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Report Highlights:

Guatemala is a net yellow corn importer, but white corn production is expected to grow 9 percent, forecasting 1.89 million metric tons (MT) in Marketing Year (MY) 2021/2022. Guatemala is a net rice importer. Recent satellite images resulting from the assessment of hurricanes Eta and Iota at the end of 2020 revealed a rice production area three times larger than the last official estimate (which had only considered commercial production) reaching 13,000 hectares (Ha) with 75 percent of the producers being subsistence farmers (less than 2 Ha), small and extremely poor. Prices at retail and wholesale for both grains reached record highs during the March-August period of 2020 due to the COVID-19 pandemic.

Commodities: Corn and Rice

Content

Rice

Production:

In November of 2020, two category four hurricanes made landfall in Central America. Both affected Guatemala as tropical depressions and had a severe impact on agricultural production. The Ministry of Agriculture, Livestock, and Feed (MAGA) was able to assess the impact of Eta and Iota, thanks to USDA´s timely donation of an emergency control room. This allowed MAGA to process and analyze satellite images of over 108 municipalities and effectively update the latest agricultural data for the affected crops, which was published in 2016.

Figure 1 shows the main crop calendar for rice in Guatemala. Rice cycles in Guatemala are divided into summer and winter harvests. The main harvest occurs during the winter, or rainy season, along the Atlantic and Pacific Coasts and in the Eastern zone. Planting goes from May to July (at the beginning of the rainy season) and harvest from August to December. This harvest season represents around 71 percent of the total harvest. The summer harvest goes from March to April for the December-February planting on the Atlantic Coast (Alta Verapaz, Izabal, and Peten departments), and in the humid tropical zones around the Motagua River Valley in Izabal and the Polochic River in Alta Verapaz and Izabal. These regions account for 29 percent of the total harvest and depend to some extent on irrigation. The storms impacted the end of the rice winter harvest season.

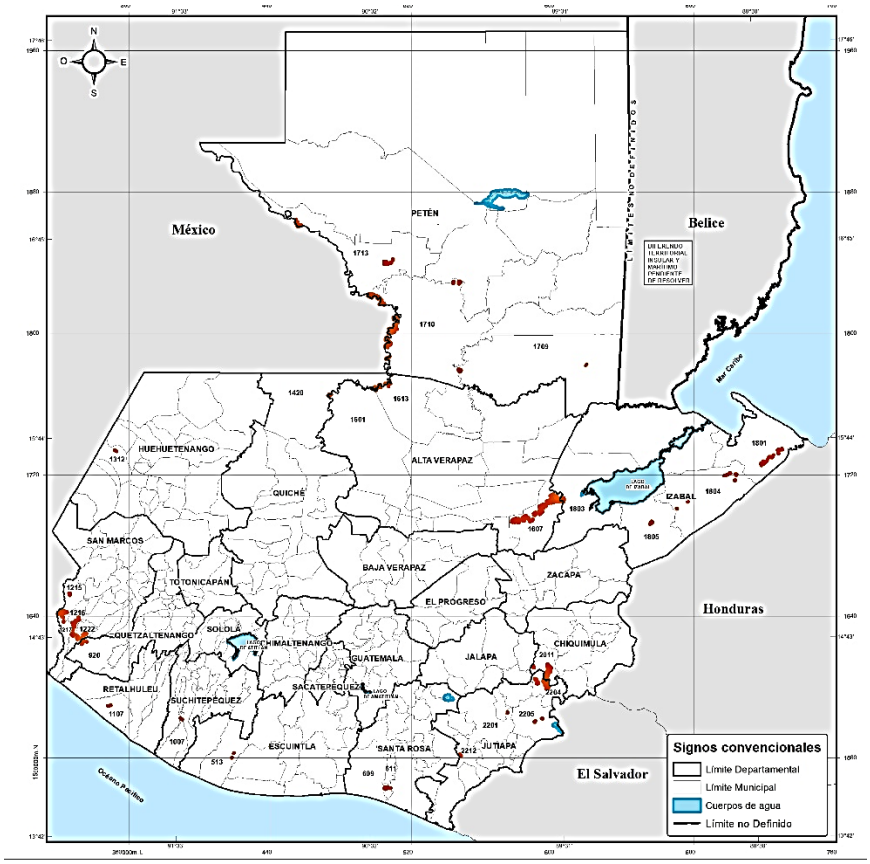
Figure 1
Main crop production calendar for rice in Guatemala

Note: Green bar is planting season and brown bar is harvesting season

Source: DIPLAN/MAGA, 2020

The most recent images MAGA analyzed, provided by the European Space Agency's Sentinel 2-A satellite, revealed a rice production area three times larger than the previous estimate for MY2020/2021, close to MAGA´s official estimate from 2016 (11,000 Ha) and the National Agricultural Survey (NAS) from 2017 (14,000 Ha). The Institute of National Statistics (INE) has reported the difficulty it has experienced estimating rice area and crop production, significantly varying from one survey to another. Post´s previous estimate was based on ARROZGUA´s data for commercial farming. Figure 2 shows GPS located rice producing areas in Guatemala.

Figure 2
GPS (Sentinel 2-A, 10 mts.) rice production areas in Guatemala (red dots)

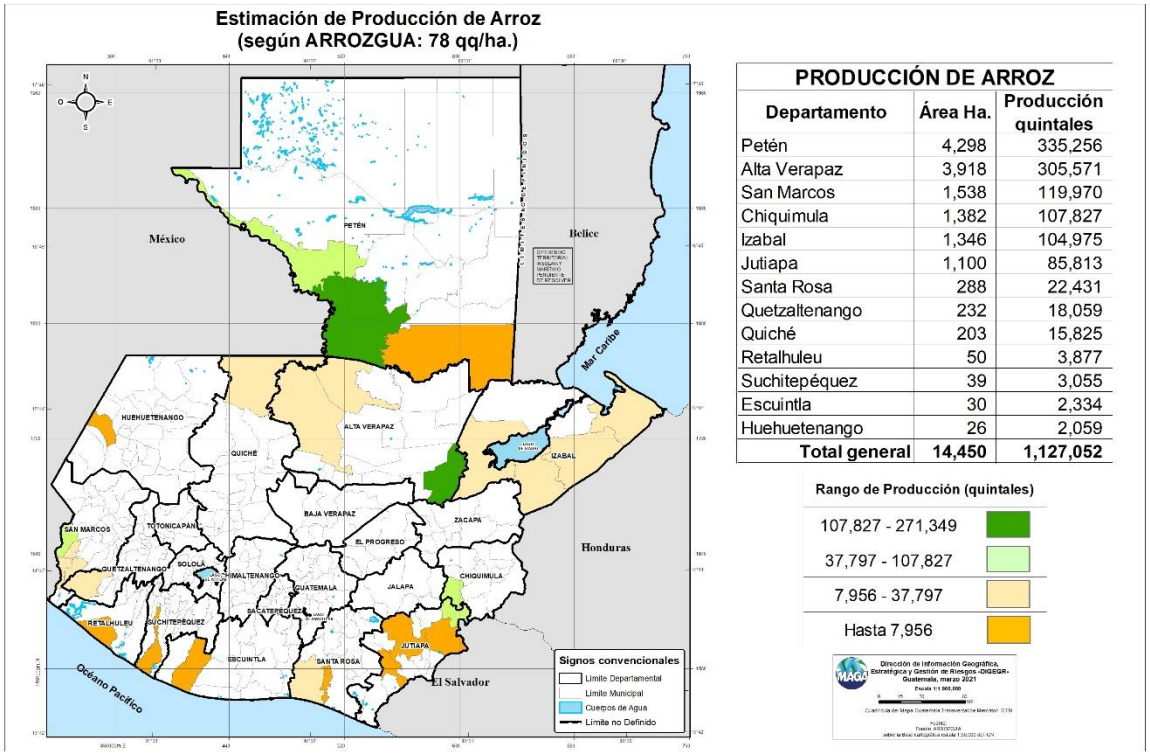


Source: MAGA, 2021

Figure 3 shows rice production in Guatemala, distributed in 13 departments of Guatemala, with Peten and Alta Verapaz showing the major producing areas. These two departments are responsible for almost 60 percent of the country´s production. San Marcos, Chiquimula, Izabal, and Jutiapa follow with 37 percent of the production, and the rest is produced in minor quantities in Santa Rosa, Quetzaltenango, Quiche, Retalhuleu, Suchitepequez, Escuintla, and Huehuetenango.

