# The Central American Sugar Industry

by
Nydia R. Suarez [1]

Abstract: The sugar industry is important to the Central American countries, as a source of employment and foreign exchange. The industry has also had a positive impact from a social and economic perspective, becoming one of Central America's most important sources of stability and income. The Central American countries have invested in research and development and have implemented new payment systems to become more efficient and productive, positioning themselves as important reliable world market suppliers.

Keywords: Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama, sugar production, tariff-rate quota, exports.

## Introduction

The Central American countries, Costa Rica, El Salvador, Guatemala, Honduras, and Nicaragua—plus Belize and Panama— have a common heritage.[2] These seven countries occupy about 205,000 square miles, support approximately 34 million people, and their governments consider sugar a means toward improved trade and higher standards of living.

The Central American countries are small, and mostly mountainous. In addition, the population pressure is very high, with 57 people per square kilometer. For example, El Salvador has about 275 people per square kilometer, and Costa Rica 67, compared with the average of less than 15 for all of South America and 24 for the United States—where only about 4 percent of the population directly depends on agriculture for its livelihood. The Central American population is growing by 2.4 percent per year. Finding employment is a major social problem in the region in spite of good economic growth in most of the countries. Sugarcane cultivation, which is very labor-intensive, has been an ideal crop for these countries as a source of employment and an important foreign exchange generator.

Nicaragua was the first country in Central America to produce centrifugal sugar, having started in the 1880's. Guatemala, Costa Rica, and El Salvador started producing sugar during the following decade, but it was not until the 1920's that centrifugal sugar began to be produced in Honduras.

Over the past 2 decades, Central America's sugar production, consumption, and exports have increased considerably. The production growth has occurred even though Central America's internal prices are among the lowest worldwide. Sugar's regional output for 1996/97 is forecast at almost 3.0 million metric tons, raw value, up 7 percent from 1995/96, and almost 100 percent more than in 1979/80. In spite of large increases in domestic consumption, the Central American sugar industry has been able to expand exports by more than 100 percent.

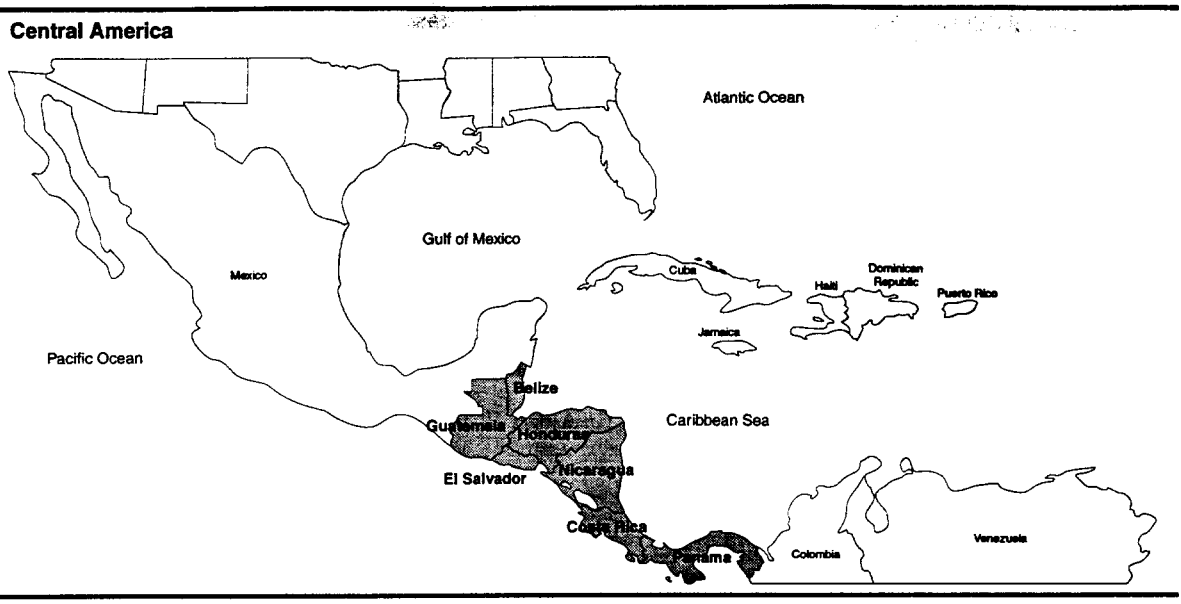
The Central American sugar industry faces changes in government policies after a decade of political and social-economic turmoil, and technological and commercial challenges that will affect production in both the short and long run. Central America produced a 1995/96 sugar crop of almost 2.8 million tons, consumed approximately 46 percent and exported the difference. The United States is the main export market.

Central America's domestic sugar markets are regulated by annual internal quotas. The quotas are assigned proportionally to each mill by each country's different sugar regulatory agency according to each mill's annual production, and distributed on a monthly basis. In each country, the distribution of sugar is generally done by the mills or by distributing companies established by the mills.

To achieve higher efficiency and utilize new technology in the areas of sugarcane sampling and analysis, Costa Rica, El Salvador, Guatemala, and Panama changed their payments to sugarcane producers from one based on the weight of sugarcane to one based on quality and sugar content. Guatemala's payment system is based on the mills' average sucrose content for the season, while the other three countries conduct individual analyses of the raw material for each farmer. Honduras and Nicaragua still pay according to weight. After implementing the sugar content payment system in late 1994, yields at both levels—farm and mill—have improved. Cane producers have been motivated to prepare and treat their fields in order to obtain a higher quality product. On the other hand, the payment system has stimulated efficiency of the industrial operation in the mills and improved the relationship between farmers and mills, which now view each other as partners.

Processors in the Central American countries would like to increase total sugar output with the hope of expanding exports, preferably to the premium market in the United

[1] Agricultural economist, Commercial Agriculture Division, Economic Research Service, USDA.
[2] In this article the term "Central America" refers to all seven countries.




