



Sugar and Sweeteners Outlook: October 2023

In this report:

[U.S. Sugar Outlook](#)
[Mexico Sugar Outlook](#)

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Mexico's 2023/24 Sugar Production Lowered; U.S. Supply Reduced in 2022/23 and 2023/24

In the October 2023 *World Agricultural Supply and Demand Estimates (WASDE)*, Mexico's sugar production in 2023/24 is reduced by 225,000 metric tons (MT), actual weight to 5.575 million amid widespread drought conditions. Mexican imports in 2023/24 are projected to increase by 277,000 MT to 322,000 to compensate for the lower production, meet domestic needs and exports commitment, and maintain adequate inventory before the 2024/25 sugar campaign.

The U.S. 2022/23 sugar supply is reduced from last month on lower imports across all categories except high-tier duty imports, which are raised to a record 453,000 short tons, raw value (STRV). The U.S. 2022/23 sugar use is minimally changed, with the reduction in food use delivery mostly offset by the increase in exports and non-food use delivery. The net result is reduced 2022/23 ending stocks, and a stocks-to-use ratio that is lowered by 1.5 percentage points to 15.6 percent. The U.S. 2023/24 sugar supply is reduced primarily on lower carryover stocks from 2022/23. The U.S. 2023/24 sugar use is lowered by 25,000 STRV to 12.665 million in concurrence with the observed food use delivery slowdown in 2022/23. Thus, ending stocks in 2023/24 are residually calculated at 1.557 million STRV, down 157,000 from last month. Correspondingly, the stocks-to-use ratio is 12.3 percent, down 1.2 percentage points from last month's 13.5 percent.

U.S. Outlook Summary

Stocks-to-Use Ratio Lowered in 2022/23 and 2023/24

In the October 2023 *WASDE*, the U.S. 2022/23 sugar supply is reduced from last month by 179,000 STRV to 14.641 million primarily on lower imports (table 1). Imports are lowered by 154,000 STRV to 3.584 million after downward adjustments were made in all categories, except high-tier duty imports, which are raised to a record 453,000 STRV. The rest of the supply decrease, amounting to 25,000 STRV, results from lower September 2023 sugar production in Louisiana given the drought-delayed harvest. The U.S. 2022/23 sugar use is raised by 4,000 STRV to 12.664 million as the 25,000-STRV and 4,000-STRV increase in exports and non-food use deliveries, respectively, offset the 25,000-STRV decrease in food use deliveries. Thus, the 2022/23 ending stocks are reduced by 183,000 STRV to 1.977 million, and the resulting stocks-to-use ratio is down by 1.5 percentage points to 15.6 percent.

The U.S. 2023/24 sugar supply is reduced from last month by 182,000 STRV to 14.222 million based on lower carryover stocks from 2022/23 and lower beet sugar production offsetting increases in cane sugar production and free trade agreements (FTA) tariff-rate quota (TRQ) imports (table 1). Beet sugar production is lowered by 71,000 STRV to 5.151 million after the USDA, National Agricultural Service Statistics (NASS) lowered sugarbeet yields in several States in its October *Crop Production*. Florida's cane sugar production is raised by 3,000 STRV to 2.038 million on processors' reporting to USDA, Farm Service Agency (FSA) *Sweetener Market Data (SMD)*. Louisiana's increase is due to accounting—the sugar that was not produced in September 2023 is expected to be produced in fiscal year 2023/24. Free trade agreement TRQs, which are based on a calendar year, are increased by 13,000 STRV to 228,000 as imports that were expected to enter by September 30 are now anticipated by December 31. The U.S. 2023/24 food use deliveries are lowered by 25,000 STRV to 12.525 million in concurrence with the observed food use delivery slowdown in 2022/23. With no changes to the other use categories, the U.S. 2023/24 sugar use is lowered by the same amount to 12.665 million STRV, reflecting flat growth from 2022/23. Ending stocks in 2023/24 are residually calculated at 1.557 million STRV, down 157,000 from last month. Correspondingly, the stocks-to-use ratio is 12.3 percent, down 1.2 percentage points from last month's 13.5 percent.

Table 1: U.S. sugar: supply and use by fiscal year (October/September), October 2023

Items	2021/22		2022/23			2023/24	
	Final	September (estimate)	October (estimate)	Monthly change	September (forecast)	October (forecast)	Monthly change
	1,000 short tons, raw value						
Beginning stocks	1,705	1,820	1,820	0	2,159	1,977	-183
Total production	9,157	9,261	9,237	-25	8,981	8,969	-12
Beet sugar	5,155	5,168	5,168	0	5,223	5,151	-71
Cane sugar	4,002	4,094	4,069	-25	3,758	3,817	59
Florida	1,934	1,983	1,983	0	2,034	2,037	3
Louisiana	1,944	2,034	2,010	-25	1,682	1,738	55
Texas	124	76	76	0	42	42	0
Total imports	3,646	3,738	3,584	-154	3,264	3,277	13
Tariff-rate quota imports	1,579	1,869	1,834	-35	1,604	1,617	13
Other program imports	298	200	141	-59	200	200	0
Non-program imports	1,769	1,669	1,608	-61	1,459	1,459	0
Mexico	1,379	1,219	1,156	-63	1,284	1,284	0
High-duty	390	450	453	3	175	175	0
Total supply	14,508	14,819	14,641	-179	14,404	14,222	-182
Total exports	29	45	70	25	35	35	0
Miscellaneous	81	0	0	0	0	0	0
Total deliveries	12,578	12,615	12,594	-21	12,655	12,630	-25
Domestic food and beverage use	12,470	12,500	12,475	-25	12,550	12,525	-25
To sugar-containing products re-export program	80	90	94	4	80	80	0
For polyhydric alcohol, feed, other alcohol	27	25	25	0	25	25	0
Commodity Credit Corporation (CCC) for ethanol	0	0	0	0	0	0	0
Total use	12,688	12,660	12,664	4	12,690	12,665	-25
Ending stocks	1,820	2,159	1,977	-183	1,714	1,557	-157
Private	1,820	2,159	1,977	-183	1,714	1,557	-157
Commodity Credit Corporation	0	0	0	0	0	0	0
Stocks-to-use ratio (percent)	14.3	17.1	15.6	-1.4	13.5	12.3	-1.2

Source: USDA, World Agricultural Outlook Board, *World Agricultural Supply and Demand Estimates (WASDE)*.

Beet Sugar Production in 2023/24 Lowered Based on NASS

U.S. beet sugar production in crop year 2023/24 (August 2023–July 2024) is adjusted downward from last month by 71,000 STRV to 5.116 million (table 2) after the USDA, NASS lowered its last month's forecast of sugarbeet yields in 6 of the 11 producing States in its October *Crop Production*. The updated national yield is 31.1 tons per acre, down from last month's 31.5 tons. Despite the lower estimate, the 2023/24 yield would be 2.5-tons per acre (9 percent) higher than last year's 28.6 tons and would be the fourth highest yield since 2007/08. Since NASS did not update either the U.S. 2023/24 sugarbeet planted and harvested area

(currently at 1.132 million acres and 1.119 million acres, respectively), the reduction in yield correspondingly lowers sugarbeet production by 520,000 short tons to 34.739 million.

Table 2: U.S. beet sugar production calculations, 2022/23 and 2023/24

	2022/23 September	2022/23 October	Monthly change	2023/24 September	2023/24 October	Monthly change
Sugarbeet production (1,000 short tons) 1/	32,574	32,574	0	35,259	34,739	-520
Sugarbeet shrink (percent)	6.19	6.19	0.00	6.56	6.56	0.00
Sugarbeet sliced (1,000 short tons)	30,558	30,558	0	32,947	32,461	-486
Sugar extraction rate from slice (percent)	15.38	15.38	0.00	14.65	14.65	0.00
Sugar from beets sliced (1,000 STRV) 2/	4,700	4,700	0	4,828	4,756	-72
Sugar from molasses (1,000 STRV) 2/	372	372	0	360	360	0
Crop year sugar production (1,000 STRV) 2/	5,071	5,071	0	5,188	5,116	-72
Aug.–Sep. sugar production (1,000 STRV)	537	537	0	633	633	0
Aug.–Sep. sugar production of subsequent crop (1,000 STRV) 3/	633	633	0	633	633	0
Sugar from imported beets (1,000 STRV) 4/	N/A	N/A	N/A	35	35	0
Fiscal year sugar production (1,000 STRV)	5,168	5,168	0	5,223	5,151	-72

STRV = short tons, raw value; N/A = not applicable.

1/ USDA, National Agricultural Statistics Service.

2/ August–July.

3/ The August–September 2023 sugar production of 633,000 STRV is equal to the 5-year average (2017/18–2021/22) of 643,000 STRV less 10,000 STRV to account for the lost production due to Sidney Sugars' closure in April 2023.

4/ Sugar from imported beets in 2022/23 are already included in the crop year production. Typically, this component is separated for projection purposes and included in the total once the full crop year slice is available.

Source: USDA, Economic Research Service; USDA, World Agricultural Outlook Board; USDA, Farm Service Agency.

