurately predicted. The bottom line of any project in Guatemala is whether the product can compete economically in the U.S. and the world market.

## VI. POTENTIAL PROJECT INVESTMENT OPPORTUNITIES

### A. Project Selection Process

In order to maximize the resources for the Reconnaissance Survey Team, the selection included: 1) a chairman with technical livestock and crop experience and a broad base of agribusiness entrepreneur activities, 2) a member with an international investment banking career and experience in cattle ranch management and 3) a staff member with agribusiness management experience in Latin America and experience with many prior ASACI survey teams. In the process of assessing the agricultural sector and the investment climate, the Reconnaissance Survey Team initiated a project selection process as follows:

1. Analysis of written materials on the infrastructure, agriculture, economy and results of prior projects.
2. Interviews in Guatemala with owners and operators of agricultural and agribusiness enterprises, marketing production associations, the finance community, the Central Bank, Guatemalan government officials and U.S. government representatives.
3. Visits and inspections of agribusiness enterprises throughout the country.
4. Developing a list of potential projects as recommended to the team in an informal person-to-person manner.
5. As different information was gained on each project from the interviews and on-site inspections, the predetermined selection criteria were applied to each of the potential projects.

### B. Description and Ranking of Project Opportunities

An investment was examined from the perspective of a joint venture between a U.S. firm and Guatemalan company or individual. Wholly owned, vertically integrated U.S. investments are discouraged. The U.S.

contributions would include marketing skills (or shelf space), technology and management or equity capital.

The primary criteria for project selection are summarized as follows:

1. Market needs and capacity of specific U.S. and European markets or regional markets for identified product.
2. Export potential of specific items, product or services from U.S. firm or individuals.
3. Assurance that potential imports into the U.S. market would be non-competitive with U.S. products.
4. A positive assessment that the project would provide a lock up of market share, sole source guaranteed delivery or a rate of return on investment in relation to action risk (after use of insurance).
5. Proper level of motivation and contribution of local partner.
6. The proper balance of the productivity factors - quality, quantity, and cost competitiveness.

C. Ranking and Description of Project Investment Opportunities

1. Winter Vegetables. Utilizing its various micro-climates, Guatemala is currently producing and exporting fresh a variety of vegetables such as broccoli, brussel sprouts, okra and snow peas into the U.S. winter market. Producers and exporters report attractive profit margins. Present agribusiness owners expressed interest in joint venture arrangements with U.S. companies or individual investors, which would create a demand for the supply of U.S. equipment, technical and managerial know-how, capital and

market assistance. To increase the quantity, quality and cost effectiveness of current operations, proper cold storage and packing facilities would be needed. The addition of a quick freezing plant to an integrated operation might be considered to process and market vegetables not meeting the "fresh" standard.

2. Tropical Fruits. Papaya, mangoes, pineapple, melons, citrus and strawberries are currently grown in relatively small quantities. Some are exported. Though not currently produced in Guatemala, raspberries, a high value crop could be grown in the highlands. Timely production of some tropical fruits could be increased to be shipped fresh to enter market windows in the U.S. and Europe. Others could not be exported fresh because of the existing med fly problem, but could be processed as juice concentrates targeted at the growing export market for exotic blended juices. Freezing or dehydrating part of the fruit crop would be complementary options that a joint venture might want to consider. Several local producers expressed an interest in joint ventures with prospective U.S. investors.

3. Ornamental Plants and Cut Flowers. Ferns and yucca cane plants are ocean shipped in commercial quantities to the European Community (EC) market and cut flowers, mainly roses, air freighted to the U.S. market. Producers report good profit margins and express an interest in increasing quantity and variety of production in conjunction with prospective U.S. investors. Air shipment capacity continues to be a constraint on increased volumes, but soon a daily cargo flight of Air Wisconsin to the States will be approved and inaugurated by government aviation authorities.

4. Marine Shrimp Farming. World market prices remain steady and demand for frozen shrimp is increasing. Three or four marine shrimp farming operations are in the start up stage along Guatemala's Pacific coast. One 100 hectare production venture reported that normal commercial operations have been established with good profit

margins on the first container shipments of frozen tails. One seasoned farm manager with many years of experience in Central and South American shrimp production surveyed farming potential in Guatemala and estimates that some 5,000 hectares of land are potentially suitable sites for marine shrimp farming. A handful of local agribusinessmen expressed an interest in a joint effort with prospective U.S. investors in a shrimp farming venture.

5. Agribusiness Funding Corporation. As Guatemala looks to the private sector to expand its economy, increased attention is being given to non-traditional agricultural products. These activities are capital intensive, and substantial amounts of loans will be needed for land, buildings, equipment and operating activity. The banking laws do not allow long term loans, resulting in the use of one year notes on a renewal basis. The finance corporations, which are also supervised by the Department of Bank Supervision, can make loans up to 12 years but cannot take deposits. Based on the appraisal process, 200 percent collateral and guarantees are required with little recognition of earning capacity and cash flow analysis. Therefore, loans are given to members of established families who have land and fixed assets that are not encumbered. At the present time, the banks have excess liquidity but capital and loan sources are scarce for expanding agribusiness activities.

Since changing the banking laws which will require much effort and time has not received priority action, there has arisen a growing need for a special purpose lending organization in Guatemala.

The purpose of this agribusiness fund would be to provide a balanced package of short, intermediate and long term loans based on earnings analysis, market contracts and borrower performance. The financing would be for the commercialization and export of non-traditional product and the expansion of selected basic crops and livestock. The recipients would be the technically prepared and managerially experienced individuals who may or may not have the support of an established family.

The new corporation would be organized as a local company under the laws of Guatemala with direct ties to the Central Bank. A multinational board would be chosen with strong agribusiness affiliations in both North and Central America. Every effort would be made to locate and train local management. Prior non-Guatemalan lending experience would be paramount. Start up of the bank would be with the modern tools of analysis and computerization, a streamlined staff and two or three small qualified teams of agribusiness finance specialists.

The corporation would be strongly capitalized by both local and international funds. The firm would want the authority to sell certificates of deposit, long term notes and to borrow from the banks and finance companies. Variable rate funds will be needed with the possibility of inflation and for the necessity of a fixed spread. USAID should be invited to provide equity or loan funds similar to its role in Trafalgar Development Bank in Jamaica in 1985. The International Finance Corporation (IFC) should be formally requested to do a feasibility study and take a lead role in developing the operating entity. Mr. David Gill, Director of the Capital Market Report, should be briefed by ASACI leadership next month.

6. Hybrid Seed Production. This project has excellent potential in Guatemala with the low cost labor, abundant micro-climates and available production experience. Hybrid seeds for worldwide distribution are expensive and require hand labor to perform the pollination for many plants. With the proximity of hot - humid, cool - wet, and hot - dry climates, most species could be grown within three hours driving time of Guatemala City. The total clearing, packaging, and shipping to worldwide markets could be centralized in Guatemala rather than coordinated through shipments from several countries. This project would require expertise in breeding and marketing from the U.S. as well as equipment and genetic stocks.

7. Growing and Packaging of Spices. This venture opens the possibility of a U.S. spice marketing company becoming involved in the production or collection of their own spices, which could increase the competitive advantage of a U.S. corporation in the world market. Ideal climates exist for all types of spices within easy transportation distance. The U.S. partner would furnish marketing and improved genetic material along with the new processing packaging technology to preserve flavor and shelf life.

8. Growing and Processing of Cashew and Macadamia Nuts. Two separate producers of processed cashew nuts are interested in expanding their production. Growers have been expanding their plantings by over 1,000 acres per year for the past three years and would expand even more rapidly if they had a reliable market. A joint venture would utilize U.S. machinery for hulling and packaging, as also U.S. technology in processing and marketing. Neither production nor hand labor for this project would be a problem. Also, space for processing and warehousing is available.

9. Textiles. As production costs became too expensive, plants with high capacity and low labor cost were built in Asia, Africa and Latin America. Over production has now caused oversupply, dumping in the export market and closed plants for the last five to eight years. Some low cost vertically integrated operations have survived. Some specialty operators have made shrewd purchases of supplies at below their cost of production. Others have anticipated the trends in clothing styles. Guatemala has both open and closed plants that could complement the needs of a U.S. investor. For example, drawback projects are the fastest growing user of low cost, semi-skilled labor in Guatemala now. Also, cotton has been imported in recent years, so a U.S. cotton firm could develop a joint venture with a local plant for a contracted sale and profit participation through the textile process. Proposed modification in the Caribbean Basin Initiative rules may favor textiles.

10. Animal Breeding Programs. An opportunity exists to build herds using improved technology, selection and genetic materials. During an initial phase a program would utilize U.S. breeding stock, technology and equipment. Guatemala could produce beef cattle very competitively for the world market. Other species such as dairy, swine, sheep and goats would be produced for the domestic market as there would not be a competitive advantage for the world market. The current Guatemalan beef herd is estimated at 2.2 - 2.5 million head, or less than one half the 5.3 million head of 1978. Most of this liquidation was illegally driven into Mexico and then shipped to the U.S. for feeding. Now that the dollar exchange problem is over and the domestic cattle price is profitable, a rapid expansion of the cow herd should take place. This demand should last for at least 15 years just to replace the lost cattle. Also, with the population growth at over 3%, the price and demand should increase markedly.

11. Meat Packing Plant. This project would provide the opportunity to export to the Caribbean Basin an inspected, USDA approved low cost product. At the same time, it should reduce the exports to the U.S. of both live animals for feeding in U.S. feedlots and of boneless beef currently being sent to the U.S. market.

12. Cacao Bean Production. Hershey's of Pennsylvania has established farming, technical assistance and marketing operations for cacao in Belize, Guatemala's neighbor to the east. The Hershey venture has been set up to supply quality seedlings to producers, to provide technical assistance and to guarantee purchase of all cacao beans produced under the company's program. Good profit margins have been demonstrated by producers in Belize. Available lands and good growing conditions exist in Guatemala. Landowners and cooperatives are currently looking for alternative cash crops and would be willing to invest jointly with a prospective U.S. investor.

13. Growing and Processing of Non-Traditional Seed Crops. Should make an excellent opportunity for several U.S. joint ventures in Guatemala. Crops such as sesame which are suited to the labor and/or micro-climates of Guatemala should be included in any project analysis. Some varieties of dried beans, pumpkin seeds, etc. are currently being produced and packaged using all hand labor. Modern technology for hulling, roasting, and packaging are all needed by the Guatemalan partners to make the crops commercial and competitive from a quality standpoint.

14. Distributorship for U.S. Agricultural Equipment. As has been pointed out several times in the Team's investment analysis of Guatemala, the lack of readily available equipment, supplies and repairs is a major constraint to the success of most agribusiness projects whether in production or processing. This same problem exists in all developing countries. But, Guatemala and its new government seems open to changing the effective monopoly system that exists for these input items. The U.S., especially the midwest and south-central regions, is currently oversupplied with good equipment, machinery and supplies for agribusinesses. These surpluses exist both in used (nearly new, repossessed) and new states. A joint venture to move these surpluses to Guatemala would provide a valuable service to U.S. agro-industries and to U.S. lenders who own the equipment as well as to Guatemalan agribusinesses providing them with a much needed supply. This same joint venture could continue with repairs and supplies of both new and used equipment. Several prospective investors have indicated a real interest in pursuing this proposal.

15. Rubber Latex Products. The Mayans used the sap of the wild rubber trees in the Tikal area over one thousand years ago to fashion a large hard ball. This soccer size ball was the primary playing object in a "rather competitive" life-or-death sport. The production of latex from the existing semi-commercial plantings is dependent on rainfall which varies on the north coast of Guatemala. A local entrepreneur would like to take advantage of the low cost

of collecting the latex and the moderate cost of factory labor by manufacturing quality rubber gloves in a joint venture. Competition in the international market would be from Asia but the demand for sterile gloves and masks is increasing as a safeguard from AIDS.

APPENDIX A  
ECONOMIC INDICATORS

EXPORTS AND IMPORTS BY SPECIFIC COUNTRIES 1983-1985

-MILLIONS-

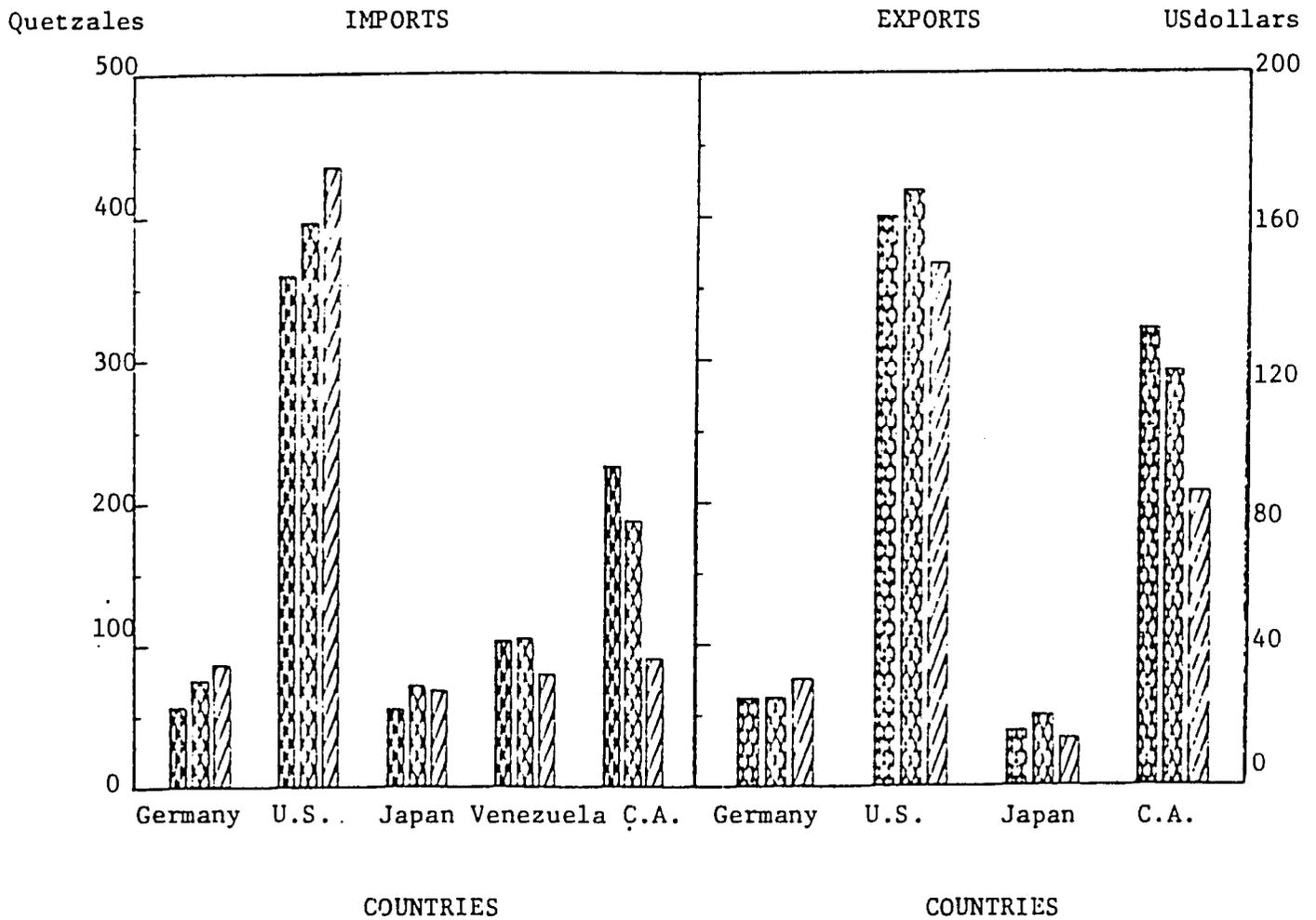


TABLE 2

KEY ECONOMIC INDICATORS

In millions of U.S. dollars unless noted

	1984	1985	1986	1987
<u>Domestic Economy</u>				<u>Projections</u>
Population (millions)	7.8	8.0	8.2	8.4
Population growth (%)	3.0	3.0	3.0	3.0
GDP in current dollars	8,700	8,900	9,200	9,600
Per capita GDP, current dollars	1,120	1,110	1,100	1,130
GDP in local currency (1958 quetzals)	2,958	2,925	2,925	2,986
Consumer Price Index Percentage Change	3.6	31.4	25.6	12.0
<u>Production and Employment</u>				
Labor force (1,000s)	2,400	2,500	2,600	2,700
Unemployment (average percent for year)	12	13	14	14
Industrial production (% change)	.4	-1.3	.5	3.0
Fiscal deficit as percent of GDP	-3.6	-1.2	-1.4	-3.0
<u>Balance of Payments</u>				
Exports (F.O.B.)	1,132	1,060	1,002	987
Imports (C.I.F.)	1,297	1,175	900	1,054
Trade balance	-165	-17	102	-64
Current-account balance	-386	-246	-31	-104
Foreign debt <u>1/</u>	1,620	2,536	2,516	2,686
Debt service	221	543	543	515
Debt service ration as % of exports	19	47	47	45
Net foreign exchange reserves	-28.3	-112	3.2	20
Average exchange rate for year (X U.S. \$1.00)	1.0	1.7	2.7	2.7
<u>U.S. - Guatemalan Trade</u>				
U.S. export to Guatemala	417	435	414	415
U.S. imports from Guatemala	396	366	483	422
U.S. bilateral aid				
Economic	15.7	101.4	112.8	180.0
Military	.3	.3	5.3	5.4

1/ Does not include debt with a maturity of less than one year.

Sources: Bank of Guatemala Reports and Embassy estimates

APPENDIX B  
AGRICULTURAL STATISTICS

TABLE 1

GUATEMALA'S AGRICULTURAL EXPORTS AND U.S. SHARE 1986

(\$ MILLION)

COMMODITY	TOTAL FOB VALUE <sup>1/</sup>	U.S. SHARE	
		VALUE	PERCENT
Coffee, green	493.0	307.5	62.4
Cotton lint	35.0		--
Sugar	59.5	27.2	45.7
Cardamom	32.9	12.4	10.0
Banana and plantain	76.0	49.2	65.3
Tobacco leaf and products	11.0	7.0	63.6
Vegetables and products	23.0	12.0	52.2
Beef	3.0	3.0	100.0
Sesame Seed	11.0		29.1
Cocca beans and products	1.5	0.8	53.3
Processed foods	25.2		2.0
Rubber, raw	6.0		8.3
Fruit and Produce	6.2	3.9	62.9
Bulbs, Flowers, & Ornamentals	6.7	4.2	62.7
Lumber	4.4		22.7
Molasses	6.5	6.0	92.3
Honey	2.2		22.7
Essential oils	0.7	0.3	42.9
Animal feed	1.0		--
Sugar Products	0.4		25.0
Other	<u>32.2</u>	<u>13.4</u>	<u>41.6</u>
Total Agricultural Exports	<u>807.45</u>	<u>441.0</u>	<u>55.0</u>

<sup>1/</sup> Fourth quarter export values estimated by AgAtt Office.

Source: Central Bank of Guatemala

TABLE 2

GUATEMALA'S AGRICULTURAL IMPORTS AND U.S. SHARE 1986

(\$ MILLION)

<u>COMMODITY</u>	<u>TOTAL CIF VALUE</u> <sup>1/</sup>	<u>U.S. SHARE</u>	
		<u>VALUE</u>	<u>PERCENT</u>
Wheat	19,756	19,756	100
Dairy Products	7,510	3,142	42
Cereal & Products	4,356	759	17
Other grains	5,077	4,006	79
Feed ingredients	4,166	2,883	69
Vegetable oils	16,229	15,331	94
Vegetable & Production	2,667	1,962	74
Tallow	8,469	8,462	100
Beverages	2,311	178	8
Fruit Production	349	291	83
Oilseeds	647	442	68
Tobacco & Production	53	35	67
Foodstuff, no esp.	8,795	1,808	21
Spices	606	43	7
Livestock	1,528	1,222	80
Cocoa & Produce	339	69	20
Sugar syrups	1,285	222	17
Seeds for planting	1,446	797	55
Total Other	<u>18,562</u>	<u>7,313</u>	<u>39</u>
Total	<u>104,150</u>	<u>68,720</u>	<u>66</u>

<sup>1/</sup> Fourth quarter import values estimated by AgAtt Office.

Source: Central Bank of Guatemala

TABLE 54-  
3

## ECONOMICALLY IMPORTANT GUATEMALAN AGRICULTURAL EXPORTS FOR 1985

Commodity	Qty (MT)	Value FOB (Q thousands) (1)	% Value to U.S.(1)	% Value to CA and Panama (2)
<b>I. FRUITS</b>				
<b>A. <u>Fresh &amp;/or Frozen</u></b>				
fresh fruit	4	2,165.8	63	30
other fruit	947	136.3	95	5
other	10	0.9	0	100
grapes & apples	2,358	294.4	0	100
avocadoes	4,635	455.2	0	100
granadillas	1,947	191.1	2	96
pineapple	1,432	136.4	34	65
orange & tangerines	957	61.8	2	98
SUB-TOTAL,	15,940	3,736.8		
<b>B. <u>Processed</u></b>				
dried fruit	219	221.3	17	15
frozen or marinated	430	235.0	28	73
jelly or jam	357	257.7	2	98
fruit extract	150	59.0	72	28
SUB-TOTAL,	1,155	772.8		
<b>II. VEGETABLES</b>				
fresh vegetables	29,990	8,799.6	84	16
beans	240	209.2	0	100
garbanzos, peas & lentils	45	16.9	0	100
onions	7,506	804.9	1	99
fresh mushrooms	13	0.9	0	100
truffles	26	5.5	60	40
garlic	1,947	1,188.3	10	90
cabbage	20,419	951.4	1	99
tomato	14,978	1,306.3	1	99
peppers	1,030	107.3	2	98
lettuce	3,194	286.6	8	93
okra	25	2.8	9	91
other	5,526	2,666.1	92	0
SUB-TOTAL,	84,939	16,346.1		
<b>B. <u>Processed</u></b>				
tubers	602	83.7	22	11
vegetable soup	224	456.9	12	88
tomato juice	387	286.2	0	100
vegetable juice	15	10.0	0	100
canned vegetables	39	62.1	0	100
SUB-TOTAL,	1,266	898.9		

TABLE 3 (continued)

Commodity	(mt) (MT)	Value FOB (Q thousands' (1))	% Value to U.S. (1)	% Value to CA and Panama (2)
<b>III. GRAINS, NUTS, AND SPICES</b>				
sesame seed	14,517	10,153.4	38	0
soybe seed	287	259.9	41	12
Spices:				
vanilla	10	5.1	0	100
nutmeg	0	0.2	0	100
cinnamon	1	1.5	0	100
saffron	0	0.1	40	60
other	202	208.6	66	26
achiote	3	4.0	0	100
ginger	2	0.9	100	0
SUBTOTAL,	15,022	10,633.6		
<b>IV. NURSERY AND SEEDS</b>				
seeds, bulbs, live plants, etc.	12,450	7,201.4	53	3
cut flowers	3,374	2,734.8	83	2
SUB-TOTAL,	15,823	9,936.2		
<b>V. TOBACCO</b>				
	6,354	14,095.4	72	8
<b>VI. HONEY</b>				
	351	2,152.3	10	1
TOTAL,	140,851	56,277.6		

(1) The parallel exchange rate ranged from approximately Q1.55 to Q1.90 = \$1.00 over the course of 1985

(2) Other receiving countries include some in Europe and the Middle East.