States. The Central American countries value the premium they receive from the U. S. tariff-rate import quota (TRQ) system. While Central America has not objected to the new administrative mechanism for managing the import quota that was implemented for fiscal year 1996/97, they would like to receive a preferential quota due to their extreme dependence on the U.S. market. The region holds 16 percent of the global U.S. sugar TRQ, which was established in 1982 and based on U.S. imports over the 1975-1991 period.

Shipments to the United States under the TRQ comprise a significant share of total exports for many Central American countries. In 1983/84, the U.S. TRQ allocation to Central American countries was 440,000 tons, 55 percent of their total exports of 800,000 tons that year. By 1995/96, the TRQ allocation of 350,000 tons was 24 percent of total exports of 1.48 million tons. Most countries sent between 20 and 65 percent of their exports to the United States under the 1995/96 TRQ (table A-2). Sometimes, as for Panama in 1995/96, the TRQ allocation has exceeded a country's total exports.

## Belize

Belize is the smallest sugar producer in the region. However, sugarcane is by far its most important agricultural product, generating approximately 15 percent of the country's Gross Domestic Product (GDP) annually. Every year, approximately 1 million metric tons of sugarcane are grown to produce over 100,000 metric tons of raw cane sugar. The industry is highly dependent upon trade, as 90 percent of all raw sugar is exported. Sugarcane accounts for about half of total value-added in agriculture.

### *Trends in Sugarcane Production*

Sugarcane production grew at about 10 percent a year in the late 1980's to 1991, following the replacement of disease-prone plants with a more resistant variety and the introduction of improved cultivation practices. Growth, however, slowed to less than 3 percent a year during 1991/92 to 1993/94 because of declining sugar prices and minimal expansion of the planted acreage. Despite recent price increases, production did not expand in 1995/96, owing to exceptionally dry weather during the planting season. Cane yields per hectare increased in the mid-1980's but dropped in 1995/96 due to the drought. However, higher than expected sugar recovery rates offset most of the decline.

The sugar industry consists of two mills. The Belize Sugar Industries (BSI) owns one mill and produces all the sugar in the country. It plans to expand sugar output by about 5 percent a year for the next few years in an effort to lower unit costs. Another factory, Tower Hill, produces only molasses for export to Jamaica. Tower Hill is owned by Belizean private entrepreneurs and Jamaican-owned Petrojam. Government regulations assure that sugar production has a priority claim on sugarcane over molasses production. Sugar production remained flat at about 100,000 tons a year from 1985/86 to 1994/95 because of weak sugar prices and declining productivity at the BSI factory. Processing facilities were modernized and expanded in 1995/96 and, consequently, sugar output is to grow by 5 percent, despite the smaller area harvested.

### *Trade*

Belize is heavily dependent on preferential price sugar markets. Over 50 percent of its exports are to preferential price sugar markets, principally the European Union (EU) and the United States. While sugar remains the most important export product, its share in total domestic exports

Figure A-1

**Central American Sugar Production, Consumption, and Exports**

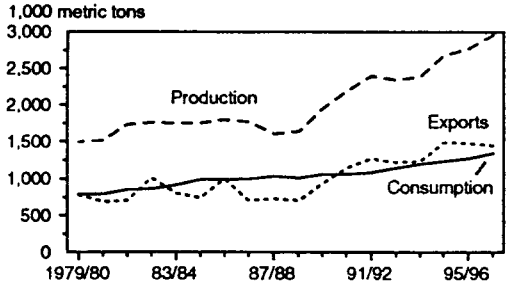
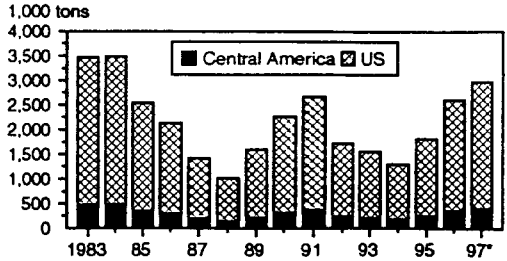



Figure A-2

**U.S. TRQ Sugar Imports and Central American Share, Fiscal Years 1983-97**




*Assumes entire TRQ is allocated.

Figure A-3

**Central American Sugar Production**

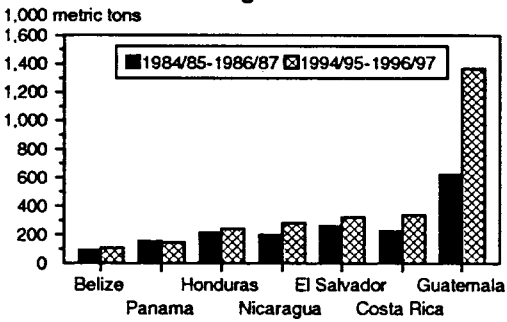
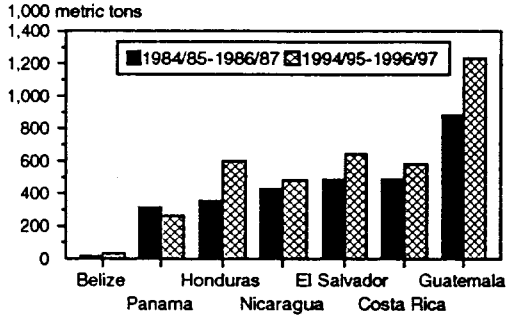



Figure A-4

**Central American Sugar Consumption**




fell from 39 percent in 1989/90 to 33 percent in 1994/95. The average cost of sugar production in Belize is estimated to be above average world market prices. Sugar exports averaged about 100,000 tons between 1979/80 and 1989/90 because of favorable export prices. In 1991/92 and 1992/93, however, export earnings stagnated because of sluggish volumes and weaker prices following a reduction in quota sales to the U.S. market and increased sales at lower prices in the free market.

In 1995, Belize's EU quota was raised by about 7,700 tons a year for a period of 6 years due to Portugal's EU accession, while Belize's U.S. quota was raised by 4,000 tons because of shortfalls from other suppliers. As a result, the proportion of sugar output sold in the free market declined from 43 percent in 1994 to 26 percent in 1995. Belize holds only 1.1 percent of the U.S. sugar TRQ, which accounted for about 25 percent of Belize total sugar exports in 1995/96. Of the initial TRQ allocation in 1996/97, Belize's share is 17,849 metric tons. Other destinations besides the EU and the United States in recent years included Canada and Mexico.