Figure 3

Rice production area (Ha) and volume (quintal) per department in Guatemala



PRODUCCIÓN DE ARROZ

Departamento	Área Ha.	Producción quintales
Petén	4,298	335,256
Alta Verapaz	3,918	305,571
San Marcos	1,538	119,970
Chiquimula	1,382	107,827
Izabal	1,346	104,975
Jutiapa	1,100	85,813
Santa Rosa	288	22,431
Quetzaltenango	232	18,059
Quiché	203	15,825
Retalhuleu	50	3,877
Suchitepéquez	39	3,055
Escuintla	30	2,334
Huehuetenango	26	2,059
Total general	**14,450**	**1,127,052**

Note: Green color (4,949-12,455 MT), light green color (1,735-4,949 MT), light orange color (365-4,949 MT), and orange color (up to 365 MT); 1 quintal = 0.0459 MT

Source: MAGA, 2021

Table 1 details the department, municipality, and hectares where rice production was identified by MAGA in 2020. Rice is produced in 13 departments and 27 municipalities.

Table 1
Municipalities with rice production in Guatemala

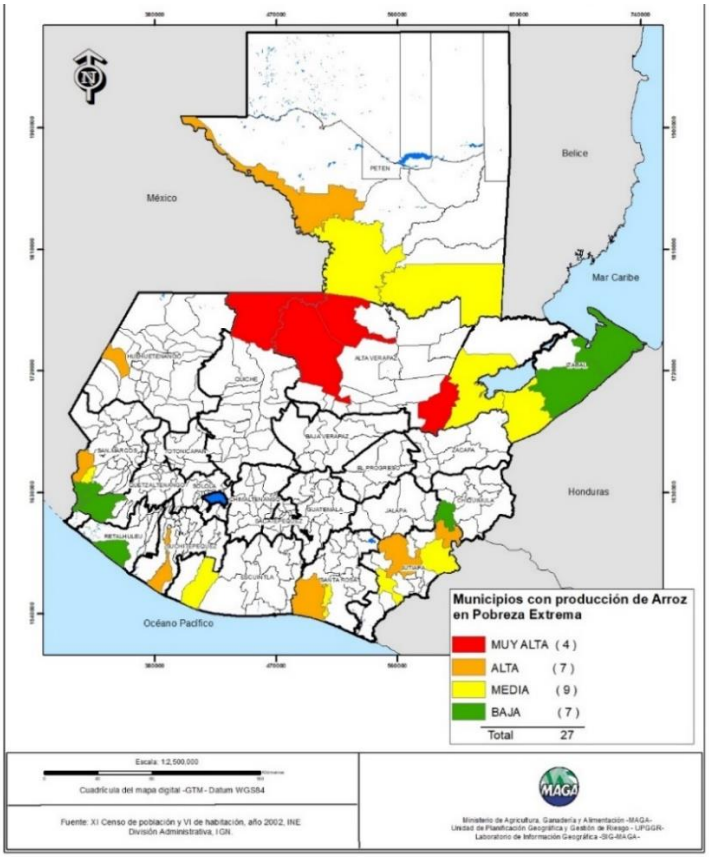
Department	Municipality	Area (Ha)
Peten	Sayaché	3,479
	Las Cruces	791
	San Luis	28
	Sutotal	**4,298**
Alta Verapaz	Panzós	3,449
	Chisec	298
	Cobán	171
	Subtotal	**3,918**
San Marcos	Malacatán	673
	Pajapita	432
	Ayutla	241
	Catarina	192
	Subtotal	**1,538**
Chiquimula	Ipala	1,382
	Sutotal	**1,382**
Izabal	El Estor	485
	Puerto Barrios	361
	Morales	309
	Los Amates	192
	Subtotal	**1,346**
Jutiapa	Agua Blanca	937
	Asunción Mita	102
	Jalpatagua	47
	Jutiapa	14
	Subtotal	**1,100**
Santa Rosa	Taxisco	209
	Guazacapán	79
	Subtotal	**288**
Quetzaltenango	Coatepeque	**232**
Quiché	Ixcán	**203**
Retalhuleu	Champerico	**50**
Suchitepéquez	San Lorenzo	**39**
Escuintla	Nueva Concepción	**30**
Huehuetenango	La Democracia	**26**
TOTAL		**14,450**

Source: MAGA, 2021

INE has reported significant variability in the data surveys to determine rice production in Guatemala, as the latest survey in 2019 showed a significant drop to less than 4,000 Ha. According to INE, Guatemala planted 4,000 hectares (Ha) of rice in MY2019/2020, for rough rice production of 26,000 MT, which is 25 percent below Post's previous estimate.

Based on the most recent information from MAGA (dated end of 2020) after the satellite imagery report, Post forecasts MY2021/2022 rice production in 13,000 Ha and 47,000 MT of rough rice, with an average yield of 3.62 MT/Ha. This yield average of 3.62 MT/Ha is almost half the average previously reported (5.4 MT/Ha), as it includes two third of producers in the non-commercial subsistence (less than 2 Ha) and infra-subsistence categories (less than 1 Ha), which were not reported in the 2020 report. This newly updated information completely changes the matrix for large and small rice producers in Guatemala, as small producers account for 75 percent of the rice producers. Figure 4 shows poverty levels in rice producing areas. The rice sector generates roughly 22,800 direct jobs and 30,000 indirect jobs.

Figure 4
Poverty levels in rice producing areas in Guatemala



Note: Red = very high extreme poverty, Orange = high extreme poverty, Yellow = medium extreme poverty, and Green = low extreme poverty

Source: MAGA, 2021

The Guatemalan Rice Producers Association (ARROZGUA) reported that commercial production area will remain steady at 5,000 Ha and 27,000 MT of rough rice, where yields average 5.4 MT/Ha. Post estimate for MY2020/2021 is like MY2021/2022, reflecting some impact by hurricanes Eta and Iota. The storms increased the flow of the Polochic and Cahabon Rivers, which flooded the Polochic Valley, where 420 hectares of commercial rice were lost (Photo 1). In addition, the storms affected roughly 66 hectares of non-commercial rice in Panzos, Alta Verapaz (40 Ha), Oratorio, Santa Rosa (25 Ha), and Peten (1.4 Ha). Total rice loss was estimated at 1,656 MT, 4 percent of the total harvest. Close to 188 families of small producers lost their rice crop due Eta and Iota.

Photo 1
Rice plantations destroyed by Eta in the Polochic Valley in Alta Verapaz

Source: ARROZGUA, 2020

MAGA expects to support these families by paying for the rehabilitation of the production areas affected by the storms in the Polochic Valley, Alta Verapaz, but also in the communities of Semay, Los Recuerdos, Selayá, San Vicente, Los Lagartos, and El Estor, at Izabal. The access to those valleys has been destroyed by the flow of the Tinajas, Pueblo Viejo, and Zarco rivers. The affected valleys cannot be cultivated at this point due to existing debris, rocks, and sand, as shown in Photo 2.

Photo 2
Rice plantations affected by Eta and Iota in Guatemala

Source: ARROZGUA, 2021

Consumption and Residual:

The average milling rate in Guatemala remains stable at 70 percent. Consumption in MY2021/22 is forecast at 159,000 MT, 4 percent higher than the MY2020/2021 estimate. Consumption in MY2020/2021 is estimated at 154,000 MT, down 1 percent from MY2019/2020, as last year (155,000 MT) was a record high and directly responded to the Government of Guatemala opening of WTO quotas to provide rice for poor families affected by the COVID-19 pandemic, which also decreased production.