Source: Bank of Guatemala

Importer's Guide to Non-Traditional Agricultural Products from Guatemala  
Office of the Agricultural Attache, Guatemala City, Guatemala

GUATEMALA WHOLESALE AND RETAIL PRICES  
1986

<u>Product</u>	<u>December 18, 1986 Prices</u>		<u>Change From January 1, 1986</u>	
	<u>Wholesale</u>	<u>Retail</u>	<u>Wholesale</u>	<u>Retail</u>
White corn	15.80	.20	22	33
Yellow corn	52.00	.23	59	44
Black bean	52.00	.60	27	33
Milled rice, first quality	67.20	.77	104	114
Milled rice, second quality	60.40	.70	95	106
Sorghum	21.80	.24	56	50
Garlic	98.00	.10	54	-83
Cauliflower	4.80	.32	-18	-16
Lettuce	5.90	.52	7	63
Potatoes	25.60	.30	229	150
Beets	7.70	.50	28	-17
Cabbage	3.00	.33	-50	-18
Tomatoes	6.10	1.65	-70	-67
Carrots	9.50	.62	58	3
Avocados	13.60	1.00	36	456
Bananas	12.30	.68	45	-9
Juice Oranges	2.80	.25	-30	-17

Source: INDECA (National Institute of Agricultural Marketing) weekly prices' report

TABLE 4a

GUATEMALAN RETAIL FOOD PRICES  
1986

<u>Food Item</u>	<u>Units</u>	<u>Average Price</u> <u>12/31/86</u>	<u>Percentage Change</u> <u>From 1/1/86 Prices</u>
Baby food	134 gr.	1.23	24
Beef, round steak	1 lb.	3.91	10
Bread, white	large loaf	1.49	96
Butter	8 oz.	2.17	30
Carbonated beverage	liter	.69	37
Cheese, fresh	540 grams	2.36	39
Chicken, whole pkgd.	1 lb.	1.50	17
Coffee, grnd	1 lb	1.21	- 17
Eggs, med. white	dozen	2.28	3
Flour, white	5 lbs.	2.82	52
Milk, whole, fresh	liter	.64	- 1
Potatoes, lrg.	1 lb.	0.43	80
Plantains	dozen	1.80	57
Sugar, granulated	5 lb.	1.49	35
Beans, black	1 lb.	0.67	33
Margarine	1 lb.	1.40	65
Milk, powdered	1 lb.(454 gr)	2.76	29
Oil, cooking	gallon	8.25	54
Rice, white	1 lb.	0.76	138
Tortillas, corn flour	10 (375 gr)	0.97	16

Source: Agency for International Development  
American Embassy, Guatemala

TABLE 5

## LOCATION OF NATIONAL PRODUCTION OF NON-TRADITIONAL CROPS

Crop	Area (ha)	Production (MT)	REGIONAL PRODUCTION (% OF NATIONAL)				
			I	IV	V	VI	VII
Apple (1)	n.a.	11,681	96	—	3	1	—
Asparagus (2)	53	51	30	—	56	14	—
Broccoli	207	1,782	38	—	28	34	—
Brussel sprouts *	24	244	10	—	90	—	—
Cabbage	200	45,133	90	—	10	—	—
Carrots (3)	199	2,850	48	—	52	—	—
Cashew	1,520	n.a.	—	99	—	—	1
Cauliflower	155	5,152	37	—	63	—	—
Chayote (4)	67	6,365	—	—	100	—	—
Citrus: Orange	253	n.a.	—	17	—	—	83
Lemon (5)	127	n.a.	—	47	6	—	47
Garlic	n.a.	4,545	99	—	1	—	—
Honey (6)	—	40	—	—	—	—	—
Lettuce	32	2,986	59	—	41	—	—
Macadamia	22	1	—	100	—	—	—
Mango	156	n.a.	—	92	—	—	8
Melon: Cantaloupe & Honey dew	1,398	18,859	—	26	4	35	35
Okra	415	4,111	—	—	4	—	96
Onion	1,444	30,172	36	—	2	52	10
Ornamentals *	n.a.	n.a.	—	60	40	—	—
Pineapple	463	10,831	—	97	—	1	2
Plantain (7)	n.a.	n.a.	—	56	—	—	44
Root Crops:							
Taro	21	n.a.	—	—	—	—	100
Cassava (8)	100	500	—	—	—	—	100
Sapodilla	22	n.a.	—	23	—	—	77
Snow pea	99	663	—	—	100	—	—
Spices: Ginger	20	5,250	—	100	—	—	—
Curcuma	1	n.a.	—	—	—	—	100
Strawberry	33	308	—	—	100	—	—
Tomato	1,850	51,260	3	2	25	12	59
Watermelon (9)	304	2,610	—	6	34	—	60
<b>TOTAL</b>	<b>9,185</b>	<b>205,354</b>	<b>18</b>	<b>28</b>	<b>22</b>	<b>5</b>	<b>27</b>

\* Combined data from field survey and Ministry of Agriculture statistics.

- (1) Data from report on the Guatemalan Apple Industry, Office of the Agricultural Attaché, Guatemala. March, 1986.
- (2) Data from the Asparagus Producers and Exporters Guild.
- (3) These values are low compared to the 1979 Agricultural Census figure of 20,100 MT of carrot production.
- (4) Chayote production was a reported 36,315 MT in the 1979 Census. This is probably a more accurate figure since chayote is a perennial crop.
- (5) Citrus production was registered as 306,000 MT of oranges and 48,185 MT of lemons in 1979.
- (6) Honey is produced in every region of the country. Production estimates reach 4,180 MT/year.
- (7) Plantain production was listed as 4.5 million MT in 1979. Much of the production is handled by the banana companies.
- (8) This value is extremely low compared to the 1979 production of 69,388 MT. In 1979, approximately 30% of the production was in El Progreso Department (Region V), 25% in Escuintla (Region IV), and 25% in Alta Verapaz (Region II). The survey did not cover this production.
- (9) Watermelon production reached 1,000 MT in 1979. Total plantings were probably reduced due to lack of market, but 2,610 MT still appears low.

Note: Most crops grow in all regions but are concentrated in specific areas; if the regional total was less than 1% of the national production, it does not appear in the table.

Source: All data was derived from the field survey unless otherwise noted. If information was not available, "n.a." is listed.

TABLE 5a

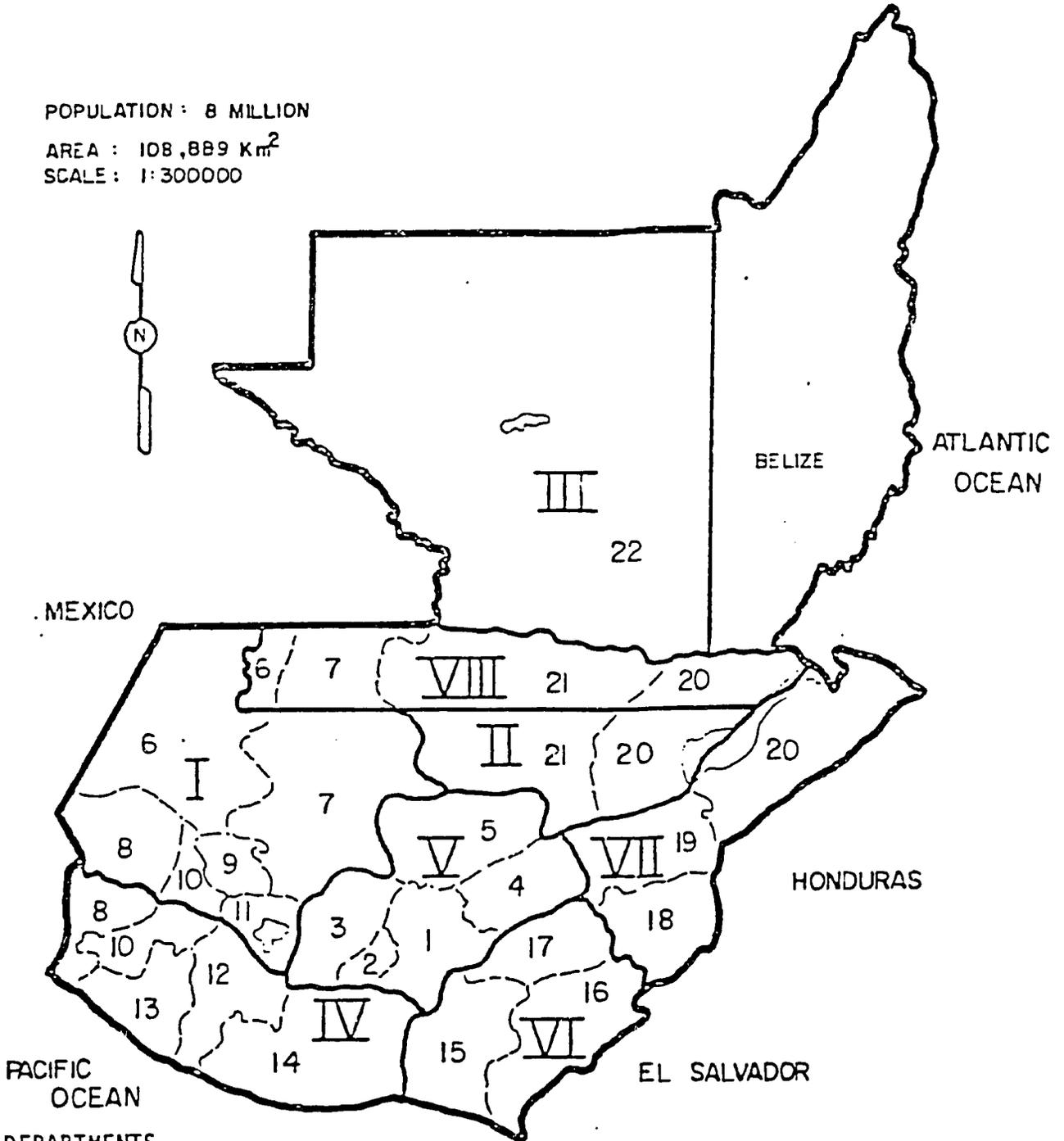
# GUATEMALA

MINISTRY OF AGRICULTURE  
REGIONS AND GOVERNMENTAL DEPARTMENTS

POPULATION : 8 MILLION

AREA : 108,889 Km<sup>2</sup>

SCALE : 1:300000



**DEPARTMENTS**

- 1. GUATEMALA
- 2. SACATEPEQUEZ
- 3. CHIMALTENANGO
- 4. EL PROGRESO
- 5. BAJA VERAPAZ
- 6. HUEHUETENANGO
- 7. QUICHE
- 8. SAN MARCOS

- 9. TONTOCAPAN
- 10. QUEZALTENANGO
- 11. SOLOLA
- 12. SUCHITEPEQUEZ
- 13. RETAHULEO
- 14. ESCUINTLA
- 15. SANTA ROSA
- 16. JUTIAPA

- 17. JALAPA
- 18. CHIQUIMULA
- 19. ZACAPA
- 20. IZABAL
- 21. ALTA VERAPAZ
- 22. PETEN

PRICE VARIABILITY OF GUATEMALAN NON-TRADITIONAL AGRICULTURAL EXPORTS  
(FOB PRICES IN U.S. DOLLAR EQUIVALENTS PER METRIC TON, 1984 FIGURES)\*

Commodity	Minimum	Price Average	Maximum
Apple	40.00 (March)	270.00	830.00 (March)
Asparagus <sup>1</sup>	1,000.00 (April)	1,040.00	1,080.00 (April)
Broccoli	130.00 (January)	360.00	760.00 (January)
Brussel Sprouts	760.00 (March)	890.00	990.00 (November)
Cabbage	20.00 (November)	280.00	370.00 (May)
Cantaloupe & Honey Dew <sup>2</sup>	40.00 (March)	810.00	1,026.00 (February)
Carrot	60.00 (December)	230.00	330.00 (December)
Cassava	80.00 (9 months)	100.00	300.00 (January)
Cauliflower	50.00 (Nov, Dec)	260.00	970.00 (January)
Chayote	250.00 (January)	250.00	250.00 (January)
Citrus	180.00 (August)	710.00	1,420.00 (September)
Coconut	1,670.00 (August)	1,990.00	2,530.00 (January)
Flowers <sup>3</sup>	110.00 (Jan, Nov)	781.00	45,590.00 (May)
Garlic	90.00 (February)	190.00	290.00 (October)
honey	610.00 (August)	1,060.00	1,880.00 (July)
Lettuce	70.00 (December)	90.00	350.00 (December)
Macadamia	2,120.00 (November)	2,190.00	2,230.00 (June)
Mango	50.00 (May)	360.00	1,150.00 (March)
Onion <sup>4</sup>	270.00 (June)	700.00	820.00 (May)
Onion	40.00 (December)	100.00	150.00 (December)
Ornamentals <sup>5</sup>	10.00 (November)	3,600.00	762,930.00 (July)
Papaya	130.00 (Aug, Sept)	170.00	220.00 (June)
Pineapple	130.00 (Aug, Sept)	150.00	200.00 (June)
Plantain	40.00 (March, Dec)	170.00	570.00 (September)
Sapodilla	180.00 (Jan, Feb)	180.00	180.00 (Jan, Feb)
Snow Pea <sup>6</sup>	180.00 (November)	1,062.00	8,600.00 (September)
Strawberry	70.00 (February)	450.00	2,200.00 (January)
Tomato	150.00 (March)	270.00	330.00 (March)
Watermelon	80.00 (April)	80.00	80.00 (April)

\* Absolute minimums and maximums and the month in which they occurred are listed. This variation may relate more to differences in quality rather than in the supply and demand. Averages were calculated from monthly averages. Average 1985 prices appear in Table 10. Many of the prices dropped in 1985, perhaps due to greater competition.

1. Maximum price for asparagus in 1983 was \$2,530/MT. Prices in 1985 were similar to those of 1984, however.
2. Although receiving different prices, all types of melons are generally listed together in the Guatemalan statistics. These prices plummeted in 1985 since producers throughout the region saw the opportunity for earnings in 1984 and flooded the market the next year.
3. Prices reflect the varieties of flowers exported.
4. These values are from 1983. In 1984, only one shipment was made at a price of \$90/MT. Onion is also exported in a frozen or pickled form.
5. Prices reflect the varieties of plants exported.
6. Snow pea prices were quite volatile in 1984, whereas in 1983 prices averaged \$880/MT and showed little variation. This was probably due to attempts to play the market in 1984 since snow peas were seen as an opportunity for high earnings and more widely planted for that season.

Source: Analysis of Customs Statistics by the Ministry of Agriculture.

Importer's Guide to Non-Traditional Agricultural Products from Guatemala  
Office of the Agricultural Attache, Guatemala City, Guatemala

TABLE A-6. RATES FOR SEA FREIGHT OF NON-TRADITIONAL AGRICULTURAL PRODUCTS FROM PORT SANTO TOMAS, GUATEMALA, TO MIAMI, FLORIDA. APRIL 1986.

Company	Product	Freight (lbs)		Rate (FOB)	Additional Costs	
		Min	Max			
C.C.T (primarily roll on-roll off)	fresh vegetables (refrigerated)	22,000	42,000	\$6.60/100 lbs	U.S. Handling Demurrage	\$350 max/trailer \$ 76/trailer
	melons (refrigerated)	36,000	42,000	flat rate - \$2,200/40' trailer (+\$0.125/lb excess)	Inland transport to Port Sto. Tomás Sto. Tomás handling	Q230.00* Q 0.0021/lb real weight
	pineapple (refrigerated)	30,000	44,000	\$5.60/100 lbs	Bill of Lading	Q 12.50
	frozen vegetables	35,000	42,000	\$5.80/100 lbs	All of the above minus U.S. handling	
Sea-Land (primarily container)	various non- traditional agri- cultural products (excluding shrimp, for example)			\$2,000-\$2,400 per 40' trailer	Inland transport to Port Sto. Tomás	Q 1.08/km*

\* Inland transport costs will probably increase due to pressure from truckers. CCT does not charge strictly by km so the Guatemala City price is listed.

Note: Prices are subject to change without notice. Current exchange rate is Q2.75/\$1.00

Source: Importer's Guide to Non-Traditional Agricultural Products from Guatemala  
Office of the Agricultural Attache, Guatemala City, Guatemala

TABLE A-7. SPECIFIC RATES FOR INTERNATIONAL AIR FREIGHT OF NON-TRADITIONAL AGRICULTURAL PRODUCTS FROM GUATEMALA.  
( U.S. \$) APRIL 1966

Airline		K i l o g r a m s						Minimum Cargo	
		-45	+45	+100	+200	+300	+500		+1,000
TACA * **	to Houston . . . . .	1.73	1.73	1.24	----	1.24	1.11	----	40.00
	to Los Angeles . . . . .	2.47	2.47	1.72	----	1.72	1.69	----	40.00
	to Miami . . . . .	1.26	0.95	0.95	----	0.78	0.63	----	40.00
	to New Orleans . . . . .	1.26	0.95	0.95	----	0.78	0.63	----	40.00
PAN AM	to Houston . . . . .	----	----	----	----	----	0.47	----	----
	to Los Angeles . . . . .	----	----	----	----	----	----	0.45	----
	to Miami . . . . .	----	----	----	----	----	0.42	----	----
AVIATECA **	to Houston . . . . .	----	1.71	1.71	----	1.24	1.10	1.10	45.00
	to Miami . . . . .	----	1.63	1.25	----	1.03	0.83	0.83	45.00
	to New Orleans . . . . .	----	1.63	1.25	----	1.03	0.83	0.83	45.00
EASTERN	to Miami . . . . .	----	----	----	0.51	----	----	----	----
LACSA	to Los Angeles . . . . .	----	----	0.66	----	0.68	0.45	----	----
MEXICANA	to Houston . . . . .	----	----	----	----	0.48	----	----	----

\* The following have to be added to the total.

Taxes	- Sales (IVA)	7%
	- Services (timbres)	3%
Handling		\$2.25
Guide		\$5.00

\*\* Rates listed for non-traditional products such as melons, flowers, and plantains were used for all airlines except TACA and AVIATECA which gave general rates.

Note: Prices subject to change without notice.

Source: Importer's Guide to Non-Traditional Agricultural Products from Guatemala  
Office of the Agricultural Attache, Guatemala City, Guatemala

APPENDIX C

PRIMARY PARTIES CONTACTED BY RECONNAISSANCE TEAM

PRIMARY PARTIES CONTACTED

Arturo Aldana Aguirre  
Socio Director  
KPMG - Praun Reyes Adlana & Asociados  
Centro Financiera Torre I  
7a. Avenida 5-10, Zona 4, Niveles 16 y 17  
Apartado Postal 1020, Guatemala, C. A. Telephone: 311229, 311701  
311734

Robert R. Anlauf  
Consejero Agricola  
Servicio Extranjero Agricola  
Departamento de Agricultura de los Estados Unidos  
Adjunto a la Embajada Americana  
Avenida la Reforma 7-01, Zona 10  
Guatemala City, Guatemala, C.A. Telephone: 311541 Ext 300

Alfonso Aycinena V.  
Alpine Export Company  
16 Calle 4-53, Zona 10  
Guatemala City, Guatemala C. A. Telephone: 370691 370974  
Telex 5627 Eliza-GU.

Roberto Augusto Calderon Chacon  
Economista  
Promocion Y Estudio de los Sectores Productivos  
Banco Centroamericano de Integracion Economica  
16 Calle 7-44, Zona 9  
Guatemala, C. A. Telephone: 311260/62/65  
311268 61744-65722  
Telex: 6012 BANCIE GU

Ing. Eduardo A. Castillo D.V.  
Industrias Agricolas Centroamericanas, S.A.  
2a. Avenida 14-61, Zona 10  
Guatemala, C.A. Telephone: 680303  
Telex: 4182 CERVEN GU

Lic. Jorge G. Cordova S.  
Gerente General  
Del Molino  
2a. Av. 5-24, Zona 9  
Guatemala, C. A. Telephone: 63182 316033  
Telex: 5479 RISECO GU

Lic. Arnulfo Coto Martinez  
Promotor de Credito  
Gremial de Exportadores de Productos No Tradicionales  
Camara de Industria de Guatemala  
6o. Nivel Ruta 6, 9-21, Zona 4  
Guatemala, C. A. Telephone: 318525 315947  
325683

Alexander De Beausset  
Gerente De Produccion  
Ayasal  
Edificio 74, Oficina 301  
7a. Avenida 3-74, Zona 9  
Guatemala, C. A. Telephone: 314546

Lic. Jorge A. Donis G.  
Jefe de Seccion II  
Credito Bancario  
Banco de Guatemala  
7a. Av. 22-01, Zona 1  
Guatemala, C.A.

Telephone: 534053 Ext. 430

Philip A. Farr  
Ave Hincapie, 5-91  
Zona 13  
Guatemala, C.A.

