

USDA Foreign Agricultural Service

# GAIN Report

Global Agricultural Information Network

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Required Report - public distribution

**Date:** 4/13/2018

**GAIN Report Number:** 18005

## Guatemala

### Sugar Annual

### Sustaining Competitiveness

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**Report Highlights:**

Guatemalan sugar production for Marketing Year (MY) 2019 is forecast at 2.70 million metric tons (MMT). Production for MY2018 has been revised down 4 percent to 2.79 MMT from the previous estimate due to reduction in area. Production for MY2017 was revised down 3 percent to 2.72 MMT. Total exports for MY2018 are forecast at 1.89 MMT. Harvested area is reduced to 255,000 Ha and a daily milling capacity of 160,000 MT per day. MY2018 consumption is revised 9 percent up to 810,000 MT. The sugar sector is committed to sustain productivity and efficiency, reflected in high sugar cane yields (103.5 MT/Ha in MY2018) and sugar yields (10.9 MT/Ha in MY2018). Guatemala continues to be the fourth largest sugar exporter in the world and the third in global productivity.

**Executive Summary:**

Despite the significant profitability of sugarcane, over the past three years of lower international sugar prices have made banana production in Guatemala even more attractive and an interesting possible alternative. Harvested sugarcane area was reduced by at least 5 percent over the last two years. Eleven sugar mills are currently active in Guatemala out of 14 original family owned mills. Sugar recovery rates in MY2019 are expected to be 101 Kg/MT with up to 115 Kg/MT potential rate in the future depending on milling renovations. Present milling rates have slightly decreased from 162,000 MT per day to 160,000 MT per day.

Domestic Consumption for MY2017 was revised 8 percent up to 806,000 MT and revised 9 percent up to 810,000 MT for MY2018. Consumption represents roughly one third of total production. Exports for MY2019 are forecast at 1.89 MMT, with a 54-46 percent share of raw vs. refined sugar, respectively. Guatemala produces 50 percent of total Central American sugarcane. During MY2017, both the United States and Cote d Ivoire were the first major export markets for Guatemalan sugar, with a combined share of 22 percent. Guatemala continues filling the U.S. WTO sugar quota in a timely manner and utilizing as much as possible of the CAFTA-DR quota for refined sugar.

