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Report Highlights:

In marketing year 2022/2023, Guatemala is forecast to produce 2.6 million metric tons of sugar from sugarcane from a harvested area of 258,000 hectares. Total planted area has fallen 2 percent, but the sugar yields are forecast to increase now that half of the harvested area is planted with Guatemalan varieties with increased resistance to pest and diseases, lower water needs, and increased sugar recovery at the mills. Stocks in MY2022/2023 are forecast at 159,000 MT, after reaching significantly higher than normal stock levels during years 2020-2022. Total exports dropped 26% during MY2020/2021. Domestic prices were stable during CY2021 but have increased 10% as of January 2022.

Executive Summary:

Production:

Sugarcane

Planted area in sugarcane for marketing year (MY) 2022/2023 is forecast at 275,000 hectares (Ha) and 2% down from the previous estimate for MY 2021/2022. Sugarcane area has been slightly reduced as rented land for sugarcane is no longer under production. Increased yields have partially compensated for the reduced area. The Guatemalan Center for Sugarcane Research – CENGICAÑA- has introduced a total of 2,611 new varieties from around the world, with 1,538 varieties sourced from Canal Point, Florida. The varieties are kept as part of CENGICAÑA's national collection in the South Coast of the country (Photo 1).

Photo 1

National collection of sugarcane varieties in Guatemala



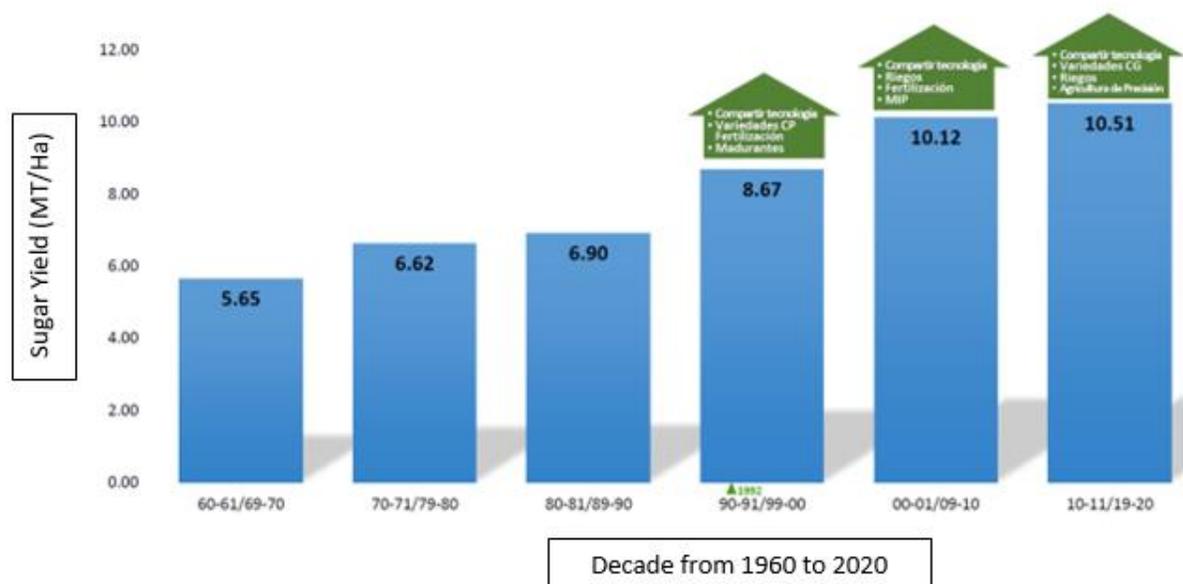
Source: CENGICAÑA, 2022

CENGICAÑA has cooperation agreements with the United States (Canal Point-Florida, ARS- USDA Louisiana), Argentina (EEAOC), Australia (SRA, ASSCT), Brazil (STAB, CTBE), Colombia (CENICAÑA, TECNICAÑA), Costa Rica (DIECA-LAICA, ATACORI), Ecuador (CINCAE, AETA), El Salvador (Izalco Central Mill), ATASAL), Spain (Santiago de Compostela University), France (CIRAD), Honduras (Azucarera La Grecia, AZUNOSA, ATAHON), Mauricio (MSIRI), México