Telephone: 65163

Philip A. Farr  
19 Calle 9-69 Zone 14  
Guatemala, C.A.

Telephone: 683486 682708

Jose R. Fernandez G.  
Presidente Y Gerente General  
Industria de Ganaderos Guatemaltecos, S.A.  
Exguapagra  
Planta Progesadora de Carne  
KM 5 1/2 Carretera Al Atlantico, Zona 17  
Guatemala, C. A.

Telephone: 560169, 560193  
560415  
Telex: 5327 IGGSA-GU

Johanna Fiallos  
Director  
Investment and Export Promotion Department  
Non Traditional Products Exporters Guild  
Edificio Camara De Industria  
6o. Nivel Ruta 6, 9-21, Zona 4  
Guatemala, C.A.

Telephone: 318525 315947  
325683  
Telex: GREXPO-GU 3100

Ing. Fernando Garcia-Salas  
Director  
Consultores Agroindustriales  
4a. Ave. 3-68, Zona 9  
Edificio Intecunsa, Oficina 309, 3er. Nivel  
Guatemala, C. A.

Telephone: 318493/322015  
Telefax: 318483

Alfredo Gil Spillari  
Consejo Nacional Del Algodon  
7a. Avenia 6-26, Zona 9  
Edificio Plaza 6-26, 8o. Nivel Oficina 806  
Guatemala, C. A.

Telephone: 324540 324563

Carlos E. Giron S.  
Gerente General  
CATI, S.A.  
18 Avenida 40-18, Zona 8  
2do. Nivel  
Guatemala City, Guatemala C. A.

Telephone: 720479 720525  
720555 41090  
Telex: 5684 CATISA GU

Eduardo Gonzalez Castillo  
Presidente  
GEXPO - Gremial De Exportadores  
de Plantas Ornamentales  
Adscrita a la Camara de Exportacion  
Ave. La Reforma 9-24, Zona 9  
Guatemala, C. A. Telephone: 320868/9  
Telex: 5411 MOGO GU

Max Edgar Gonzalez Salan  
Jefe Oficina Regional  
Banco Centroamericano de Integracion Economica  
16 Calle 7-44, Zona 9  
Guatemala, C. A. Telephone: 311260/62/65  
311268 61744-65722  
Telex: 6012 BANCIE GU

Instituto Geografico Nacional  
Avenida Las Americas 5-76, Zona 13  
Guatemala, C. A.

Dr. Thomas C. Ivers  
Agency for International Development (A.I.D.)  
8a. Calle Y Av. Reforma, Zona 9  
Guatemala City, Guatemala C.A. Telephone: 322431

Fernando Lara C.  
Coordinator General  
Pavos Chumpis, S. A.  
1a. Calle 34-47, Zona 7  
Guatemala, C. A. Telephone: 914085 913731

Felipe Manteiga  
Programas del Sector Privado  
USAID/Guatemala  
APO Miami 34024 Telephone: 310914/24  
Ext. 622

Guillermo Matta Ovalle  
Oficina de Programas del Sector Privado (OPSP)  
8a. Calle 7-86, Zona 9  
Guatemala, C. A. Telephone: 310914/310924  
321739/66352

Armando Merida Ruano  
Quezada, Ibarguen Y Escobar  
Plaza Panamericana, Nivel 7  
La Raforma, 9-00 Zona 9  
Guatemala, C.A. Telephone: 312001

Milton E. Molina Espinoza  
Presidente  
Ganaderia Rio Seco, S. A.  
Desmotadora "Las Acacias" Y CIA. LTDA.  
2a. Av 5-24, Zona 9  
Guatemala, C.A. Telephone: 316033 63182  
322381  
Telex: 5479 RISECO GU

Luis Nadel  
American Club  
Guatemala, C.A.

Telephone: 312927

Jose Oromi M.  
Training Advisor  
International Consulting Division  
PROEXAG  
Edif. Camara de Industria  
8vo. Nivel  
Ruta 6, 9-21, Zona 4  
Guatemala City, Guatemala C.A.

Telephone: 502/2/31-37-36  
32-35-90  
Telex: 3053100

Rafael F. Passarelli  
Presidente  
Internacional de Alimentos Procesados, S. A.  
8a. Calle 6-27, Zona 4  
Guatemala, C. A.

Telephone: 64456 320042  
321042  
Telex: 3180 NINSA GU

Ing. Jose Maria Passarelli P.  
Administrador Unico  
Paragsa/Capritex, S.A.  
8a. Calle 6-33, Zona 4  
Guatemala, C. A.

Telephone: 65121 67908  
62207 Y 61779

Ing. Jose Maria Passarelli P.  
8a. Calle 6-41, Z-4  
Guatemala, C. A.

Telephone: 67813

Ing. Roberto E. Perdomo  
Consultor Agricola  
Avenida la Reforma 7-01, Zona 10  
Guatemala City, Guatemala C.A.

Telephone: 311541 Ext 300

Arturo Pichardo S.  
Foremost Dairies De Guatemala  
Calz. "Raul Aguilar Batres"  
32-33 Zona 12  
Guatemala, C.A.

Telephone: 762178, 762431  
Telex: 5733 FORSA GU

Carlos F. Poza  
Commerical Attache  
U.S. Embassy - Guatemala  
APO Miami, FL 34024

Telephone: 31 1541

Adam S. Praun  
Partner  
Peat Marwick  
Centro Financiero, Torre I  
7a. Avenida 5-10, Zona 4, Niveles 16 y 17  
Apartado Postal 1020  
Guatemala, C. A.

Telephone: 311229 311701  
311734  
Telex: 5128 PRAUN GU

Adam Praun Tarnawski  
Socio  
KPMG  
Centro Financiero, Torre I  
7a. Avenida 5-10, Zona 4, Viveles 16 y 17  
Apartado Postal 1020  
Guatemala, C. A.  
Telephone: 311229 311701  
311734  
Telex: 5128 PRAUN GU

Fernando Jose Quezada Toruno  
Quezada, Ibarguen y Escobar  
Bufete Miembro de Asociacion Juridica Internacional  
Plaza Panamericana Nivel 7  
La Reforma 9-00, Zona 9  
Guatemala, C. A.  
Telephone: 312001 312004  
312007 312009  
Telex: 5384 FRENCH GU

Rodolfo Quezada  
Director de Proyectos  
Glidden Paints  
Av. Reforma 3-48, Zona 9  
Edificio Anel, 1er. Nivel  
Apartado Postal 1648  
Guatemala, C. A.  
Telephone: PBX 373937  
Telefax: 316578  
Telex: 5616

J. Jose Rabanales R.  
Director  
Departamento de Creditos  
Banco de Guatemala  
7a. Av. 22-01, Zona 1  
Guatemala, C.A.  
Telephone: 534053 Ext. 742

Roberto Rivera Neutze  
Muebles Siesta  
15 Avenida 1-34 Zona 13  
Guatemala, C.A.  
Telephone: 61268, 67855

Ing. Francisco Rohrmann Castillo  
Presidente  
Consultores Agroindustriales  
4a. Av. 3-68, Zona 9  
Edificio Intecunsa, Oficina 309, 3er. Nivel  
Guatemala, C. A.  
Telephone: 318493/322015  
Telefax: 318483

J. Federico Rossell A.  
Sub-Gerente  
Financiera Industrial Y Agropecuaria, S.A.  
Avenida La Reforma 10-00, Zona 9  
Guatemala, C. A.  
Telephone: 310303, 310401  
and 321733

Michael R. Suarez  
Vice President and Manager  
Bank of America, NT & SA  
11th Street 5-07, Zone 1  
Guatemala, C. A.  
Telephone: 512266/75  
Cable: BANKAMERICA  
Telex: BANKAM GU 5205

Ing. Agr. Julio Alfredo Trejo R.  
Director General  
Direccion General de Servicios Agrícolas - DIGESA  
12 Avenida 19-01, Zona 1  
Guatemala, C. A. Telephone: 23801-4

Ing. Juan Jose Urruela V.  
FRUDESA  
1a. Calle 34-47, Zona 7  
Guatemala, C. A. Telephone: 921115 921125  
Telex: 5023 LALUZ-GU

Federico Weller S.  
Finca "La Igualdad"  
Post Office Box 235 A  
11 Calle 6-58, Zona 9  
Guatemala, C. A. Telephone: 63230 y 313005  
Telex: 5891 PROCAF GU

Alberto Yarhi  
Granja, La Meseta  
Km 32 1/2, Carretera a Antigua  
San Lucas, Sacatepequez  
A. P. 331. Antigua  
Guatemala, C.A. Telephone: 532682, 534222  
691456

Ruth Zachelmayer  
The Importer  
Division of Guatemala Imports  
3159 E. Atlantic Blvd.  
Pompano Beach, Florida 33062 Telephone: 305-785-2020

APPENDIX D

RESUMES OF MEMBERS OF RECONNAISSANCE TEAM

MEMBERS OF THE RECONNAISSANCE SURVEY TEAM

Marshall Burkes, Ph.D.

Dr. Burkes is a international financial management consultant who specializes in financial improvements, problem portfolios (securities, loans and equities) problem companies and financial institution building. His base of operation is Washington, D.C.

His twenty-five years of professional experience includes funding, lending, administration and consulting. Major assignments have been successfully completed in the financial community of several countries. Prior appointments include the Chief Financial Officer of the International Finance Corporation, an affiliate of the World Bank and the Director of Finance and Fiscal Agent for the Federal Home Loan Banks.

With an Oklahoma cattle ranching background, Dr. Burkes has degrees from Oklahoma State University, Purdue University, and Ohio State University. He is a member of the International Agricultural Economic Association and a Certified Member of the American Society of Agricultural Consultants.

Dr. Gary O. Conley, Ph.D.

Dr. Conley, team chairman, is president of Conley Farms, Inc., a consulting and management organization with headquarters in the high plains of the Central U.S. He provides consulting services to livestock producers, agribusiness firms, development groups and government agencies. These services include breeding programs, genetic analyses, employee training, and the design and supervision of production programs.

Using his broad experience in agricultural research and production, Dr. Conley has designed breeding, research and development programs for major corporations as well as implementing production and marketing programs. He has also reviewed projects for development programs in Latin countries and supervised training programs for participants in new livestock development programs. Dr. Conley also supervises the operation of his own ranching and farming operation which includes a beef cattle breeding programs.

Dr. Conley received his B.S. in Animal Science and Agricultural Economics from Iowa State University in 1954 and his M. S. in Beef Breeding in 1956 from Oklahoma State University. He received his Ph.D. from Iowa State University in 1968 in Biometrics. He is a member of both the American Society of Animal Science and American Genetics Associations. He is a Certified Member of the American Society of Agricultural Consultants and is currently serving as a member of the Board of Governors of ASAC International.

Michael W. Hurley

Mr. Hurley is the ASACI Director of International Agribusiness Teams, working under the 1985, 1986 and 1987 grant agreements with the U.S. Trade and Development Program. To date, he has directed teams to the Ivory Coast, the Dominican Republic, Ecuador, Grenada, Kenya, the Philippines, Belize, and Guatemala.

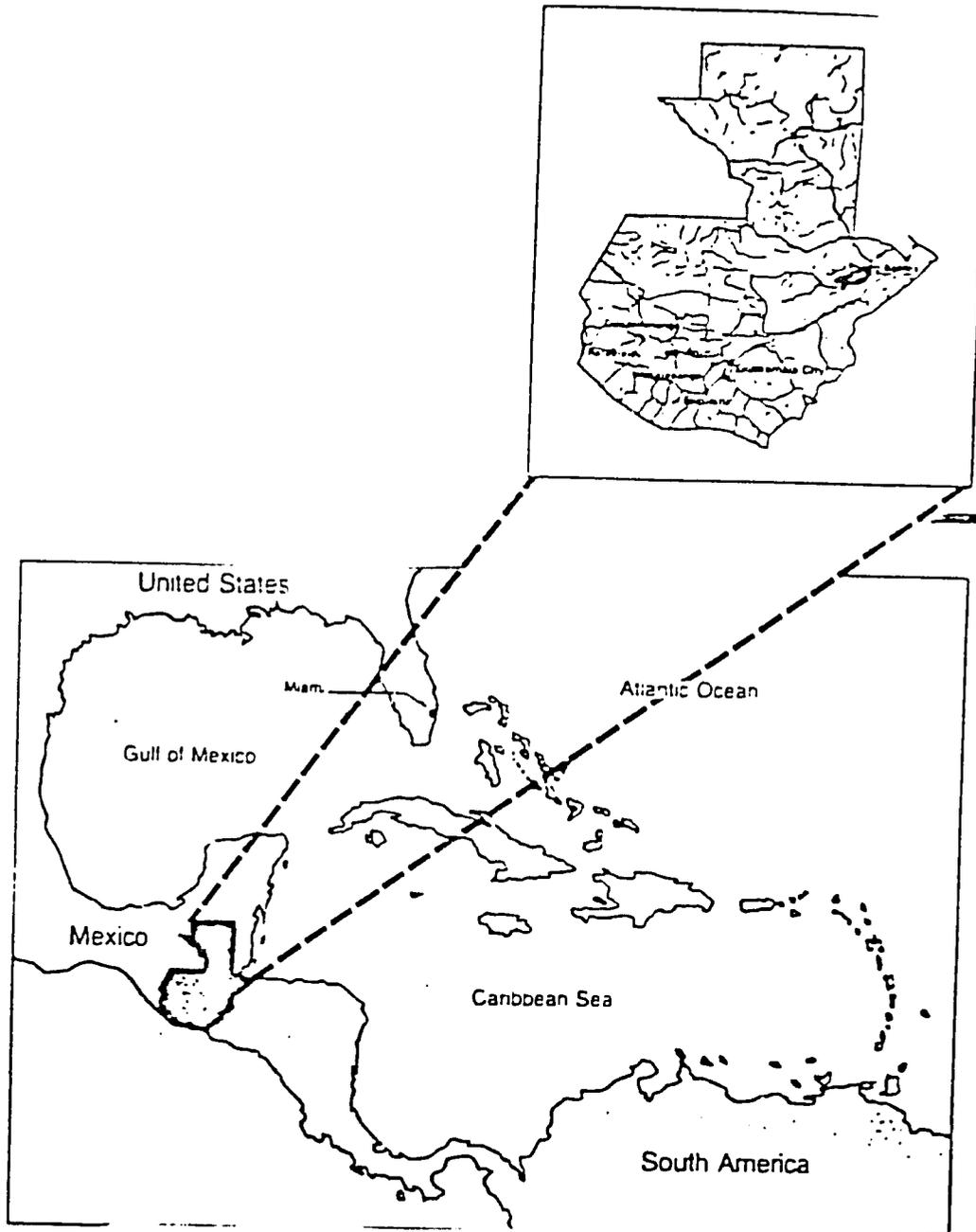
Mr. Hurley's previous experience includes nine years of work in Latin America as sales and marketing manager for an agricultural development company, and as project director for the design and installation of grain storage, handling, and processing facilities. His agricultural marketing and development work encompassed nearly all countries of Latin America.

Mr. Hurley has a Master's degree in Spanish with a concentration in Latin American studies. He is completely fluent in Spanish and has a working knowledge of Portuguese and French.

APPENDIX E

MAPS

REGIONAL MAP OF GUATEMALA





PH 10/15/88

AGRIBUSINESS INVESTMENT OPPORTUNITIES  
IN GUATEMALA

VOLUME II: PROJECT PROFILE REPORT

PREPARED BY  
THE  
AMERICAN SOCIETY OF AGRICULTURAL CONSULTANTS INTERNATIONAL  
UNDER A GRANT FROM  
THE  
U.S. TRADE AND DEVELOPMENT PROGRAM

FEBRUARY 2, 1988

TABLE OF CONTENTS

	Page
I. INTRODUCTION . . . . .	1
II. AGRIBUSINESS INVESTMENT CONDITIONS . . . . .	3
A. Country Background . . . . .	4
B. Investment Climate . . . . .	5
C. Agribusiness Survey . . . . .	6
D. Potential Investment Opportunities . . . . .	7
III. ONE-PAGE SUMMARIES OF PROJECT PROFILES . . . . .	8
IV. PROJECT INVESTMENT PROFILES . . . . .	15
A. ASPARAGUS . . . . .	16
1. Project Description and Rationale. . . . .	16
2. Market Considerations . . . . .	16
3. Technical/Economic Considerations . . . . .	17
4. Financial Considerations . . . . .	17
5. Prospective Partners . . . . .	19
B. CANTALOUPE . . . . .	20
1. Project Description and Rationale. . . . .	20
2. Market Considerations . . . . .	20
3. Technical/Economic Considerations . . . . .	22
4. Financial Considerations . . . . .	25
5. Prospective Partners . . . . .	26
C. HERBS, SPICES AND BOTANICAL . . . . .	27
1. Project Description and Rationale. . . . .	27
2. Market Considerations . . . . .	27
3. Technical/Economic Considerations . . . . .	27
4. Financial Considerations . . . . .	29
5. Prcspective Partners . . . . .	29
D. FROZEN AND DEHYDRATED FRUITS AND VEGETABLES . . . . .	32
1. Project Description and Rationale. . . . .	32
2. Market Considerations . . . . .	33
3. Technical/Economic Considerations . . . . .	35
4. Financial Considerations . . . . .	36
5. Prospective Partners . . . . .	38

	Page
E. SEED PRODUCTION . . . . .	40
1. Project Description and Rationale. . . . .	40
2. Market Considerations . . . . .	41
3. Technical/Economic Considerations . . . . .	42
4. Financial Considerations . . . . .	44
5. Prospective Partners . . . . .	44
F. CUT FLOWERS AND ORNAMENTAL PLANTS . . . . .	47
1. Project Description and Rationale. . . . .	47
2. Market Considerations . . . . .	47
3. Technical/Economic Considerations . . . . .	48
4. Financial Considerations . . . . .	48
5. Prospective Partners . . . . .	49
V. PROJECT DESCRIPTIONS . . . . .	51
A. Frozen Berries . . . . .	52
B. Irrigation Equipment Sales . . . . .	55
C. Animal Breeding Technology Project. . . . .	57
D. Production and Export of Fresh Vegetables . . . . .	61
E. Marine Shrimp Farming . . . . .	65
VI. APPENDICES . . . . .	67
A. Members of the Profile Team . . . . .	68
B. Maps . . . . .	71

## I. INTRODUCTION

Working under a Grant Agreement with the U.S. Trade and Development Program (TDP), the American Society of Agricultural Consultants International (ASACI) sent a five-man Project Profile Team to Guatemala to examine project opportunities identified by an earlier Reconnaissance Survey Team (see: Agribusiness Investment Opportunities in Guatemala, Volume I: Reconnaissance Survey Report, August 4, 1987). The summary pages of the reconnaissance report form Section II of this document. The earlier Team identified fifteen project areas for potential investment opportunities.

From November 30, - December 18, 1987, the five-man team of consultants worked in Guatemala developing and preparing information leading to this present document Agribusiness Investment Opportunities in Guatemala, Volume II: Project Profile Report. The team was composed of the following members: Gary Conley, Team Chairman, Perryton, Texas; John Baker, Bethesda, Maryland; Michael Chilton, Turner, Oregon; Wayne Sweatt, Memphis, Texas; and Michael W. Hurley, McLean, Virginia. A professional profile of the team members appears in the Appendix section.

The project investment profiles prepared by the Team offer the prospective U.S. investor essential data on market potential, technical viability, investment costs, return on investment, and suitable local partners. All calculations are done in U.S. dollars unless otherwise noted. The selected profiles are summarized in Section III, and then fully presented in Section IV of the report.

It should be noted that because the report is only a preliminary analysis of the different project opportunities, each potential investor must make his own independent investigation and assessment of a prospective venture before making any investment decision.

Potential investors should also be aware of certain U.S. trade laws that affect investment in any project designed to promote exports to the United States, and are advised to consult with their trade counsel to assess such concerns.

To facilitate follow-up on individual project opportunities, the report lists potential Guatemalan partners interviewed by team members. The ASACI consultants who prepared this report are available to the potential investor interested in following up on Guatemalan project opportunities, as is the agricultural expertise of other consultants who are members of the American Society of Agricultural Consultants International.

The prospective investor may obtain the current study (and the earlier report) at a reasonable cost, as well as information on ASACI consultants by contacting the Society's headquarters at the following address:

American Society of Agricultural Consultants International  
8301 Greensboro Drive  
Suite 260  
McLean, Virginia 22102

Telephone: (703) 893-8303/04  
Telex: 704419 ASACI MCLN UD

SECTION II

AGRIBUSINESS INVESTMENT CONDITIONS

## COUNTRY BACKGROUND SUMMARY -- GUATEMALA

### Geography

Location: In Central America. To the west and north is Mexico. East of Guatemala lie Belize, Honduras, El Salvador and the Caribbean Sea. The southern border is the Pacific.

Size: 42,000 sq mi, four geographic regions--two coastal areas, the highlands and the northern Peten area.

Climate: Varied. From cool temperatures in the highlands, to hot and humid on the coasts. Many micro climates. Rainfall varies by region 20-200 inches/year. Wet and dry seasons.

### People

Population: 8.4 million, most populous of Central American republics. Heavy rural population, concentrated in highlands. Growth rate 3.1%/yr. 50% under 18 years old. Life expectancy 62 years. Per capita income \$1,100.

Ethnic Groups: Predominantly descendants of Maya Indians, and mestizos (Spanish-Indian), ladinos (westernized Mayans).

Language: Officially Spanish, many Indian dialects spoken in the highlands. Many business people also speak English. Literacy level 45%.

Work Force: 2.7 million--60% in agriculture, 26% industry, 11% services. Min. ag worker wage \$2/day. Small but growing union movement. Un-/Under-employment 45%.

### History, Government, Defense

History: Center of ancient Mayan civilization, Spanish conquest in 1524, independence 1821. Long history of dictatorships broken by brief periods of elected government.

Government: New constitution in effect January 14, 1986 with swearing in of new president Vinicio Cerezo and national Congress for 5 year term. Judiciary branch of government.

Defense: President, Commander in Chief of Armed Forces, 34,000. Since 1982, counterinsurgency operations successful to point where no threat to national security.