### *Trends in Domestic Consumption*

From the 1996/97 crop, an estimated 12,000 tons of sugar are expected to be used for domestic consumption. This amount represents only 11 percent of expected output and a per capita consumption estimate of 50 kgs per year. Domestic consumption is growing steadily as industrial demand for soft drinks and food processing increase. Belize produces both brown and "plantation white" sugar for the domestic market. Brown sugar accounts for about 15 percent of domestic consumption, while plantation white sugar accounts for the remainder.

## Costa Rica

The sugar industry in Costa Rica is relatively small, but it is still very important to the country's economy. Every year, over 3 million tons of sugarcane are harvested to produce over 300,000 tons of raw cane sugar. Like other countries in the region, the industry is very dependent upon trade. Over 40 percent of total raw sugar is exported.

### *Trends in Sugarcane Production*

For 1996/97, sugarcane production is expected to reach 3.4 million tons. Sugar production is expected to reach a record 350,000 tons, raw value, up slightly from the previous year because of better yields per hectare. Yields have increased more than 30 percent from 1979/80 through 1995/96. While the area harvested for sugarcane and sugar production have been relatively stable, averaging about 35,000 hectares per year in the last 10 years, sugar output has increased considerably. Most of the growth was to meet the rapid expansion in domestic demand for sugar; however, the expanded export opportunities in the U.S. market were also an incentive. Good cultural practices and higher mechanization are also factors behind increased production.

Sugarcane is grown in two different regions in Costa Rica. The traditional producing area is on the Central Plateau,

Figure A-5

**Belize: Sugarcane Harvested Area**

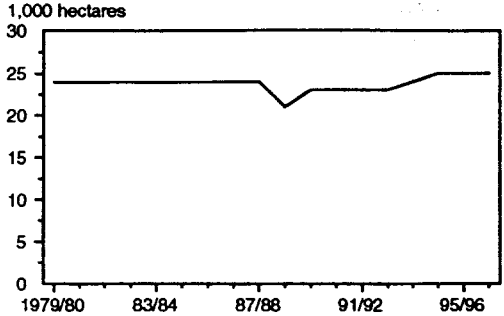



Figure A-6

**Belize: Sugarcane Production**

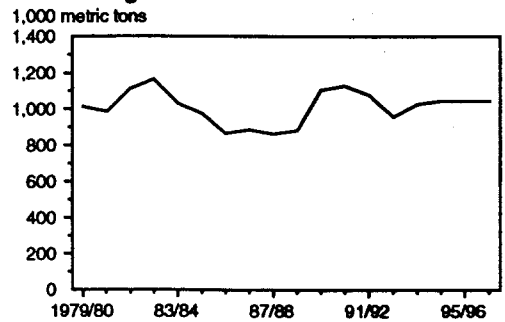



Figure A-7

**Belize: Sugarcane Yield**

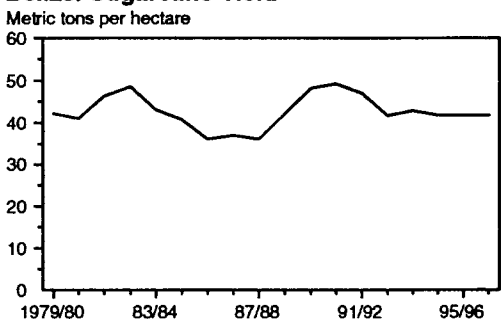
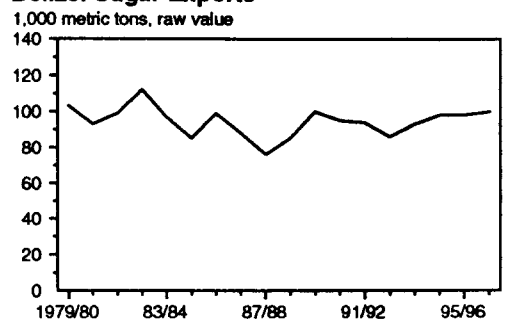



Figure A-8

**Belize: Sugar Exports**




where cane is grown on relatively mountainous terrain. Some sugar is also grown in the northern and southern Pacific coast areas. In the traditional producing area of the Central Plateau, cane is characteristically cultivated by small landowners. Sugarcane is largely unirrigated in this region and usually grows for 18 to 24 months before the first cutting. Common practice in the Central Plateau growing region is to have 4 to 5 ratoon crops before replanting. The sugarcane harvest season runs from December through April.

Since the late 1980's, cane cultivation has spread to the relatively dry Pacific Coastal plain, and new areas were planted in Guanacaste, San Carlos, and San Isidro del General. In this area, holdings are relatively large by Costa Rican standards and the gently rolling terrain lends itself to mechanized cultivation. Cane is frequently grown under irrigated conditions on the coastal plain, allowing the production of a 12- to 14-month crop.

The Costa Rica's Sugar Cane Industry League (LAICA), which is an autonomous agency, controls the production and marketing of sugar. The Costa Rican Government sits on the board of directors of LAICA, participating in issues related to price control. Sugarcane is expected to remain an important crop, as it is a relatively low risk activity for small farmers. Also, alternative products such as rice, beef, or melon production require more capital or are associated with higher risks.

### *Trade*

Although Costa Rica's sugar exports have grown steadily, export share of total production declined from over 40 percent in 1979/80 to 22 percent in 1988/89 due to the growth in domestic utilization. Export share of total production has averaged about 43 percent in the last few years. Costa Rica exported an average of 80,000 tons of sugar annually from 1979/80 to 1993/94. Record sales of 158,000 tons in 1994/95 accounted for 10 percent of the region's sugar exports. Exports dropped 5 percent in 1995/96 to 150,000 tons and are expected to drop even more in 1996/97 because of increased domestic consumption.