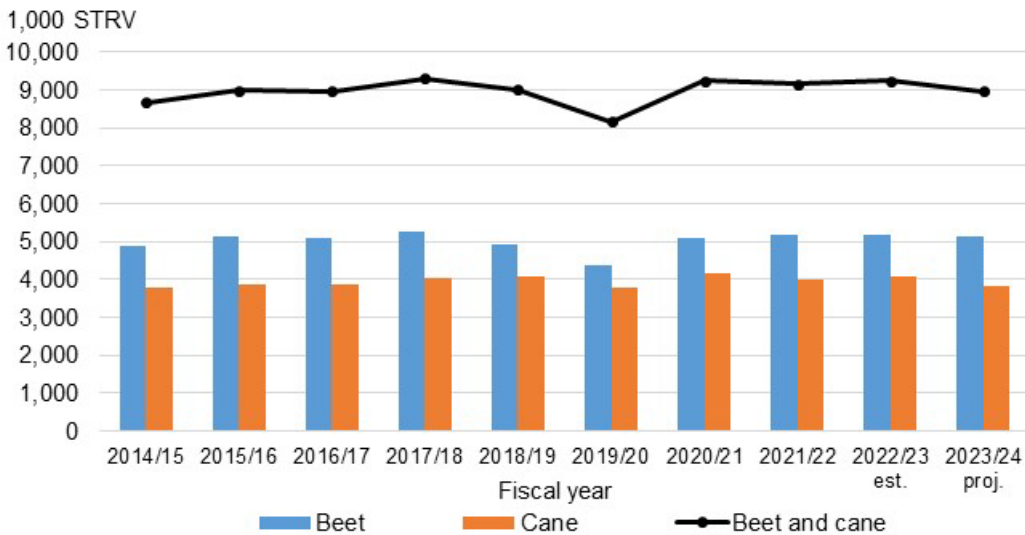
As there are no other changes to the rest of the variables, the fiscal year 2023/24 beet sugar production is reduced by the amount equivalent to the crop year reduction (71,000 STRV) to 5.151 million. The revised sugar production estimate, if realized, would be comparable with the prior 2 years (2022/23's 5.168 million STRV and 2021/22's 5.155 million) (figure 1).

The forecast for sugarbeet shrink and extraction rate from sliced beets, both reflecting 10-year averages (2013/14–2022/23), are unchanged at 6.56 percent and 14.65 percent, respectively. Sugar produced from molasses (360,000 STRV) and from imported beets (35,000 STRV) are likewise the same as last month. The 633,000-STRV estimate for August–September sugar production is also carried over. This estimate of early beet sugar production reflects a 5-year average (2017/18–2021/22) that was slightly adjusted downward to account for the lost production due to Sidney Sugars' closure in April 2023.¹ The estimate will be replaced by the actual August–September 2023 sugar output when it becomes available in next month's *SMD*.

¹ For more information on Sidney Sugars' closure, refer to the Sugar and Sweeteners Outlook March 2023 Special Article.

Figure 1

U.S. beet and cane sugar production, by fiscal year, 2003/04–2023/24



STRV = short tons, raw value; est. = estimated; proj. = projected.

Source: USDA, World Agricultural Outlook Board, *World Agricultural Supply and Demand Estimates*

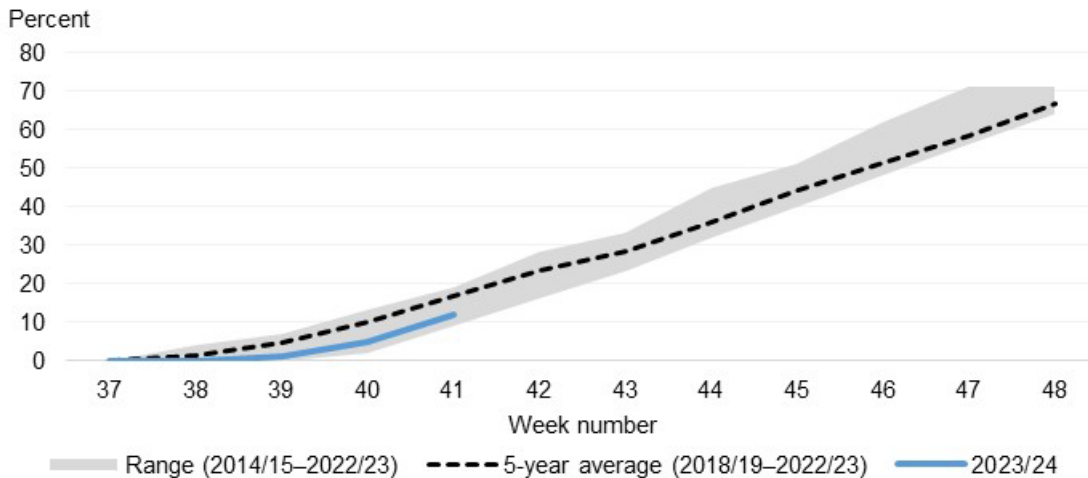
Louisiana Cane Sugar Production Lower in Fiscal Year 2022/23 Due to Harvest Delays

Cane sugar production in fiscal year 2022/23 is reduced from last month by 25,000 STRV to 4.069 million, solely on a lower expectation of Louisiana’s September 2023 sugar output due to drought-related harvest delays. The September estimate is reduced from last month’s 55,000 STRV to 31,000, which in turn lowers Louisiana’s fiscal year 2022/23 by the same amount to 2.010 million. The September data will be available in next month’s *SMD*, which will finalize the State’s fiscal year 2022/23 production.

Louisiana has been experiencing drought since June. Based on USDA’s interpretation of the October 10 U.S. Drought Monitor, 100 percent of Louisiana’s sugarcane production areas remain under exceptional drought. The lack of rainfall stunted the development of the sugarcane crop, compelling growers to delay harvest in hope of receiving beneficial rains. Typically, harvest in the State starts in mid- to late-September, and thus accounted for in fiscal year 2022/23, and finishes by mid-January to avoid freeze-related losses. However, most of the sugarcane mills’ start dates in the 2023/24 campaign were pushed back to October, one of the latest in record. As of October 15, the sugarcane crop is 12 percent harvested, behind last year (19 percent) and the 5-year average (17 percent) (figure 2). Thus, the September portion of the output is instead assumed to be pushed into fiscal year 2023/24.

Figure 2

Louisiana sugarcane, percent harvested as of week 41^{1/}, 2014/15–2023/24



^{1/} Week 41 was October 15 in 2023; exact dates vary by year.
 Source: USDA, National Agricultural Statistics Service.

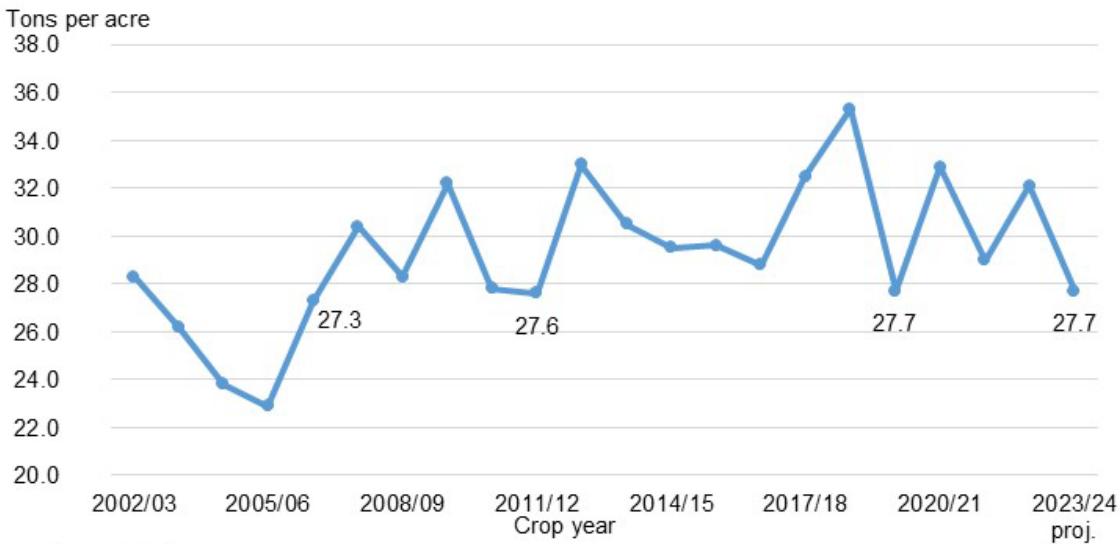
U.S. Cane Sugar Production Higher in Fiscal Year 2023/24

Cane sugar production in fiscal year 2023/24 is raised from last month by 59,000 STRV to 3.817 million based on increases in Florida (up 3,300 STRV to 2.037 million) and Louisiana (up 55,500 STRV to 1.738 million). Production in Texas is unchanged at 42,000 STRV, a record low due to drought conditions and restrictions of water releases from Mexico under the Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande (1944 Water Treaty). If realized, 2023/24 cane sugar production in the U.S. would be 252,000-STRV lower (6 percent) than last year’s 4.069 million and would be the lowest since 2019/20’s 3.798 million STRV (figure 1).

Based on the *SMD*, cane processors in Florida slightly raised their production outlook from last month by 3,300 STRV to 2.037 million. When Hurricane Idalia made landfall in the State on August 30, it brought rain but did not cause major damage to Florida’s sugarcane areas. The wet field conditions, however, delayed harvest in some areas.

The sugar output in Louisiana is increased by 55,500 STRV to 1.738 million partly based on moving sugar expected in September into the next fiscal year and on the NASS October *Crop Production*, which increased the yield forecast for the State from 27.2 tons per acre to 27.7 tons. Despite the increase, the 27.7 tons per acre yield forecast in Louisiana would match 2019/20 as the second lowest since 2011/12’s 27.6 tons per acre (figure 3).

Figure 3
Louisiana sugarcane yield, 2002/03–2023/24



proj. = projected.
 Source: USDA, National Agricultural Statistics Service.