### Economy

GDP: \$8.9 billion (1985), annual growth rate 1.1%. Agriculture-26%, trade-25%, industry 16%.

Trade: Exports, 1985, \$1.1 billion, coffee, cotton, sugar, meat, cardamom, bananas, petroleum. Imports, 1985, \$1.2 billion, fuels, lubricants, machinery. U.S. major trading partner at about 35% of total trade. Access to U.S. market through Caribbean Basin Initiative.

Exchange Rate: floating interbank rate 2.45 quetzales-US\$1 (December, 1987), import-export rate 2.5q-US\$1, official rate 1q-US\$1. Moderate inflation.

### Infrastructure

Transportation: Several flights daily to U.S., Europe--2.5 hours to Miami. Air cargo capacity increasing but still a bottleneck. Two ocean ports, Pacific and Caribbean. Paved roads connect major towns and ports, relatively good shape.

Power: Hydroelectric, abundant, \$0.05 kwh.

Communications: Good, international direct dialing.

## INVESTMENT CLIMATE SUMMARY-GUATEMALA

### Economic Policy and Measures

Policy: foster positive investment climate with necessary guarantees and securities for business to prosper.

Measures: a simplified exchange rate based on currency's free market value, an export tax as a temporary revenue measure, removal of many price controls, increase in interest rate to combat inflation and boost savings, new social programs balanced against revenues.

### Laws and Policy Affecting Foreign Investments

Establishing a Business: By registering company with mercantile registry and local IRS. Usual forms of business organization. Preferred business arrangement, joint venture with receipt of shares in joint stock company.

Foreign Investments: No restrictions on percentage of foreign ownership in a Guatemalan company.

Incentives: For businesses creating employment and generating foreign exchange--no import duties on equipment, supplies, fuel; income tax exemption 10 years, value added tax exemption on export products, tax exemption certificate for 15% of non-traditional exports.

Repatriation of Profits: No prohibition of repatriation of dividends, profits and original capital. However, past shortage of foreign exchange. Dollars available for export companies that generate dollars.

### Regulations Governing Business Operations

Export and Import: "One stop shop" for permits, CBI duty free access to U.S. market, technology/trademarks protected, SGS inspection group enforces quality and price controls on all imports and exports.

Labor and Social Legislation: Labor code, seasonal labor \$2/day, unskilled \$2.50/day plus 54% benefit package. 15% labor unionized, government favor increased unionization.

Taxation: Income tax, 12% withholding, scale from 5-48%. Corporate tax 34%.

### Investment Issues

Land Reform: No large base of people in poverty by international standards, Maya Indians own land. Isolated tracts of foreclosed land divided up for small farms.

Convertibility of Currency: With inter bank market, mechanism available to achieve convertibility with minimum uncertainty. External debt is modest.

Availability of Capital: Not available except from profits of established firms. No institution to issue stock in the local market. With 8% interest and inflationary conditions, no incentive to save and build a capital base.

Availability of Credit: Banks with excess liquidity, but rely on 200% collateral for loans, no cash flow lending. Intermediate funds needed for under collateralized operator.

Availability of Insurance: Overseas Private Investment Corporation, (OPIC) provides political risk and currency exchange insurance, loan guarantees, and letters of credit.

## AGRIBUSINESS SURVEY -- GUATEMALA

### Agricultural Production Sector

Importance: \$807 million (1986) in ag exports accounting for 72% of total value of exports.

Traditional Crops: Domestic market--bananas, dry black beans, wheat, rice, cassava, squash, pumpkins, cabbage, many tropical fruits and vegetables. Export market--coffee, sugar, cotton, cardamom, bananas, tobacco.

Non-Traditional Crops: 7% of total agricultural products, but increasing rapidly--strawberries, pineapples, apples, melons, mangoes, broccoli, celery, lettuce, asparagus, cauliflower, sesame seed, cashew nuts, spices.

Livestock: Beef cattle 4th most valuable segment of ag production, exports to U.S. as boxed boneless beef. Swine, poultry for local market, no export potential. Shrimp farming has potential, is growing on Pacific coast.

### Climatic and Soil Resources

Micro-Climates: Many and varied with any combination of temperature and humidity available.

Soil Resources: Extremely variable from rich deep soils to rocky volcanic sand, from limestone to pure clay soils.

### Human Resources

Agricultural Workers: Over 55% of total work force.

Work Habits: Upland Indian population leave farms for one month to harvest coffee, cotton, sugar cane, pineapple, etc., then rotate with other Indians. Highly motivated group

Management Skills: Ag and business training from local universities. Consensus that graduates are competent.

Joint Venture Partners: Many young aggressive entrepreneurs working to build new businesses, receptive to U.S. partners.

### National Infrastructure

Roads: In good condition, 4 hours from Guatemala City to agricultural areas, 8 hours from Pacific to Caribbean.

Repair Parts: Can be found but very expensive.

Power and Fuel: Prices of agricultural fuel are competitive. Hydroelectric power available at reasonable rates.

Irrigation Water Supplies: Most areas--adequate rainfall and topography for storage of surface water. Ground water available at 50-1,000 ft.

Insects, Disease, Parasites: Few problems in highland area. Insects major problem for cotton, med fly for fruit, parasites for cattle. Modern laboratories producing sterile male flies, natural predators and viruses to combat pests.

## POTENTIAL PROJECT INVESTMENT OPPORTUNITIES -- GUATEMALA

### Project Selection Process

Steps: Analysis of written materials on economy, business and agriculture; interviews with owners and operators of agribusiness enterprises; visits and inspections of enterprises throughout the country; developing a list of potential projects including first hand recommendations; applying selection criteria to the potential projects.

### Project Selection Criteria

Market Needs and capacity of specific U.S. and European markets or regional markets for identified product.

U.S. Export Sales Potential of specific items, product or services from U.S. companies or individuals.

Noncompetitive Products: Assurance that potential imports into the U.S. market would not be competitive with U.S. products.

Good Rate of Return on Investment: A positive assessment that the project would provide a lock up of market share, sole source guaranteed delivery or a rate of return on investment in relation to action risk (after use of insurance).

Local Partner: Proper level of motivation and contribution.

Productivity Factors: The proper balance of quality, quantity and cost competitiveness.

### Ranking and Description of Project Investment Opportunities

Winter Vegetables: Good growing conditions, micro-climates, current exports, good margins, market window. Fresh and frozen

Tropical Fruits: Papaya, mangoes, pineapple. Fresh and concentrates. Joint venture partners ready.

Ornamental Plants/Cut Flowers: Currently produced for U.S., EC market, roses from higher elevations. Good margins.

Marine Shrimp Farming: 5,000 hectares of suitable land, 3 ventures being started up, good margins and markets.

Agribusiness Funding Corporation: Intermediate term loans based on earnings, market contracts and borrower performance

Hybrid Seed Production: Efficient low cost labor, many micro climates, centralized production for worldwide distribution.

Growing/Packaging of Spices: Ideal climates, low cost labor.

Cashew Nuts: Expansion of current production, U.S. equipment for hulling and packaging.

Textiles: Draw back project using low cost labor.

Animal Breeding Programs: Urgent need to build cow herd.

Meat Packing Plant: Low cost export to Caribbean Basin.

Cacao Beans: Hershey could provide tech assistance/market.

Non-Traditional Seed Crops: Currently produced at low cost.

Distributorship-U.S. Equipment: Ready spares/supplies needed

Rubber Latex Products: Natural latex and low cost labor.

SECTION III

ONE-PAGE SUMMARIES OF PROJECT PROFILES

Project Name: Asparagus Production for Export

Location: Guatemala - Highlands between Guatemala City and Antigua

Project Proposal:

To participate in a farm and packing enterprise supplying fresh asparagus to the U.S. market during the November - January high price season.

Potential Profitability: A capital investment of \$176,000 is required.

Based on average market estimates, a 43 acre farm would produce a net income of \$75,000 in year five on \$110,000 in sales. Time needed for establishment precludes heavy early returns.

A feasibility study is needed to gain confidence in the long term market trends and costs of production. Profitability is probably higher than current estimates indicate.

Capital Investment:

Capital costs would total \$176,000 including irrigation equipment costs at \$1,000 per acre or \$43,000. Other equipment needs would be very minimal.

Project Viability:

Production: Know-how and experienced management is available. Land in a good area is available for lease.

Packing: Facility, know-how and management are available.

Market: Market channels are already set up. The asparagus market is well established in the U.S. as a premium market.

Credibility of Foreign Investors:

Gerardo Bianchi Azurdia who proposes a farm project has been in the marketing business for several years, already has the packing plant facilities and has been marketing fresh vegetables for a Guatemalan firm for some time. His planning seems careful and conservative.

Louis Fernando Arias of Finca Calderas and John Luthman of Finca Santa Anita may have opportunities for participation involving equity contribution which would finance expansion of growing areas and the establishment of packing and cooling facilities. Both are experienced and have been producing and marketing successfully.

Project Name: Cantaloupe Production

Project Location: Guatemala, in the southwestern coastal area

Project Proposal:

To set up a commercial operation for producing high quality cantaloupe for the U.S. winter market.

Potential Profitability:

With yields of 470 boxes (40 lb.) per acre, a market price of \$16.63/box and total production costs of \$700/acre, operating income per acre per year would be \$4,450. A thousand acre farm would produce an annual operating income of \$4,450,000.

Project Viability:

**Market:** Over the last few years, U.S. demand for melons has grown at an annual rate of 5%. Guatemala is a competitive grower and shipper of melons for the U.S. winter market.

**Production:** The hot and dry climate on Guatemala's southern coast is ideal for melons. Ground water for irrigation is sufficient. Melons are currently being produced on a commercial scale in the area. Roads are good.

**Personnel:** Labor is low cost and in good supply, management would have to be provided.

Local Investors and Prospective Partners:

There are several producers of melons in Guatemala at this time who would welcome discussion of a potential joint venture:

Agencias Agrícolas, Jorge R. Pontaza  
CATI, Carlos Giron  
CAPCO, S.A., William Hubbell

Project Name: Production of Herbs, Spices and Botanicals

Project Location:

Guatemala, varied climatic and topographic production regions available

Project Proposal:

Particularly for an established U.S. spice company, to source a variety of herbs and spices from Guatemala first under contract production, and then under a joint venture arrangement entailing production facilities and a quality control laboratory.

Capital Investment Required:

Because of the wide range of project possibilities depending on the kinds of spices, herbs or botanicals selected and volumes required, capital investments would vary accordingly.

Project Viability:

Market: In the rather narrow markets which spices and herbs represent, a reliable production source in Guatemala would enable a U.S. spice company to better serve its clients needs for quality, variety, quantity and consistency.

Production: Varying climatic conditions make possible the year round production of a wide variety of plant kinds including cumin, thyme, cloves and cayenne pepper.

Personnel: Groups of small producers have been effectively organized for production of fresh vegetables and some herbs and spices.

Prospective Partners:

Farm cooperatives and other similar organizations would be very interested in investigating specialty crop kinds that fit the interest and abilities of the small farmer, especially:

- Union de Cuatro Pinos, Mr. Tulio Garcia M.
- Salinas Nu-Atzan, Mr. Juan Luis Miron
- Productos Agricolas Superb, Mr. Oscar Ufer
- Alpine Export Company, Mr. Alfonso Aycinena

Project Name: Frozen and Dehydrated Fruits and Vegetables

Location: Guatemala

Project Proposal:

To establish a frozen processing facility for processing fruits and vegetables for export. More than one project may be available and might also include dehydration. The year round availability of quality produce in close proximity to the U.S. market makes investment attractive.

Profit Potential:

Current feasibility studies indicate a high rate of return with payback of investment in less than two years. Year round production, low labor costs and the possibility of thermal energy for dehydration offer possibility for additional projects which are likely to show good return.

Capital Investment:

Capital requirements for a proposed frozen plant with an annual capacity of 45 million pounds is \$2,600,000. Capital for other plants would vary depending upon the process used and the size.

Project Viability:

Production: Equipment will come from the U.S. and the process is well enough established so that no difficulties should arise. Middle management will need training.

Markets: Markets in the U.S. are well established and competitive but the major frozen project will need to get established in that market. A U.S. participant knowledgeable in this field would be helpful.

Credibility of Foreign Investors:

Rafael F. Passarelli, President, Internacional de Alimentos Procesados. Although new to frozen food processing Mr. Passarelli and his family have been in business in Guatemala for many years and have a good reputation.

Ing. Eduardo A. Castillo, D.V., Industrias Agricolas Centroamericanas, is another possibility for a frozen plant. He represents one of the oldest and best established families in Guatemala.

Alfonso Aycinena, Alpine Export Company. Again there is potential for processing with this firm which is well established in business, and has done a feasibility study on processing frozen fruits.

Project Name: Seed Production

Project Location:

Guatemala, suitable growing environments in the highlands (up to 7,500 ft) and coastal lowlands

Project Proposal:

For a U.S. seed company, to establish a joint venture arrangement with Guatemalan growers to expand its seed production under contracting arrangements, including complex multiplication activities once technical and infrastructural capabilities are achieved.

Capital Investment:

A seed production program is not envisioned to require large amount of money but, more importantly, the managerial capability to set up and supervise proper cultural procedures.

Project Viability:

Market: Seeds would be produced in Guatemala for export back to the U.S. American companies have a continuing need for quality seed which would be multiplied for inventory and put into their own marketing system. A competitive international price is possible with Guatemala's efficient, low cost labor, and its proximity to the U.S.

Production: Most crops considered for seed production are already produced in Guatemala. The production of seed, including hybrid flower seed, already has been done for some years. A wide range of growing environments, fertilizers and chemicals, and private processing facilities are available.

Personnel: There are well trained technicians and managers within the country, and would be instrumental in expansion of the seed industry. Details and monitoring of culture procedures would be provided by the breeding company. Labor is low cost and efficient.

Prospective Partners:

The following experienced growers in Guatemala would be willing to consider a joint venture arrangement with a U.S. company:

- Productos Agricolas Superb, Mr. Oscar Ufer
- Rancho Virginia, Mr. Mario Calderon
- Finca La Igualdad, Mr. Federico Weller
- La Meseta, Mr. Alberto Yahri
- Alpine Export Company, Mr. Alfonso Aycinena

Project Name: Production of Cut Flowers and Ornamental Plants

Location: Guatemala - the Central Highlands

Project Proposal:

To participate in the production and marketing of ornamental plants, flowers and cut flowers in Guatemala which has a wide variety of micro-climates, good air transport to markets and available land, water and labor at low or reasonable cost.

Profit Potential:

Projected returns on flower projects indicate early and large returns. Returns on ornamental plants would also be good but might not have as early a payback. Payback in flowers occurs in the second year with substantial return against the investment in the first year.

Capital Investment:

Ornamental plants and flowers are land and technology intensive, and at the beginning capital intensive. Investments of \$217,000 and \$443,000 for each 2.5 acres are required for the start up of two varieties of flowers.

Project Viability:

Production: Ornamental plants and flowers are being successfully produced and shipped currently to the U.S. and Europe. Management and technical know-how for production is vital, much is available but more is needed.

Markets: The markets in the U.S. and Europe have been expanding for some years. With the short time needed to get into production, investors must be sensitive to possible temporary market saturation and must develop a strategy of diversification. Careful market studies should be conducted.

Credibility of Foreign Investors:

There are now 18 members of the Association of Ornamental Plant Exporters who are producing and exporting. Many more are anxious to get into the business. Information about the availability of foreign partners and investors could be obtained from:

Eduardo Gonzalez Castillo, President GEXP - Gremial de Exportadores de Plantas Ornamentales.

Ing. Richardo Santa Cruz Rubi, Sub-gerente Tecnico, Gremial de Exportadores de Productos non Tradicionales.

**SECTION IV**

**PROJECT INVESTMENT PROFILES**

## ASPARAGUS PRODUCTION FOR EXPORT

### 1. Project Description and Rationale

This project involves the production of fresh asparagus for the U.S. winter market on a 43 acre farm.

Asparagus production in Guatemala presents a long term investment and marketing opportunity. Conditions favoring this enterprise are:

- climatic conditions suited to asparagus harvest during November - January when fresh market prices in the U.S. are at their peak,
- low cost labor for establishment and harvesting,
- good rapid transport to U.S. markets,
- good local market for spears not suited to export,
- an established freezing industry should the fresh and local market not absorb the production, and
- individuals with experience in production, packing and marketing asparagus, who are interested in joint ventures.

### 2. Marketing Considerations

Guatemala is ideally suited to take advantage of a window of opportunity in the U.S. market. Prices in the last few years have ranged around \$28-30 per 13.5 lb. box, net weight, in November - January as compared to \$16-18 per box by March or April.

Asparagus can either be green or white. The variety has an influence on this but any asparagus can be made white by hilling it with more soil prior to the harvest period. The U.S. market generally prefers green asparagus.

Marketing is usually through a produce broker in Miami or California.

Shelf life of fresh asparagus is about four weeks. The time from harvest in Guatemala to shipment from Miami to the final destination is only about one week, leaving ample time for the balance of the marketing process.

### 3. Technical Considerations

Techniques exist for bringing asparagus into production in the tropics at the time desired.

Harvesting in the tropics might have to be as much as twice a day because of rapid growth caused by higher temperatures. Labor must be available to harvest in a timely manner. It is essential that cooling, sorting, and packing be accomplished quickly and that the product be kept cool in transit since the spears deteriorate very rapidly under warm conditions. Each hour delay in cooling can reduce shelf life by several days. Labor and facilities for sorting, packing and cooling as well as for transport are available for asparagus grown in Guatemala.

Establishing asparagus takes some time. About twenty four months are required after transplanting for the plant to build up food reserve in the crown and root. Harvest then lasts no more than 4 weeks in the second year, 8 weeks the third and only in the fourth year can the normal 12 week harvest begin.

Good weed control is essential and can be done by mechanical cultivation, chemicals or both. Asparagus is also susceptible to a number of pests and diseases, but to date these seem to be problems which can be controlled.

Irrigation will be required to properly develop the crop in the Guatemalan climate. Suitable water and land resources are available.

### 4. Financial Considerations

Because of the four years needed for establishment, pay back does not occur as quickly as in many other crops. This means that entry is

more difficult and fewer producers will be anxious to attempt production. A long term appraisal of market prices and trends needs to be made under these circumstances.

A project investment of \$176,000 would yield a positive cash flow in year four with pay back in year seven.

In year five, when full production is reached, \$108,600 of gross income are generated by the \$176,000 of capital investment, with a net income of \$75,400 yielded from sales of \$108,600. The resulting return on investment is 43%.

The cash flow summary below is based on an average price of \$28 for a box of asparagus, CIF Miami. Over the past few years, average prices have been \$28-30 per box.

The alternate cash flow is based on a low market price assumption of \$20 per box.

CASH FLOW ON AGRICULTURAL PROJECT 43 ACRE FARM (US\$)							
Item	Year						
	1	2	3	4	5	6-9	10
Gross Income (\$1.39/lb.)		13,570	27,150	54,500	108,600	203,630	169,680
Expenses							
Labor	16,168	6,832	7,363	8,562	10,963	15,182	13,662
Crowns	10,000						
Materials	17,752	8,392	8,382	10,392	8,392	8,373	6,592
Irrigation	43,000						
Land Lease	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Contingency	<u>19,384</u>	<u>3,031</u>	<u>3,151</u>	<u>3,382</u>	<u>3,841</u>	<u>4,711</u>	<u>4,410</u>
Total Expense	116,304	28,255	28,896	32,336	33,196	38,266	34,664
Net Income	(116,304)	(14,685)	(1,746)	22,164	75,404	165,364	135,016
Cumulated							
Net Income	(116,304)	(130,989)	(132,735)	(110,571)	(35,167)	130,197	761,305

ALTERNATE ASSUMPTION

Gross Income(0.80/lb)		9,150	18,301	36,600	73,200	137,251	114,385
Total Expense	116,304	28,254	28,896	32,336	33,196	38,266	34,664
Net Income	(116,304)	(19,104)	(10,595)	4,264	40,004	98,985	79,721
Cumulated							
Net Income	(116,304)	(135,408)	(146,003)	(141,739)	(101,735)	(2,750)	373,926

5. Prospective Local Partners:

The following companies and individuals are prospects for investment or marketing arrangements in Guatemala.

Gerardo Bianchi Azurdia, 15 Avenida 7-41, Zona 13, Guatemala City, S.A., telephone: 312753.

Mr. Bianchi has worked in the marketing of asparagus and other fresh produce from Guatemala for several years. He already has a packing shed to handle the fresh asparagus and land available for production, in what he considers an ideal area. He is well aware of the production problems which have existed in other projects. He needs investment capital.

Luis Fernando Arias, Finca Calderas - Schuarsa, 0 Calle "A" 18-24, Zona 15, VH 11, Guatemala City, S.A. telephone: 691917.

Luis Arias is now exporting fresh asparagus from two production sites and is expanding production acreage rapidly. He currently contracts for the services of a hydro cooler and packing facilities. His specific needs are for capital to expand production and to establish his own packing facilities with a hydro cooler, and for a partner who can improve his market in the U.S.

John Luthman, Finca Santa Anita, 15 Calle 1-91, Zona 10, Guatemala City, S.A. telephone: 370094.

Mr. Luthman has been working in asparagus for some time and is cooperating with other producers including Luis Arias. He has a reputation for knowing the asparagus business in Guatemala. As with Mr. Arias, Mr. Luthman would be looking for a U.S. partner who could contribute both capital and market in expanding his present business.

## CANTALOUPE PRODUCTION

### 1. Project Description and Rationale

This project involves the production of fresh, high quality cantaloupe for the U.S. winter market. A farm of no more than 100 acres is recommended for a start up operation. A joint venture of a prospective U.S. investor with an experienced local producer in Guatemala would permit rapid expansion of production once the 100 acre farm proved to be profitable.

The project opportunity for cantaloupe production in Guatemala is based on the favorable climate and soil conditions in the La Gomera area on the South Coast. Other factors such as shelf life, marketability, profitability, and the local knowledge of producing cantaloupe also support project viability. Local familiarity with this crop helps to obtain good labor and offers the possibility of expansion at a later date.