**Commodities:**

Sugar, Centrifugal

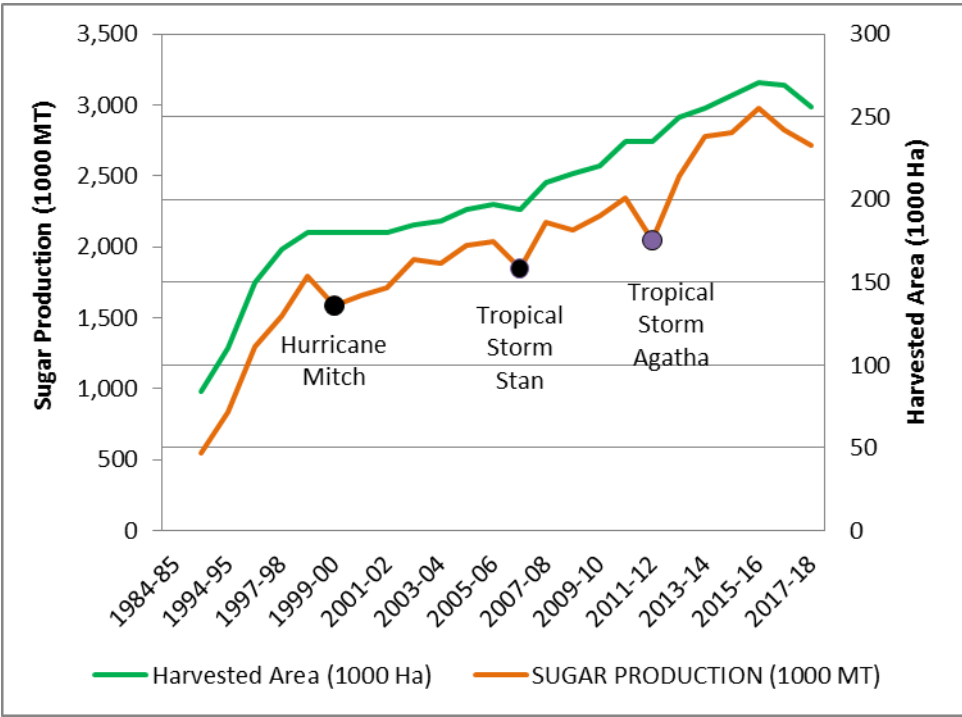
**Production:**

Sugar production in MY2019 is forecast at 2.70 MMT with sugar yields expected to average 10.6 MT/Ha. Production for MY2018 is revised down 4 percent to 2.79 MMT from last year's forecast due to a reduction in recovery rates and harvested area. Sugarcane yield for MY2018 is estimated at 10.9 MT/Ha with a sugar recovery rate of 102 Kg/MT from a total harvested area of 255,000 Ha. Daily milling capacity has slightly decreased from 167,000 to 162,000 MT. Production for MY2017 is revised down 3 percent to 2.72 MMT and total exports of 1.98 MMT, is down 9 percent from previous estimates due to a slight increase in domestic consumption combined with a decrease in total output. The reduction is partially due to lower light intensity and rainfall during MY2017, combined with a reduction in harvested area.

Guatemala's sugar production increased from roughly 500,000 MT in MY1985 to an estimated 2.79 million MT by MY2018, a 6-fold increase in the past 30 years, growing steadily at 5 percent annually

until MY2015 (see Graph 1). The sector stopped growing in MY2016, after the closing of a fourth mill. There are currently 11 active mills, down from 15. During MY2016-MY2018, the drop in sugar production is mostly correlated to the reduction in harvested area. Total production area, representing roughly 3 per cent of the entire country is equivalent to three times New York City. Historical production of sugar in Guatemala has also experienced significant drops due to severe weather conditions such as hurricanes and storms. Graph 1 below shows the impact of three such weather events: Hurricane Mitch, and Tropical Storms Stan and Agatha. Hurricanes and storms can significantly reduce sugar cane production due to reduction in light hours and light intensity needed to concentrate sugar levels in the sugarcane.

Graph 1  
Guatemala’s Historical Sugar Production and Harvested Area

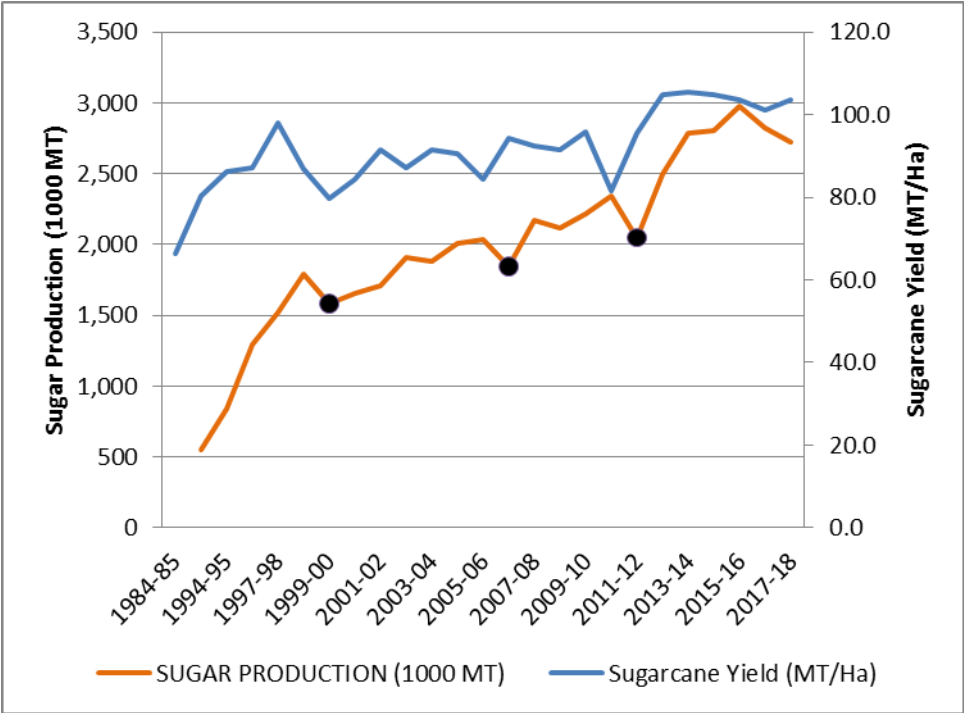


Source: Based on CENGICAÑA’s Data, 2018

Sugar production grew at twice the pace of area expansion due to increased productivity of sugarcane and efficiencies in sugar extraction. Sugarcane yields increased 35 percent from 66 to 104 MT/Ha over

the past three decades, contributing to an average increase of one extra metric ton of sugar production per year (see Graph 2).