(CNIAA, CIDCA, Veracruzana University), Colegio Postgraduados, ATAM), Nicaragua (Monte Rosa, San Antonio, and Montelimar Mills), Panama (Santa Rosa Mill), Thailand (Mitr Phol), and organizations such as the International Society of Sugar Cane Technologists (ISSCT), the Iberoamerican Network for Science and Technology for Development (CYTED Networks), the Guatemalan Council of Science and Technology, and universities.

CENGICAÑA has maintained a breeding program for the past 30 years, selecting the best adapted materials for the Guatemalan South Coast. Permanent ongoing research is oriented for the monitoring and evaluation of the highest yielding genetics through improved resistance to pests and diseases, lower water requirements, and increased sugar content. Guatemalan varieties are now yielding more than 1 MT/Ha of sugar compared to its prior best variety from Canal Point. As shown in Figure 1, during the decade 1990-2000, when CENGICAÑA is founded in 1992, the true sugarcane development and sustainability starts, basically doubling the sugar yields of the 1960's decade.

Figure 1
Historical sugar yields in Guatemala per decade



Source: CENGICAÑA, 2022

As mentioned before, the breeding program for sugarcane in Guatemala includes selection of varieties with less water demand, coupled with improved irrigation systems. CENGICAÑA has introduced a series of technologies in the sugarcane production, which lately have included precision agriculture to better estimate maturity of the crop and water needs. The Guatemalan Institute for Climate Change (ICC) estimate's the sector's water usage at 100 cubic meters per ton, with roughly 16 percent of production area requiring irrigation. Global averages are 175 cubic meters per ton, and 27 percent, respectively.

The sugar sector has been active in supporting Guatemala's climate change national targets. The ICC has estimated the carbon footprint of the sector at 0.33 kg of carbon dioxide equivalent per kg of sugar produced, representing less than 2% of the country's national greenhouse gas emissions. The Guatemalan sugar sector is participating in the carbon markets and has well defined mitigation and adaptation strategies. Biodiversity conservation is now a priority for the different plantations, as these have forest portions or fragments, rivers, lakes, mangrove, among others. Farms are contributing with natural forests, energetic forests (for the sugar mill process), and arboretums. Up to 260 different species of birds have been identified in the plantations. During 2017-2019, with the support of GIZ cooperation, ICC developed a guideline for the conservation and restoration of the biodiversity of the sugar sector; the guideline was recently approved by the Sugar Association (ASAZGUA) and its implementation is scheduled for late 2022.

The sugar sector continues advancing with mechanization as the land permits. Guatemalan soils in the South Coast are of volcanic origin, and the higher elevations make mechanization harder. In terms of efficiency, manual harvest yields 6 MT/day/man compared to 745 MT/day with a harvesting machine. The machine harvest per day is the equivalent of the hand labor of 124 workers. There are some farms, with the right topography, that have adopted so far 67% of harvest mechanization and expect to reach 80% of mechanization for the 2024/2025 harvest.

Sugar Production

Sugar production for MY 2022/2023 is forecast at 2.6 million MT, slightly below the estimate for MY 2020/2021 and 5% below the previous estimate for MY 2021/2022. These changes correspond primarily to reduced area planted as a result of market disincentives and the pandemic. Production in MY 2020/2021 closed at 2.56 million MT, 2% below the previous estimate. In MY 2020/2021 Guatemala was the 9th sugarcane producer in the world, the 5th largest exporter, and the 3rd most productive. At the Latin America and Caribbean level, Guatemala was the 3rd largest producer of sugarcane and 2nd largest exporter. According to the Bank of Guatemala, sugar exports in MY 2020/2021 were valued at US\$417 million. The total economic footprint of the sector translated into \$1.1 billion, of which \$399 represented salaries, \$430 million were spent in services, and \$319 million were invested in equipment. The sector presently provides 54,000 direct jobs.