### 2. Market Considerations

The total U.S. market for melons is estimated at 40 million hundredweight (cwt - 100 lbs.) per year. Imports comprise about seven percent of this market. In the ten years commencing in 1974 and ending in 1984, the demand for vegetables and melons grew at an average rate of two percent per year. During the same time period, the U.S. demand for melons grew at an annual average rate of five percent. Since 1980, the volume of fresh melons imported into the U.S. has increased nearly fifty percent.

The increase in consumption of fresh melons and vegetables underscores the drift in food preferences exhibited by a large segment of the U.S. population. The popularity of salad bars in restaurants and a general concern for health have also created a large demand for fresh products.

The principal sources of cantaloupe imports are Mexico, Dominican Republic, Guatemala and Chile. While these four countries account for approximately 90 percent of the volume of U.S. imports, Mexico now accounts for a staggering 70 percent of the import share. In the past years the countries of Dominican Republic, Guatemala, and Chile have shown marked growth in this market and are predominately responsible for the increased volume of U.S. melon imports during the period from 1982 to 1987.

Cantaloupes have a longer shelf life than some of the other fresh fruits, which becomes important when considering the shipping time to North America. It will take approximately three days to ship from Puerto Barrios to Miami. Extremely good organization and planning must be used when scheduling refrigerated containers for shipment. It is recommended to schedule shipments with accuracy about 4 to 6 months in advance in order to be assured that trailers will be available when needed.

The seasonal production of melons in the U.S. runs from mid May to December. In descending order, California, Texas and Arizona are the principal melon producing states in the U.S. During the winter and early spring, the production from the Southern Hemisphere dominates the marketplace and then diminishes as U.S. production picks up.

The market opportunity for off-season fruit is clearly from December through May. As the U.S. product enters the marketplace, the economic forces of supply and demand exert significant downward pressure on prices. Off-season cantaloupe from the Southern Hemisphere has consistently entered the lucrative market window created by scarcity of U.S. production. This scarcity creates a tremendous potential for offshore producers. Consumer demand for melons in the markets is stable and influenced more by supply than by price. This demand characteristic is typical of most fresh fruit commodities, and serves to create the highly variable marketplace that typifies the fresh fruit and vegetable market in the U.S.

3. Technical Considerations

All the basic conditions required for efficient melon production are present in the south coast area of Guatemala in the vicinity of the town of La Gomera. In this cotton growing region, large flat tracts of land with sandy loam soils are available primarily on a lease basis.

Underground water is sufficient for irrigation needs, as evidenced by one existing large scale melon operation and one full size winter vegetable production unit visited by the Profile Team. Electrical energy is available from the public utility.

The hot, dry climate during the growing months from September to March provides ideal conditions for growing melons and preventing disease.

Field labor is low cost and readily available, but management and field supervision would have to be mostly provided by the U.S. owner and operator unless he went into a joint venture with one of the local cotton growers.

Roads in the area including many farm roads are in good condition, facilitating the transport of product and inputs. Agrichemicals and other inputs are in ready supply at prices slightly higher than in the U.S.

For the needed high yields of quality cantaloupe, careful professional attention must be given to soil and water analysis, as well as to the programming, execution and monitoring of efficient culture practices including foliar analysis. Key elements of technical know-how as described below would have to be incorporated into a project plan to assure an efficient and successful commercial operation.

Climate Requirements. Cantaloupes, a warm weather crop, grow best on well drained sandy loam soils in climates that are hot and dry. Leaf diseases cause severe damage in humid regions and limit production.

Land Preparation. Plowing, disking, and some land planning to maintain correct slope for irrigation and drainage are important in preparing land for cantaloupe production. The land is then listed into 60" rough beds, fertilized and then planted.

Fertilization. Cantaloupe production, in general, requires 60 to 80 pounds of nitrogen and 90 to 100 pounds of phosphorus per acre, which should not be applied until complete soil tests have been obtained. Usually the first application of nitrogen should be made at the two-to-four leaf stage.

Planting. Cantaloupe seed should be planted at a rate of 1 and 1/2 to 2 pounds per acre, in single drills on top of the 60" rows. The plants should be planted about 14 to 18" apart. Seeds need to be drilled at a depth of 3/4 to 1 and 1/2 inches. Cantaloupe should not be sown until the soil temperature is at least 68° Fahrenheit at the two inch depth.

Weed Control. Prefar is one of the safest chemical herbicides available for weed control in cantaloupes. When Prefar is used, hold mechanical cultivation to a minimum, and if needed, keep it shallow. Treflan or Dacthal, which control only germinating weed seeds, may be applied as a post emerge lay-by application. Both Prefar and Treflan require soil incorporation one to two inches deep for best results.

Irrigation. Cantaloupe should be irrigated as needed during early fruit set and development. Very light or no irrigation water should be applied once the melons begin to ripen.

Pollination. At least one good strong colony of honeybees should be used for every two to three acres of cantaloupes. To assure good pollination and fruit set, locate the hives on the windward side of the field when the fruit blooms appear.

Pests. Leaf miners and aphids are the most serious insect pests of cantaloupe. These insects normally must be controlled during early growth stages. Other insects, such as cucumber beetles, wire worms, spider mites and pickle worms may cause injury. For control measures, insecticides should be applied in late afternoon to avoid injury to bees.

Diseases. Cantaloupe diseases are controlled best by a combination of several practices, which include growing resistant varieties, crop rotation and preventative fungicide applications. Powdery mildew and downy mildew are controlled best by growing resistant varieties, supplemented by a preventive fungicide program starting at blooming time and continuing at 10 to 14 day intervals, depending on weather conditions. Other diseases are controlled by chemical applications as needed.

If the cantaloupe is to be planted in nematode infested land, soil fumigation before planting may be required. No adequate control measures have been developed for viral diseases such as tobacco ring spot virus, curly top and mosaic.

Harvest and handling. Cantaloupes usually are hand harvested every other day during the first week of harvest and every day during the second week. Most cantaloupes are bulk hauled to a shed for cooling, grading and packing.

Grading and packing. Grading usually consists of removing inferior cantaloupe and sorting the cantaloupe as to size and maturity. The cantaloupe are packed according to size ranging from 9 count to 32 count per 40-lb. box. Yields in the Rio Grande Valley average from 450 to 600 boxes per acre. Extreme care should be taken during the harvesting, packing, and shipping period to avoid bruising. Field heat is removed from the fruit by immersion in cold water or by precooling in 40 degree Fahrenheit rooms prior to loading in refrigerated trucks for transport.

4. Financial Considerations

Because entry level costs would vary considerably according to the project size selected by the prospective U.S. investor, the financial information for this profile is presented as operating costs and margins on a per acre basis.

Total production costs were estimated at \$700 per acre after comparing reported production costs in Guatemala with those in other Caribbean Basin countries and in the United States. The total includes the costs of production, amortization of equipment, packing, financing, and administration.

Production yields in Guatemala range between 235-470 boxes (40-lb.) per acre. The average price of cantaloupe in the U.S. market over the last five years between December and April has been \$16.63 per box.

Calculations on varying production yields of (235-470 boxes/acre), production costs of \$700/acre and a market price of \$16.63 per box yield operating incomes of \$1,877.25/acre, \$3,138.45/acre and \$4,454.49/acre, as shown below.

	<u>Gross Income</u>	<u>Operating Costs</u>	<u>Operating Income</u>
235 boxes per acre @ \$16.63	\$3,908.05		
Freight per acre		\$940.00	
Brokerage		390.80	
Production Cost		<u>700.00</u>	
Net Profit			\$1,877.25 per acre
350 boxes per acre @ \$16.63	\$5,820.50		
Freight per acre		\$1,400.00	
Brokerage		582.05	
Production Cost		<u>700.00</u>	
Net Profit			\$3,138.45 per acre
470 boxes per acre @ \$16.63	\$7,816.10		
Freight per acre		\$1,880.00	
Brokerage		781.61	
Production Cost		<u>700.00</u>	
Net Profit			\$4,454.49 per acre

5. Prospective Local Partners

The following companies and individuals were interviewed by the Profile Team. Contact with them is recommended to the prospective U.S. investor interest in exploring this project opportunity.

Agencias Agricolas, Jorge R. Pontaza C., 10A Ave., 34-01 2.11, Guatemala, S. A. telephone: 762889, telex: 5345 GU-CABLE.

Jorge R. Pontaza is a producer of cantaloupe at this time. He is looking for a joint venture partner for expansion purposes and marketing. He has been successful and holds an excellent reputation among other growers in Guatemala.

CATI, Carlos Giron, 10A Ave., 34-01 2.11, Guatemala, S. A. telephone: 762889, telex: 5345 GU-CABLE.

Carlos Giron is a producer of honeydew melons. He is interested in a joint venture partner in order to improve his processing plant. This could include cold storage and freezing equipment. He is wanting to diversify into other crops in order to utilize any new facility that could be installed. He also is a successful melon grower and is widely known and respected in the country.

CAPCO, S.A., William Hubbell, Ave. La Reforma 13-702.9, Edificio Real Reforma 40 Nivel of 4-A, Guatemala City, S.A. telephone: 312384, 319514, fax: 63343

With excellent management and technicians on site in Guatemala, this large company has been producing melons for several years. They run a tight ship and a profitable operation. For a prospective investor, the company could provide valuable information and a profit opportunity in diversified production.

## PRODUCTION OF HERBS, SPICES, AND BOTANICALS

### 1. Project Description and Rationale

For an established U.S. spice company, this project outlines the potential of contract production with a Guatemalan grower to source a variety of herbs and spices under carefully worked out specifications. Establishing a joint venture entailing production facilities and a quality control laboratory might then follow.

The strength of this project activity lies with the varied climatic and topographic production regions available, suitability to small farm production units and a private sector motivated to organize and manage specialty type production. Both the Guatemalan government and the private sector have placed a renewed emphasis on nontraditional crops which can be developed under small landholder production.

### 2. Marketing Considerations

Because of the specialized and rather narrow herb and spice markets Guatemala as a source would most particularly be of interest to U.S. companies with special marketing systems already developed. A reliable production source in Guatemala would enable an existing spice company to satisfy increasing customer demands more consistently. Additionally, a U.S. company which had its own production sources could exercise greater quality control to ensure that its products were fresh and free of contamination.

With the introduction of improved cultural techniques, the premium quality products continually in demand by the herb and spice trade could be readily supplied from Guatemala with its potential for specialty plant production.

### 3. Technical Considerations

#### a. Existing Production and Processing

Because of the wide variety of plant types under consideration, a brief mention will be made of certain production and processing which is

now ongoing. Citronella grass is grown and distilled in-country to produce citronella oil. Aloe vera production is being established with facilities to process products preserved by freeze drying techniques. Drying facilities at a cooperative near Guatemala City turn out a quality product of parsley flakes, a system which could be readily applied to other dehydrated crops, such as coriander, celery, dill, or fennel. A lime oil pressing facility is currently idled by management problems. In the meantime, lime demand and prices are high for dried fruits which are exported for Middle East consumption. Annatto is grown and processed for its color content. Allspice is a crop grown and collected under wild conditions. Black pepper, cloves, and a small amount of cinnamon and nutmeg are successfully grown in-country. Quality ginger and turmeric are grown at higher elevations.

The Indians of Guatemala who make up over one-half of the total population have a rich cultural heritage in the use of plants for cosmetic, health and household utilitarian purposes. In some cases, plants which have become difficult to find are now cultivated in small plots in order to assure a continuous supply. It is very possible that plants which serve the Indians well could also have useful purposes within other societies. These plants and their applications are worth considering and are included within the scope of this project.

b. Potential Production and Processing

Guatemala has native production of many of the plants used for preparing retail flavorings and spices. The many micro-climates of the country provide ideal growing conditions for most spice trees, shrubs, vines and plants. These valuable plants could indeed be cultivated while most are now simply collected. These plants produced, harvested at prime quality and shipped, fresh, frozen, dehydrated or packed in nitrogen would provide a gourmet product to a U.S. spice company.

Much of the newly developed fresh vegetable industry is based on groups of producers effectively organized to achieve and maintain high quality production. Some of these organizations are interested in the production of specialty herbs and spices.

For instance Cooperativa Cuatros Pinos, located near Guatemala City, is a cooperative devoted to the production of fresh vegetables for export. Strong management has placed strict control on producing quality. They currently have facilities for drying and sifting herbs and for cooling large amounts of fresh vegetables and spices. This cooperative has over 1,400 members and expects to produce approximately 12,000,000 lbs. of fresh vegetables in 1987. During the current season (December, 1987) they are shipping about 200,000 lbs. of snow peas per week. This cooperative and other similar organizations would be very interested in investigating specialty crops that fit the interest and abilities of the small farmer.

Varying climatic conditions make possible the production of a wide variety of plant kinds. More common plant kinds which are grown in varying quantities are as follows:

Annatto	Fenugreek	Lemon Grass	Sesame
Tarragon	Wormwood	Anise	Ginger
Star Anise	Celery	Basil	Camomile
Cardamom	Marjoram	Orange Blossom	Garlic
Onions	Parsley	Plantago Major	Allspice
Valerian	Coriander	Vanilla	Hibiscus
Cumin	Thyme	Cloves	Cayenne Pepper
Caraway	Rosemary	Dill	Lavender
Pepper (black & white)			

#### 4. Financial Considerations.

Because of the wide range of project possibilities depending on the kinds of spices, herbs or botanicals selected and volumes desired by prospective U.S. investors, financial requirements could not adequately be determined at this time.

#### 5. Prospective Partners.

Prospective Guatemalan associates are capable and willing to meet market requirements of interested U.S. companies with their production and processing capabilities. The first phase of a joint venture arrangement would likely be in the form of contract production under

carefully worked out specifications. A logical second phase might then be to establish a joint venture entailing production facilities and a quality control laboratory.

Persons to be contacted in Guatemala for further spice, herb and botanical sourcing would include:

Mr. Tulio Rene Garcia Morales, Union de Cuatro Pinos, Santiago, Sacatepequez, Guatemala, telephone: 030325, 0303817, 0303618, fax: 0303818.

This is a well run cooperative producing fresh vegetables for export and representing over 1400 quality growers. They currently have in operation drying and sifting equipment for plant materials (presently used for parsley flakes) which could be used for many other kinds of plants.

Mr. Juan Luis Miron, III, 14 Calle, 2-62, Zona 10, Guatemala, C.A., telephone: 371451, 370968, telex: 5150 EMPOSE GU.

As manager of Salinas Nu-Atzan, Mr. Miron is establishing a production and processing facility for aloe vera. He is also interested in other specialty crops and is installing equipment, including freeze drying to process them.

Oscar Ufer, President, Productos Agricolas Superb, S.A., 7a. Avenida 17-01, Zona 1, Guatemala, C.A.

While also in the seed business, this family enterprise offers the widest variety of spices and herbs in Guatemala to retail outlets. This company buys about half of its total line through domestic production sources and processes all materials through its own processing facilities. Mr. Ufer is interested in exploring ways to become more competitive in the international trade of specialty plant materials, including the expansion of his own production capability.

Alfonso Aycinena, Alpine Export Company, 16 Calle, 4-53, Zona 10, Edificio Marbella Loto, Office 6-13, Guatemala, C.A.

This company represents a broad production system of small growers with a built-in credit system, and Mr. Aycinena would like to determine new products for these growers to produce.

## FROZEN AND DEHYDRATED FRUITS AND VEGETABLES

### 1. Project Description and Rationale

This profile sets forth excellent profit opportunities in Guatemala for prospective American investors interested in supplying the U.S. market year-round with frozen and dehydrated fruits and vegetables at competitive prices.

The business interests of U.S. food companies could be well served by exploring possibilities offered by the initial project investments and plans of Guatemalan firms. Depending on the company, the local investors would be interested in evaluating joint venture arrangements which could provide them with marketing channels, technical know-how, supply of equipment, and capital.

The wide variety of micro-climates within a relatively small geographic area allows the production of both tropical and temperate crops which can either be produced year-round or can be adjusted seasonally by planting date. Irrigation water is generally available in the November-May dry season. A near optimum use of freezing and dehydrating facilities is therefore possible giving a high sales volume for the assets employed. This also reduces the need for working capital tied up in inventory versus the situation in the U.S., since shipments can be made from current production for most or all of the year rather than having to be stored until the new season begins. Possibilities exist for reducing the cost of energy needed for drying by utilizing thermal energy which is available in the country in many locations.

Processed fruits and vegetables can be combined with a fresh produce operation which takes advantage of high seasonal fresh prices. Many Guatemalans seeking relationships with U.S. firms contemplate a fresh market operation to the U.S. along with their processing.

Practical hands-on entrepreneurial management is characteristic of those in Guatemala seeking joint ventures or relationships. They

generally are aware of the importance of knowledge of markets, product quality and methods to maintain quality. They understand the importance of technical expertise. However, training would be required for middle management.

Land is available for farm units of substantial size and many Guatemalan entrepreneurs want to grow a substantial portion of their needs for quality reasons. Both land and labor are reasonable in cost. Also Mayan small holders are good farmers, hard working and approachable. They are responding positively to both well managed cooperatives and private organizations in supplying quality crops.

Guatemala is also geographically close to the U.S. markets. Improved shipping alternatives and lower rates appear to be developing.

A hard surface road network connects major agricultural producing areas with towns and cities where processing takes place, and with the ports of Puerto Barrios to the north and Iztapa on the Pacific to the south.

Guatemala's laws and regulations favor foreign investment with a ten year tax holiday and favorable treatment on importing processing equipment. The Caribbean Basin Initiative also gives preferential treatment in the U.S. market to Guatemala along with other neighboring countries. Guatemala has been able to supply hard currency since 1983.

This project opportunity would offer apparent advantages or opportunities for U.S. companies which market, distribute or use frozen or dehydrated fruits and vegetables. Consumer price and product availability in major markets would have greater stability. Also the project provides an opportunity for U.S. farm operators to invest in an additional geographic area which might give greater stability and reduced risk to their farm investment.

## 2. Marketing Considerations

Based upon reported inquiries by U.S. companies which have visited Guatemala, some U.S. firms have already become aware of the

opportunities and conditions presented in the previous section. Relatively short distances and shipping times to the East Coast give credibility to these opportunities.

Frozen and dehydrated products have quite different distribution channels and uses. Each are discussed separately below to (1) show investors areas of marketing opportunity in the U.S. and (2) suggest to firms in these marketing areas opportunities which exist for them in Guatemala.

Frozen Products. Sales and distribution channels are already well established in the U.S. Some of the major markets into which frozen fruits and vegetables could be sold include:

- brokers and wholesalers to the food industry
- retail: chains, independent groups and large independents
- institutions: hotel and restaurant chains, airline catering services, hospital chains etc.
- manufacturers of frozen meals

If the project has large volume and high sustainable quality or is unique in some desirable way, a branded item could be developed. In this profile, it is only presented as a long term possibility leading to a larger and more profitable market share.

Dehydrated Products. For the most part, dehydrated fruits and vegetables in the retail trade are branded products. Other marketing opportunities include ingredients for:

- ice cream and yogurt
- cereals
- snack food products
- bakery and cookie products
- natural food companies (branding may be possible).

Marketing may be direct to many firms in the above categories but is usually done through broker/wholesalers for most if not all products and markets.

Different markets and uses will require products with different specifications and processes. Some uses may require a product which

reconstitutes close to its original form. This would probably require a freeze dry process. Other uses could require a tunnel or drum dry process of which there are modifications which may affect quality. The technological aspects of these are not covered in this profile. The market, consumer and the product required must be defined before decisions are made on the process. For a U.S. firm which already has a well defined and growing market, an immediate opportunity may exist to joint venture or source in Guatemala.

Packaging will follow accepted trade practice and can be brought in competitively from the U.S. when unavailable or not competitive locally.

Competition. The frozen fruit and vegetable market is very competitive in the United States both from a price and quality point of view. Guatemala has the conditions and location to compete favorably as pointed out in the first section. The major U.S. growing areas are in California and the South which are quite removed from the Northeast and are subject to frosts which frequently disrupt supply. U.S. land and labor costs have been rising rapidly, thus increasing the opportunity for Guatemalan investment.

Mexico is another major competitor for winter vegetables in the fresh and processed market but has been losing marketshare recently to other countries. As a production area, it is not located any closer to the U.S. eastern seaboard than Guatemala.

Peru has vegetable dehydration firms but is losing market share to a Guatemalan firm in the European market.

All other potentially competitive areas either lack the micro-climate advantage or have less desirable locations.

### 3. Technical Considerations

Raw Materials. With labor currently costing US\$2 per day and the climatic advantages mentioned above, the cost of raw materials delivered

to a Guatemalan processing plant should be at least competitive with Mexico and the U.S.

Quality standards are capable of being maintained at a high level. Some proposed freezing projects plan on having some part of their raw material sourced from their own farms in order to have the right varieties, proper control of chemical use, proper harvesting and control of any other factor which would influence quality. The experience in Guatemala of one cooperative and one private fresh produce operator indicates this is not always necessary since local farmers with proper supervision will deliver high quality produce.

Equipment and Process. Freezing and precooling equipment is readily available from U.S. suppliers. One experienced process consultant resides in Guatemala and is available. Several freezing plants are already operating and some dehydration processing exists. Currently no freeze drying operations exist but know-how in this area is readily available.

#### 4. Financial Considerations

##### a. Frozen Product

Capital Required. Several projects of different sizes are in varying stages of development. Some need capital and others purposefully require capital participation from potential marketing partners even though they have sufficient resources. The following are typical capital requirements for a large IQF plant for Guatemala with a capacity of 4,000 lbs. per hour of normal frozen products.

<u>Item</u>	<u>Cost</u>
Equipment	\$1,600,000
Land, Building, Installation	<u>1,000,000</u>
Total	\$2,600,000

The use of used equipment would bring the equipment cost down significantly. Working capital which will be less than required in the U.S. is not included above.

At three shifts a day year-round, the above plant would produce 45 million pounds of product.

Operating Costs. Lower raw material and labor costs should more than offset higher packaging and energy costs (up to \$.07/kw/hr.) as compared to the U.S.