Graph 2  
Guatemala’s Historical Sugar Production and Sugarcane Yields



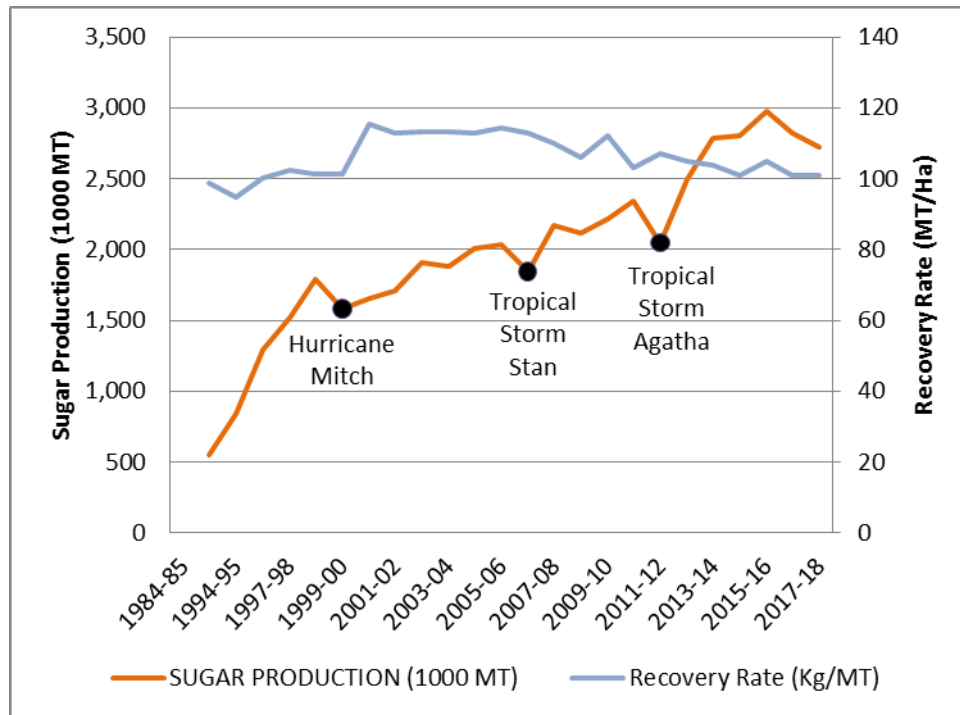
Source: Based on CENGICÑA’s Data, 2018

The sugar recovery rate has been relatively stable at over 100 Kg/MT of sugarcane in the past three years. The sugar recovery rate is expected to increase to an average 115 Kg/MT of sugarcane once all active mills are upgraded with new technology to increase extraction rates. Investments in genetics continue to improve sugar production. Irrigation efficiency has scaled up to more than 1.80 Ha/ML (mega liter, or one million liters), which has significantly reduced water usage to 820 Lts/Kg of raw sugar. This means that the sugarcane industry has cut water usage in half for cane production.

Sugar production growth in Guatemala has clearly relied on area expansion combined with steady sugar recovery rates. Sugar yields increased as a result of the 30-year agricultural research program which optimized production efficiency and water utilization. Graph 3 shows historical gains in sugar

production and the sugar recovery rate (Kg/MT). While production increased 6-fold from 1985-2015, sugar recovery rate has kept relatively constant in the same time frame.

Graph 3  
Guatemala's Historical Sugar Production and Sugar Recovery Rate



Source: Based on CENGICANA's Data, 2018

Increasing the sugar recovery rate is priority for the industry's continued growth. There are two medium term options for increasing recovery rates: a) increased concentration of sugar in the cane and/or b) increased extraction of sugar at the mill. Increased concentration of sugar in the cane is dependent upon genetics and agronomic production methods. So far, the agronomic component of the package has been consistently fine-tuned over the past 30 years. The sugar content in sugarcane can only, realistically, be pushed further with the latest technologies in genetically engineered plants. Of course weather conditions also define the plant's capacity to concentrate sugar, but cannot be manipulated so easily for crops growing in large extensions of land (i.e. irrigation and moving production to other parts of the country).