U.S. Imports Reduced in 2022/23; Raised for 2023/24

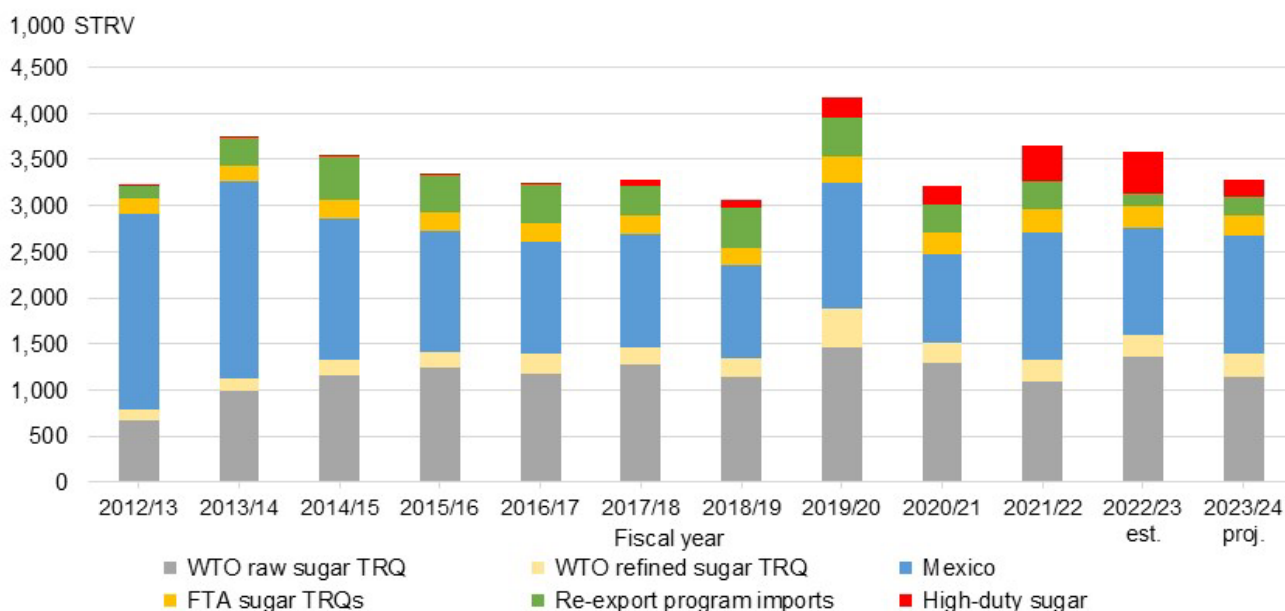
U.S. imports in 2022/23 are lowered from last month by 154,000 STRV to 3.584 million on lower-than-expected entries across all categories except high-tier, which was slightly raised by 3,000 STRV to a historic high of 453,000. The adjustments were based on the October 12 USDA, Foreign Agricultural Service’s (FAS) *FY23 U.S. Sugar Monthly Import and Re-exports* preliminary final report, which primarily obtains data from the U.S. Department of Homeland Security, Customs and Border Protection (CBP) and U.S. Department of Commerce, Bureau of the Census.

Among the categories, the largest over-the-month decreases were observed for imports from Mexico (down 63,000 STRV to 1.156 million), followed by imports under the re-export and polyhydric alcohol programs (down 59,000 to 141,000), raw sugar TRQ (down 22,000 to 1.356 million), and free trade agreements TRQ (down 13,000 to 237,000). Refined TRQ imports were also reduced but by a minimal amount (down 30 to 241,000).

The revised 2022/23 import volume of 3.584 million STRV implies an over-the-year decline of 62,000 STRV (2 percent) from last year’s 3.646 million (figure 4, table 3). The largest annual decline occurred in imports from Mexico (down by 223,000 STRV or 16 percent) and re-export program imports (down 156,000 STRV or 53 percent), which offset the increases in

imports of raw sugar TRQ (up 260,000 STRV or 24 percent) and high-tier sugar (up 63,000 STRV or 6 percent).

Figure 4
U.S. sugar imports by type, 2012/13–2023/24



STRV = short tons, raw value; FTA = free trade agreement; WTO = World Trade Organization; TRQ = tariff-rate quota; est. = estimated; proj. = projected.
Source: USDA, Foreign Agricultural Service.

Table 3: U.S. sugar imports by type, by fiscal year 2017/18–2022/23

	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23 est.	5-year average	Over-the-year change		
Fiscal year total	1,000 short tons, raw value (STRV)								STRV	Percent
Mexico	1,223	1,000	1,376	968	1,379	1,156	1,189	-223	-16	
WTO raw sugar TRQ	1,272	1,144	1,468	1,296	1,096	1,356	1,272	260	24	
WTO refined sugar TRQ	190	207	408	217	237	241	248	4	2	
FTA sugar TRQ	202	190	276	236	246	237	223	-9	-4	
Re-export program	326	438	432	292	298	141	382	-156	-53	
High-duty sugar	64	91	206	212	390	453	117	63	16	
Total	3,277	3,070	4,165	3,221	3,646	3,584	3,395	-62	-2	
Share of fiscal year total	Percent								Percentage point	
Mexico	37	33	33	30	38	32	34	-6		
WTO raw sugar TRQ	39	37	35	40	30	38	36	8		
WTO refined sugar TRQ	6	7	10	7	7	7	7	0		
FTA sugar TRQ	6	6	7	7	7	7	7	0		
Re-export program	10	14	10	9	8	4	10	-4		
High-duty sugar	2	3	5	7	11	13	5	2		
Total	100	100	100	100	100	100	100	N/A		

WTO = World Trade Organization; TRQ = tariff rate quota; FTA = free trade agreement; est. = estimated; N/A = not applicable.

Note: Totals may not add due to rounding.

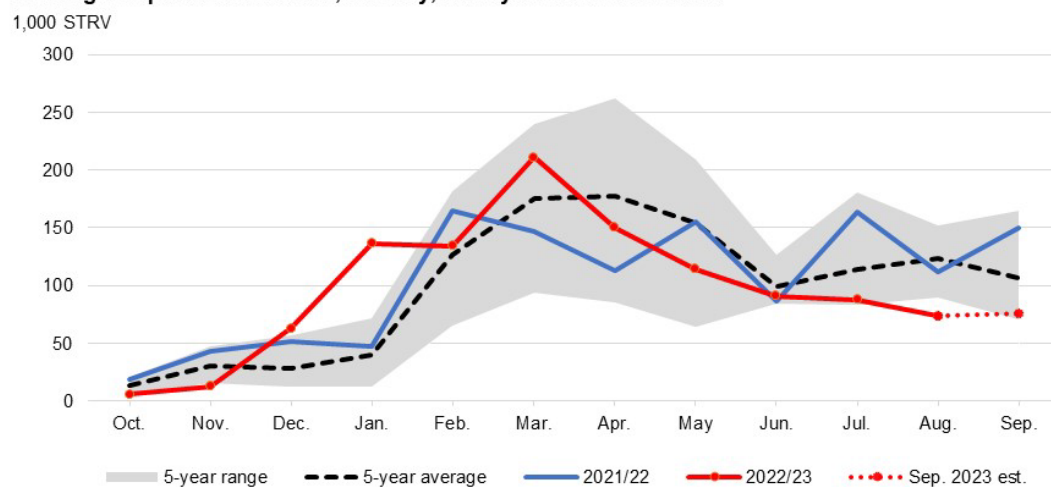
Source: USDA, Economic Research Service calculation using data from USDA, Foreign Agricultural Service.

For U.S. 2023/24 imports, the sole adjustment came from a 13,000-STRV increase in FTA TRQ imports from last month to 228,000. The calendar-year-based FTA TRQ imports are increased because the volume expected to enter by September 30 are now expected to arrive by December 31. As such, total imports for 2023/24 are increased by the same amount to 3.277 million STRV, which would be 307,000-STRV (9 percent) less than 2022/23's 3.584 million. The over-the-year decline is mainly driven by lower expected imports of raw sugar TRQ and high-tier sugar offsetting the larger expected imports from Mexico and under the re-export programs.

Lower-than-Expected Imports from Mexico in 2022/23

Using trade data from the U.S. Bureau of the Census, USDA, FAS' preliminary final of the fiscal year 2022/23 U.S. imports from Mexico are at 1.156 million STRV. For *WASDE* purposes, the FAS estimate is considered the final volume of sugar exported from Mexico into the United States. The 1.156 million-STRV estimate would be 223,000-STRV lower (16 percent) than last year's 1.379 million and the third lowest since 2017/18 (table 3). This volume is also lower than the 2022/23 U.S. Needs (1.306 million STRV)—the maximum amount Mexico is allowed to export to the U.S. based on the suspension agreements—that were calculated by the U.S. Department of Commerce in March 2023. Imports from Mexico entered at a relatively strong pace in the first half of the fiscal year, but the pace slowed to the minimum levels in the second half for certain months due to supply constraints stemming from Mexico's record-low sugar production in 2022/23 (figure 5).

Figure 5
U.S. sugar imports from Mexico, monthly, fiscal year 2017/18–2022/23



STRV = short tons, raw value; est. = estimated.
Source: USDA, Foreign Agricultural Service.

Raw Sugar TRQ Shortfall in 2022/23 Largest in a Decade

Imports under the raw sugar TRQ in fiscal year 2022/23 are 1.356 million STRV, the second largest since 2017/18, behind 2019/20's 1.468 million. This amount includes about 176,000 STRV of fiscal year 2021/22 raw sugar TRQ that entered in October–December 2022 due to USDA's action to extend entry.

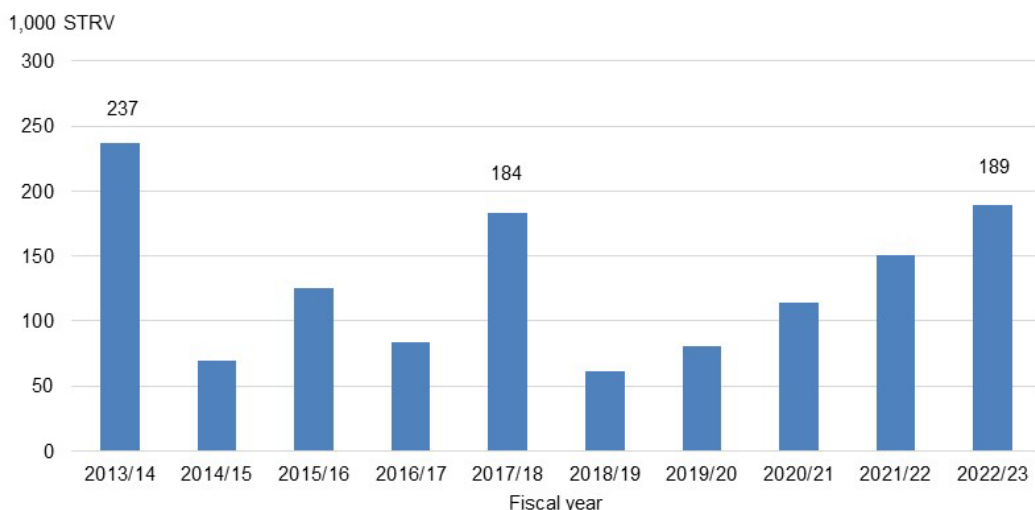
The raw sugar TRQ for fiscal year 2022/23 was initially set at 1,231,497 STRV² (1,117,195 MTRV), which is the minimum quantity that the United States is committed to pursuant to the WTO Uruguay Round Agreements, and allocated to 40 countries. On March 14, 2023, the U.S. Trade Representative (USTR) reallocated 247,182 STRV (224,240 MTRV) of the initial TRQ from those countries that stated they do not plan to fill their allocation. For example, the initial raw sugar quota assigned to the Philippines (132,454 STRV), which is the third largest, was reallocated to other supplying countries. On July 19, USDA increased the raw sugar TRQ by 137,789 STRV (125,000 MTRV), which USTR then allocated. As a result, the adjusted raw sugar TRQ in 2022/23 is 1,369,286 STRV (1,231,497 + 137,789).