Returns. Guatemalan firms which have recently carried out feasibility studies indicate high rates of return with payback of investment in less than two years. However, U.S. firms exploring this investment opportunity are urged to be sure feasibility studies have been made and to check carefully the assumptions of the ones completed. Change in raw material prices, capacity utilization and overheads can affect the rate of return significantly.

b. Dehydrated Product (tunnel)

Capital Investment. Total costs of a dehydrating plant producing 1,000 lbs. per hour would be \$50-60,000.

Many opportunities exist for use of thermal heat which would greatly reduce the energy cost component of operating costs.

c. Freeze Dry Product

Capital Investment. A plant producing one ton per day would cost \$250,000, which is capital intensive in relation to the other processes.

Returns. Where a market exists or can be developed for such a high quality product, returns should be larger than for other processes.

Returns to Marketing Participants. Price, quality and continuous reliable availability of product should put marketing participants into a very favorable position.

Other. Development of this Guatemalan potential should provide opportunities for agricultural, processing and marketing consultants as well as for equipment manufacturers.

5. Prospective Business Partners.

The following are individuals and firms interested in some joint venture, participation, or relationship with U.S. firms.

Rafael F. Passarelli, President, Internacional de Alimentos Procesados, S.A., 8a Calle 6-27, Zona 4, Guatemala, C.A. telephone: 64456, 320042, 321042, telex: 3180 NINSA GU.

His primary need is for marketing partners or market relationships in the U.S. Product volume is projected to reach 45 million pounds per year.

Mr. Passarelli is from a well established business family in Guatemala. A feasibility study for a fruit and vegetable freezing plant has been completed. Partial financing of the operation will be provided through funds placed with local banks by USAID.

Construction and installation contracts are to be let in January, 1988 and plant operation is scheduled to begin September, 1988. The mix of vegetables crops to be planted for production in 1988 needs to be decided before June by those people handling marketing. A substantial portion of the crop will come from their own land and the balance from contracts with local growers.

Ing. Tulio Rene Garcia Morales, Director Ejecutivo, Union de Cuatro Pinos, Santiago, Sacatepequez, Guatemala telephone: 0303259, 0303817, 0303618 fax: 0303818.

This cooperative, established in 1979, now has 1,400 members and is expanding to 2,000 next year. Until now it has produced for the fresh market in the U.S. and Europe, principally growing and processing snow peas, parsley and baby vegetables. With its good cooling, packing and storage facilities, it is well organized at putting out quality products. A freezing plant is currently being planned, with design work and the laying of foundations already in progress.

Ing. Eduardo A. Castillo, D.V., Industrias Agricola Centroamericanas, S.A., 2a. Avenida, 14-61, zone 10, Guatemala, C.A. telephone: 680303, telex: 4182 CERVCEN GU

Mr. Castillo would be interested primarily in a marketing partner who would commit some financial resources to the project. This is a well established agricultural and business organization. The project consists of fresh and frozen berries, beginning with strawberries. Twenty-five acres are in production which would be increased to 300 acres without difficulty in the years ahead. A vegetable freezing operation is also being contemplated.

Alfonso Aycinena, Alpine Export Company, 16 Calle, 4-53, Zona 10, Edificio Marbella Loto, Office of 6-13, Guatemala, C.A. telephone: 370691, 370974, telex: 5627 ELIZA GU.

This firm has an established business in exporting sesame seed and edible pumpkin seeds. They are interested in entering the frozen fruit business, and have recently completed a feasibility study for a freezing facility to be located in the Southwest. They would need agricultural and process technologies along with capital from a U.S. partner.

## SEED PRODUCTION

### 1. Project Description and Rationale

This project proposes the establishment of a joint venture between a U.S. seed breeding company and a Guatemalan producer to multiply seed under contracting arrangements.

There exists an opportunity for expanded seed production in Guatemala where production costs are relatively low and a wide range of growing environments are available.

Skilled personnel are available in Guatemala and interested in developing seed production capabilities. Organizations in the form of effectively functioning cooperatives and companies already exist through which seed production capabilities could be expanded. Labor is trainable and not expensive. It would be most appropriately used where hand labor is required in the development of hybrid crosses.

Climatically, Guatemala offers many growing environments for crops ranging from brassicas and peas at higher elevations (up to 7500 ft.) to the purely tropical crops of the southern lowlands. A distinct dry season exists from November to April where little to no rainfall occurs. Technical development of irrigation systems has allowed production during the dry season when low relative humidity prevails and best seed quality can be obtained.

Vegetable seed kinds for multiplication would include hybrid varieties of tomato, pepper, cucumber, melon, and squash. Other kinds include flower seed and field crop seed. (Mayacrop, a large agribusiness company, has produced hybrid flower seed under greenhouse conditions for Goldsmith Seeds, a U.S. company, for some years.) Other field crop seed production has included corn, sorghum, black beans, and sesame. Additionally, the infrastructure exists for production of warm season grass and legume seeds.

Because of technical issues involved, initial production would probably be based on contracting arrangements. The project, at start-up, would be kept small in order to establish strong working relationships and develop familiarity with the capabilities of each party. Initial production would entail fundamental production requirements. More complex multiplication activities would be delayed until technical and infrastructural capabilities have been established.

Unusual production problems would be unlikely to occur because most crops considered for seed production are already raised in Guatemala. For example, there is a strong commercial capability in the production of export quality melons: 18,200 MT were produced for export in 1985. Tomatoes and peppers are grown in all regions of the country but are generally produced for domestic use only. The same situation exists for cucumbers.

Increased production of field crops such as sesame seed would be based upon the knowledge of traditional production systems within the country. Sesame, like corn, is a traditional crop for Guatemala and has been grown throughout the lower warmer regions of the country. Being a staple in the Guatemalan diet, almost all corn production is consumed. Sesame, produced by traditional village procedures, is exported in sizeable amounts each year, 14,517 MT in 1985.

## 2. Market Considerations

Seed companies which have their own breeding program or have access to breeding programs would be the most likely to consider production in Guatemala. This assumption is based on their continuing need for quality seed which would be multiplied for inventory and put into their own marketing system. Primary market considerations for this project will depend upon the ability to produce a quality seed at a competitive international price.

While most hybrid seed production which requires extensive amounts of hand labor has become too expensive under U.S. labor costs,

production is undertaken in countries such as Taiwan, China, Thailand, and Mexico. It is felt that easy access to Guatemala from the U.S. along with country-wide political stability and a strong emphasis on private sector development make Guatemala an appropriate location for seed production. Close proximity to U.S. company locations helps to maintain quality control throughout the production cycle.

Though it is possible that some seeds could be packaged and marketed into the local Guatemala economy, initially seeds would be expected to be produced for export back to the country of origin. It is conceivable that once production had been established in Guatemala, varieties would be produced suitable to the Guatemalan growing environment and local packaging capabilities could be established for Central American markets.

### 3. Technical Feasibility

The production of hybrid seed is not new to Guatemala. As mentioned earlier, hybrid flower seeds have been produced for some years in-country for Goldsmith Seeds, a California seed company. The Superb Seed Company, based in Guatemala City, has produced some of its own seed requirements for several years. Additionally, sorghum seed production has been undertaken by U.S. based seed companies.

There are well-trained technicians and managers within the country who are interested and motivated to participate in the development of the agricultural sector. These persons see developmental opportunities within the seed sector and can become instrumental in its expansion.

In order to develop a seed production capability, goals and responsibilities would be outlined in the beginning. Such a program is not envisioned to require large amounts of money but, more importantly, managerial capability and the capacity to work with different types of people within the social order, that is, from governmental officials to growers.

Several agribusiness managers whom the Profile Team met and prequalified are interested in establishing a contractual relationship with seed companies requiring specific production to be undertaken in Guatemala.

Costs other than a production purchase guarantee are not expected to be significant. It is anticipated that no special technical materials would be necessary other than simple tools and/or chemicals used in hand pollination techniques.

Details of cultural procedures would be provided by the breeding company. Procedures would then be carefully worked out and an action plan determined under local production conditions. A procedure for maintaining the current status of production fields would be established. An arrangement whereby a representative from the breeding company would visit the production site at least once, probably twice, during the production cycle is advisable.

Minimum quality specifications would be determined by the breeding company and a final sale of production would be based on meeting these requirements.

Processing of seed is accomplished in Guatemala by both public and private facilities. Equipment exists in both types of facilities to handle most small seed requirements. However, according to local seed personnel, private facilities are preferred although they are slightly more expensive.

Fertilizers and chemicals are generally available in-country as most major chemicals companies are represented in Guatemala either by representational distribution or by local manufacture and formulation.

After one or possibly two production cycles are completed, a more thorough evaluation of equipment and expansion could be determined. There may arise requirements for specialized equipment in seed processing which would expedite an expanded seed production operation.

Laboratory facilities might be required with project development as needs arise which were not present at the initiation of the project.

By giving the project time to develop at its own pace, a more realistic requirement for facilities and equipment can be determined. Thus, initial costs and risks can be kept at a minimum during project initiation.

Storage space is considered to be adequate for start-up operations. Recognizing that seed vigor and germination deteriorate rapidly in a tropical condition, project managers would minimize the problem by exporting production as soon as possible after harvest and processing.

#### 4. Financial Considerations

As mentioned in an earlier part of this discussion, initial production would be based upon a contract arrangement where seed of basic quality specifications would be produced for a predetermined amount per unit. Consequently, major financial costs will be in meeting basic terms of a production contract.

Additional costs will include covering expenses of coordination and crop inspection. As expected, larger scale production will proportionately reduce per unit costs. These expenses would be in the form of sending stockseed, communications by phone, telex and fax, possibly costs of small equipment not available in Guatemala, and probably two personal visits by a company representative to Guatemala during production and processing cycles. Estimated costs to cover these expenses during the first year of operation are approximately \$10,000.

#### 5. Potential Local Partners

Participants in Guatemala would be willing to consider a joint venture arrangement, should a prospective U.S. seed company determine that such a business structure would be the proper route to proceed.

The following persons have expressed an interest in exploring joint venture possibilities with U.S. seed companies.

Mr. Alfonso Aycinena, Director of Sales, Alpine Export Company, 16 Calle 4-53, Zone 10, Edificio Morbella, Office 6-B, Guatemala, C.A., telephone: 370691-370974, telex: 5627 ELIZA GU.

This company's sales represent the activities of over 15,000 producers, many of whom are small farm producers, who own and sell numerous agricultural products. This company presently exports vegetables and fruit to the U.S. It also buys and exports sesame seed. Through related programs sponsored through Mr. Aycinena, growers are able to secure local assistance in the form of loans and management help. Mr. Aycinena is looking for new activities in which growers can participate and feels that seed offers the right opportunity.

Mr. Federico Weller, Finca "La Igualdad", P.O. Box 235A, 11 Calle 6-58, Zone 9, Guatemala, C.A., telephone: 63230, 313005, telex: 5891 PROCAF GU.

Mr. Weller is currently producing some seed including hybrid tomato seed for export. He is also assisting in the development of a production project of red raspberries for the international market. Mr. Weller would like to build up his current seed production business.

Mr. Mario Calderon, Rancho Virginia, P.O. Box 1246, Guatemala City, C.A.

Mr. Calderon has worked previously in hybrid flower seed production and has good technical knowledge of genetics and plant breeding. He would like to work with someone in seed or plant materials production in Guatemala.

Alberto Yahri, La Meseta, S.A., 6th Avenue, No. 10-34, Zone 1, Guatemala City, Guatemala, telephone: 534222, telex: 5505 Elemir GU fax: 23377.

Mr. Yahri operates one of the best vegetable production operations in Guatemala and would like to be able to rotate some vegetables with seed crops in some production areas.

Mr. Oscar Ufer, President, Productos Agricolas Superb, S.A., 7a Avenica, 17-01, Zona 1, Guatemala, C.A. telephone: 518424, 539454, 519875, 513689.

Mr. Ufer is the second generation operating this retail seed company that began 38 years ago. In addition to importing seed from U.S. and European companies, Mr. Ufer also produces locally a part of the seed he markets. He is personally very interested in seed production and represents a very authoritative technical source of information on production matters unique to Guatemala.

## CUT FLOWERS AND ORNAMENTAL PLANTS

### 1. Project Description and Rationale

Production of ornamental plants and flowers in Guatemala for export to the U.S. and Europe presents an opportunity for producers, investors, and those engaged in marketing these materials.

Conditions which favor projects in this area include:

- a wide variety of micro-climates within a relatively small geographic area allowing year round production or seasonally adjusted production of a wide variety of plants.
- a rapidly developing air transport service, capable of delivering plants and flowers in a timely manner,
- availability of land, water, and labor at low or reasonable cost,
- an organization of ornamental plant exporters currently with a membership of 18 companies working together to improve conditions and expand opportunities. (with 17 exporting to the U.S. and one to Europe),
- a continued uptrend in demand for ornamental plants and flowers from the U.S. and Europe,
- increased supply of ornamentals from tropical countries including Guatemala which has proven capable of major participation in a growing market,
- the existence of Guatemalan laws and regulations favoring investments through tax holidays and freedom from import duties,
- the Caribbean Basin Initiative which gives preferences to imports into the United States from Guatemala.

### 2. Marketing Considerations

Sales trends have been upward in the United States and Europe for ornamental plants and flowers. To a significant degree, ornamental plants are a fashion market with new and unique plants becoming important in the market from time to time. Flowers, cut for the U.S. and both potted and cut for Europe, continue to be mostly the standard favorites.

Plants are sold for display in a wide variety of locations including homes, businesses, restaurants and hotels. They are available for sale in flower shops, plant nurseries and in many department and food stores.

There are different marketing systems including wholesale markets or auctions, contracts, or commission selling (mostly in the U.K.).

The following are some of the cut flowers currently of interest:

Popular volume flowers: roses, carnations, and chrysanthemums

Fillers: gypsifibrium, statice, tuberose, daisies

Novelties: birds of paradise, anthurium

### 3. Technical Considerations

All the climate, soil and water conditions exist for a wide variety of ornamental plants. The major needs are technology, (including varietal choices, cultural and agronomic practices and preparation for shipment), and marketing and distribution help in the U.S. and Europe.

A major technical obstacle is the sanitary import restrictions into the U.S. which restrict the shipment of soil with the plants. Enough of the technical problems have been solved to permit a currently growing export market.

### 4. Financial Considerations

The propagation of ornamental plants and flowers is intensive for labor, technology, management and land. The capital requirements for start up are also high per acre but project returns according to sample cash flow projections indicate early significant cash flow and pay back.

Following are summary performance projections for two flowers (2.5 acres each)

Standard Carnation				
Year				
Item	1	2	3	6
Investment		110,483		2,640
Direct Costs		43,697	48,067	52,873
Indirect Costs		<u>63,646</u>	<u>70,010</u>	<u>77,011</u>
Total Outflow		217,826	118,077	132,525
Sales		176,000	193,600	212,200
Net Cash Flow		(41,826)	33,697	113,372

Tea Roses				
Year				
Item	1	2	3	6
Investment		322,483		
Direct Costs		43,697	48,067	52,873
Indirect Costs		<u>77,146</u>	<u>84,860</u>	<u>93,873</u>
Total Outflow		443,326	132,927	146,220
Sales		350,000	378,000	406,000
Net Cash Flow		(93,326)	245,073	259,780

5. Prospective Local Partners.

The Profile team met with Eduardo Gonzalez, the President of the Association of Exporters of Ornamental Plants, who recommended contact with several operators who wanted to expand their businesses. Needs include capital, technology and marketing help.

Further information regarding these local investors may be obtained by contacting:

Eduardo Gonzalez Castillo, Presidente, GEXPO - Gremial de Exportadores de Plantas Ornamentales, Adscrita a la Camara de Exportacion, Ave., La Raforma 9-24, Zona 9, Guatemala, C.A. telephone: 32086819, telex: 5411 MOGO GU.

Ing. Ricardo Santa Cruz Rubi, Sub-gerente Tecnico, Gremial de Exportadores de Productos no Tradicionales, Edificio Camara de Industria, 6o. Nivel, Ruto 6, 9-21, Zona 4, Guatemala, C.A. telephone: 318525, 325683, telex: 3100 GREXPO GU

Mr. Santa Cruz is the technical agribusiness manager of the Association of Exporters of Non-Traditional Crops. An agronomist, he is well acquainted with growing conditions in Guatemala. In his current position, he works on a daily basis with the exporters of both cut flowers and ornamentals.

SECTION V

PROJECT DESCRIPTIONS

## PROCESSING AND MARKETING FROZEN BERRIES

This project description outlines the opportunity that exists in Guatemala for a U.S. food company that processes and markets frozen berries for the American market.

Fresh strawberries, blackberries, and raspberries are being produced from October through April in elevations of 4,000-6,000 ft. in areas surrounding Guatemala City. The majority of the fresh berry product is currently targeted for the U.S. winter market during the two premium months of December and January.

However, the proven capability in Guatemala to produce quality berries for six months and the present availability of second quality berries during the peak fresh market months suggest the feasibility of a joint venture to process and export frozen berries to the United States.

Prospective partners for such a venture would be a U.S. company dealing in frozen fruit products and looking for an additional supply of competitively priced product, and a Guatemalan company with demonstrated business and agronomic management skills which is looking to increase and broaden its exports of berry product.

Marketing, specialized food and production technology, and limited capital input would come in from the U.S. side. Suitable land with irrigation resources, overall management for agronomic and processing operations and capital input would be provided from the Guatemalan side.

The basic economics of comparative advantage come from the use of low cost (\$1-2/day), very efficient Guatemalan labor, ideal growing conditions, savings from holding frozen product only a limited time in inventory, competitive freight rates to the U.S., and duty free entry of Guatemalan product to the U.S. under the Caribbean Basin Initiative.

In 1985, total national production of strawberries was estimated at 308 MT, principally of the Chandler, Pajaro and Selva varieties. Production of other berries on a commercial scale is still in the trial stage with experiments with the adaptation of varieties and appropriate culture practices being conducted at the present time. Preliminary results are encouraging--one producer, for example, has yields of 30,000 lbs./acre of large blackberries being air freighted currently (December, 1987) to the U.S.

The Lawton, Humble and Brazos blackberry varieties are being used for trial plantings, as are The Heritage, Meeker and Willamette varieties for raspberries.

Among the prospective local agribusiness investors in a potential joint venture in Guatemala would be Industrias Agricolas Centroamericanas, a holding company for several large agro-industrial businesses. These involve the agricultural production of feed grains, coffee, sugarcane, strawberries, beef and dairy cattle; the processing of food products such as beer, soft drinks, milk substitutes, and snack foods; and the operation of retail outlets for convenience foods and beef.

The company in one of its divisions has 25 acres of strawberries under production for the U.S. fresh market in a joint venture effort with a Florida company. Since production results have been encouraging and the company is looking to expand its export volumes, it would consider the feasibility of soon increasing its production to 60 acres, and then successively to 120 and 320 acres on available, irrigable land if a well structured joint venture--integrated from production through processing and marketing--could be formed with the appropriate U.S. partner.

Interested U.S. companies in the frozen food business who could bring the needed marketing, food technology, and capital to this prospective opportunity should contact Mr. Eduardo A. Castillo, a company manager, and a Texas A.& M. graduate through:

Industrias Agricolas Centroamericanas, S.A.  
2a. Avenida 14-61, Zona 10  
Guatemala City, Guatemala Telephone: 680303  
CENTRAL AMERICA Telex: 4182 CERVEN GU

The prospective U.S. investor can also learn much about the operations and potential of other Guatemalan producers of berry products through contact with three groups involved in the fostering of the growing and export of nontraditional Guatemalan products. All three groups offered valuable assistance and information to the Profile Team in its work in Guatemala:

Non Traditional Products Exporters Association  
Edificio Camara de Industria, Ruta 6, 9-21, Zona 4  
Guatemala City, Guatemala  
telephones: 61311/14/18, 318525, 314957, 325683  
telex: 3100 GREXPO GU

attn: Mr. Ricardo Santacruz

PROEXAG  
Chemonics International Consulting Division  
12 Calle 0-39, Zona 14  
Guatemala City, Guatemala  
telephone: 68-05-42  
telex: 3100 GREXPO GU

attn: Edward F. Hurlston, Jr., Team Leader

Consultores Agroindustriales  
4a. Avenida 3-68, Zona 9  
Edificio Intecunsa, Oficina 309  
Guatemala City, Guatemala  
telephone: 318-493  
facsimile: 318483

attn: Fernando Garcia-Salas, Director  
Francisco Rohrmann C., President

## IRRIGATION EQUIPMENT SALES

There seems to be a growing interest in irrigation in Guatemala. As more and more fresh fruits and vegetables are produced, the need for modern irrigation equipment is rising.

Irrigation techniques in country range from traditional methods to high pressure sprinkler and drip systems. Most farms are small, usually two to five acres. Some have a co-op type water system where they share with other growers the cost of drilling wells and piping water to each small field. Most small farmers either flood the fields by furrow method or they use a few high pressure impact sprinklers. With the high value of the fresh crops that they grow, it should be economical for them to use drip irrigation. It appears that the market for drip will rise rapidly in the next few years.

Modern irrigation techniques will be one of the major factors that contribute to the economic success or failure of a large number of new projects in Guatemala.

An example of savings using modern irrigation systems is as follows:

If 33% of a 36 inch crop water requirement is saved annually, then 135-200 kilowatt hours might be saved for each acre irrigated. Likewise, by reducing the operating pressure from 50psi to 20psi, 94-139 kilowatt hours would be saved annually for each acre foot of water pumped. Thus the total energy saving on a farm could be 339 kilowatt hours or more per acre irrigated. If a grower was irrigating 300 acres and electricity cost was approximately \$.08 then there would possibly be a saving in fuel (electricity) of \$8,136.00 per year or an average savings of \$27.12 per acre. These modern irrigation techniques can be achieved either with drip irrigation or by center pivot irrigation with L.E.P.A. (Low Energy Precision Application)

### 1. Drip Irrigation

Advantages of drip irrigation include energy conservation, water conservation, additional vegetative growth, fertilizer efficiency, saline water use and low labor costs.

Potential problem areas include emitter clogging, soil conditions, salt accumulation, and high maintenance.

Extreme caution should be exercised when designing a drip system. One should always design for maximum requirements and always allow for growth in the system.