In 2020, the Ministry of Economy (MINECO) published the Rice Industry Study revealing that overall economic growth of rice production in value terms has dropped 7.3 percent in the past five years (comparing 2018 to 2013). In comparison, mills have grown in that same period by 5.6 percent. This report reflects the trend of commercial rice production and processing in Guatemala, which certainly contrasts with MAGA's latest report of increased rice production area and producers involved in non-commercial operations.

The study measures the intermediate consumption for grains – the value of agricultural inputs such as fertilizers and agrochemicals, equivalent to 68.7% of total costs – increasing in 7.3 percent for corn in the 5-year period compared to 40 percent negative value for rice. It is worth mentioning that non-commercial agricultural production at the subsistence or infra-subsistence levels make no use of inputs, which is clearly reflected by the very low yields. The study also reveals that rice seed imports, mostly sourced from Costa Rica, declined 36 times in the 2013-2018 period.

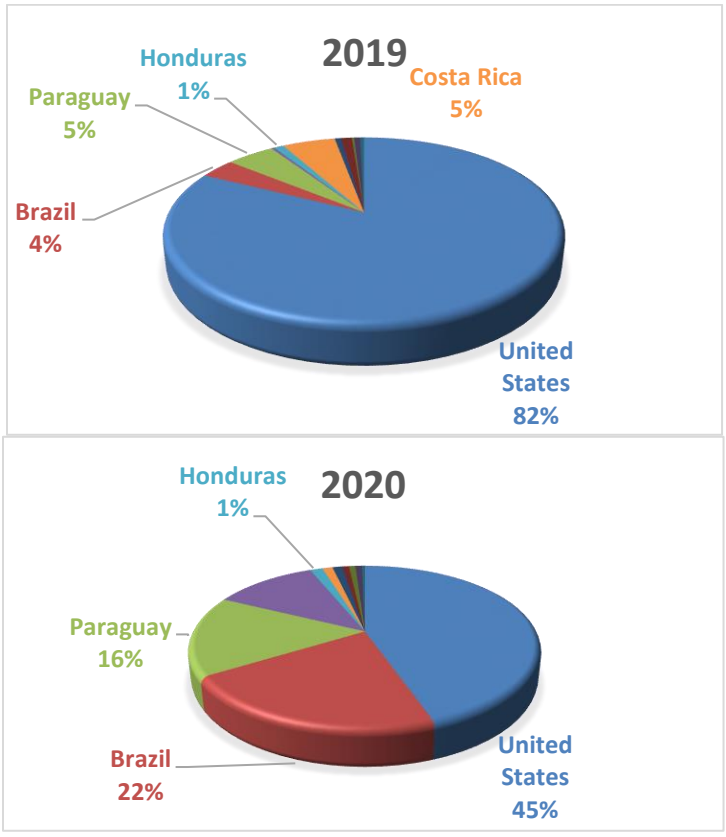
In the meantime, imported milled rice and ready-to-eat presentations are growing by 22 percent, though these products represent roughly 14 percent of total rice imports. These include Arborio, Risotto, Basmati, Sushi, and Jasmin. Broken rice consumption, which represents roughly 8 percent of total imports, is used for the animal feed industry, and after a significant fall in 2017, it is recovering as of 2019.

Trade:

Guatemala continues to be a net rice importer. For MY2021/22, Guatemala is forecast to import 126,000 MT, 4 percent more than the estimate for MY2020/21. The estimate for MY2020/2021 is 13 percent lower than imports in MY2019/2020, an atypical year because of the Government of Guatemala opening WTO quotas on rice for its food assistance programs (125,000 MT for paddy rice, 15,000 for milled rice, 10,000 for broken rice, and 2,000 for brown rice). These quotas impacted the market as they represented a fivefold increase compared to the existing 26,000 MT open for the year as part of the CAFTA-DR quota.

Behavior in trade year (TY) 2020 was completely different from the trend seen in previous years, where most of the rice was sourced from the United States. Though rice exports from the United States in TY2020 closed at 59,000 MT, its market share dropped from 82 percent to 44 percent, when comparing TY2019 to TY2020, as shown in Graph 1. In that same period, Brazil increased its market share from 4 to 22 percent and Paraguay from 5 to 16 percent.

Graph 1
Guatemalan Market Share for Rice Imports in TY2019-2020



Source: USDA elaboration based on Trade Data Monitoring information, 2021

According to ARROZGUA, this trend will accelerate when the tariff-rate-quotas (TRQs) for rice in CAFTA-DR phase out, as Brazil and Paraguay can source rough rice with higher quality at a lower price. CAFTA-DR and Free Trade Agreements (FTAs) in general, partially organize some of the agricultural markets when opening export quotas or import quotas. For rice, the CAFTA-DR TRQs were negotiated with a local purchase requirement, which led to organization within the domestic rice market as it created an incentive for the rice producers. ARROZGUA knows ahead of time that by 2023, there will be no incentive for the millers to buy local rice, with a potential for commercial rice production to disappear, unless significant innovations are introduced to increase yields and quality.

Under CAFTA-DR, the TRQ in CY2022 will be 96,200 MT for rough rice and 4.89 percent out-of-quota tariff. In CY2020, rough rice quotas were filled at 87 percent (78,820 MT assigned out of 91,000) and milled rice at 6 percent (1,019 MT assigned out of 11,800 MT).

Table 1 shows rice tariffs applied for countries with negotiated tariffs and quotas in existing FTAs with Guatemala. Overall, CAFTA-DR is the main FTA that negotiated rice, with quotas increasing by 5 percent simple growth annually, to be phased out completely by 2023. Rice for planting has a 0 tariff for both the United States and Panama, and broken rice is under a CAFTA-DR TRQ, exclusively.

Table 1
Guatemalan Tariffs for Rice

HS Code	Product Description	Out-of-Quota	United States (CAFTA-DR) In Quota/Out of Quota Tariff			Dominican Republic	EU	Panama
			2020	2021	2022	2021		
10.06.10.10	Rice for Planting	14.7	0	0	0	14.7	4.7	0
10.06.10.90	Paddy or Rough	14.7	0/14.67	0/9.8	0/4.89	14.7	14.7	14.7
10.06.20.00	Husked Rice (brown)	14.7	0/14.67	0/9.8	0/4.89	14.7	14.7	14.7
10.06.30.00	Semi-Milled or Wholly Milled including glazed or polished	14.7	0/14.67	0/9.8	0/4.89	14.7	14.7	14.7
10.06.30.90	Others	14.7	0/14.67	0/8.78	0/4.89	9.8	14.7	14.7
10.06.40.00	Broken Rice	14.7	0/14.67	0/8.78	0/4.89	N/A	14.7	14.7

Source: Ministry of Economy (MINECO) and Tax Superintendence (SAT)

Stocks:

The imported rice is taken to the mill, packed, and sold. Small producers sell to intermediaries, which take the rice to the mill to sell it. Except for some bags that may be kept temporarily at warehouses for short term distribution, the Government of Guatemala does not manage rice stocks.

Policy:

The Ministry of Economy (MINECO) issued Ministerial Decree 223-2005 in 2005, which established the local purchase requirement prior to CAFTA-DR's entry in force. This decree secured volume, price, and payment guarantees to rice producers, as millers had to buy the local production to be able to import rice. When CAFTA-DR was negotiated, rice received protection for 18 years, starting with a 29.2 percent tariff and quotas of 54,500 MT for rough rice and 10,500 MT for milled rice. All tariff cuts are backloaded, as the cuts at the beginning of the implementation period were lower, to be increased at the end of the implementation period; safeguards are available for out-of-quota imports.