Costa Rica holds 1.5 percent of the U.S. sugar TRQ and the United States accounted for 22 percent of Costa Rican sugar exports in 1995/96. Of the initial U.S. TRQ in 1996/97, Costa Rica's share is 24,340 tons.

In January 1995, the Costa Rica Constitutional Court decided that the allocation of both the U.S. sugar and domestic consumption quota among the mills was to be made according to the mill's sugar production during the preceding crop year. Before this decision, LAICA allocated these quotas among the mills. The domestic consumption quota, like the U.S. quota, allows producers to receive a higher price than the sugar sold in the world market. This policy change originated when the millers of the Guanacaste-Puntarenas region filed a law suit complaining that they were at a disadvantage under the previous system, as a large percentage of their production had to be sold in the world market at a lower price. LAICA used to assign higher quota volumes to the smaller mills. Under the new

Figure A-9

**Costa Rica: Sugarcane Harvested Area**

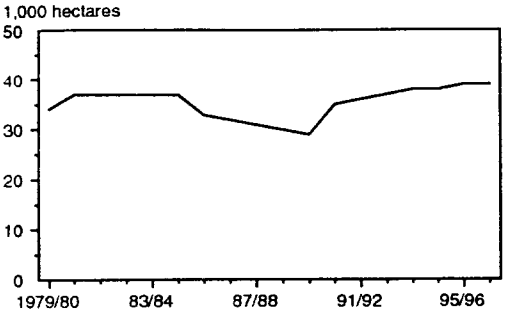



Figure A-10

**Costa Rica: Sugarcane Production**

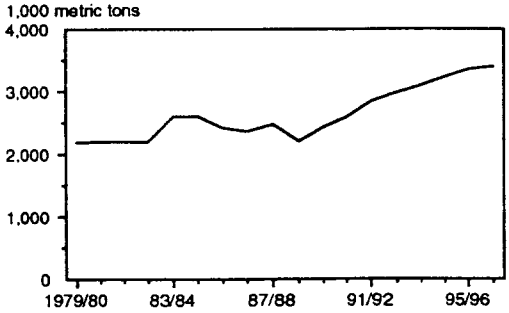



Figure A-11

**Costa Rica: Sugarcane Yield**

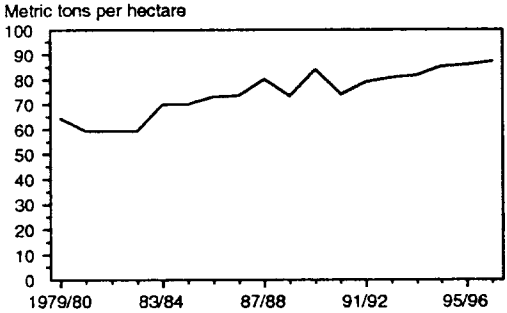
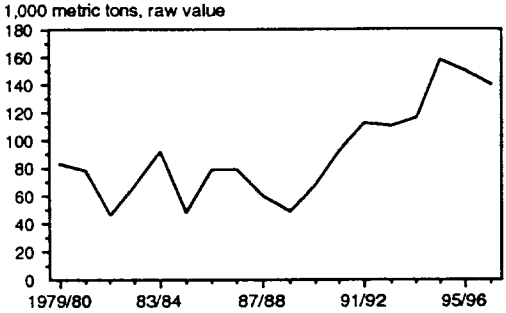



Figure A12

**Costa Rica: Sugar Exports**




system, the largest mills will receive a larger share of both quotas. Small producers from other areas of the country found that the new system would negatively affect them and introduced a new bill that could change the system again.

### *Trends in Domestic Consumption*

Domestic consumption of sugar in Costa Rica continues its upward trend, although at a slower pace than the population growth rate. For 1995/96, domestic use is estimated at a record 195,000 tons, influenced by higher industrial use and increased direct human consumption. Nearly 70 percent of the sugar is used in direct human consumption, and the rest in the manufacturing of soft drinks, confectionery, and other food products. Per capita consumption is estimated at about 65 kgs per person, per year, the highest in Central America and one of the highest of the world.

## El Salvador

El Salvador is the most densely populated country in Central America, and sugar was one of the most dynamic agricultural commodities during the 1990's. In 1995, the sugar industry contributed $38 million to the country's foreign exchange earnings.

### *Trends in Production*

Privatization of sugar mills and new price incentives for producers are likely to lead to higher sugar recovery rates and sugar output over the next 3 to 5 years. Sugarcane is being planted to areas formerly dedicated to cotton production and idle land in the eastern region of the country. However, the amount of land suitable for mechanized harvesting is very limited. Long-term success of the sugar industry will depend on continued strong sugar prices and less government intervention. There are 10 sugar mills in the country of which six are privately owned. Two of the privately owned mills have recently expanded milling capacity to produce greater quantities of refined sugar for export. The Government of El Salvador is finalizing plans to privatize its four mills.

Unusually heavy rains during August and September 1995 lowered 1995/96 sugarcane production to 3.2 million tons. The industry has had a history of problems with unscheduled burnings of sugarcane fields, resulting in significantly reduced sugar recovery rates. However, sugarcane burnings were better controlled in 1996. Better recovery rates offset some of the loss in sugar production caused by reduced sugarcane output. Area is forecast to increase in 1996/97 by 2 percent, and assuming normal weather, production is forecast at 340,000 tons, up 7 percent.