In its October 2023 *U.S. Sugar Monthly Import and Re-exports*, FAS reported that the 2022/23 raw sugar TRQ shortfall (the difference between TRQ allocation and the actual entry of imports) amounted to about 190,000 STRV. This implies that out of the total raw sugar TRQ of 1,369,286 STRV, only about 1,179,539 (86 percent) entered the U.S. The 190,000-STRV shortfall in 2022/23 would be the largest since 2013/14's 237,000 (figure 6). Following the TRQ reallocation and increase, 20 quota-holding countries did not fill their revised quotas. The largest contributors to the shortfall are Dominican Republic with 48,000 STRV (25 percent), followed by Argentina with 30,000 (16 percent) and Peru with 28,000 (15 percent) (table 4).

² In this paragraph, the actual numbers are used to be consistent with the Federal Register announcements.

Figure 6

Shortfall between U.S. raw sugar tariff-rate quota World Trade Organization allocation and entry, fiscal year 2013/14–2022/23



Note: Shortfall is the difference between quota allocation and actual entry of imports into the United States.

Source: USDA, Foreign Agricultural Service; U.S. Department of Homeland Security, Customs and Border Protection.

Table 4: U.S. allocation and entry of World Trade Organization Raw raw sugar tariff-rate quota for countries with shortfall, fiscal year 2023 (October 2022–September 2023)

	Entry	Tariff-rate quota (TRQ)	Shortfall	Share in total shortfall	Share of shortfall in TRQ
	Short tons, raw value			Percent	
Countries with shortfall 1/:					
Argentina	34,895	64,972	30,078	16	46
Barbados	225	7,750	7,525	4	97
Bolivia	12,013	13,887	1,874	1	13
Colombia	32,675	42,432	9,758	5	23
Dominican Republic	204,994	252,807	47,814	25	19
Ecuador	17,942	19,448	1,506	1	8
El Salvador	45,910	45,969	58	0	0
Guatemala	84,188	84,867	679	0	1
Guyana	17,343	18,132	789	0	4
Honduras	15,109	17,680	2,571	1	15
India	6,536	12,860	6,324	3	49
Jamaica	5,203	13,045	7,842	4	60
Malawi	9,406	15,109	5,703	3	38
Mauritius	11,407	21,217	9,811	5	46
Mexico 2/	0	8,001	8,001	4	100
Mozambique	21,100	22,985	1,885	1	8
Panama	28,525	47,161	18,637	10	40
Paraguay	7,968	8,001	33	0	0
Peru	44,182	72,490	28,308	15	39
Uruguay	0	551	551	0	100
All countries	1,179,539	1,369,286	189,746	100	14

1/ Shortfall is the difference between quota allocation and actual entry of imports into the United States.

2/ Imports from Mexico are determined under the U.S.-Mexico sugar suspension agreements.

Note: Totals may not add due to rounding.

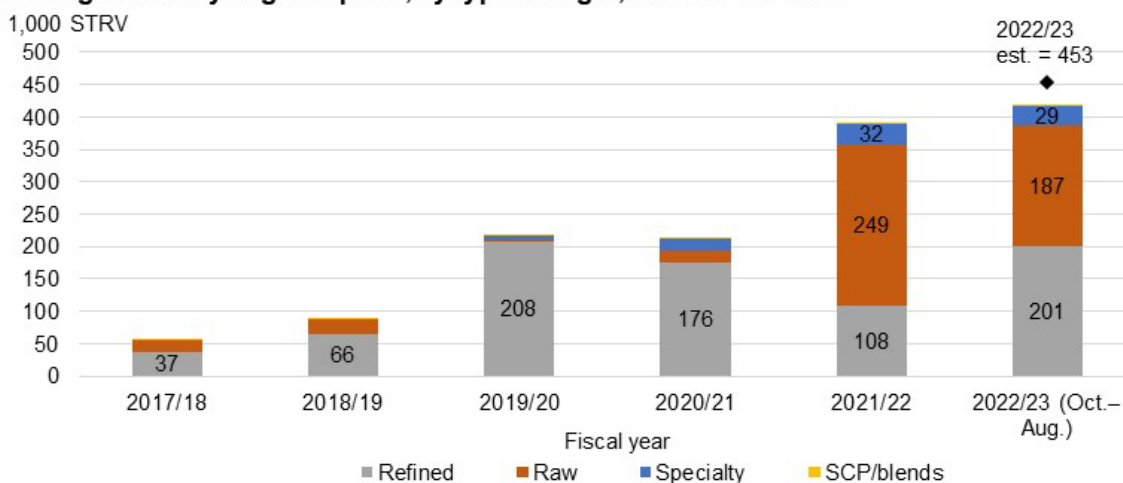
Source: USDA, Foreign Agricultural Service; U.S. Department of Homeland Security, Customs and Border Protection.

High-Tier Sugar Imports in 2022/23 at Record-High

High-tier sugar imports in 2022/23 are slightly raised from last month by 3,000 STRV to 453,000, which would be a new record, surpassing last year's 390,000 STRV by 63,000 (16 percent) (figure 7). After being historically the smallest import category, high-tier imports in 2022/23 would then be the third largest category in 2 consecutive years behind imports from WTO raw sugar TRQ and Mexico (table 3).

Figure 7

U.S. high-tier duty sugar imports, by type of sugar, 2017/18–2022/23



STRV = short tons, raw value; SCP = sugar-containing products; est. = estimated.

Note: The Harmonized Tariff Schedule (HTS) lines are 1701.12.5000, 1701.13.5000, and 1701.14.5000 for raw sugar; 1701.91.3000, 1701.99.5025, 1701.99.5050, for refined sugar; 1701.99.5015 and 1701.99.5017 for specialty sugar including organic; and 1702.90.2000, and 2106.90.4600 for SCP/blends.

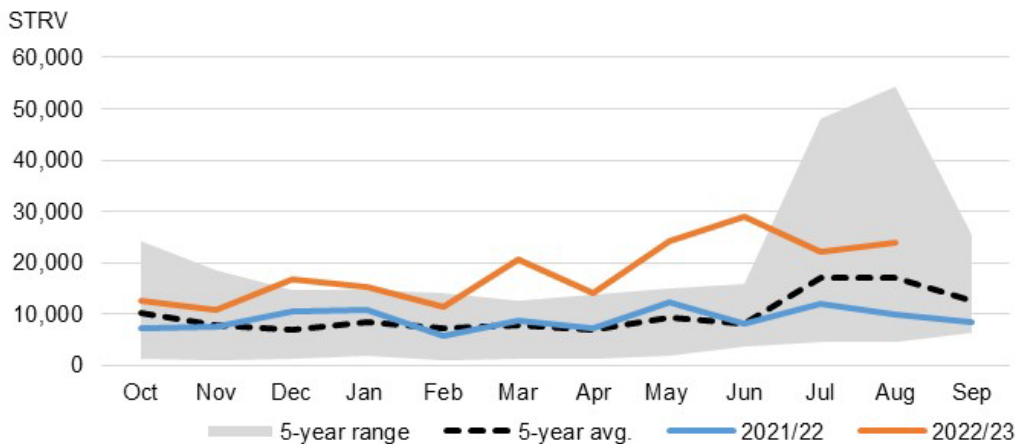
Source: USDA, Economic Research Service's calculation using U.S. Department of Commerce, Bureau of the Census trade data from the U.S. International Trade Commission's *DataWeb*.

The publicly available import data from the U.S. Bureau of the Census is between October 2022–August 2023, which lags the proprietary data used in the *WASDE* by a month. Through August, total high-tier imports already reached 419,000 STRV or 93 percent of the estimated 2022/23 total (453,000 STRV). Of the 419,000-STRV cumulative imports through August, refined sugar comprises about 201,000 STRV (48 percent), almost double 2021/22's total volume of 108,000 STRV despite having 1 more month of data remaining. Since October 2022, the monthly entry pace of high-tier refined imports has outpaced the 5-year average and is either at or above the high end of the 5-year range since December 2022 (figure 8).