Ministerial Decree 223-2005 applied not only to CAFTA-DR but also to other FTAs and WTO quotas. The COVID-19 pandemic led MINECO to issue Ministerial Decree 591-2020, which eliminates previous Ministerial Decree 223-2005. Ministerial Decree 591-2020 opens the possibility to import rice freely, establishing a new rice administration regime, to be further elaborated by MINECO, MAGA, and the Ministry of Finance. The new administration regime is not in place yet, but MINECO published Ministerial Decree 46-2020, opening WTO quotas for 152,000 MT of rice in 2020. The opening of this volume of rice led to the significant rice imports reported during MY2019/2020 and TY2020. ARROZGUA expects MINECO to adopt an administration regime to protect local rice production at the commercial level, otherwise this sector is at risk of disappearing.

Marketing:

Rice is distributed mostly through traditional channels, with 83.6 percent of the sales through local neighborhood stores, and 2 percent through other minor distributors. Supermarkets already have 14 percent of the market share. According to MINECO´s study, Arrocera Los Corrales is the major milled rice producer, leading with 47% of the market with Gallo Dorado pre-cooked rice, followed by El Molinero white rice (25 percent of the market) and Macarena (13 percent). Figure 5 shows retail prices for the main brands consumed in Guatemala.

Figure 5. Prices for different rice presentations at retail for main leading brands in Guatemala (May 6, 2020)

Source: MINECO, Study of the Rice Sector, 2020

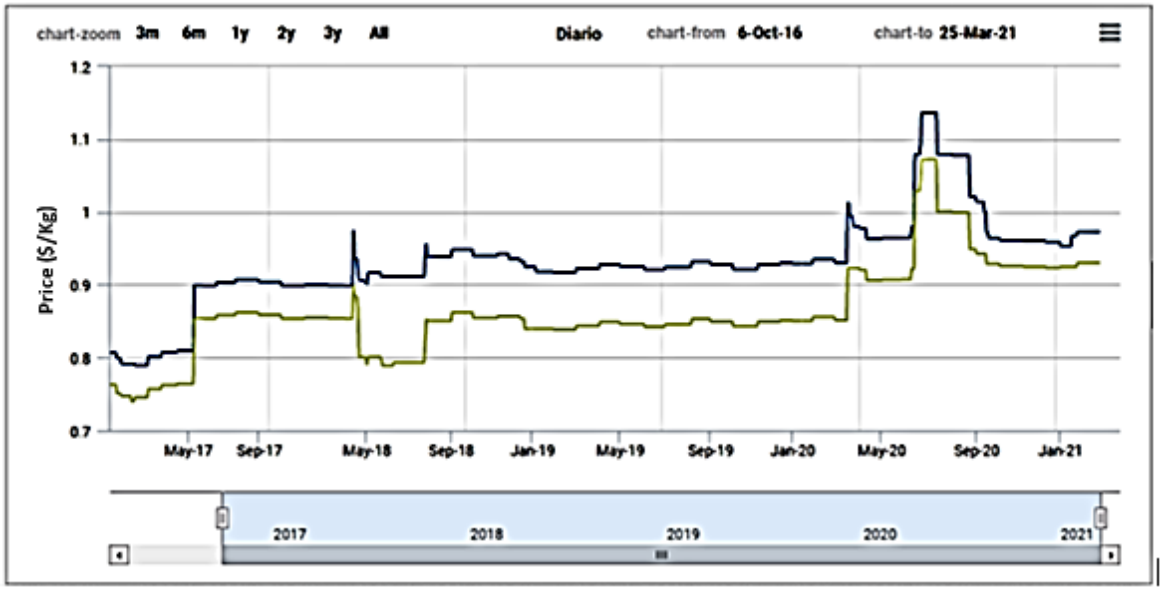
Figure 6 shows other rice options and prices available at the supermarkets. Imported milled and ready-to-eat rice is growing at a 22 percent rate, according to MINECO´s study in 2020.

Figure 6. Prices for different rice presentations at retail for new types of rice in Guatemala. (May 6, 2020)

Source: MINECO, Study of the Rice Sector, 2020

Graph 2 shows the historical average wholesale price for first and second quality milled rice in the CEMA wholesale market. Prices for first quality rice remained in the $0.90-$0.92/Kg range since 2017. As a result of the COVID-19 pandemic in 2020, prices experienced a 25 percent increase up to $1.15/Kg during the months of June-August; prices started to stabilize again by September 2020 and since then have maintained a $0.95/Kg average in the first quarter of 2021.

Graph 2
Average Historical Milled Rice (1st and 2nd qualities) Prices at Wholesale Markets in Guatemala



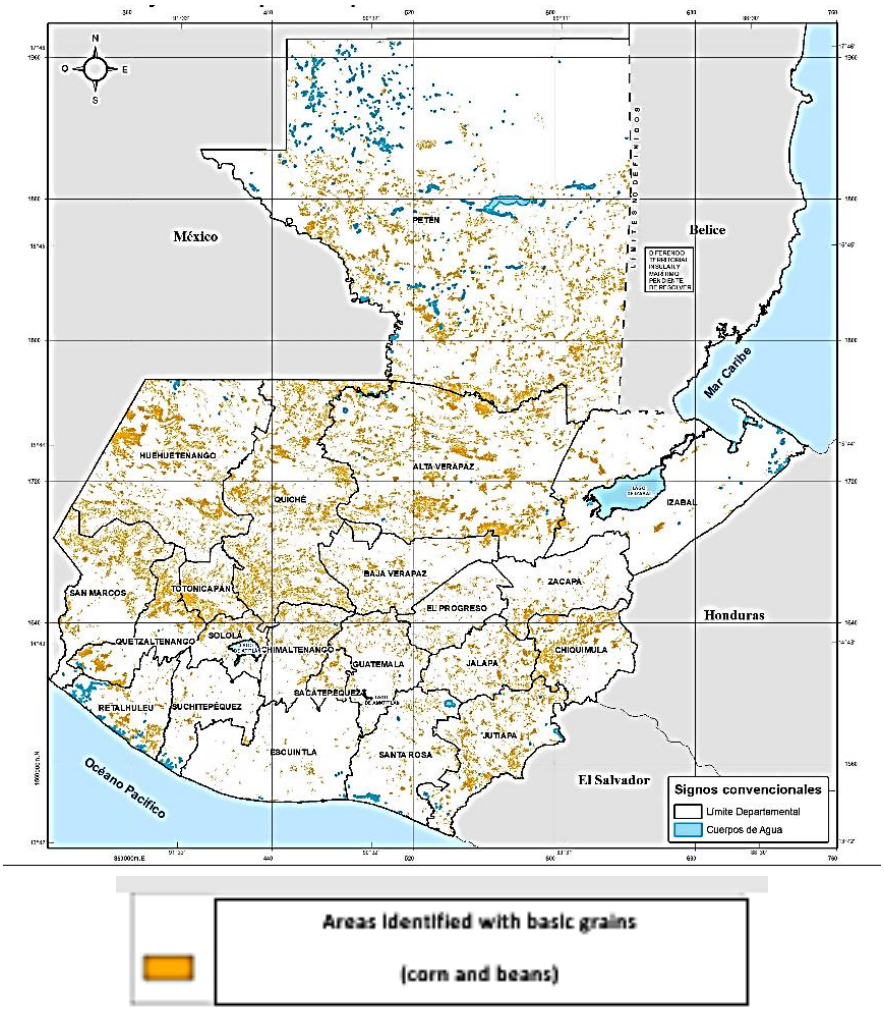
Source: DIPLAN, MAGA, 2020

Corn

Production

In MY2021/2022 harvested area is forecast at 950,000 hectares, a 3 percent increase compared to MY2020/2021 (estimated in 920,000 Ha). This forecast is based on latest data of planted area from MAGA satellite imagery (Figure 7) and growth trends for the past 3 years.