## 2. Center Pivot Irrigation

There are some projects in Guatemala that are large enough to justify center pivot irrigation. If the land lies correctly, then it is highly recommended that L.E.P.A. (Low Energy Precise Application) be used. Farming is done in a circle and drop tubes are placed on the pivot in order to water each row. No water is applied to the plant, just in the row.

Advantages of center pivot include energy conservation, water conservation, additional vegetative growth, fertilizer and chemical efficiency, saline water use, and low labor cost.

Potential problem areas include finding farms in Guatemala that are large enough, and providing effective training to machine operators.

The market for irrigation equipment in Guatemala is very competitive. There are a number of dealers located in the country. In order to be successful a company would have to visit these dealers and gain their confidence.

A few of the prospective clients are:

TOPKE, Chris Rasch, Hasso Lehnhof, Guatemala, C.A. telephone: 318417, fax: 2325365.

TECNI RIEGOS y Cia. Ltda., Avenida La Castellanna 40.26, Zone 8, Ciudad de Guatemala, Guatemala, C.A.

TECUN, S.A., Apartado Postal 590, Guatemala, C.A.

## ANIMAL BREEDING TECHNOLOGY PROJECT

The cattle and swine herds in Guatemala are generally operating at a low level of efficiency. One of the constraints to improving production is the low input of management and technology within the production cycle. A few cattle producers have experimented with the introduction of new breeds through semen, bulls, heifers and embryos. The crosses between European breeds and Cebu (usually American Brahman) have produced marked improvement in production both through improved fertility and growth rate. Most of these imports have been selected for their outward appearance rather than from production records.

The national herd of beef and dairy animals has been drastically reduced over the past seven years. Many animals were exported illegally into Mexico to generate U.S. dollars during the period of multiple exchange rates and inflation within the country. With the new government and a stable exchange rate, the herd is being rebuilt. This situation provides a unique opportunity to improve the genetic capability of the national herd.

A joint venture project with a progressive Guatemalan cattle breeder offers the U.S. partner a new market for technical expertise and genetic technology. This project will need to import equipment for a modern biotechnology laboratory and subsequently the importation of animals, semen and embryos from production tested U.S. dairy and beef herds. Training of field technicians will be an important part of this joint venture, as well as a demonstration herd or herds. The most effective use of the laboratory will be to test new combinations of breeds and to disseminate the successful new composites into many herds through embryo transfer.

The rate and cost of weight gain for steers (bulls) fed in confinement feedlots in Guatemala are shown in tables 1 and 2 that follow. These steers are fed either concentrated rations (corn, grain, sorghum and cottonseed) or more commonly a ration of sugarcane silage with concentrate. Their gain is slow and costly by U.S. standards but

most of this may be due to genetic potential. Another factor may be rations which are inadequate in some essential nutrients. New technology brought in with the joint venture could alleviate both of these problems.

Currently, the projects must be vertically integrated into the retail beef market as the current live or carcass market pays no premium for grain-fed beef or for choice carcasses.

Prospective U.S. investors wishing to pursue this opportunity should contact potential local partners Jose Maria Passarelli, Robert Merrick, and Eduardo Castillo who are interested in exploring a joint venture to improve their present breeding and feedlot operations.

PRAGSA, Jose Maria Passarelli, 8a. Calle 6-33, Zona 4, Guatemala, C.A. telephone: 65121, 67908, 62207.

Mr. Passarelli started his cattle ranch in 1986 and has developed improved pasture with an intensive rotational grazing system. He intends to vertically integrate all the way to the retail meat markets as well as to produce quality adopted breeding stock.

Robert E. Merrick B., Edif. Geminis 10, 42 Nivel, 12 Calle 1-25, Zona 10 Guatemala, C.A. telephone: 320611 al. 17, telex: 5604 REMCOGU

Mr. Merrick owns an integrated livestock operation as well as managing large land-holdings for other companies and families. He feeds his steers on concentrates, then processes the meat and sells retail, wholesale and through his own restaurants.

Industrias Agrícolas Centroamericanas, Ing. Eduardo A. Castillo D.V., 2A. Avenida 14-61, Zona 10, Guatemala, C.A. telephone: 680303 telex: 4182 CERVCEN GU.

This is the largest agricultural company in Central America and is vertically integrated in the majority of their production. They are the representatives for A.B.S. service in Guatemala.

CATTLE FEEDING PROJECTIONS GUATEMALA

LOT #: BRAHMAN X

NO. HEAD: 100  
 DATE IN :  
 OUT WT. : 920  
 DATE OUT:

#####

ASSUMPTIONS:		PER/HD
1. AVE. PURCHASE WEIGHT		520
2. PURCHASE COST (PER CWT)	\$	40.8
3. FEED COST (PER TON)	\$	135.00
4. CONVERSION RATIO		8.85
5. FEED COST PER CWT OF GAIN	\$	59.74
6. DEATH LOSS		.005
7. MEDICINE & PROCESSING		12.50
8. INTEREST RATE		.14
9. SEASON IN (1,2,3,4)		2
10. POUNDS OF GAIN		400
11. DAYS ON FEED		182

	PER/HD	PER/PEN
12. CATTLE COST	212.14	21216.00
13. FEED COST	238.95	23895.00
14. DEATH LOSS	1.06	106.00
15. MEDICINE	12.50	1250.00
16. INTEREST	25.79	2579.40
a. CATTLE	14.80	1479.57
b. FEED	11.00	1099.82

17. OWNER BREAKEVEN		
a. PER HEAD	516.26	51625.87
b. PER POUND	56.12	56.12
18. BANK BREAKEVEN		
a. PER HEAD	452.61	45261
b. PER POUND	49.20	49.20

#####

	PER/HD	PER PEN
21. PAY WEIGHT	# 920	92000
22. PROJECTED SALES PRICE /CWT	\$ 41.60 FOR GRASS FED CATTLE	
23. COST PER DAY	\$ 1.67	
23. CATTLE VALUE	\$ 382.72	38272.00
24. LESS TOTAL COST	\$ 516.26	51625.87
25. NET PROFIT	\$ -133.54	-13353.9

PREMIUM NEEDED FOR FED CATTLE = \$ 14.52 /CWT

RETAIL PREMIUM FOR FED BEEF = \$ 15.96 /CWT \*

\*--ASSUME 58% YIELD FOR GRASS FED, 62% FOR GRAIN + SUGAR CANE FED CATTLE  
 , 64% FOR GRAIN FED

CATTLE FEEDING PROJECTIONS GUATEMALA

LOT #:BRAHMAN X

NO. HEAD: 100

DATE IN :

OUT WT. : 920

DATE OUT:

#####

ASSUMPTIONS:		PER/HD
1. AVE. PURCHASE WEIGHT		700
2. PURCHASE COST (PER CWT)	\$	40.8
3. FEED COST (PER TON)	\$	135.00
4. CONVERSION RATIO		9.50
5. FEED COST PER CWT OF GAIN	\$	64.13
6. DEATH LOSS		.005
7. MEDICINE & PROCESSING		12.50
8. INTEREST RATE		.14
9. SEASON IN (1,2,3,4)		2
10. POUNDS OF GAIN		220
11. DAYS ON FEED		100

	PER/HD	PER/PEN
12. CATTLE COST	285.60	28560.00
13. FEED COST	141.05	14107.50
14. DEATH LOSS	1.43	142.80
15. MEDICINE	12.50	1250.00
16. INTEREST	14.53	1452.50
a. CATTLE	10.95	1095.45
b. FEED	3.57	357.13

17. OWNER BREAK-EVEN		
a. PER HEAD	469.65	46965.47
b. PER POUND	51.05	51.05
18. BANK BREAK-EVEN		
a. PER HEAD	383.97	38397
b. PER POUND	41.74	41.74

#####

	PER/HD	PER PEN
21. PAY WEIGHT	# 920	92000
22. PROJECTED SALES PRICE /CWT	\$ 41.60 FOR GRASS FED CATTLE	
23. COST PER DAY	\$ 1.84	
23. CATTLE VALUE	\$ 382.72	38272.00
24. LESS TOTAL COST	\$ 469.65	46965.47
25. NET PROFIT	\$ -86.93	-8693.47

PREMIUM NEEDED FOR FED CATTLE = \$ 9.45 /CWT

RETAIL PREMIUM FOR FED BEEF = \$ 8.04 /CWT \*

\*--ASSUME 58% YIELD FOR GRASS FED, 62% FOR GRAIN + SUGAR CANE FED CATTLE  
 , 64% FOR GRAIN FED

## PRODUCTION AND EXPORT OF FRESH VEGETABLES

Besides the production of fresh asparagus as profiled earlier, project opportunities exist for integrated ventures producing other fresh vegetables crops. These ventures would include the production, quality control, cooling, packing, export and marketing of fresh vegetables from the highlands in Guatemala.

Vegetables currently produced are cauliflower, broccoli, celery, lettuce, snow peas, sugar peas, green snap beans and asparagus. Production volumes and export values for 1985 are given below:

Commodity	Quantity(MT)	Value FOB	% Value	% Value to CA
fresh vegetables	29,990	8,799.6	84	16
beans	240	209.2	0	100
garbanzos, peas & lentils	45	16.9	0	100
onions	7,506	804.9	1	99
fresh mushrooms	13	0.9	0	100
truffles	26	5.5	60	40
garlic	1,947	1,188.3	10	90
cabbage	20,419	951.4	1	99
tomato	14,978	1,306.3	1	99
peppers	1,030	107.3	2	98
lettuce	3,194	286.6	8	93
okra	25	2.8	9	91
other	5,526	2,666.1	92	0
TOTAL	84,939	16,346.1		

Source: Bank of Guatemala  
Importer's Guide to Non-Traditional Agricultural Products from Guatemala, Office of the Agricultural Attach, Guatemala City, Guatemala

The climates and soils of the higher elevations are ideally suited to the production of these vegetables on a 12 month basis. Current production of premium quality products is exported to the U.S. market as well as to Central American and Caribbean countries.

Presented below are four accomplished Guatemalan agribusinesses which offer a diversity of opportunities to prospective investors interested in the fresh vegetable industry:

La Meseta, S.A.

This Guatemalan company, owned by two local investors and one U.S. investor, has built up its growing, packing and export operations over the last few years to the point where it exports about 100,000 lbs. of fresh produce weekly to the U.S. Eastern Seaboard. It also exports fresh vegetables to Central American markets.

Its principal products are celery and lettuce, but also include asparagus and baby vegetables. The company employs 250 to 500 workers, and its annual sales are in the \$1-10 million range.

The owners would welcome \$1,000,000 of additional investment capital to (1) expand (nearly double) the current volume of staple items (celery, lettuce), and (2) develop other labor intensive and high-margin specialty items to add on to weekly refrigerated container shipments to increase landed value.

The company has established an excellent name for the quality and reliability of its "Highlands" brand product on East Coast markets. Demand for its produce runs much higher than current supply.

A feasibility study for the expansion was completed by the partners in November of 1987 and would be available to prospective U.S. investors in negotiating the contribution of new equity capital. Based on the average prices received over the past three years and the current cost of production, the increased capacity generated by the \$1 million of new capital will bring a positive cash flow within 18 months. Overhead and fixed costs will be reduced as a percentage of unit costs as the economics of volume from the new production are realized. The U.S. investor would receive a solid return on his money.

The owners indicate that \$1 million dollars would purchase a 20% share in the company, and that equal participation or controlling participation can also be discussed but would require a larger investment.

For the expanded business, the company would provide the land, packing plant, management, and some capital. It is looking mainly for an equity investment contribution from the potential U.S. investor.

Financial references on La Meseta and the Highlands Corporation are the Banco Industrial, S.A., Apartiado Postal 744, Guatemala City, Guatemala; and Texas Commerce Bank, 712 Main Street, Houston, Texas 77002.

Prospective U.S. investors interested in exploring this joint venture opportunity should contact:

Thomas J. Rosser, Director  
The Highlands Corporation  
c/o Agrotex Products, Inc.  
5373 W. Alabama, Suite 404  
Houston, Texas 77056  
tel. (713) 623-0515  
telex: 79-4688

-or-

Alberto Yarhi, President  
La Meseta, S.A.  
6th Avenue No. 10-34, Zone 1  
Guatemala City, Guatemala  
tel. 534222  
telex: 5505 Elemir Gu  
fax: 23377.

Union De Guatro Pinos

This large cooperative is expanding rapidly. It is well managed and has excellent cooling and packing equipment. They would welcome new products and market channels. Interested investors should contact:

Ing. Tulio Rene Garcia Morales, Director  
Santiago Sacatepequez  
Guatemala, C. A.  
telephone: 0303259, 0303817  
fax: 0303818.

Alpine Export Company

This export company contracts production from many small farmers and ships high quality agricultural production to world markets. They are looking for technical information, and new markets for products their farmers could produce. Interested investors should contact:

Alfonso Aycinena  
16 Calle 4-53, Zona 10  
Guatemala, Guatemala City, C.A.  
telephone: 376691  
telex: 5627 ELIZA Gu

International de Alimentos Procesados

This company, owned and managed by Mr. Rafael Passarelli, an established and respected businessman, has completed a recent feasibility study to start up an integrated (production through market) frozen vegetable venture. Experienced managers have been hired to handle production, processing and marketing of frozen vegetable product - to reach 45 million pounds per year at full scale production.

Their marketing plan also calls for selling premium quality produce fresh into market windows in the U.S. market. The company is looking for marketing partners willing to take a small percentage share in the business. Investment opportunity in the fresh vegetable business. Investors interested in pursuing this should contact:

Rafael F. Passarelli, President  
8a-Calle 6-27, Zona 4  
Guatemala City, Guatemala  
telephone: 64456, 320042, 321042  
telex: 3180 NINSA GU

## MARINE SHRIMP FARMING

Guatemala has along its southern coastline all the natural resources necessary for a marine shrimp farming industry--an abundant supply of natural seed stock from the Pacific Ocean, nearly constant water temperatures, and land sites with access to water with the correct salinity.

Several commercial farming ventures are in the start up stage, including at least one joint venture with two U.S. companies providing the equity capital and technical expertise. Another shrimp operation draws upon the technology, experience and capital of an Ecuadorean company.

The Profile Team observed the operations of a productive aquaculture farm of more than 250 acres where state of the art marine technology was applied to the natural resources in a semi extensive system. The business has been shipping frozen shrimp tails to the U.S. market for two years now.

It was evident to the Team that marine shrimp farming is a very intensive venture in its requirements of capital, technology and experienced management; but that properly done, produces a premium price commodity for the international market.

Various opportunities exist for the prospective U.S. investor involved or interested in the shrimp industry. A shrimp wholesaler might consider beginning a commercial relationship through a marketing arrangement with one of the Guatemalan producers such as Mayasal. Such an arrangement could lead to other investment possibilities in shrimp processing and production. Mayasal may be contacted through its general manager, Dr. Gabriel Biguria O., Edificio 74, Oficina 301, 7a. Avenida 3-74, Zona 9, Guatemala City, Guatemala, Central America, tel. 314546, telex: 5740 Macrop GU.

Technical service opportunities also exist for those U.S. aquaculture companies with experience in operating commercial shrimp farms, since many landholders in Guatemala have plans to develop their suitable coastal properties into shrimp farms. For the venture capitalist, the marine shrimp farm project that pulls together the required technology, experienced management and proper land site can offer very attractive returns on capital investments.

On the side of caution, a prospective U.S. investor would do well to conduct a medium term market study to evaluate the impact of an increasing supply of farmed shrimp on international markets, particularly the lower priced black tiger variety and others sourced from Pacific Rim countries. And in selecting a suitable site for shrimp production, a project investor would want to assess water quality in the shadow of those cotton growing areas where agrichemicals have been heavily used.

Information on Guatemalan landowners with development plans for shrimp farming can be obtained through contact with the Nontraditional Products Exporters Association, Edificio Camara de Industria, Ruta 6, 9-21, Zona 4, Guatemala City, Guatemala, Central America, telex: 3100 GREPXO GU, tel. 325683, 318525, attention: Technical Manager, Mr. Ricardo Santacruz R.

**SECTION VI**

**APPENDICES**

MEMBERS OF THE PROJECT PROFILE SURVEY TEAM

Dr. Gary O. Conley, Ph.D.

Dr. Conley, team chairman, is president of Conley Farms, Inc., a consulting and management organization with headquarters in the high plains of the Central U.S. He provides consulting services to livestock producers, agribusiness firms, development groups and government agencies. These services include breeding programs, genetic analyses, employee training, and the design and supervision of production programs.

Using his broad experience in agricultural research and production, Dr. Conley has designed breeding, research and development programs for major corporations as well as implementing production and marketing programs. He has also reviewed projects for development programs in Latin countries and supervised training programs for participants in new livestock development programs. Dr. Conley also supervises the operation of his own ranching and farming operation which includes a beef cattle breeding program.

Dr. Conley received his B.S. in Animal Science and Agricultural Economics from Iowa State University in 1954 and his M. S. in Beef Breeding in 1956 from Oklahoma State University. He received his Ph.D. from Iowa State University in 1968 in Biometrics. He is a member of both the American Society of Animal Science and American Genetics Associations. He is a Certified Member of the American Society of Agricultural Consultants and is currently serving as a member of the Board of Governors of ASAC International.

Michael W. Chilton

Michael W. Chilton is owner and president of Agricultural Alternatives, an Oregon-based company offering production, research, and consulting services in seed and specialty plant materials. Numerous vegetable, flower, field, forage, and specialty seed crops are produced for international seed companies requiring proprietary seed production in the Northwest or other specific U.S. locations. In conjunction with the private sector and Oregon State University, training programs are designed for international participants in seed technology emphasizing hands-on training under practical field conditions.

His tropical experience draws from over fifteen years of living and working in Southeast Asia, especially Thailand and South Vietnam, in agricultural development of field, plantations and horticultural crops. Commercial experience entails twelve years of agricultural business development in Japan, South and Southeast Asia, and Europe with extensive travel in each area. Production and research into herbal and special use crops have been ongoing during that time. He has also participated in several agricultural consultation missions to West Africa and South Asia.

Mr. Chilton is a graduate of Iowa State University with an M.S. degree in Seed Technology and Economic Botany. He is a member of American Society of Horticultural Sciences, a Certified Professional Agronomist (CPAg), a member of American Seed Trade Association, and a Certified Member of American Society of Agricultural Consultants.

John D. Baker, Ph.D.

Dr. Baker is President of John D. Baker & Associates. He is a consultant to domestic food processors having volatile input costs advising them on commodity purchasing organization, business and procurement planning, training, price and profit risk control, price forecasting methods, market research, project feasibility and overseas sourcing. The firm also works in international agribusiness management and integrated rural development programs.

Prior to establishing the consulting business Dr. Baker was vice president of a large international food, pet food and confectionary manufacturing firm with responsibilities in purchasing and commodity organization, training and sourcing throughout the world. Commodity price forecasting, risk control methods and use of futures markets were significant activities. He has also worked for a large vegetable, fruit and vegetable oil processor as director of material.

Dr. Baker has a B.S. degree in Animal Husbandry and a M.S. in Agricultural Marketing from Utah State University and a Ph.D. in Agricultural Economics from Purdue University. He is a member of the American Society of Agricultural Consultants, the American Agricultural Economics Association, Sigma Xi, served as an officer of the Purchasing Management Association of Washington, D.C. 1984/5 and has been a member of the National Advisory Council, School of Management, Brigham Young University.

Wayne Sweatt

Mr. Sweatt, President of Golden Spread International Services, Inc., Memphis, Texas, is an international consultant for irrigation equipment and farm machinery requirements. Through his company, he offers a range of services including feasibility studies, analysis and designing of irrigation systems, technical services and training, and implementation and management of agricultural projects.

Mr. Sweatt who has been designing and installing irrigation systems for clients in the United States for more than 16 years began his international consulting work in 1983 as a member of the TEXAG Trade Mission to the African countries of Nigeria, Ivory Coast, Cameroon and Gabon. He was subsequently invited by the President of Gabon to be a member of the U.S. Feed Grain Council team to do a feasibility study for the investment of American agribusiness in Gabon. More recent work has had Mr. Sweatt providing consulting and management services to clients in Saudi Arabia, Nigeria, Dominican Republic and Mexico.

Mr. Sweatt has a B.S. from Texas Tech University with Agricultural Engineering as a major field of study. He is an Associate Member of American Society of Agricultural Consultants, a past Associate Director at Large of ASAC, District Export Council Member for North Texas District, Member of the U.S. Committee on Irrigation and Drainage, and a member of the Irrigation Association.

Michael W. Hurley

Mr. Hurley is the ASACI Director of International Agribusiness Teams, working under the 1985, 1986 and 1987 grant agreements with the U.S. Trade and Development Program. To date, he has directed teams to the Ivory Coast, the Dominican Republic, Ecuador, Grenada, Malaysia, Kenya, the Philippines, Belize, Guatemala, and Haiti.

Mr. Hurley's previous experience includes nine years of work in Latin America as sales and marketing manager for an agricultural development company, and as project director for the design and installation of grain storage, handling, and processing facilities. His agricultural marketing and development work encompassed nearly all countries of Latin America.

Mr. Hurley has a Master's degree in Spanish with a concentration in Latin American studies. He is completely fluent in Spanish and has a working knowledge of Portuguese and French.