High-tier raw sugar imports through August 2023 (187,000 STRV) are equally strong. This volume represents about 45 percent of the 419,000 STRV total to date, and only second

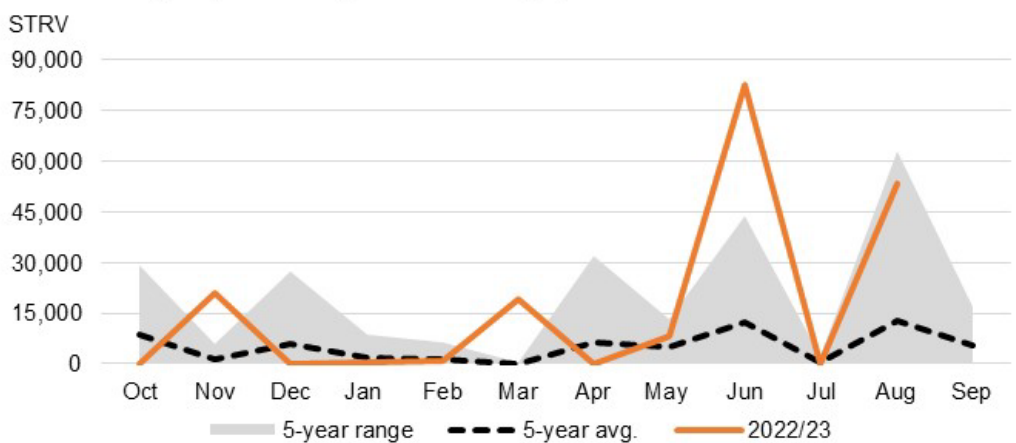
behind 2021/22. Relatively high volumes of high-tier raw sugar were entered in June and August 2023 (figure 9).

Figure 8
U.S. monthly imports of high-tier refined sugar, 2017/18–2022/23



STRV = short tons, raw value; avg. = average
 Source: USDA, Economic Research Service calculation using U.S. Department of Commerce, Bureau of the Census trade data from the U.S. International Trade Commission's *DataWeb*.

Figure 9
U.S. monthly imports of high-tier raw sugar, 2017/18–2022/23

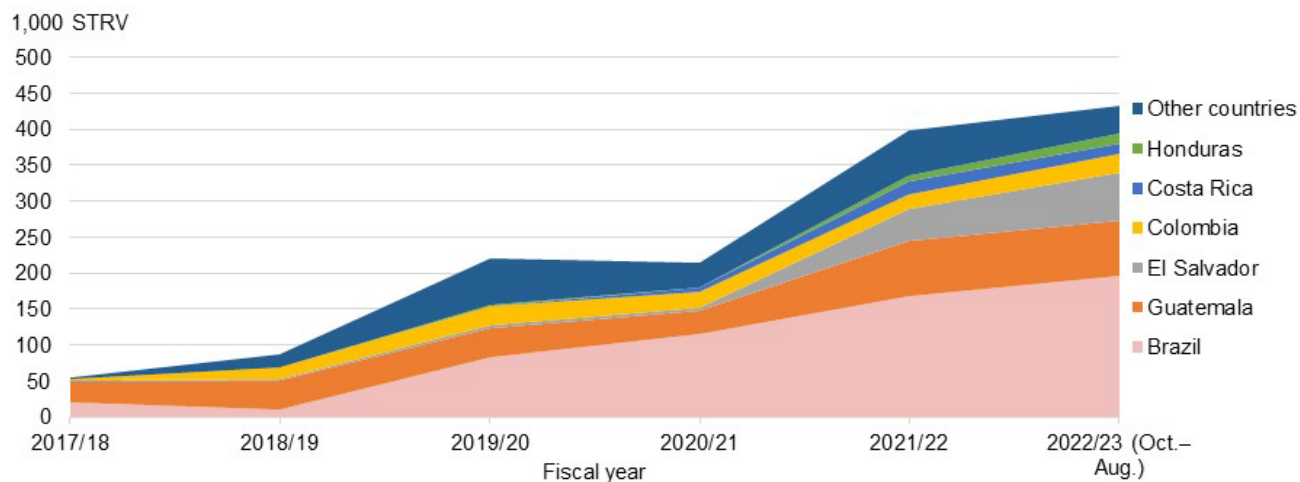


STRV = short tons, raw value; avg. = average
 Source: USDA, Economic Research Service calculation using U.S. Department of Commerce, Bureau of the Census trade data from the U.S. International Trade Commission's *DataWeb*.

About 29,000 STRV (7 percent) of high-tier imports through August 2023 are specialty sugar that includes organic sugar, and closely matches 2021/22's 32,000 STRV. It is possible that that the refined sugar additional specialty sugar quota, which was set at 220,462 STRV (200,000 metric tons, raw value), was oversubscribed and organic sugar was entered with high-tier duty.

Of the 419,000-STRV total high-tier imports between October 2022–August 2023, about 195,000 STRV or 47 percent came from Brazil, followed by Guatemala (79,000 STRV or 19 percent) and El Salvador (65,000 STRV or 15 percent) (figure 10). Most of the sugar entered via one of three ports: Philadelphia, PA (89,000 STRV or 16 percent), New Orleans, LA (72,000 STRV or 17 percent); and San Francisco, CA (67,000 STRV or 16 percent) (figure 11).

Figure 10
U.S. high-tier duty sugar imports, by country of origin, 2017/18–2022/23

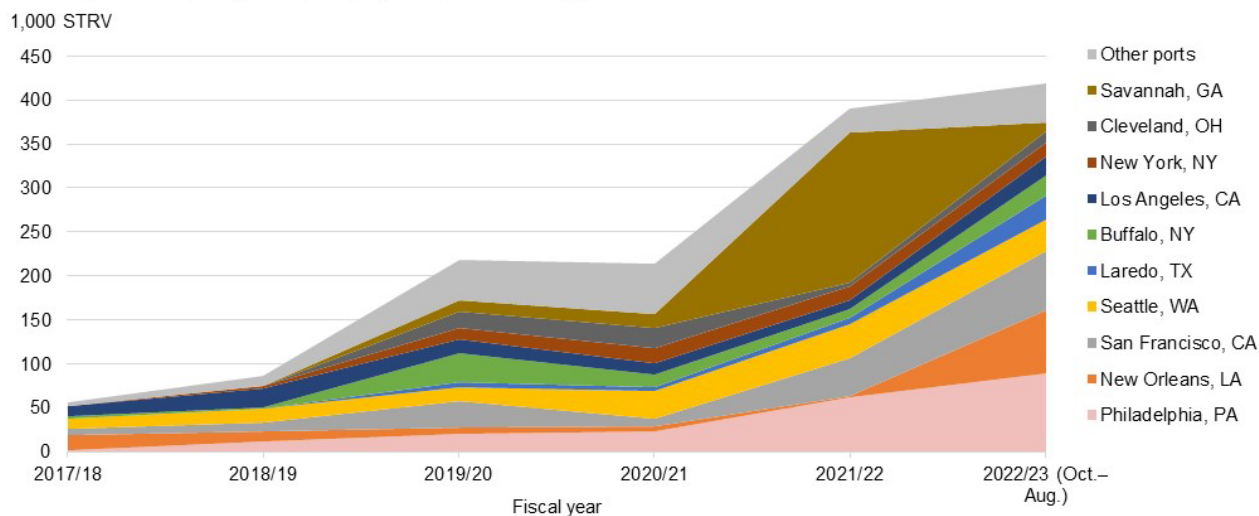


STRV = short tons, raw value; SCP = sugar-containing products.

Note: The Harmonized Tariff Schedule (HTS) lines are 1701.12.5000, 1701.13.5000, and 1701.14.5000 for raw sugar; 1701.91.3000, 1701.99.5025, and 1701.99.5050 for refined sugar; 1701.99.5015 and 1701.99.5017 for specialty sugar including organic; and 1702.90.2000 and 2106.90.4600 for SCP/blends.

Source: USDA, Economic Research Service calculation using U.S. Department of Commerce, Bureau of the Census trade data from the U.S. International Trade Commission's *DataWeb*.

Figure 11
U.S. high-tier duty sugar imports, by U.S. port of entry, 2017/18–2022/23



STRV = short tons, raw value; SCP = sugar-containing products.

Note: The Harmonized Tariff Schedule (HTS) lines are 1701.12.5000, 1701.13.5000, and 1701.14.5000 for raw sugar; 1701.91.3000, 1701.99.5025, and 1701.99.5050 for refined sugar; 1701.99.5015 and 1701.99.5017 for specialty sugar including organic; and 1702.90.2000 and 2106.90.4600 for SCP/blends.

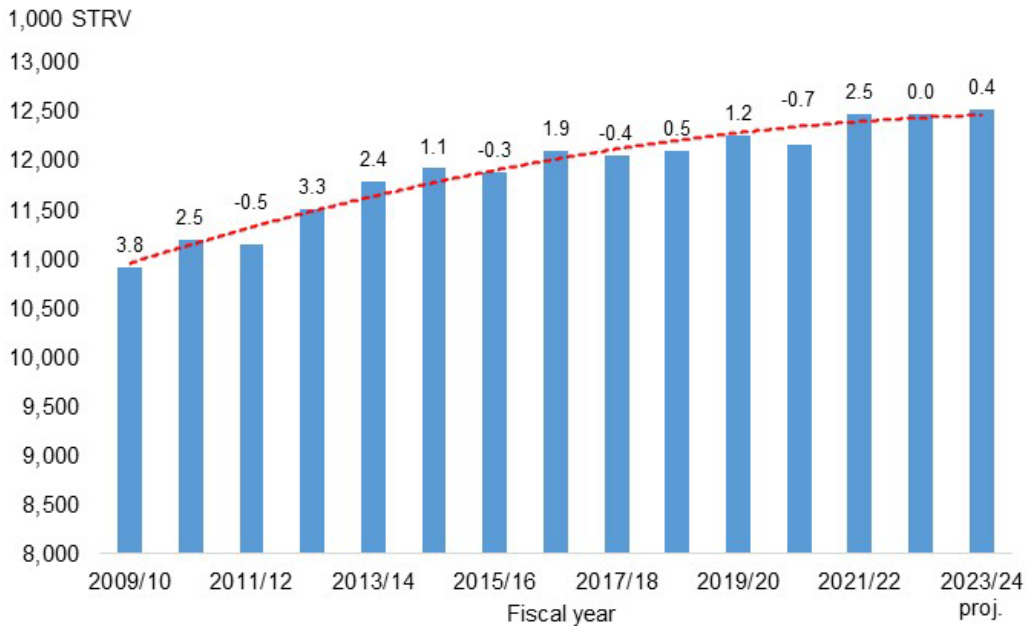
Source: USDA, Economic Research Service calculation using U.S. Department of Commerce, Bureau of the Census trade data from the U.S. International Trade Commission's *DataWeb*.