Figure 7
MAGA satellite imagery for corn (and beans) producing areas in Guatemala



Source: MAGA, 2021

Harvested area for MY2020/2021 is 1 percent lower than the previous estimate, mainly due to the impact of Eta and Iota in November of 2020. The storms hit during the postrera second harvest season (Nov-Mar), which is not the highest production season. The corn production cycle (Figure 8) goes from May to March in Guatemala, with the *Primera* or first and most important harvest representing 67 percent of the total harvest and running August-October, followed by the *Postrera* second harvest, which represents 27 percent of the national harvest, from November to March, and the *Apante*, or late harvest, from January to February, representing some 6 percent of the harvest. The April-June period is critical for food security in Guatemala, and deficits are covered by imports, mostly from the United States and Mexico.

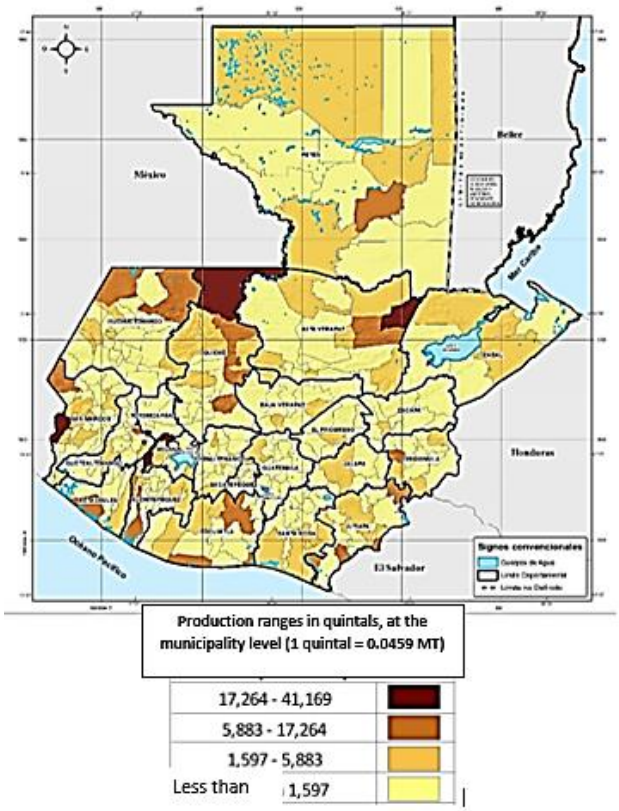
Figure 8
Main crop production calendar for corn in Guatemala

Note: Green bar is planting season and brown bar is harvesting season

Source: DIPLAN/MAGA, 2020

Production forecast for MY2021/2022 increases to 1.89 million MT, 9 percent higher than MY2020/2021 (estimated 1.72 million MT) and 7 percent higher than MY 2019/2020 (1.88 million MT). Figure 9 shows corn production areas and densities in Guatemala. Though it is difficult to see the details in the map, it can be highlighted that Peten in the North is the major producing area.

Figure 9
MAGA corn producing areas in Guatemala



Source: MAGA, 2021

Table 2 shows in detail the area and production of corn, corn and beans, corn, and others at departmental level. Just Peten produces 22 percent of the national production, followed by Alta Verapaz (15 percent), Quiche (13 percent), and Huehuetenango (10 percent). The Northern production supplies half the corn in Guatemala.

Table 2
Corn production at departmental level

DEPARTMENT	AREA (HA)	AREA (%)	PRODUCTION (MT)
Peten	258,399	21.96	562,188
Alta Verapaz	176,873	15.03	384,815
Quiche	160,417	13.63	349,013
Huehuetenango	121,805	10.35	265,006
Jutiapa	53,642	4.56	116,707
San Marcos	53,381	4.54	116,138
Chiquimula	46,143	3.92	100,392
Quetzaltenango	43,462	3.69	94,558
Totonicapan	29,381	2.5	63,924
Baja Verapaz	28,525	2.42	62,061
Jalapa	28,515	2.42	62,039
Chimaltenango	24,784	2.11	53,921
Retalhuleu	21,159	1.8	46,035
Izabal	21,090	1.79	45,885
Guatemala	20,377	1.73	44,334
Sololá	17,994	1.53	39,148
Zacapa	16,802	1.43	36,555
Santa Rosa	16,136	1.37	35,108
El Progreso	14,156	1.2	30,798
Sacatepequez	9,210	0.78	20,039
Suchitepequez	7,909	0.67	17,207
Escuintla	6,609	0.56	14,380
TOTAL	**1,176,769**	**100**	**2,560,249**

Source: MAGA, 2021

The departments sourcing white corn in the first harvest are:

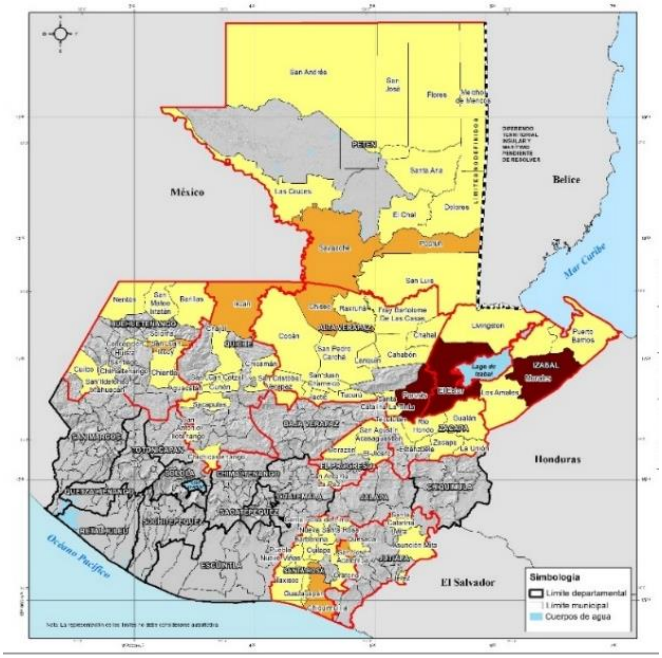
- South Coast: Escuintla, Rethalhuleu, Suchitepequez (July-August)
- East: Jutiapa, Chiquimula, Zacapa, Jalapa, Santa Rosa (August-September)

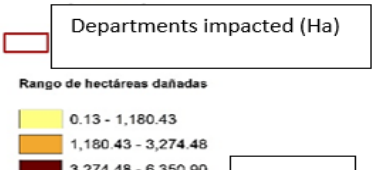
- North: Peten, Alta Verapaz, Baja Verapaz, Izabal (September-December)
- West: Huehuetenango, Quetzaltenango, Solola, San Marcos, Quiche, Totonicapan (December-January)
- Center: Guatemala, Chimaltenango, Sacatepequez, El Progreso (November-December)

For white corn second harvest, the listed departments in the south source on September-October, in the East they source on November-December, and in the North, they source for the February-April months. Yellow corn for human consumption follows a similar pattern, but is delayed one month in average, compared to white corn.

Production for MY2020/2021 is revised down 2 percent compared to Post´s previous estimate due to the impact of Eta and Iota storms, which hit production areas shown in Figure 10. Yields are forecast to recover to 1.99 MT/Ha in MY2021/2022, after dropping to 1.87 MT/Ha in MY2020/2021 because of the storms. Yields reported in the MY2019/2020 closed with 2.02 MT/Ha. Despite an increase in 28 percent of imported white corn certified seed, commercial corn roughly represents 20 percent of the national production. Average yields in commercial areas reach 5 MT/Ha, but the 80 percent of the rest of the corn is grown by small and very small farmers. Small farmers have less than 2 hectares of land, which explains why in 50,000 hectares of Eta and Iota affected corn zones, as much as 72,204 families were affected, according to MAGA estimates.