The production estimate for MY2021/2022 is 4.7% above production in MY2020/2021, according to CENGICAÑA's analysis, which can be followed in real time in the following link: [Workbook:](#)

[Produccion Guatemala \(tableau.com\)](#). Most of the increase corresponds to increased final sugar output per area.

Despite reduction in area, the improved sugar yields are also a reflection of improvements in the industrial process. CENGICANÑA has provided a standard methodology for the sugar mills to monitor sugar losses during the wet mill process. As a result, many mills have upgraded their infrastructure to eliminate water at the reception and sugar cane cleaning phase. The improvement involves vibration mechanisms to eliminate residues that go back to the field as mulch. The water used for the sugar cane cleaning carries sugar that cannot be recovered. In addition, improvements in infrastructure have also permitted recirculation of the water in the sugar mill to reduce water demand and increase up to 23% of recovered sugar in the waste water.

The improved infrastructure also includes band type filters instead of the rotation type for juice treatment, reducing the amount of insoluble solids and turbidity in the juice. Other improvements include more efficient evaporators to reduce sugar loss due to physicochemical destruction. Each 1% of sugar recovery is equivalent to 2.56 pounds of sugar per sugarcane ton, representing 76 million pounds of sugar, which at \$0.13/pound represents a total recovery valued at \$9.88 million. Each pound of sugar recovered per ton of sugarcane represents 29.7 million pounds of sugar, which at \$0.13/pound is equivalent to additional \$3.86 million.

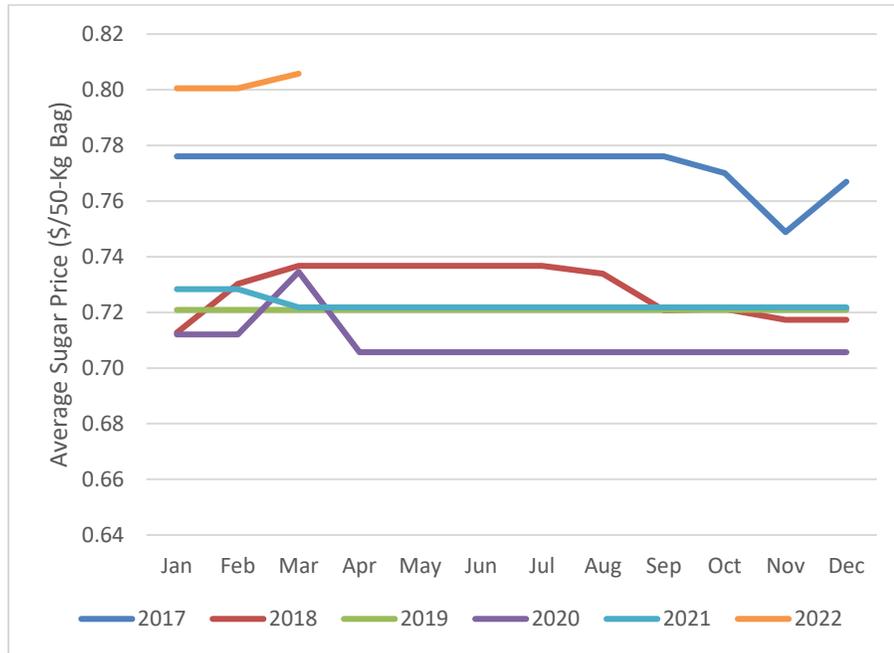
From the 11 active sugar mills in the country, 8 of them produce 25% of the electric energy supplied by the national grid during harvest season (2,835 GWh), which avoids production of 4 million tons of carbon dioxide equivalent from the renewable energy sourced by sugar. In addition, four distilleries produce 265 million liters of ethanol per year. Roughly 70% of the ethanol is dehydrated and the other 30% goes for the pharmaceutical and liquor industries. The vinegar residues are treated and go back for fertigation, as they are rich in nutrients, especially potassium.