Sugar Deliveries for Human Consumption Reduced in 2022/23 and 2023/24

Sugar deliveries for food and beverage use in 2022/23 are lowered by 25,000 STRV from last month to 12.475 million, a flat annual growth as it closely matches last year's 12.470 million (figure 12). Aligning with the observed delivery slowdown in 2022/23, the forecast for 2023/24 is decreased by the same amount to 12.525 million STRV, reflecting a 0.4 percent annual growth.

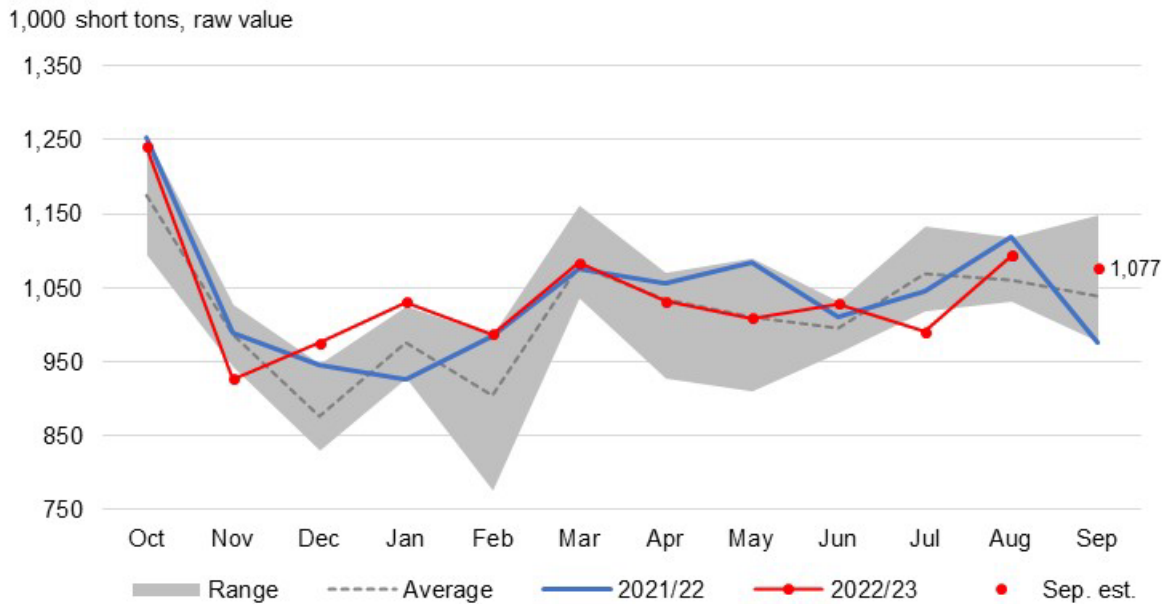
SMD data indicates that through August, sugar deliveries for human consumption totaled 11.398 million STRV, which is 96,000-STRV less than 2021/22 over the same period (table 5). Therefore, to reach the 2022/23 estimate of 12.475 million STRV, the combined deliveries by beet processors, cane refiners, and non-reporters in September are estimated to be at 1.077 million, above the 5-year average's 1.038 million (figure 13).

Figure 12
U.S. sugar deliveries for food and beverage use, 2009/10–2023/24



STRV = short tons, raw value; proj. = projected.
 Note: The dashed red line represent the long-term trend line. Numbers on top of the bars represent the annual growth rates (percent).
 Source: USDA, Economic Research Service calculation using data from USDA, Farm Service Agency.

Figure 13
Total U.S. sugar deliveries for food and beverage use, monthly, 2017/18–2022/23



est. = estimated.
 Note: Delivery for September 2023 is assumed to be 1.077 million STRV to reach the 2022/23 estimate of 12.475 million STRV in the October 2023 USDA *World Agricultural Supply and Demand Estimates*.
 Source: USDA, Farm Service Agency.

While the 12.475 million-STRV estimate in 2022/23 tracks last year's 12.470 million, the delivery patterns among the components differ. Beet sugar deliveries through August (4.595 million STRV) are lower by 294,000 STRV (6 percent) than the same period last year (table 5). Thus, beet sugar accounts for 40 percent of the 2022/23 total food and beverage deliveries, down from 43 percent last year. The decline is offset by deliveries by cane sugar refiners and non-reporters, which are up year over year. Through August, cane sugar deliveries (5.977 million STRV) and non-reporter deliveries (826,000 STRV) are higher than last year's levels by 164,000 STRV (3 percent) and 35,000 STRV (4 percent), respectively, over the same period.

Table 5: Food and beverage deliveries, October–August, 2017/18–2022/23

	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23 est.	Annual change	
	1,000 short tons, raw value (STRV)						1,000 STRV	Percent
Beet sugar processors	4,847	4,612	3,992	4,514	4,889	4,595	-294	-6
Cane sugar refiners	5,619	5,729	6,079	5,779	5,813	5,977	164	3
Non-reporter (direct consumption)	571	699	1,032	878	791	826	35	4
Total	11,037	11,040	11,102	11,171	11,493	11,398	-96	-1
	Percent share in total						5-year average	
Beet sugar processors	44	42	36	40	43	40	41	
Cane sugar refiners	51	52	55	52	51	52	52	
Non-reporter (direct consumption)	5	6	9	8	7	7	7	
Total	100	100	100	100	100	100	100	

est. = estimated.

Note: Totals may not add due to rounding.

Source: USDA, Economic Research Service calculation using data from USDA, Farm Service Agency.

Mexico Outlook

Mexico's Sugar Production in 2023/24 Lowered Amid Widespread Drought Conditions

In the October 2023 *WASDE*, Mexico's 2023/24 sugar production is reduced by 225,000 metric tons (MT), actual weight to 5.575 million (table 6) based on the negative effects of the widespread drought on sugarcane yields, particularly in non-irrigated areas. If realized, the 5.575 million-MT forecast would be Mexico's third lowest sugar production, behind last year's record low 5.224 million and 2019/20's 5.278 million.

Table 6: Mexican sugar: supply and use by fiscal year (October/September), October 2023

Items	2021/22	2022/23			2023/24		
		September (estimate)	October (estimate)	Monthly change	September (forecast)	October (forecast)	Monthly change
		1,000 metric tons, actual weight					
Beginning stocks	1,053	964	964	0	880	836	-44
Production	6,185	5,224	5,224	0	5,800	5,575	-225
Imports	31	254	285	31	45	322	277
Imports for consumption	7	229	260	31	20	297	277
Imports for sugar-containing product exports (IMMEX) 1/	24	25	25	0	25	25	0
Total supply	7,269	6,442	6,474	31	6,725	6,733	8
Disappearance							
Human consumption	4,113	4,085	4,194	109	4,139	4,249	110
For sugar-containing product exports (IMMEX)	532	413	406	-7	450	450	0
Other deliveries and end-of-year statistical adjustment	-16	0	27	27	0	0	0
Total	4,629	4,498	4,627	130	4,589	4,699	110
Exports	1,676	1,065	1,011	-54	1,248	1,124	-124
Exports to the United States and Puerto Rico	1,180	1,043	989	-54	1,099	1,099	0
Exports to other countries 2/	495	22	22	0	149	25	-124
Total use	6,305	5,563	5,638	75	5,836	5,823	-13
Ending stocks	964	880	836	-44	888	910	21
Stocks-to-human consumption (percent)	23.4	21.5	19.9	-2	21.5	21.4	0
Stocks-to-use (percent)	15.3	15.8	14.8	-1	15.2	15.6	0
High-fructose corn syrup (HFCS) consumption (dry weight)	1,291	1,407	1,392	-15	1,407	1,407	0

1/ IMMEX = Industria Manufacturera, Maquiladora y de Servicios de Exportación.

2/ Includes exports participating in the U.S. re-export programs.

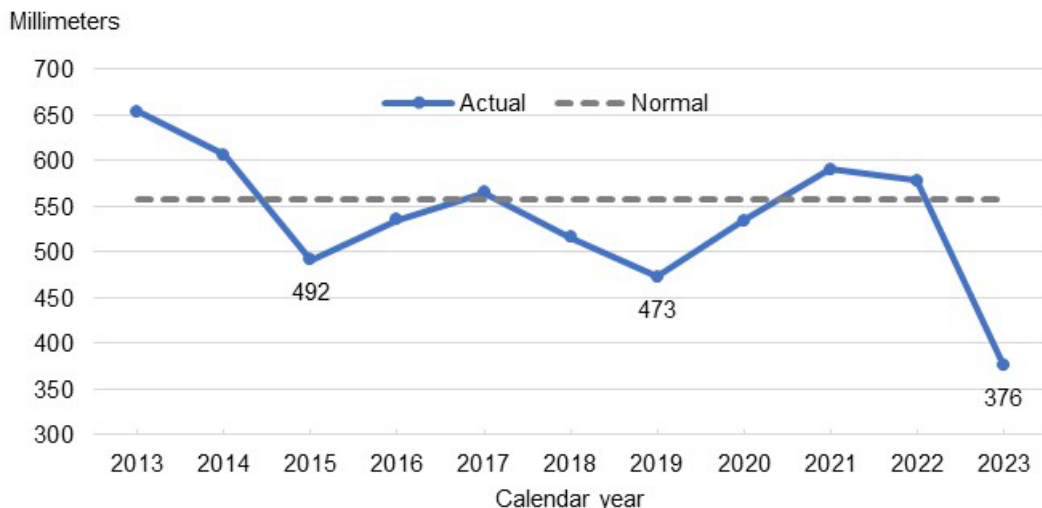
Source: USDA, World Agricultural Outlook Board; Mexico's National Committee for the Sustainable Development of Sugarcane (CONADESUCA).

The reduction in the 2023/24 sugar production forecast aligns with the USDA, FAS October 2023, *Mexico Sugar Semi-annual Report* which lowered Mexico's 2023/24 production to 5.613 million MT. Mexico's National Committee for the Sustainable Development of Sugarcane's (CONADESUCA) has yet to publish its initial 2023/24 sugar production forecast.