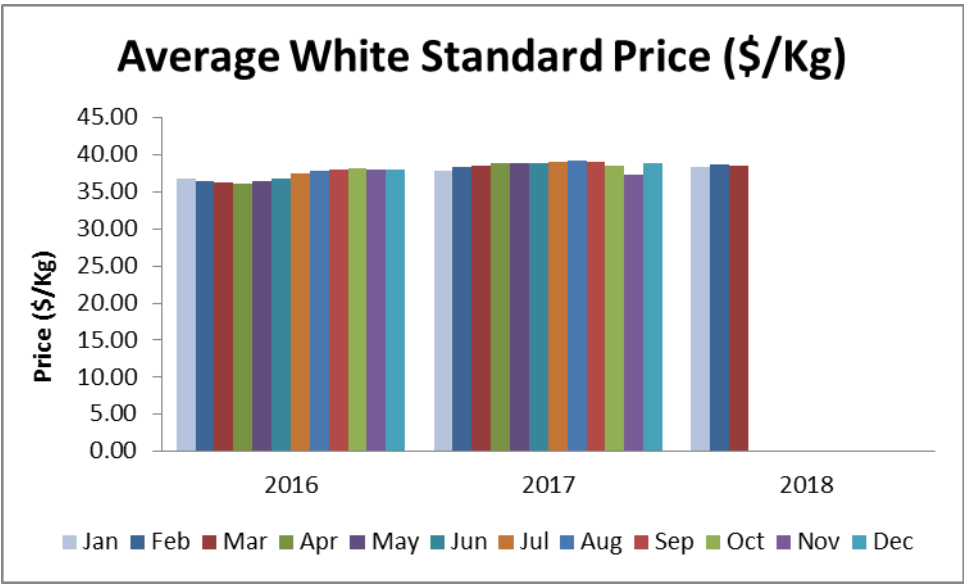
There is also room for improving the industrial efficiency, but that requires significant investment. CENGICANA's Industrial Research Program is focusing on sugar recovery and energy efficiency. Sugar recovery increases extraction rates from the final molasses and bagasse, which demands

mechanical innovation. In addition, energy efficiency depends on: diagnostics and optimization of vapor generators, fuel characterization and improvement, and reduction of energy consumption.

As part of the environmental sustainability actions, water conservation, forests grown for carbon fuel and ethanol by-production from bagasse have been incorporated into the overall production business model of the sugar industry. In MY2017, 7.5 million tons of sugarcane bagasse were converted into 630 MW of energy (32 percent of the national grid’s supply during harvest time) and produced 289 million liters of alcohol. In addition, the sugar industry planted 3.2 million trees since 2011, and is presently planting approximately 5,500 trees on a daily basis to support water conservation.

Wholesale prices were relatively stable varying around \$0.03/Kg throughout CY2017. Overall, wholesale sugar prices have been very stable for the past two years, which continued in the first 3 months of CY2018.

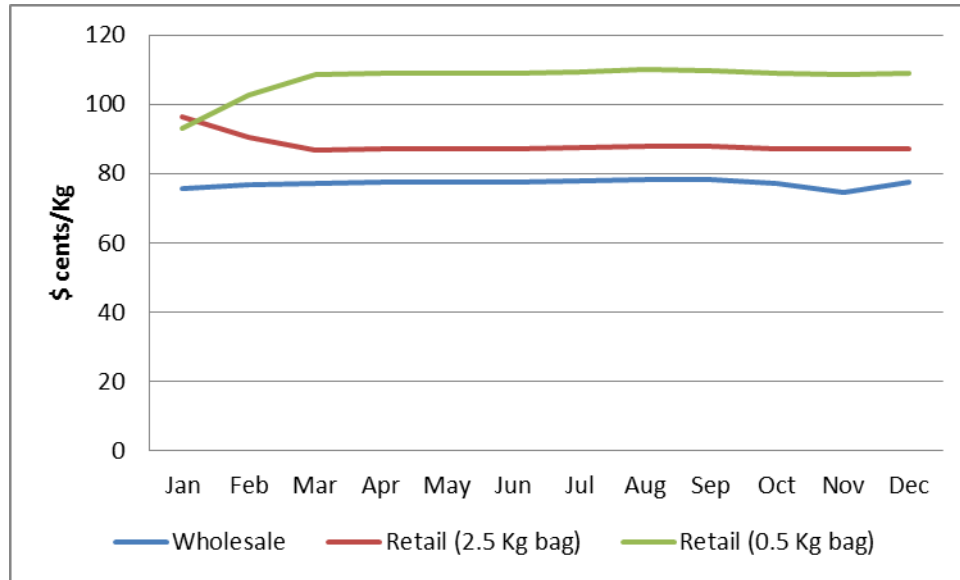
Graph 4  
Average Standard White Sugar Prices at the Wholesale Market in Guatemala  
(CY2017 - CY2017 - CY2018)