Consumption:

Consumption in MY2022/2023 is forecast at 950,000 MT, 3% above the last estimate for MY 2021/2022 of 921 million MT. Guatemala sugar consumption for MY 2021/2022 has also been revised up to 945,000 MT. Domestic consumption of sugar has recovered after the pandemic and its utilization is increasing, especially in the food and beverage manufacturing processes, bakery and sugar confectionery industries. As a result, domestic consumption used to represent 30% of the Guatemalan sugar sales, but now represents up to 35%. The sugar sector's mandate demands filling 100% of the local demand and the rest can be exported. Per capita consumption estimate for MY2021/2022 is 53 kg.

Sugar prices in Guatemala were stable at \$0.72/50-Kg bag presentation during CY2021, as shown in Graph 1. Prices have reached record high of \$0.80/50-Kg bag presentation during the first quarter of CY2022, a 10% increase compared to the previous year. Increase in domestic prices respond to increase in fertilizer costs and oil prices. Fertilizer prices have skyrocketed in Guatemala between 150-300%, especially nitrogen based fertilizers. Oil prices have also escalated and affected transportation costs.

Graph 1
Average Monthly Sugar Prices in Guatemala (2017-2022)



Source: DIPLAN, MAGA, Updated March 2022

Trade:

Exports in MY 2022/2023 are forecast at 1.75 million MT. Exports for MY2021/2022 are revised 5% down to 1.74 million MT. Exports in MY2020/2021 were significantly impacted during the pandemic, and were down 24% from the previous estimate. During MY2020/2021, main sugar export destinations per continents were Western Hemisphere (51%), Africa (22%), Asia (19%), Europe (7%), and Oceania (1%). The main buyers of Guatemalan sugar are reflected in Figure 2.

Figure 2
Guatemala Main Destination Exports in MY2020/2021



Source: EXPOGRANEL/ASAZGUA, 2022

The Trade Matrix for MY2019/2020 vs. MY2020/2021 is shown in Table 1. Total exports significantly dropped by 26% as a result of the world’s depressed economy resulting from the pandemic and logistics crisis. The major drops in exports were to the United States, Chile, Canada, and Taiwan. Cote d'Ivoire doubled its imports and South Korea market is recovering. Guatemala expects to increase exports to South Korea in MY2022, once the free trade agreement is finalized.