Figure 10
Guatemala corn producing areas hit by Eta and Iota Storms in November 2020





Department	Municipalities	Families Affected	Area impacted (Ha)
Izabal	5	17,522	12,725.44
Alta Verapaz	16	14,124	10,095.45
Quiché	8	9,866	4,518.90
Santa Rosa	11	7,180	5,020.45
Petén	11	5,850	6,925.81
Zacapa	6	5,524	2,241.03
Huehuetenango	11	5,018	2,600.74
El Progreso	4	4,556	1,214.72
Jutiapa	5	2,564	4,309.00
Total	**77**	**72,204**	**49,652**

Fuente: Dirección de Coordinación Regional y Extensión Rural

Source: MAGA, 2021

Low average corn yields in Guatemala are a direct consequence of the significant participation of small farmers at a non-commercial scale, who produce for self-consumption under subsistence conditions, with little to no inputs at all. Presently, it is estimated that Guatemala has around 150,000 commercial farmers and 600,000 subsistence farmers (less than 2 hectares). Commercial corn is produced in a 90-day cycle. Corn subsistence farming in the lowlands characterizes for 120-day production cycle, which is always intercropped with beans or other legumes or squashes. In the western highlands, corn production at the subsistence level may take from 180 up to 220 days, which doesn´t make economic sense, but given the limited options for this type of farming in the highlands, without government support, there are few other options. Most of the Guatemalans migrating irregularly to the United States come from the western highlands.

Consumption:

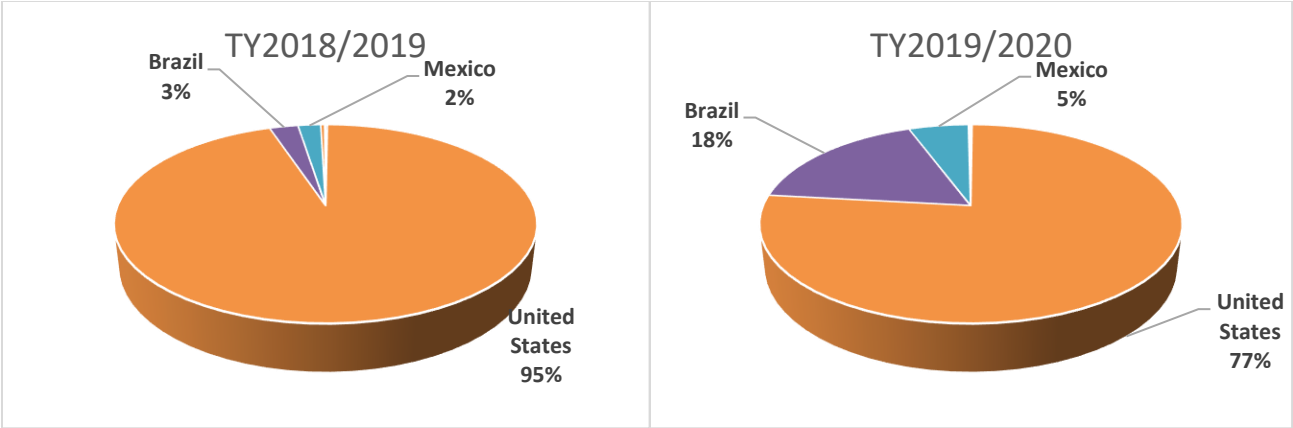
Corn continues to be the major staple in Guatemala. Corn consumption is forecast at 3.33 million MT in MY2021/2022, with an estimated consumption of 3.32 million MT in MY2020/2021. Consumption in MY2019/2020 closed at 3.30 million MT, of which 1.63 million MT went to the feed industry, and 1.67 million were consumed by a population count of 16.8 million inhabitants according to the National Institute of Statistics last update. This last update represents a per capita FSI consumption of 99 Kg, mostly consumed as fresh tortilla, which occupies the third position in the Consumer Price Index. MY2021/2022 feed consumption is forecast to account for 49 percent of the total consumption in Guatemala, as poultry, swine, livestock, and tilapia domestic production increase.

The biofortified seed resulting from the MAGA-Semilla Nueva alliance is expected to slowly, but steadily, increase the quality protein maize provided as biofortified seed (mostly for self-consumption), intended to improve the nutrition in the rural areas of Guatemala. This corn has twice as much protein content, 39 percent additional zinc, and 16 percent additional iron. Nutrition studies have demonstrated that zinc deficiencies increase respiratory diseases in 67 percent and increase 61 percent mortality in elders of the third age. MAGA considered that it was imperative to increase biofortified corn production in poverty zones, to strategically deal with the COVID-19 pandemic while providing for a mechanism to reactivate the economy.

Trade:

In April 2020, Guatemala opened a WTO quota for an additional 200,000 MT of corn to cover for the COVID-19 pandemic. In MY2019/2020, Guatemala imported 1.4 million MT of corn, of which 17 percent was white corn and the rest was yellow corn for feed. MY2021/2022 imports are forecast to maintain at 1.4 million MT, mostly sourcing yellow corn. The United States continues to be Guatemala’s main supplier, but its share was reduced in TY2019/2020 as a direct result of the WTO quota opened by the Ministry of Economy, when the Brazilian corn gained an important market share. Figure 11 shows the market share of main suppliers of corn to Guatemala.

Figure 11
Guatemalan Market Share for Corn Imports in TY2018/2019-2019/2020



Source: USDA elaboration with TDM, 2021

Guatemala has several FTAs that grant access to import corn duty-free with the United States, Taiwan, Mexico, Dominican Republic, Panama, and Belize. This duty-free access is exclusive for yellow corn but not for white corn, as shown in Table 3.

Table 3
CY2021 Tariffs for Corn Feed and FSI in Guatemala

HS Code	Product Description	Out-of-Quota	U.S.	EU	Taiwan	Mexico	DR	Panama	Belize
10.05.90.20	Yellow Corn	15	0	N/A	0	0/N/A	0	4.7	0/15
10.05.90.30	White Corn	20	0/20	N/A	0	N/A	0	2.7	N/A
10.05.90.90	Others	15	0	N/A	0	N/A	0	2	N/A

Source: MINECO and SAT, 2020

The United States is the only country that has a limited quota for white corn, under CAFTA-DR, growing by 2 percent annually in perpetuity as shown in Table 4. In year 2020, the quota for white corn was 26,000 MT, to be increased in 400 MT in 2021, and reaching 26,800 MT in year 2022. This quota is always filled as the processing food industry in Guatemala depends on this white corn to comply with mycotoxin limits in the products sold both domestically as exported. The lack of adequate technology and controls in the domestic corn production limit significantly the industrial processing of corn for the ready-to-eat food industry. Most of the corn that meets the food safety criteria goes for the corn flour industry at the commercial level. Corn flour traditionally milled is highly contaminated with aflatoxins.

Table 4
CAFTA-DR TRQ for White Corn

Product Description	2019	2020	2021	2022	2023	2024	2025
White Corn Quota (MT)	25,600	26,000	26,400	26,800	27,200	27,600	28,000
Out-of-Quota Tariff	20%	20%	20%	20%	20%	20%	20%

Source: MAGA, CAFTA-DR Phase-Out

Stocks:

Stocks in MY2021/2022 are forecast to be 123,000 MT, lower than the MY2020/2021, as corn production stabilizes again after the impact of the storms at the end of 2020. MY2019/2020 stocks closed at 350,000 MT, prior to the COVID-19 pandemic and the storms. The stocks are mostly storage silos under the food and feed industries as the government of Guatemala has roughly 70,000 MT of storage capacity, devoted exclusively for food emergency.

Policy:

MAGA has started an alliance with the Semilla Nueva organization, focused on improving food security through biofortified corn production and consumption. This corn is a hybrid suitable for the lowlands, with improved yields for the medium segment of corn producers who presently buy national seeds, or for the low segment of corn producers that depend on domestic hybrid HB-83 developed by the Agricultural Institute of Science and Technology (ICTA) from MAGA. The biofortified corn was developed through an improvement breeding program from a collaboration through the International Corn and Wheat Improvement Center (CIMMYT), the Corn Research Program from CGIAR partnership, the Agricultural Research Program for Health and Nutrition and ICTA, with the support of HarvestPlus. The corn was tested and adapted for Guatemala in the years 2013-2018, domestically reproduced to reduce the seed cost, and finally launching the first materials in 2018. Table 5 shows the positive impact of the biofortified seed in low and medium farmers´ segments in Guatemala.