### *Trade*

Sugar exports in 1995/96 amounted to 105,000 tons, down 11 percent from 1994/95, but are expected to jump 10 percent in 1996/97 to 115,000 tons due to increased production. Exports as a percent of production have declined from 43 percent in 1991/92, to 33 percent in 1995/96 mainly because of increased domestic consumption. El Salvador holds 2.6 percent of the U.S. sugar TRQ, which accounted for more than 50 percent of the country's total sugar exports in 1995/96. Of the initial

Figure A-13

**El Salvador: Sugarcane Harvested Area**

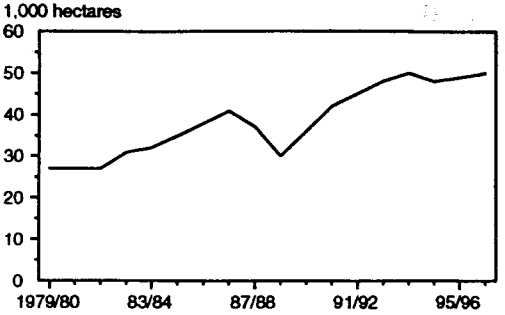



Figure A-14

**El Salvador: Sugarcane Production**

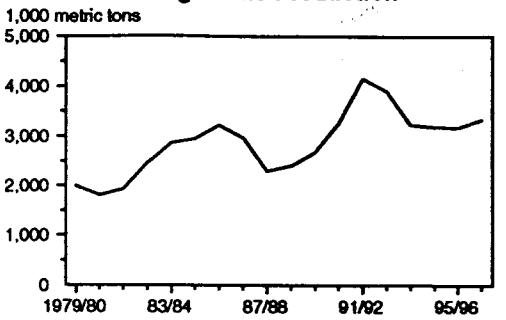



Figure A-15

**El Salvador: Sugarcane Yield**

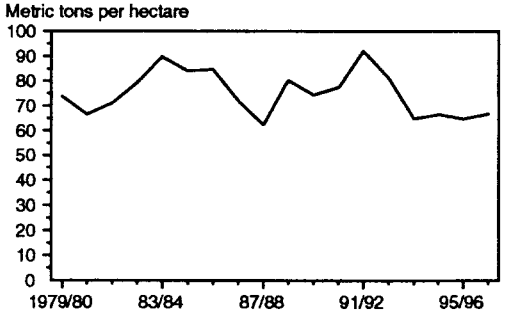
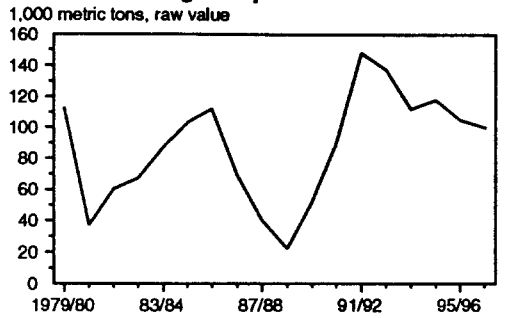



Figure A-16

**El Salvador: Sugar Exports**




U.S. TRQ allocation in fiscal 1996/97, El Salvador's share is 42,189 tons.

The Salvadorean millers continue to search for new market opportunities since intra-regional trade is limited. Nicaragua, Honduras, Guatemala, and El Salvador signed a free trade agreement, but it does not include sugar. A 20-percent tariff is imposed and an import permit is required.

### *Trends in Domestic Consumption*

Domestic sugar consumption has been trending fairly steadily upward and continues to keep pace with the rapid growth of the country's economy. For 1996/97, domestic consumption is expected to reach 219,000 tons, up more than 3 percent from 1995/96 and account for 64 percent of estimated production. Per capita consumption is estimated at 35 kgs per person, per year.

At the end of 1995, the Salvadorean Sugar Association decided to increase the wholesale price of plantation white sugar by the equivalent 2.5 U.S. cents to 42.8 cents per kilogram. Local mills claimed their returns have diminished because of rising costs of raw material, transportation, and labor. The Sugar Association claims that price increases will put El Salvador wholesale sugar prices in line with neighboring countries and reduce contraband trade. The wholesale price for refined sugar is 4.19 colones or 48 cents per kilogram and the retail price is approximately 4.88 colones or 56 cents per kilogram. Most sources do not see these price increases significantly impacting domestic sugar consumption. However, sugar mills are complaining that retailers are raising prices of sugar disproportionately to the wholesale price increases at the expense of consumers. The Salvadorean Government controls wholesale and retail sugar prices through the Ministry of Economy, but the retail price controls are difficult to enforce.

## Guatemala

Among the Central American countries, Guatemala stands alone as a country which, in less than a decade, has become a major shipper to the world market and the third largest exporter in the Western Hemisphere, after Cuba and Brazil.

### *Trends in Production*

Guatemala has one of the most rapidly expanding and lowest cost sugar sectors in the world. The Guatemalan industry produced an estimated 1.3 million tons, raw value, in the 1995/96 season, and output in the 1996/97 season is currently forecast to rise 8 percent to 1.4 million tons. The continuing expansion of cane area, due to buoyant producer prices, have encouraged farmers to divert more land from crops, such as cotton and soybeans, into cane, and underpins the expansion in production. Setting a high domestic sugar price, vis-a-vis the world market, enables the Guatemalan sugar industry to maintain a profit margin and continue to increase production and exports. In 1979/80, production was only 418,000 tons, but industry leaders recognized the potential of the area, due in part to river-fed gravity irrigation. The government established a positive economic climate, helping production climb more than 200 percent by 1996.