Table 1
Trade Matrix for Guatemalan Exports in MY2020 and MY2021

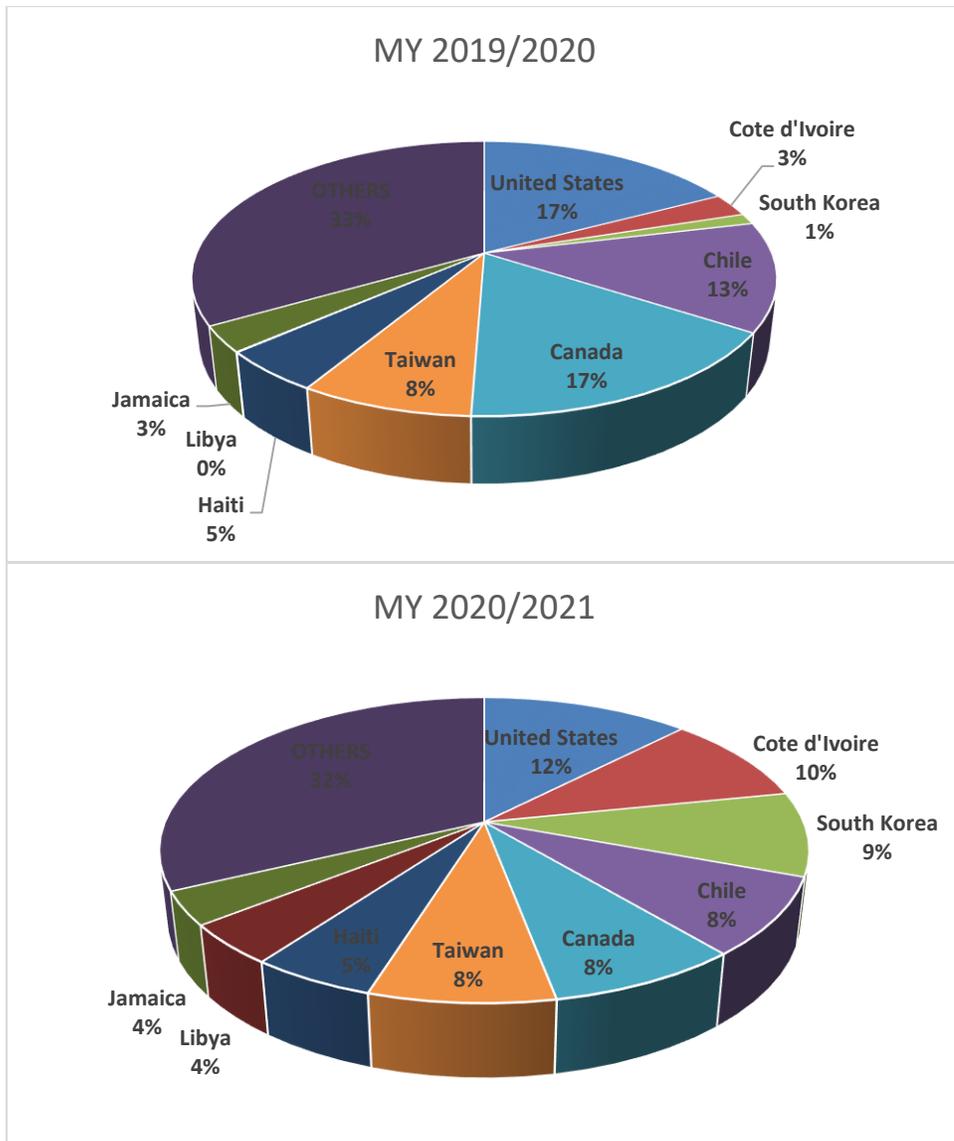
Partner Country	MTRV		Difference
	MY2020	MY2021	
World	1895997	1397238	-26%
United States	282890	172565	-39%
Cote d'Ivoire	44687	131971	195%
South Korea	20619	124091	502%
Chile	210487	114826	-45%
Canada	269770	113650	-58%
Taiwan	131957	109172	-17%
Haiti	80459	73280	-9%
Libya	1143	59741	5127%
Jamaica	49419	49334	0%
OTHERS	545992	448608	-18%

Source: Trade Data Monitoring, 2022

Market share of Guatemalan exports in MY2020/2021 and MY2019/2020 are shown in Graph 2. Despite the drop in exports, Taiwan and Haiti kept their market share. Some of the countries that were former export markets and stopped buying Guatemalan sugar were Siria (2016), Japan (2015), Guinea

(2019), Dakar (2019), and Sri Lanka (2018). On the contrary, new buyers showing in the past 3 years include: Singapore (2020), Rumania (2020), Madagascar (2020), Thailand (2021), and Brazil (2019).

Graph 2
Market share for Guatemalan sugar exports
MY 2019/2020 vs. 2020/2021



Source: USDA, 2022 (based on Trade Data Monitoring)

Guatemala is considered a trustworthy partner in the world sugar market, and despite the global transportation crisis has kept its timely deliveries of sugar given its export infrastructure at Port Quetzal. The sugar industry’s exporter terminal –EXPOGRANEL- can receive 800 MT of sugar per hour (see

Photo 2) and can fill a bulk vessel at a speed of 2,164 MT of sugar per hour. The terminal has a capacity to store 58,000 MT of sugar in sacks and operates 10 trucks per hour when filling containers with sacked white or refined sugar. Refined sugar has increased its participation in the export market from 39% in 2008 to 55% in 2021.

Photo 2
EXPOGRANEL Sugar Terminal with Raw Sugar



Source: [EXPOGRANEL](#), 2022

Stocks:

Stocks in MY 2022/2023 are forecast at 159,000 MT, recovering to close to normal levels after the higher than expected ending stocks of 259,000 MT estimated for MY2021/2022. This estimate is a carry-over from the 364,000 MT record high ending stock for MY2020/2021. This past season was significantly affected by the global logistics crisis following the COVID-19 pandemic. During the pandemic, local and foreign buyers wanted to secure sugar inventories, but with the logistics' crisis followed by a global economic deceleration, stocks have accumulated.