Table 5
Biofortified corn seed comparative costs, yields, and profit for farmers in Guatemala

	Production Cost ($)	Seed Cost ($)	Yield (MT/Ha)	Profit ($)/Ha
Medium Segment (national seeds)	891.41	54.49	5.71	434.74
Fortaleza 3 (biofortified)	891.41	35.26	6.04	534.62
Low Segment (HB-83)	842.44	32.05	4.53	180.51
Fortaleza 3 (biofortified)	891.41	35.26	4.72	223.85

Source: Semilla Nueva, 2020

Semilla Nueva´s model is innovative as it promotes local seed producers to propagate the seed for the commercial sales channel, thus increasing the benefits for seed producers, corn producers, and consumers. The first hectares were planted in 2018, leading to 6,666 MT of biofortified seed in the first year (2018), 10,112 MT of biofortified corn in the second year (2019), and 15,387 MT in the third year (2020), this last produced by 7,820 families. As part of the alliance with MAGA, ICTA is propagating ICTA HB-18 biofortified corn to support families impacted by the COVID-19 pandemic and Eta and Iota storms (see Photo 3).

Photo 3
Biofortified corn distributed as part of MAGA food security program

Source: Semilla Nueva, 2020

Under the food emergency program, MAGA also bought roughly 7,500 MT of corn from the Corn Producers Association, that somehow alleviated temporarily for the farmers that participated in the program, the negative impacts of the pandemic, the storms, and the ever present contraband corn from Mexico.

Marketing:

White corn at wholesale can be sourced in bulk or in 100-pound bags (one quintal), as shown in Figure 12. This corn comes from local varieties, local and imported hybrids, identified as ICTA Compuesto, ICTA Polochic, HB-83, B-1, B-3, B-7, H-5, Tikal, La Maquina, and A-5. At retail, the product is sold in one pound presentation.

Figure 12
White corn (1st and 2nd qualities) sold at wholesale in Guatemala

Note: 1st quality white corn (upper half); 2nd quality yellow corn (lower half)

Source: MAGA, 2020

Yellow corn at wholesale can also be sourced on bulk or in 100-pound bag presentation (one quintal), as shown in Figure 13. This corn comes from local lines, varieties, and hybrids, identified as HS-6, Nutrica, HA 28, Pioneer 5800, ICTA Toto, Criollos A-4, V-301. At retail, the product is sold in one pound presentation.

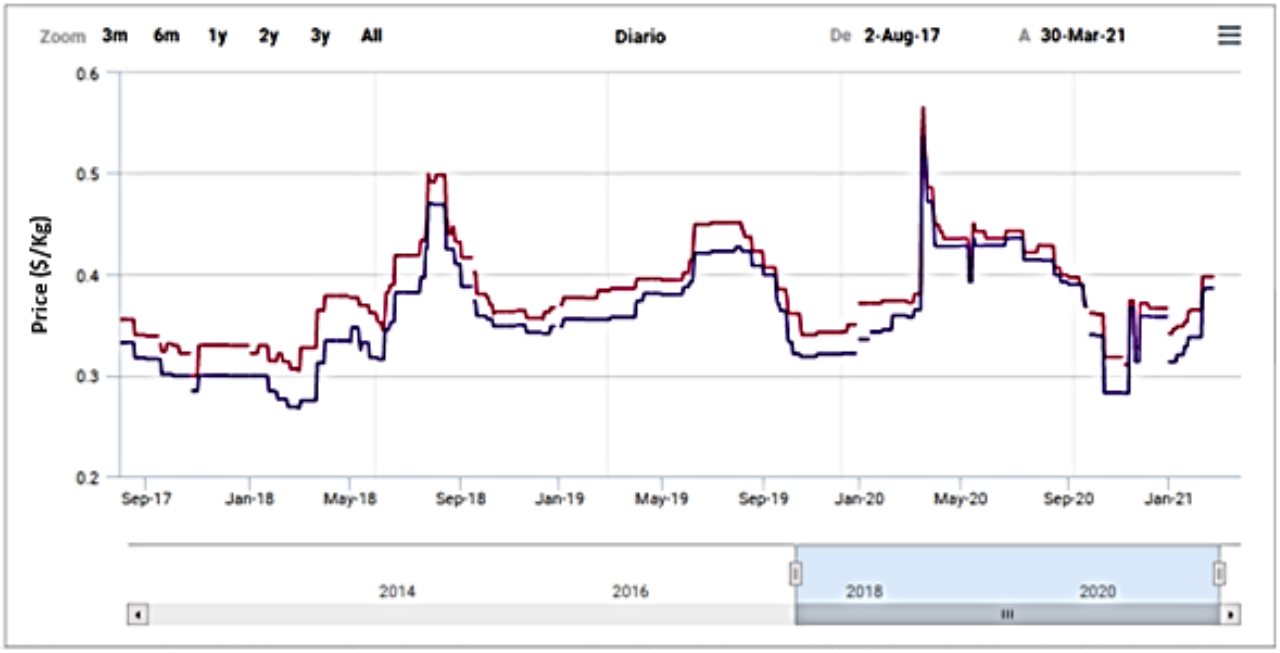
Figure 13
Yellow corn (1st and 2nd qualities) sold at wholesale in Guatemala

Note: 1st quality yellow corn (upper half); 2nd quality yellow corn (lower half)

Source: MAGA, 2020

Prices for the first and second qualities of white corn at wholesale varied significantly in the past year, mainly due to the COVID-19 pandemic, where record highs of $0.58/Kg were reported. Despite the storms hitting Guatemala at the end of 2020, prices for corn started to stabilize as of September, and have maintained stable during the first quarter of 2021, as shown in Graph 3, maintaining in the $0.30-$0.40/Kg average.

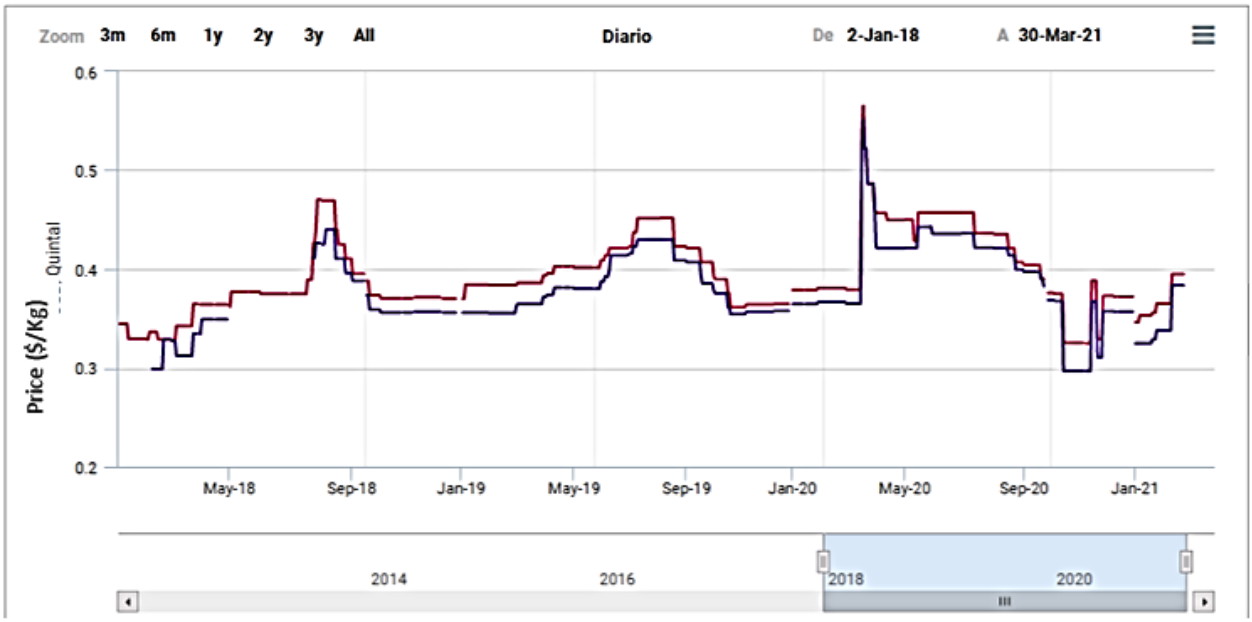
Graph 3
Wholesale prices for white corn (1st and 2nd qualities) in Guatemala



Source: DIPLAN/MAGA, 2020

Prices for yellow corn have fluctuated too, showing a similar behavior to white corn, with record highs reflecting during the COVID-19 pandemic, as shown in Graph 4.