Source: Historical Prices, DIPLAN, Ministry of Agriculture, 2018

A comparison of the latest available historical data for retail prices vs. wholesale are shown in Graph 5. Prices at retail in 2017 were 12 per cent above 2016, maintaining a 6 per cent margin for retail packaging of 2.5 Kg bag and 28 per cent margin for the 0.5 Kg bag.

Graph 5  
Average White Standard Sugar Prices in Guatemala in 2017  
(Wholesale vs. Retail)



Source: DIPLAN/MAGA and Institute of National Statistics, INE

**Consumption:**

MY2019 consumption is expected to increase to 812,000 MT. Annual consumption of sugar in Guatemala increased to 48 Kg or 104 pounds per capita based upon the latest population estimate of 16.6 million (a census is programmed for 2018). Domestic consumption of sugar keeps the trend of 75 percent for direct human consumption and 25 percent for industrial use. The soft drink industry is the major industrial consumer of sugar, followed by confectioneries, bakeries, juice makers, dairy producers, and pharmaceutical companies. Overall, domestic consumption is roughly 29 percent of total production, with the rest going to export. Alternative sweeteners use is not impacting per capita consumption of sugar. Most of the sugar consumption is standard white refined sugar, but brown sugar consumption continues increasing as demand for more natural food product alternatives continues.

**Trade:**

Table 1  
Export Trade Matrix for Guatemala’s Sugar (MY2016 and MY2017)

Export Trade Matrix			
Country	Guatemala		
Commodity	Centrifugal Sugar		
Time period	Oct-Sep		
	MT		MT
	2016		2017
U.S.	312,685	U.S.	222,124
Canada	287,529	Cote d Ivoire	216,912
Chile	167,475	Taiwan	153,493
Haiti	123,044	Peru	148,453
Taiwan	114,630	Malaysia	136,925
Cote d Ivoire	95,555	Chile	109,289
Malaysia	88,000	Indonesia	94,000
Ghana	64,004	Canada	79,281
Congo Dem. Rep.	63,221	Haiti	76,765
Peru	58,804	Libya	73,936
Venezuela	56,409	United Kingdom	65,419
	1,431,356		1,376,597
Others not listed	597,993	Others not listed	601,905
<b>Grand Total</b>	<b>2,029,349</b>	<b>Grand Total</b>	<b>1,978,502</b>