Figure A-17

**Guatemala: Sugarcane Harvested Area**

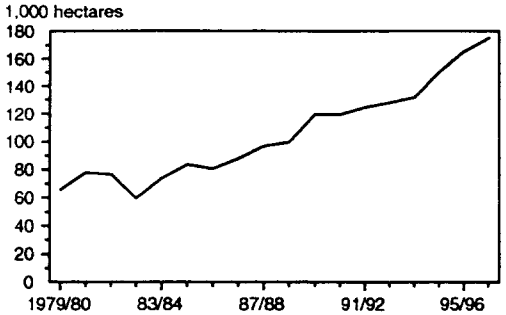



Figure A-18

**Guatemala: Sugarcane Production**

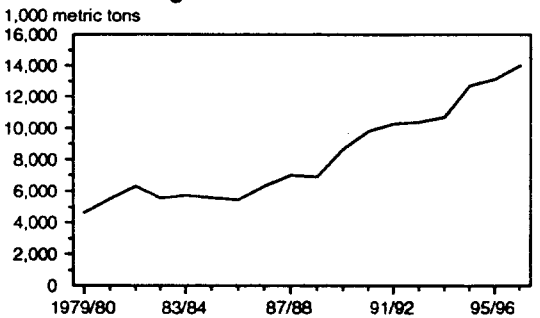



Figure A-19

**Guatemala: Sugarcane Yield**

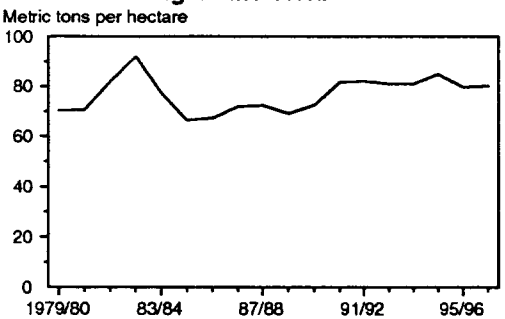
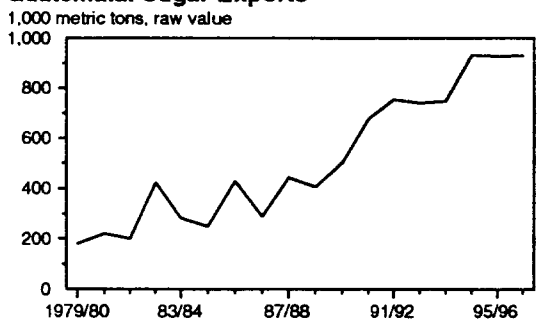



Figure A-20

**Guatemala: Sugar Exports**




### *Trade*

Sugar has become one of Guatemala's most dynamic export commodities, and in the last couple of years it has replaced bananas as the second most important export after coffee. The volume of sugar exported increased more than 400 percent from 1979/80 to 1995/96. The share of Guatemala's total sugar exports which have gone to the United States under the U.S. TRQ system, where prices are usually twice as high as the world free market price, has declined from 47 percent in 1993/94 to 11.5 percent in 1995/96 (table A-2). Guatemala's expansion in sugar trade has been helped by investment in its sugar export facility, and the construction of EXPROGRANEL, a new terminal on the south coast of the country. This facility gives Guatemala the capacity to export sugar more efficiently for both bulk and bagged shipments. EXPROGRANEL has storage capacity for 44,000 tons of bulk sugar and 20,000 tons of sugar in 50 kilo bags.

Of all Central American countries, Guatemala has the largest share of the U.S. TRQ, 4.8 percent. Of the initial U.S. TRQ allocation in 1996/97, Guatemala's share is 77,888 tons.

### *Trends in Domestic Consumption*

Domestic consumption of sugar in 1996/97 is forecast at 430,000 tons, up 5 percent from the estimate for 1995/96. Per capita sugar consumption, based on a population of almost 11.6 million, is 35 kgs per year. Like other countries in the region, sugar consumption has expanded significantly in recent years due to population growth and increased industrial use. However, the share of annual production consumed domestically has dropped significantly, from almost 51 percent in 1979/80, to 31 percent in 1995/96.

Distribuidora Azucarera de Guatemala S.A. (DAZGUA), a semi-autonomous company owned by the sugar industry, is responsible for marketing sugar domestically and also is responsible for the allocation of U.S. import quota certificates. Individual mills receive a quota for local sugar sales that are issued to distribute sugar throughout the year.

## Honduras

Unlike other countries in the Western Hemisphere where sugarcane has been a traditional crop for centuries, sugarcane production in Honduras did not gain prominence until the 20th century. Sugar production is a key component of the country's economy, providing jobs for 20,000 people and contributing almost 1 percent of GDP.

### *Trends in Production*

Total harvested area of sugarcane diminished from an all-time high of 31,000 hectares in the early 1980's to 24,000 hectares in 1987/88, bringing down crop production to less than 2 million tons of sugarcane. Depressed market conditions and a small share of the U.S. import quota forced the reduction of cane plantings, especially those of independent growers far away from the mills. Approximately 60 percent of sugarcane production is controlled by independent growers and the remaining is controlled by mills.

Figure A-21

**Honduras: Sugarcane Harvested Area**

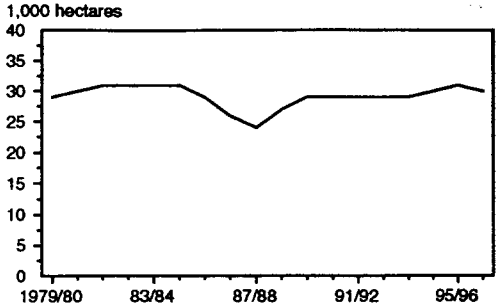



Figure A-22

**Honduras: Sugarcane Production**

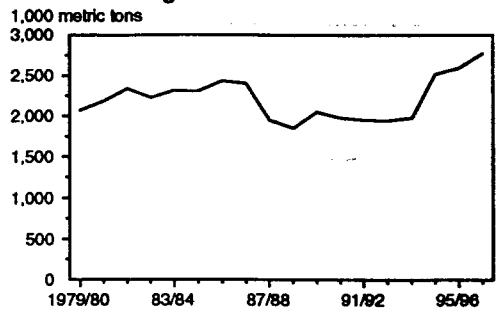



Figure A-23

**Honduras: Sugarcane Yield**

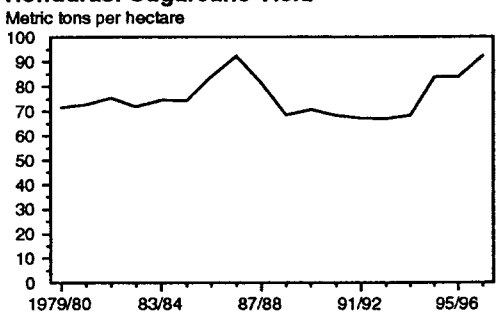
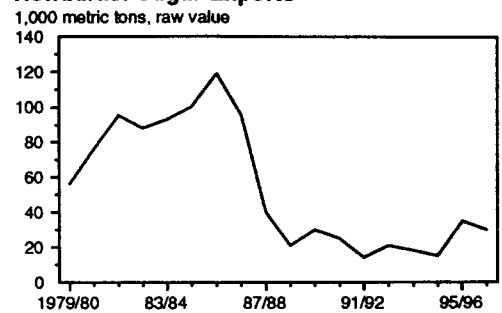



Figure A-24

**Honduras: Sugar Exports**




Since 1988/89, area harvested has been increasing slowly due to the protection created by the Agrarian Reform Law. Sugarcane has also been a profitable investment for most farmers. High domestic prices for sugar set by the Government have permitted mills to guarantee relatively high cane prices to farmers at the beginning of each crop year.