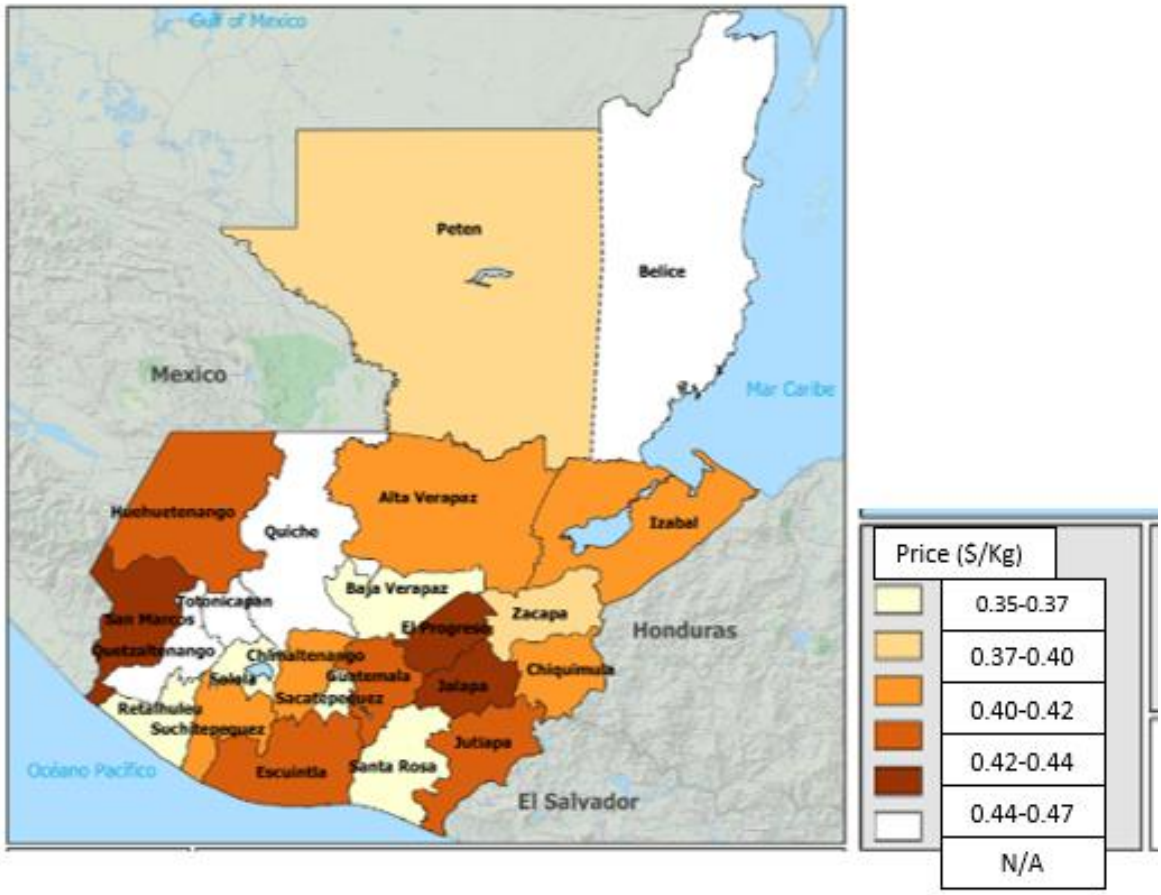
Graph 4
Wholesale prices for yellow corn (1st and 2nd qualities) for human consumption in Guatemala



Source: DIPLAN/MAGA, 2020

Retail prices at the departmental level fluctuate throughout the year, depending on the harvest season. As a rule of thumb, Peten, the grain basket of the country, usually maintains lower prices for consumers, in contrast to prices in the highlands, where local corn reserves are scarce at least half of the year. Local supplies and commercial flow will impact the behavior of prices. Figure 14 shows a snapshot of price ranges for white corn at wholesale, per department, in December of 2020; prices may vary up to 17 percent.

Figure 14
Retail prices ($/Kg) for white corn (1st and 2nd qualities) in Guatemala, at departmental level (December 2020)



Source: DIPLAN/MAGA, 2020

Production, Supply, and Demand Tables

Rice, Milled	2019/2020		2020/2021		2021/2022	
Market Year Begins	Oct 2019		Oct 2020		Oct 2021	
Guatemala	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested (1000 HA)	5	4	4	13	0	13
Beginning Stocks (1000 MT)	0	0	0	0	0	0
Milled Production (1000 MT)	19	18	16	33	0	33
Rough Production (1000 MT)	27	26	23	47	0	47
Milling Rate (.9999) (1000 MT)	7000	7000	7000	7000	0	7000
MY Imports (1000 MT)	141	137	120	121	0	126
TY Imports (1000 MT)	137	136	125	120	0	125
TY Imp. from U.S. (1000 MT)	59	59	0	0	0	0
Total Supply (1000 MT)	160	155	136	154	0	159
MY Exports (1000 MT)	0	0	0	0	0	0
TY Exports (1000 MT)	0	0	0	0	0	0
Consumption and Residual (1000 MT)	160	155	136	154	0	159
Ending Stocks (1000 MT)	0	0	0	0	0	0
Total Distribution (1000 MT)	160	155	136	154	0	159
Yield (Rough) (MT/HA)	5.4	6.5	5.75	3.6154	0	3.6154

(1000 HA) ,(1000 MT) ,(MT/HA)
MY = Marketing Year, begins with the month listed at the top of each column
TY = Trade Year, which for Rice, Milled begins in January for all countries.TY 2021/2022 = January 2022 - December 2022

Corn	2019/2020		2020/2021		2021/2022	
Market Year Begins	Jul 2019		Jul 2020		Jul 2021	
Guatemala	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested (1000 HA)	870	925	850	920	0	950
Beginning Stocks (1000 MT)	367	367	273	342	0	136
Production (1000 MT)	1680	1876	1645	1720	0	1890
MY Imports (1000 MT)	1381	1400	1600	1400	0	1400
TY Imports (1000 MT)	1527	1500	1600	1500	0	1500
TY Imp. from U.S. (1000 MT)	1162	1162	0	0	0	0
Total Supply (1000 MT)	3428	3643	3518	3462	0	3426
MY Exports (1000 MT)	5	1	5	1	0	1
TY Exports (1000 MT)	5	1	5	1	0	1
Feed and Residual (1000 MT)	1600	1630	1700	1635	0	1640
FSI Consumption (1000 MT)	1550	1670	1600	1690	0	1695
Total Consumption (1000 MT)	3150	3300	3300	3325	0	3335
Ending Stocks (1000 MT)	273	342	213	136	0	90
Total Distribution (1000 MT)	3428	3643	3518	3462	0	3426
Yield (MT/HA)	1.931	2.0281	1.9353	1.8696	0	1.9895

(1000 HA) ,(1000 MT) ,(MT/HA)
MY = Marketing Year, begins with the month listed at the top of each column
TY = Trade Year, which for Corn begins in October for all countries.TY 2021/2022 = October 2021 - September 2022

Attachments:

No Attachments