CONADESUCA usually releases the report in November, around the time the campaign starts.

Mexico's rainy season is typically between May–September, with rainfall between June–August having the greatest effect on yields. The severity of this year's drought conditions is reflected by the cumulative rainfall in Mexico between May–September 2023 amounting to an average of 376 millimeters (mm) (about 15 inches)³. This amount is lower than the level recorded during the 2019 drought (473 mm or 19 inches) thereby setting a new low since 2013 (figure 14). And as seen in the monthly data, rainfall for each month during the 2023 rainy season was below normal levels, and even lower than the minimum levels observed since 2013 for June and September (figure 15).

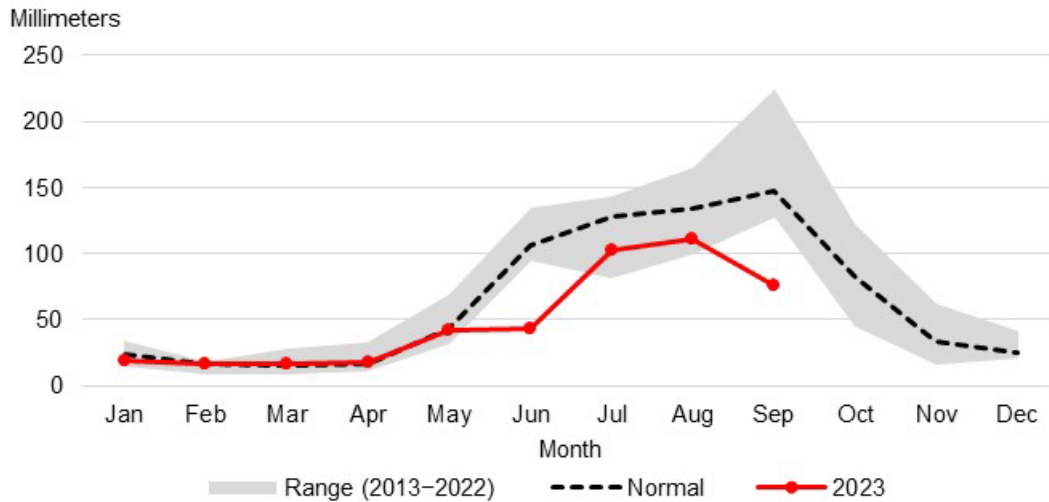
Figure 14
Mexico's cumulative rainfall, May–September, 2013–23



Note: 100 millimeters = 3.9 inches.
 Source: USDA, Foreign Agricultural Service Global Agricultural and Disaster Assessment System (GADAS) based on Climate Hazards Group InfraRed Precipitation with Station (CHIRPS) data.

³100 millimeters is around 3.9 inches.

Figure 15
Mexico's monthly rainfall, 2013–23



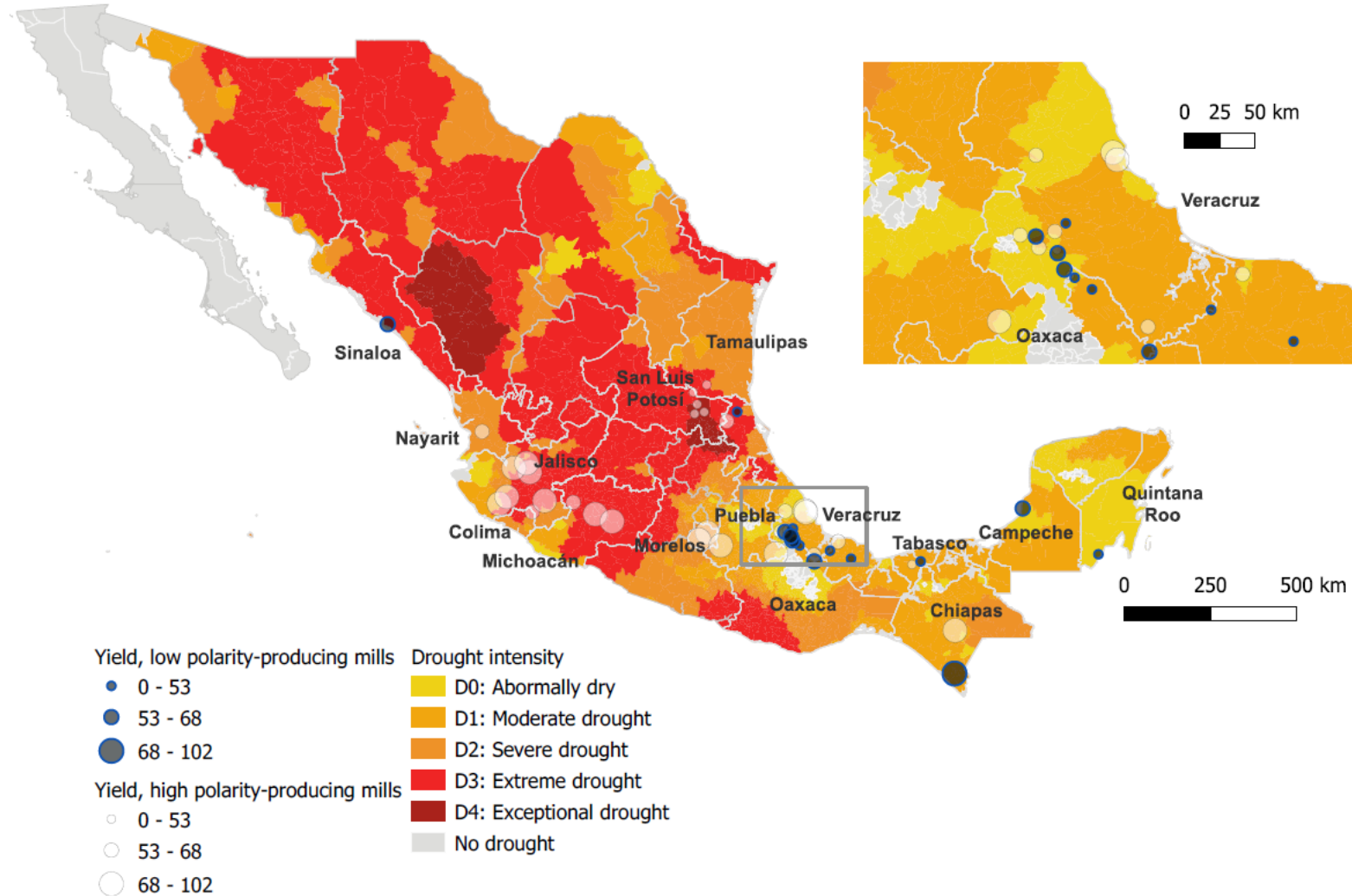
Note: 100 millimeters = 3.9 inches.
 Source: USDA, Foreign Agricultural Service Global Agricultural and Disaster Assessment System (GADAS) based on Climate Hazards Group InfraRed Precipitation with Station (CHIRPS) data.

It is notable that all 15 sugarcane-producing States are at below normal precipitation levels. Eleven out of the 15 (except Chiapas, Quintana Roo, Tabasco, and the largest-producing State of Veracruz) had the lowest level rainfall in May–September 2023 since 2013.

Based on Mexico’s National Water Commission’s (CONAGUA) *Mexico Drought Monitor* (municipal level) as of September 30, 2023, 16 of the 48 sugarcane mills in last year’s campaign (33 percent) are in municipalities that are experiencing moderate (D1) to severe drought (D2), while 19 mills (40 percent) are in municipalities under extreme (D3) to exceptional drought (D4) (figure 16). The remaining 13 mills (27 percent) are in municipalities with abnormally dry conditions (D0). The map overlays the 2022/23 sugarcane yields and whether the mill produces less than 99.2 polarity sugar and implies that:

- Drought conditions appear to be relatively less severe in municipalities where low polarity-producing mills are located; and
- Mills with relatively high 2022/23 yields that don’t produce any low polarity sugar are in municipalities in the western Pacific region with severe to extreme drought designations.

Figure 16
Mexico drought intensity at the municipal level, as of September 30, 2023



Note: Sugarcane yields reflect 2022/23 levels; unit is tons per hectare. A mill is categorized as “low polarity-producing” if it produced less than 99.2 polarity sugar in 2022/23.

Source: USDA, Economic Research Service calculation using QGIS software and data from several sources: Mexico National Water Commission (CONAGUA) *Mexico Drought Monitor* (as of September 30, 2023) for drought data; Mexico National Committee for the Sustainable Development of Sugarcane (CONADESUCA) for 2022/23 sugarcane yields, polarity of sugar produced, and sugarcane mills’ GPS coordinates; and Mexico National Institute of Statistics and Geography (INEGI) for municipal and State boundaries.

Mexico's Imports in 2022/23 Raised

Mexico's 2022/23 imports for domestic consumption are raised from last month by 31,000 MT to 260,000 based on pace through August. As of October 16, Trade Data Monitor (TDM) data through August 2023 show that countries reported exporting about 226,000 MT to Mexico (table 7), which implies that about 34,000 MT were exported in September. The WASDE's 260,000-MT estimate is relatively close to the 2022/23 imports (266,513 MT) in CONADESUCA's *Balance Nacional de Azúcar Septiembre 2023 (National Sugar Balance September 2023)* that was published on October 13, a day after the WASDE. Conversely, imports for the other subcategory *Industria Manufacturera, Maquiladora y de Servicios de Exportación (IMMEX)* program, remains at 25,000 MT.⁴ Thus, Mexico's total imports in the WASDE are also increased by 31,000 MT to 285,000, which would be 254,000-MT higher (825 percent) than last year's 31,000 MT (figure 17).

Table 7: Countries' reported sugar exports to Mexico, October 2022–August 2023

Origin	Quantity (metric tons)	Share in total (percent)
Brazil	69,794	31
El Salvador	10,531	5
Guatemala	49,535	22
Honduras	24,296	11
India	53,404	24
United States	14,352	6
Other countries	3,974	2
Total	225,887	100

Note: Totals may not add due to rounding.