Raw sugar production increased from 167,000 tons in 1979/80 to a peak of 220,000 tons in 1985/86. However, reduction in area harvested and unfavorable weather began to take a toll in the latter half of the decade, and raw sugar production fell to 186,000 tons in 1992/93. Since then, production has increased, reaching 235,000 tons in 1995/96, up almost 10 percent from 1994/95. Production is expected to increase even further in 1996/97 to 265,000 tons. Rising producer prices for sugarcane and a substantial increase in domestic sales are encouraging the industry to expand. Producer prices have increased about 5 percent from US$ 13.58 per ton in 1994/95 to $14.29 per ton in 1995/96.

Honduras's total crushing capacity is around 23,000 tons per day, with individual capacity of the mills ranging from 2,000 tons to over 6,000 tons per day. With this level of processing capacity, Honduras could produce up to 300,000 tons of sugar annually. However, the industry has never been able to completely utilize its resources, and at present operates at approximately 65 percent of capacity. However, Honduras's eight sugar mills are looking at ways to increase efficiency, and the industry expects to be operating at full capacity by the year 2000.

### *Trade*

Honduras's export share of total sugar production is small compared with other Central American countries, due mostly to rapid growth of domestic consumption. Exports have averaged only 10 percent of production in the last 5 years. From 1979/80 to 1981/82, sugar exports averaged about 76,000 tons per year, all for the United States. However, with the reintroduction of U.S. import quotas in 1982, Honduras placed large amounts of its exports on the world market. Based on historical trade levels during 1975-81, Honduras received a 1-percent share of the U.S. sugar TRQ. Honduras's share of the initial allocation of the U.S. TRQ in fiscal 1996/97 is 16,227 tons.

### *Trends in Domestic Consumption*

Domestic consumption remained relatively stable in the first half of the 1980's, averaging about 116,000 tons per year. However, domestic sales reported by the mills understate the actual level of consumption, since sugar is smuggled into the country from Guatemala and EL Salvador. From the 1995/96 crop, an estimated 191,000 tons of sugar is expected to be used for domestic consumption, about 81 percent of production. As in the other countries of the region, consumption has expanded considerably due to population growth and increased industrial use. Consumption has doubled since 1979/80.

## Nicaragua

Nicaragua is essentially an agricultural country with a small manufacturing base. Although the sugar industry is small, it contributes about 6 percent to the country's GDP.

Figure A-25

**Nicaragua: Sugarcane Harvested Area**

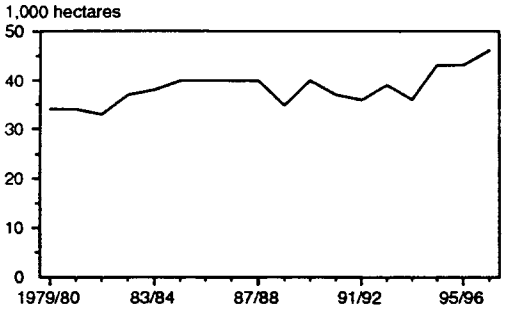



Figure A-26

**Nicaragua: Sugarcane Production**

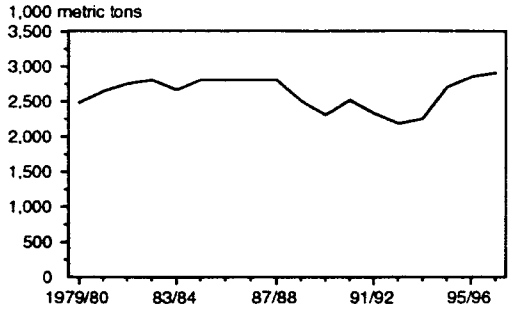



Figure A-27

**Nicaragua: Sugarcane Yield**

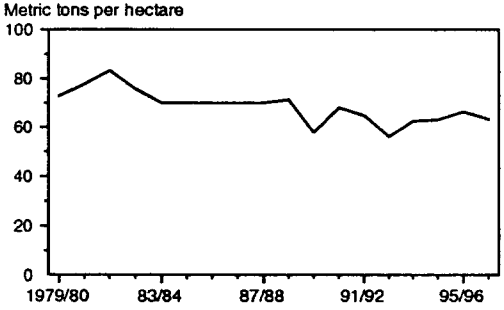
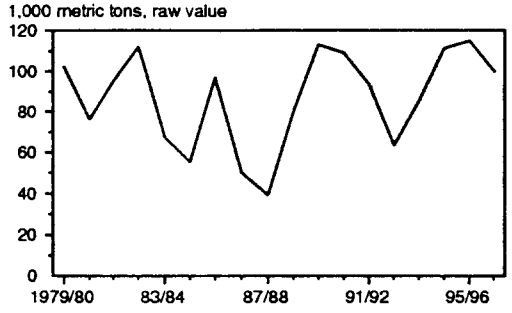



Figure A-28

**Nicaragua: Sugar Exports**




### *Trends in Production*

Sugarcane production in Nicaragua is mainly along the Pacific Coast. Sugar production has been increasing steadily since 1994/95, reaching a record harvest of 295,000 tons in 1995/96. Production in 1996/97 is forecast to increase by 3 percent to 300,000 tons. Increased area devoted to sugarcane, better cultural practices, and the privatization of several mills are contributing to the expansion. Like all other agricultural products, sugar production was severely hit by the U. S. trade embargo on Nicaraguan products from 1985-1990. On March 13, 1990, President Bush lifted the trade embargo.