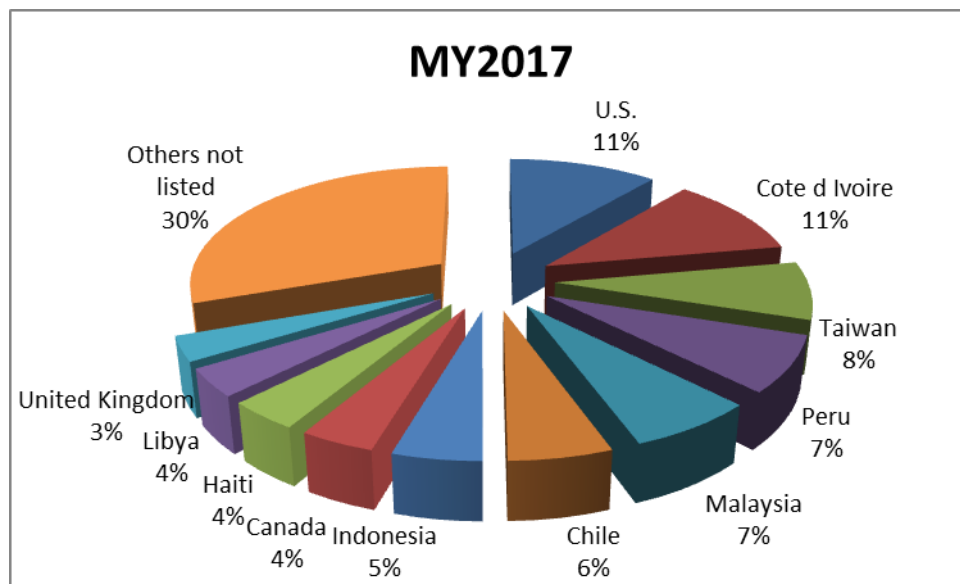
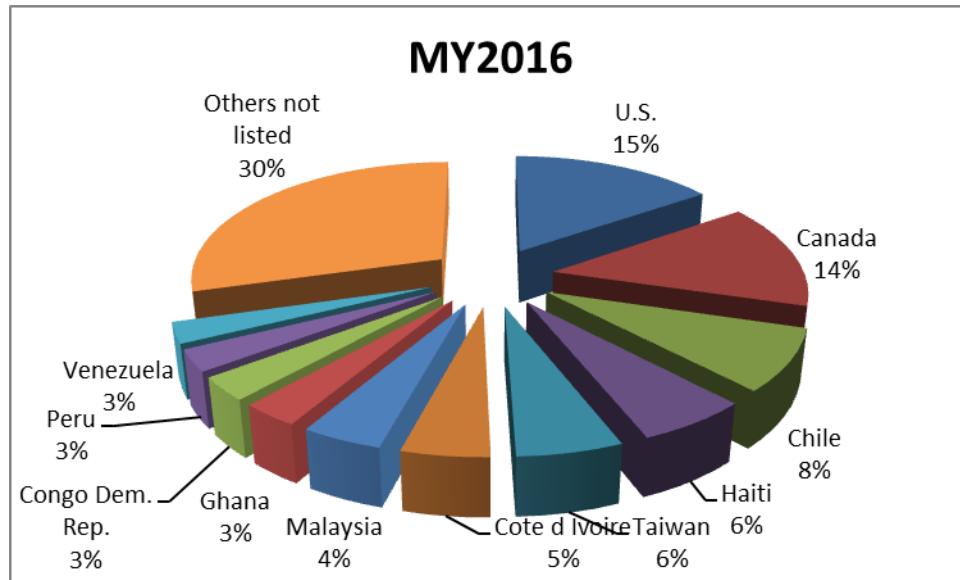
Source: Global Trade Atlas, 2018

During MY2017, Guatemala exported 1.98 MMT in raw and refined sugar, 3 per cent below the previous estimate. Sugar and its products represent the highest source of foreign exchange for the Guatemalan agricultural sector, followed by bananas and then coffee. Exports for MY2018 are estimated at 1.89 MMT; down from last year's forecast by 14 percent and 4 percent below exports for MY2017. This drop is due to a reduction in production combined with increased domestic consumption. Guatemala continues exporting around 73 percent of its total production. The export markets have changed quite significantly in the past decade, but the United States continues to be, consistently, Guatemala's major export market, as shown in Graph 6.

Guatemala was assigned a U.S. WTO quota of 45,854 MT (50,546 MTRV - metric tons raw value equivalent) for MY2018, roughly 4.5 percent of the total quota, 16 percent of the CAFTA-DR quota and 40 percent of the quota for Central America. As part of CAFTA-DR, Guatemala received an additional 940 MT per year during the first 15 years of the implementation of the free trade agreement; thereafter, the quota will grow by 2 percent a year (simple growth) into perpetuity. Guatemala always fills its U.S. sugar quota each year and is able to do more. In MY2017, Guatemala exported an additional 5,309 MTRV from unused quotas reallocated from other countries.



Graph 6  
 MY2016-2017 Comparison of Guatemala's Sugar Exports to Major Markets



Source: Global Trade Atlas, 2018

In MY 2017, raw sugar exports represented 54 percent of total Guatemalan sugar exports compared to 46 percent in refined sugar. This was a slight shift in composition due to increased exports of refined sugar to Cote d'Ivoire, the second most important export market. Guatemalan exports of sugar and derived products consist of around 79 per cent sugar, 14 per cent molasses and 7 per cent alcohol. In Guatemala, ethanol production continues to be a by-product of sugar.