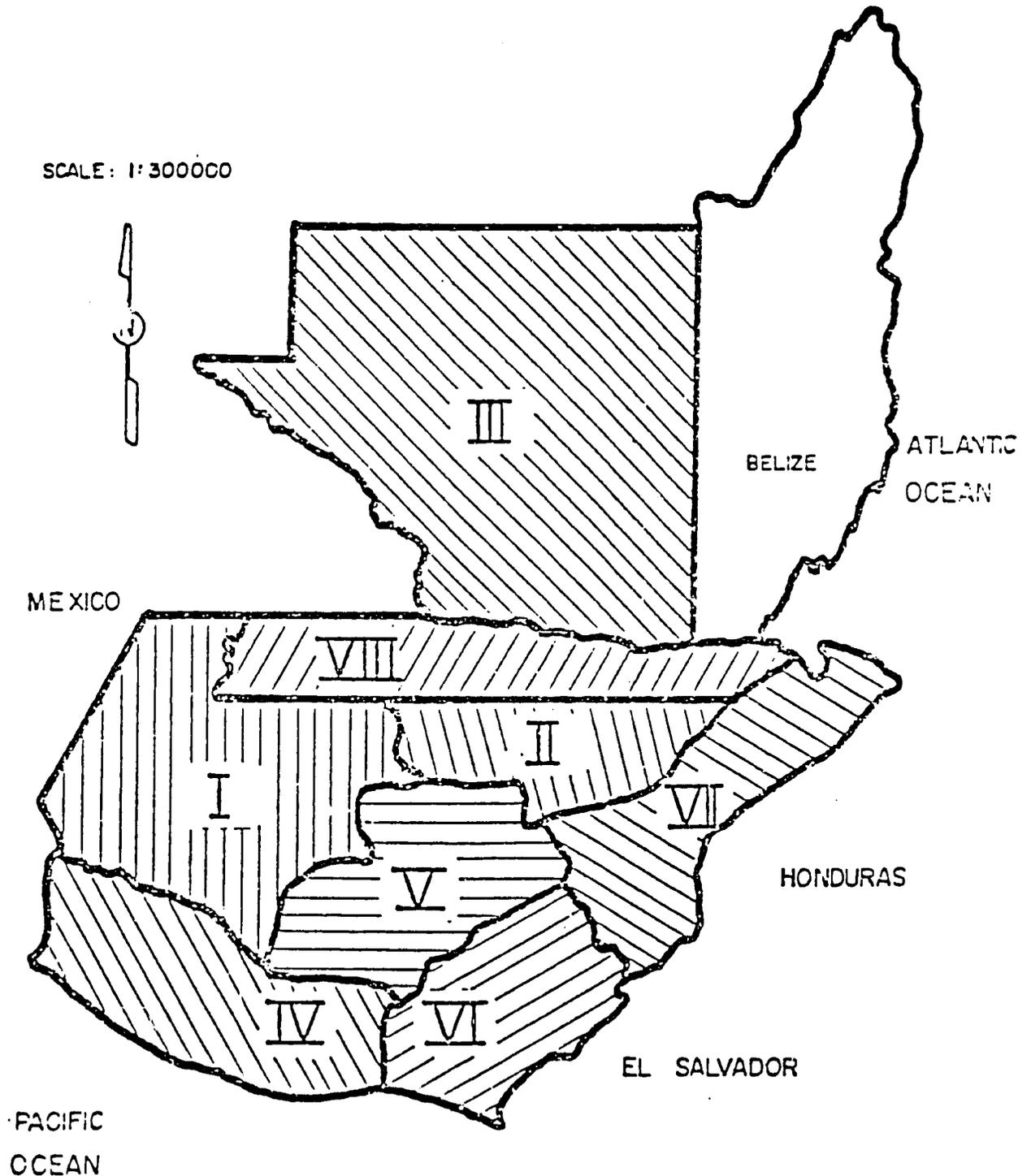


# GUATEMALA



# GUATEMALA

MINISTRY OF AGRICULTURE  
REGIONS

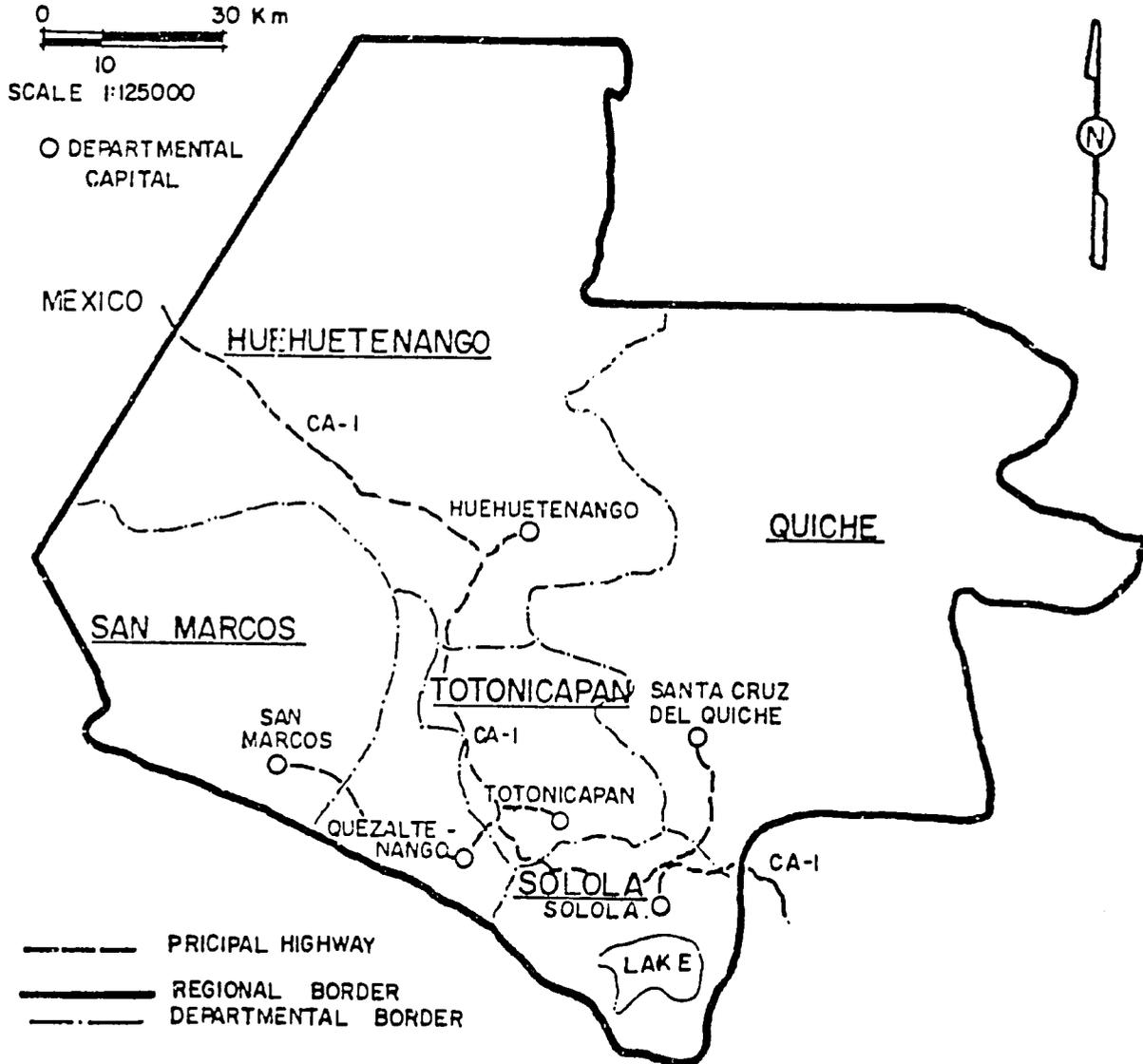


NOTE: The following maps are organized by region except for Regions II, III due to limited transportation at this time.

Source: Importer's Guide to Non-Traditional Agricultural Products from Guatemala  
Office of the Agricultural Attache, Guatemala City, Guatemala

# REGION I

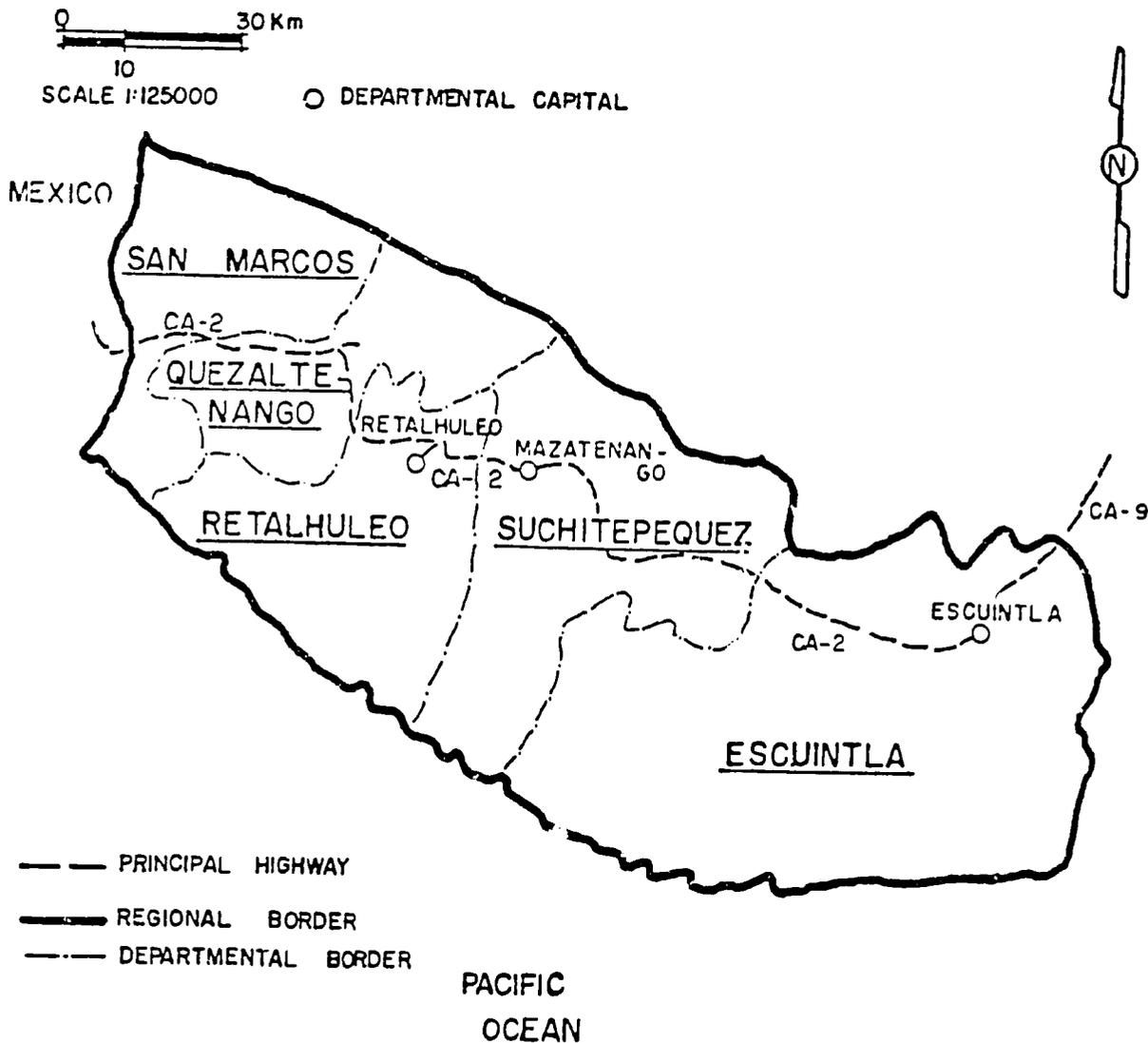
ROAD DISTANCES (Km)	Huehue.	San Marcos	Quetz.	Toto.	Quiché	Sololá
Guatemala City,	261.92	269.00	232.02	190.16	164.22	128.91
Puerto Quetzal,	371.92	379.00	342.02	300.16	274.22	238.91
Puerto Santo Tomás,	568.92	576.00	539.02	497.16	471.22	435.91



	Elevation (masl)		Annual rainfall (mm)			Average annual temperature	
	Max.	Min.	Max.	Min.	Avg. (14 yrs.)	( F )	( C )
Huehuetenango,	3000	100	6000	800	2850	64.4	18.0
San Marcos,	3000	0	4000	1000	2006	68.0	20.0
Quetzaltenango,	3000	0	4000	1000	2500	59.0	15.0
Totonicapán,	3000	1500	2000	1000	1500	59.0	15.0
Quiché,	3000	100	6000	1000	3000	63.5	17.5
Sololá,	3000	1000	4000	2000	3333	63.5	17.5

# REGION IV

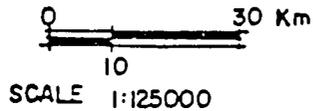
ROAD DISTANCES (Km)	Retalhuleu	Suchitepéquez	Escuintla
Guatemala City,	195.00	163.60	57.52
Puerto Quetzal,	305.00	273.60	52.48
Puerto Santo Tomás,	502.00	470.60	364.52



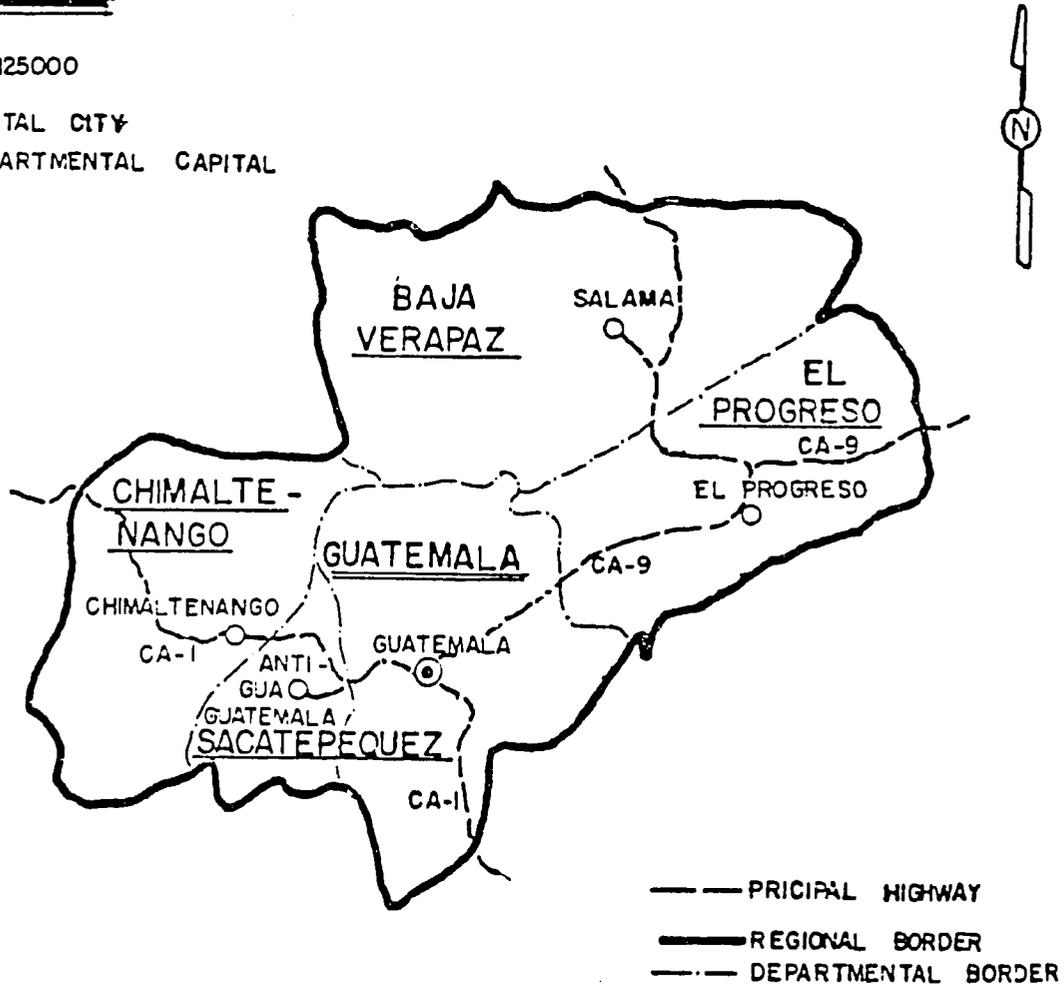
	Elevation (masl)		Annual rainfall (mm)			Average annual temperature	
	Max.	Min.	Max.	Min.	Avg. (14 yrs.)	( F )	( C )
Retalhuleu,	1000	0	4000	2000	3000	77.0	25.0
Suchitepéquez,	1500	0	5000	2000	3500	77.0	25.0
Escuintla,	1500	0	4000	1500	2625	77.0	25.0

# REGION V

ROAD DISTANCES (Km)	Guatemala	Progreso	Chimaltenango	Sacatepéquez	Baja Verapaz
Guatemala City,	0.00	75.99	52.23	39.47	154.50
Puerto Quetzal,	110.00	185.99	162.23	149.47	264.50
Puerto Santo Tomás,	307.00	231.01	359.23	346.47	285.38



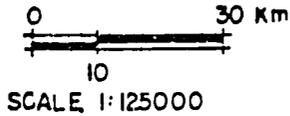
- ⊙ CAPITAL CITY
- DEPARTMENTAL CAPITAL



	Elevation (masl)		Annual rainfall (mm)			Average annual temperature	
	Max.	Min.	Max.	Min.	Avg. (14 yrs.)	( F )	( C )
Guatemala,	2500	500	3000	1000	2000	68.0	20.0
Chimaltenango,	2500	500	4000	1000	2800	68.0	20.0
Sacatepéquez,	2500	1500	4000	1000	2500	68.0	20.0
El Progreso,	1500	100	2000	500	1166	73.4	23.0
Baja Verpáz,	2000	100	2000	1000	1500	73.4	23.5

# REGION VI

ROAD DISTANCES (Km)	Jutiapa	Santa Rosa	Jalapa
Guatemala City:	123.50	70.09	167.60
Puerto Quetzal:	233.50	180.09	277.60
Puerto Santo Tomás:	430.50	377.09	474.60



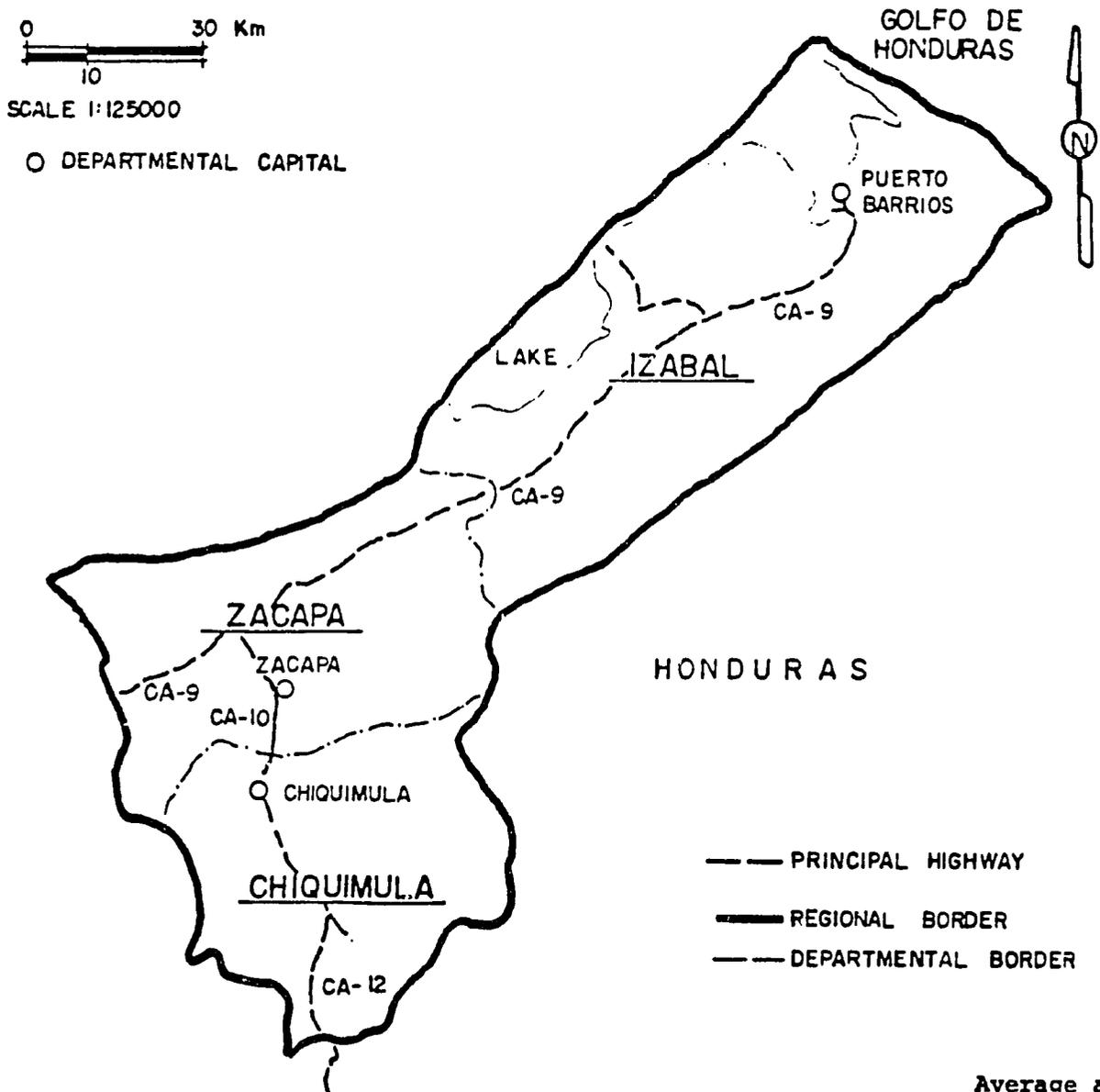
○ DEPARTMENTAL CAPITAL



	Elevation (masl)		Annual rainfall (mm)			Average annual temperature	
	Max.	Min.	Max.	Min.	Avg. (14 yrs.)	( F )	( C )
Jutiapa:	1500	0	2000	1000	1667	68.0	20.0
Santa Rosa:	1500	0	2000	1500	1750	77.0	25.0
Jalapa:	1500	500	1000	500	750	68.0	20.0

# REGION VII

ROAD DISTANCES (Km)	Zacapa	Izabal	Chiquimula
Guatemala City:	152.36	307.70	173.09
Puerto Quetzal:	262.36	417.70	283.09
Puerto Santo Tomás:	154.64	0.70	133.91



	Elevation (masl)		Annual rainfall (mm)			Average annual temperature	
	Max.	Min.	Max.	Min.	Avg. (14 yrs.)	( F )	( C )
Zacapa:	2000	100	600	400	500	77.0	25.0
Izabal:	1000	0	4000	2000	3200	77.0	25.0
Chiquimula:	1500	100	1000	500	750	77.0	25.0