Nicaragua has six mills that are grouped in an organization called National Committee for Sugar Producers (CNPA). The CNPA is the body that controls sugar marketing for the U.S. quota, other exports, and domestic use. CNPA also regulates local prices to avoid speculation by wholesalers. Although the Government of Nicaragua does not provide subsidies to the sugar industry and does not have an official production policy, it supports the CNPA.

### *Trade*

Nicaragua's export share of total production has been increasing recently, but the country occasionally has to import sugar to replace sugar used to fill its U.S. TRQ. Nicaragua's sugar exports have been averaging about 100,000 tons annually, but the export share of production has been declining due to higher domestic consumption. Nicaraguan exports to the United States, Nicaragua's main market, have averaged about 87,000 tons annually.

Nicaragua holds 2.1 percent of the U.S. sugar TRQ, which accounted for 41 percent of Nicaragua's exports in 1995/96. Nicaragua's share of the initial allocation of U.S. raw sugar TRQ is 34,076 tons.

### *Trends in Domestic Consumption*

Domestic use of sugar has increased 70 percent since 1979/80. For 1995/96, domestic consumption is estimated at 160,000 tons, accounting for 54 percent of production. Per capita consumption is estimated at 35 kgs per person, per year. The CNPA has marketing and distribution channels across the country.

## Panama

Panama is a small Central American country best known for the Panama Canal and as the second largest free trade zone after Hong Kong. The contribution of the agricultural sector to the GDP remains at only 8 percent as would be expected in this services-oriented economy. Sugar exports bring around US$20 million annually to Panama's economy.

### *Trends in Production*

Sugar production for 1996/97 is estimated at 150, 000 tons, up 7 percent from 1995/96, but 25 percent lower than the 200,000 tons of 1979/80. While there has been some improvement in sugarcane yields per hectare, much of the growth in total output in the last few years has come from an expansion in harvested area and mill crushing capacity. Two government-owned and two privately-owned mills produce enough sugar to satisfy domestic demand and to

Figure A-29

**Panama: Sugarcane Harvested Area**

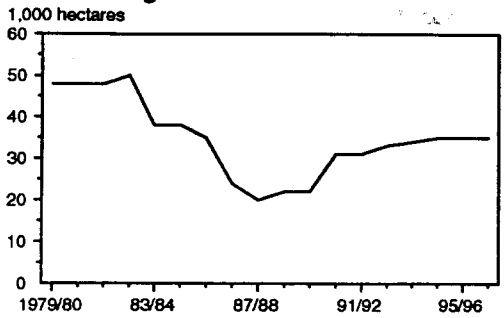



Figure A-30

**Panama: Sugarcane Production**

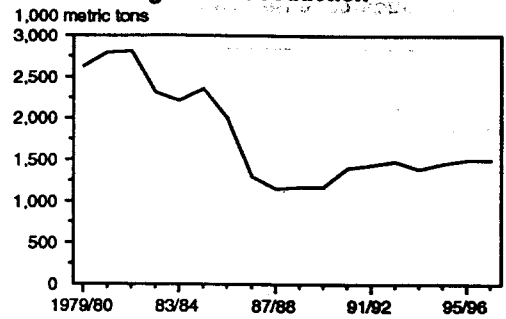



Figure A-31

**Panama: Sugarcane Yield**

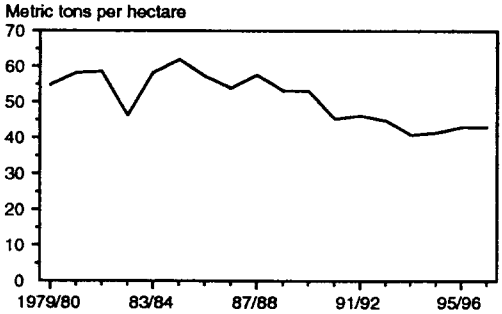
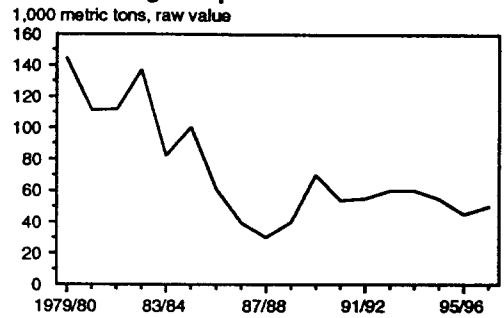



Figure A-32

**Panama: Sugar Exports**




export to the United States under the TRQ. The Government of Panama intents to sell its two mills as part of a program to privatize government-owned companies that present constant economic losses.

Sugarcane is grown in most provinces of Panama but mainly in the valleys and plains to the south of the western chain of the mountains. Despite the expansion in cultivation since the 1970's, the bulk of the annual sugarcane crop is still grown in the four central provinces of Cocle, Los Santos, Herrera, and Veraguas.

Plant cane is normally sown in the late spring in central Panama and harvested 13 to 14 months later. Low rainfall from November to early May make irrigation desirable. Where irrigation is used, a plant cane crop can be harvested in less time. Normally, larger growers produce 3 to 4 ratoon crops before a new plant crop is sown. Smaller growers follow a range of ratooning practices. Cane yields per hectare have been averaging around 43 tons in recent years, down from a decade ago when the yield per hectare was over 60 tons.

### *Trade*

Panama's sugar exports have declined from 144,000 tons in 1979/80 to 48,000 tons in 1995/96 due to diminished production and increased domestic use. Exports are expected to increase more than 30 percent in 1996/97. Panama holds 2.9 percent of the U.S. sugar TRQ, accounting for 100 percent of the country's sugar exports. Of the initial U.S. TRQ allocation for 1996/97, Panama's share is 47,057 tons.

### *Trends in Domestic Consumption*

Panama's domestic consumption has increased about 29 percent since 1979/80 and accounts for about 40 percent of total production. For 1996/97, domestic consumption is estimated at 90,000 tons, slightly higher than in 1995/96.