Trade (Policy):

Guatemala has in place various free trade agreements (FTA) where sugar has gained market access, as shown in Table 2. In MY2020/2021, Guatemala fulfilled the 50,546 MTRV quota opened by the United States under its World Trade Organization (WTO) quotas, including the additional 4,423 MTRV

allocated in July 2021, followed by 5,204 MTRV reallocated in August 2021, and a final 1,819 MT later reallocated on November of 2021, for a total of 61,992 MTRV.

Table 2
Sugar Quotas for Guatemala in Free Trade Agreements in 2022

	Volume (MT)	Annual Growth
CAFTA-DR (first-come first-serve)	51,700	940 MT
Taiwan	125,000	N/A (max 35% refined)
European Union	83,900	1,427 MT (Central America)
United Kingdom	26,890	856

Source: ASAZGUA, 2022

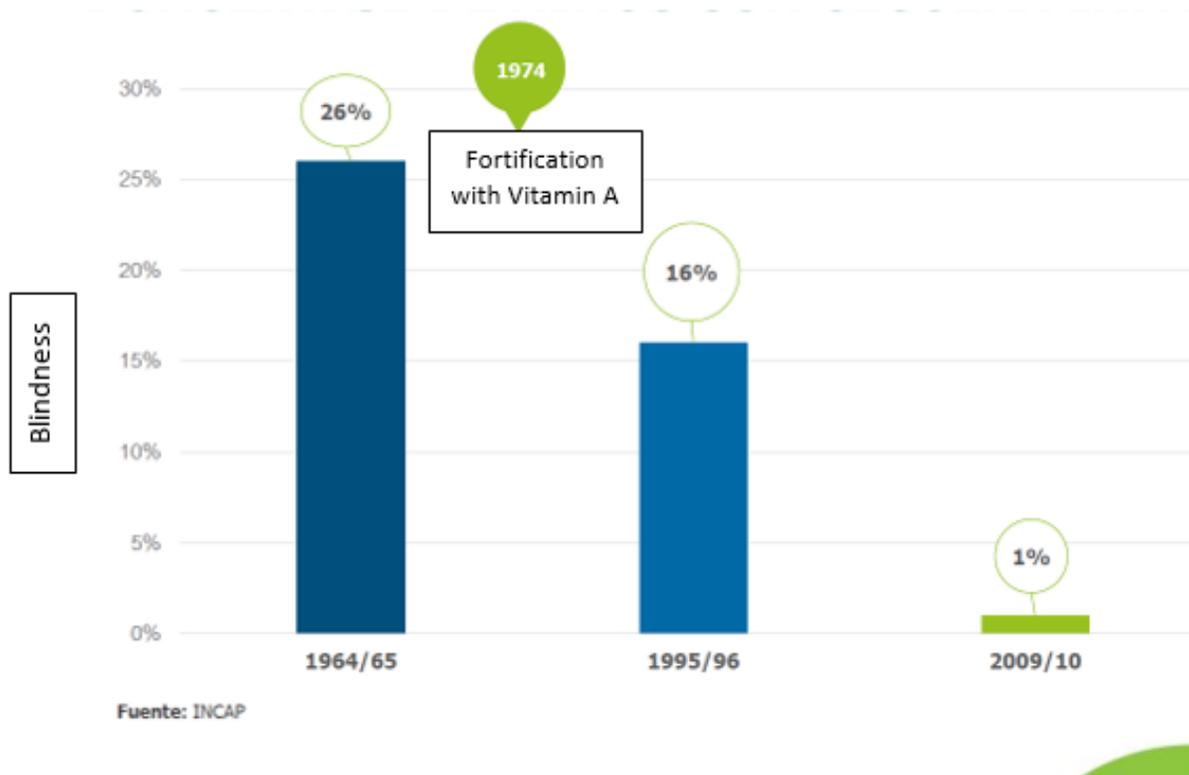
For those countries with sugar quotas, the U.S. WTO quota represents 2% of Guatemala’s exports in addition to 2% under CAFTA-DR (first-come first-serve). Taiwan sugar quotas represent 5% of Guatemalan exports, followed by the European Union (3%), United Kingdom (1%) and Ecuador (1%).