**Stocks:**

MY2019 ending stocks are forecast at 238,000 MT while the estimate for MY2018 is 6 per cent above last year’s estimate of 130,000 MT. Domestic stocks are held in warehouses managed by the sugar industry throughout the country. All exported sugar is held in warehouses managed by EXPOGRANEL, the export loading terminal located at Puerto Quetzal on the Pacific coast. Its warehousing capacity is 365,000 MT for bulk sugar and 66,000 MT for refined sugar (in 50 kg bags). It has a loading rate of approximately 2,022 MT/Hr. EXPOGRANEL has an ISO 9001:2008 Quality System Certifications and ISO 22000:2005 standards to secure its Food Safety System. In addition, the sugar industry has a state-of-the-art laboratory for sugar analysis with 19 credited analyses that guarantee sugar quality for both export and domestic markets. The laboratory is used as a reference lab by countries in the region, including Colombia.

Guatemala is known worldwide as a good partner in the sugar business, due to its high quality sugar (95-98 percent polarization) plus the consistency in supply. Guatemala signs contracts in advance of the harvest during the first three months of each calendar year. Historically prices start rising in the international market after the first quarter, so Guatemala locks in prices and export volumes early.

**Policy:**

The Sugar Board of Guatemala, which includes representatives from the Ministry of Economy, sugarcane producers, and sugar mills, establishes production goals, sets sugarcane prices, and allocates the U.S. sugar quota to the different sugar mills. The allocation of the quota to each mill is based on past production performance, previous quotas, and milling capacity.

In Guatemala, all sugar sold domestically must be enriched with vitamin A. The industry claims to invest more than \$3.5 million a year in vitamin A fortification. At times the Government of Guatemala (GOG) opens most favored nation quotas for imported sugar to try and control supplies and market prices, but the quotas rarely get filled in part due to the vitamin A fortification requirement. Fortification is approved and validated by the Institute of Nutrition of Central America and Panama (INCAP), which evaluates the impact of Vitamin A fortification and found it to be effective. Even though Guatemala has the third highest rate of chronic malnutrition in children 5 and under in the world, blindness is not an issue in the country.<sup>[i]</sup> As of 2008, in specific localities with high chronic malnutrition and anemia, additional iron supplementation is required in sugar. INCAP is also evaluating this pilot program and should have preliminary results soon.

<sup>[i]</sup> <http://www.incap.org.gt/index.php/en/areas-and-lines-of-working/nutrition-and-micronutrient/integral-analytical-center-cai>.

**Marketing:**

ASAZGUA, the National Sugar Producers Association, maintains a marketing strategy to promote domestic sugar consumption. The industry is actively engaged with supporting the “sustainable development challenge goals” in Guatemala and has been collaborating for more than 20 years in maternal-child nutrition and health components; its major program is focused on increasing local capabilities of rural primary school teachers.<sup>[i]</sup>

**Production, Supply and Demand Data Statistics:**

Sugar, Centrifugal Market Begin Year Guatemala	2016/2017		2017/2018		2018/2019	
	Oct 2016		Oct 2017		Oct 2018	
	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post

<b>Beginning Stocks</b>	219	219	130	154	0	238
<b>Beet Sugar Production</b>	0	0	0	0	0	0
<b>Cane Sugar Production</b>	2800	2719	2900	2788	0	2700
<b>Total Sugar Production</b>	2800	2719	2900	2788	0	2700
<b>Raw Imports</b>	0	0	0	0	0	0
<b>Refined Imp.(Raw Val)</b>	0	0	0	0	0	0
<b>Total Imports</b>	0	0	0	0	0	0
<b>Total Supply</b>	3019	2938	3030	2942	0	2938
<b>Raw Exports</b>	1140	1060	1145	1023	0	1020
<b>Refined Exp.(Raw Val)</b>	1010	918	1015	871	0	868
<b>Total Exports</b>	2150	1978	2160	1894	0	1888
<b>Human Dom. Consumption</b>	739	806	740	810	0	812
<b>Other Disappearance</b>	0	0	0	0	0	0
<b>Total Use</b>	739	806	740	810	0	812
<b>Ending Stocks</b>	130	154	130	238	0	238
<b>Total Distribution</b>	3019	2938	3030	2942	0	2938
(1000 MT)						

<sup>[1]</sup> <http://www.azucar.com.gt/index.html>.