In 2019, Guatemala filed a case at the WTO against India for its subsidies to sugar production, processing, and exports. The Special Group that evaluated the case for Guatemala and also Australia and Brazil included Switzerland, South Africa, and Mexico. Canada, China, Colombia, Costa Rica, El Salvador, the United States, Russia, Honduras, Indonesia, Japan, Panama, Thailand and the EU reserved their rights as third parties. Guatemala won the case when the Special Group’s decision was announced on December 14, 2021. Guatemala hopes that the decision will re-establish the international sugar market.

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, previous quotas, and milling capacity. Sugar in Guatemala is protected by Presidential Decree 15-1998 and its regulation through [Presidential Decree 021-2000](#), making fortification of sugar mandatory for its consumption in Guatemala. The fortification is approved and validated by the Institute of Nutrition of Central America and Panama (INCAP), which monitors and evaluates the impact of Vitamin A fortification; the impact of this policy has resulted in eradication of children blindness in Guatemala, as shown in Figure 3.

Figure 3
Impact of Vitamin A- Sugar Fortification in Children Blindness in Guatemala



Source: ASAZGUA, 2022

As of 2008, in specific localities with high chronic malnutrition and anemia, additional iron supplementation is provided via sugar; INCAP is responsible for monitoring pilot evaluations for vitamin and mineral fortification. [Law Initiative 5616](#) seeks to include additional fortification of iron, zinc, and folic acid to address chronic malnutrition and reduce neural tube defects in Guatemala.

Production, Supply, and Demand

Sugar Cane for Centrifugal	2020/2021		2021/2022		2022/2023	
	Nov 2021		Nov 2022		Nov 2022	
Market Year Begins	Nov 2021		Nov 2022		Nov 2022	
Guatemala	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Planted (1000 HA)	283	275	281	275	0	275

Area Harvested (1000 HA)	253	258	251	258	0	258
Production (1000 MT)	2622	2565	2700	2580	0	2600
Total Supply (1000 MT)	2622	2565	2700	2580	0	2600
Utilization for Sugar (1000 MT)	2622	0	2700	2580	0	2600
Utilizatn for Alcohol (1000 MT)	0	0	0	0	0	0
Total Utilization (1000 MT)	2622	2565	2700	2580	0	2600
(1000 HA) ,(1000 MT)						

Sugar, Centrifugal	2020/2021		2021/2022		2022/2023	
	Oct 2020		Oct 2022		Oct 2022	
	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Market Year Begins						
Guatemala						
Beginning Stocks (1000 MT)	134	134	106	364	0	259
Beet Sugar Production (1000 MT)	0	0	0	0	0	0
Cane Sugar Production (1000 MT)	2622	2565	2700	2580	0	2600
Total Sugar Production (1000 MT)	2622	2565	2700	2580	0	2600
Raw Imports (1000 MT)	0	0	0	0	0	0
Refined Imp.(Raw Val) (1000 MT)	0	0	0	0	0	0
Total Imports (1000 MT)	0	0	0	0	0	0
Total Supply (1000 MT)	2756	2699	2806	2944	0	2859
Raw Exports (1000 MT)	825	607	889	830	0	835
Refined Exp.(Raw Val) (1000 MT)	904	788	934	910	0	915
Total Exports (1000 MT)	1729	1395	1823	1740	0	1750
Human Dom. Consumption (1000 MT)	921	940	921	945	0	950
Other Disappearance (1000 MT)	0	0	0	0	0	0
Total Use (1000 MT)	921	940	921	945	0	950
Ending Stocks (1000 MT)	106	364	62	259	0	159

Total Distribution (1000 MT)	2756	2699	2806	2944	0	2859
(1000 MT)						

Attachments:

No Attachments