Source: USDA, Economic Research Service calculation using Trade Data Monitor.

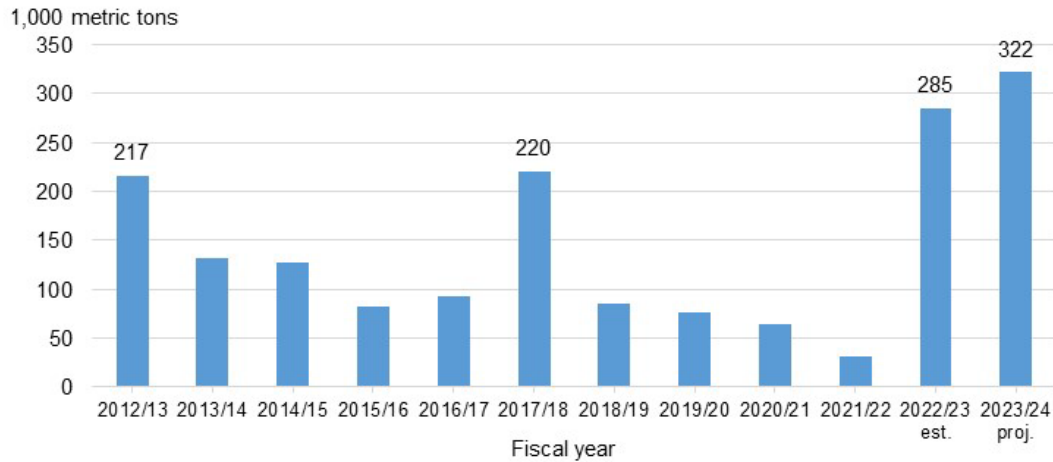
The relatively high import volume was mostly driven by the historic low 2022/23 production and stock levels. Ending stocks for each month in 2022/23 have been below the 10-year average, and below the lowest monthly level since 2012/13 from June–September 2023 (figure 18). The tight supply situation contributed to historically high Mexican prices for refined and standard sugar (figure 19).

The relatively high Mexican prices incentivized imports into Mexico from several origins. Exports to Mexico reported by Brazil are the largest (about 70,000 MT or 31 percent). India, not a past regular origin, shipped the second largest volume at 53,000 MT (24 percent),

⁴ The Mexico total imports line in the WASDE include imports for both domestic consumption and IMMEX. Conversely, CONADESUCA only includes imports for domestic consumption in its "Importaciones totales" line.

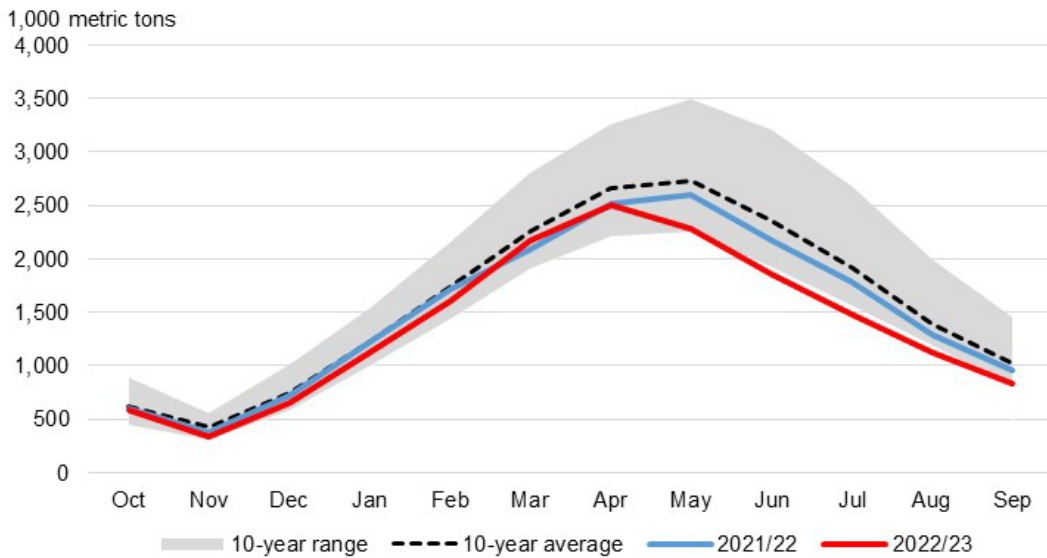
followed by Guatemala's 50,000 MT (22 percent) (table 7).

Figure 17
Mexican total sugar imports, by fiscal year, 2012/13–2023/24



est. = estimated; proj. = projected.
 Source: USDA, World Agricultural Outlook Board; Mexico's National Committee for the Sustainable Development of Sugarcane (CONADESUCA).

Figure 18
Mexican monthly available sugar stocks, fiscal years 2012/13–2022/23

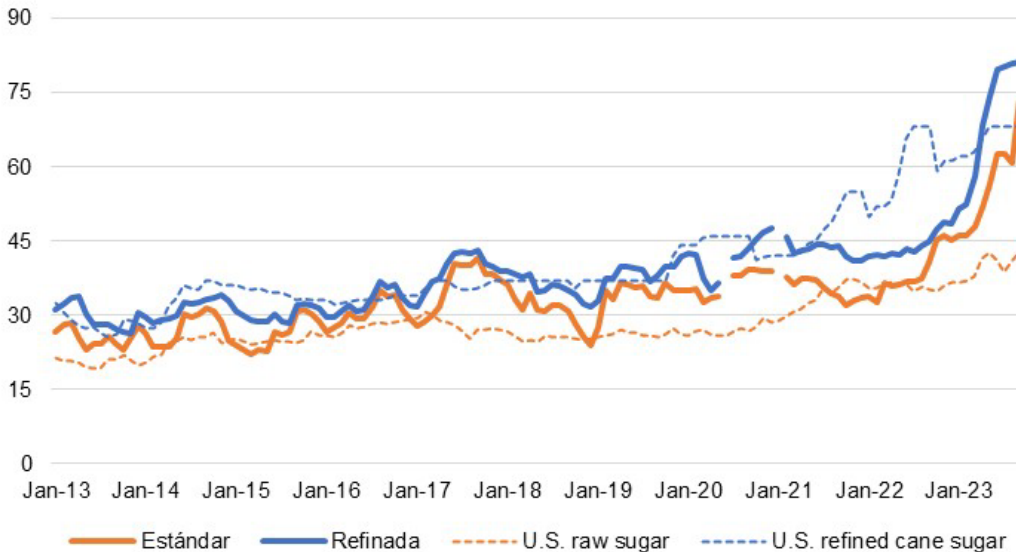


Source: Mexico's National Committee for the Sustainable Development of Sugarcane (CONADESUCA).

Figure 19

Mexican and U.S. sugar prices, monthly, January 2013–September 2023

U.S. cents per pound



U.S. = United States.

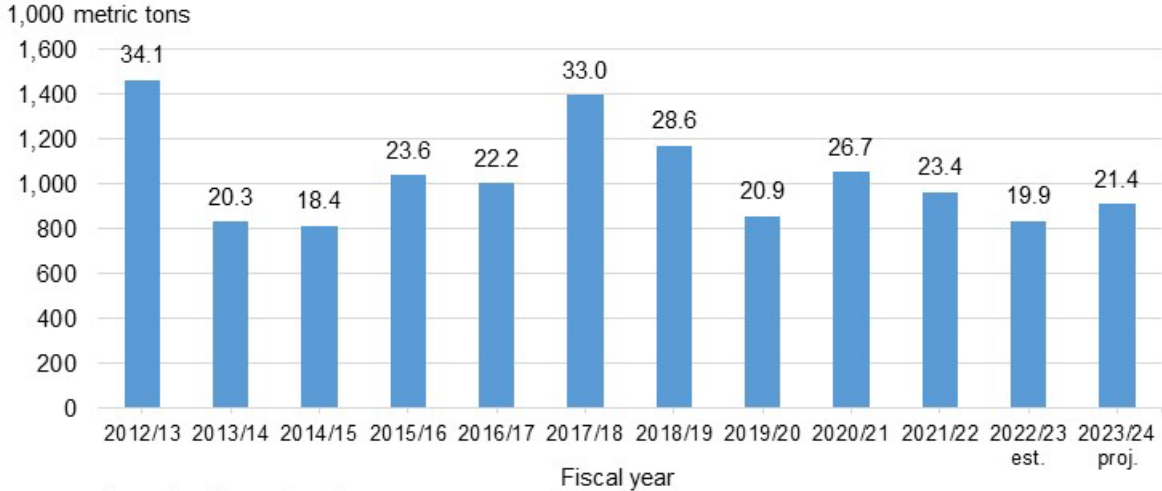
Note: The breaks in the Mexican sugar price series on June 2020 and January 2021 are due to data unavailability.
 Source: USDA, Economic Research Service calculations using data from Intercontinental Exchange, Inc. (U.S. prices), Servicio Nacional de Información e Integración de Mercados (Mexican prices), and U.S. Federal Reserve Bank

Even Larger Imports into Mexico for 2023/24

Imports for 2023/24 are increased from last month by 277,000 MT to 322,000 (figure 17). If realized, this forecast would be larger than 2022/23's 285,000 MT and would be a new record since 2012/13. The forecast for high level of imports is necessary to compensate for the drought-reduced outlook for sugar production in 2023/24 and to meet the increased outlook for domestic deliveries for consumption and IMMEX, export commitments to the United States, and the typical 2.5-months' worth of carry-over stocks during October–December 2024 before the 2024/25 sugar campaign starts in earnest. This translates to a 2023/24 ending stocks of 909,000 MT or 21.4 percent (figure 20).

Figure 20

Mexican sugar ending stocks and stocks-to-human consumption ratio, by fiscal year, 2012/13–2023/24



est. = estimated; proj. = projected.

Note: The stocks-to-human consumption ratio are in percent and are labelled on top of the bars.

Source: USDA, World Agricultural Outlook Board; Mexico's National Committee for the Sustainable Development of Sugarcane (CONADESUCA).

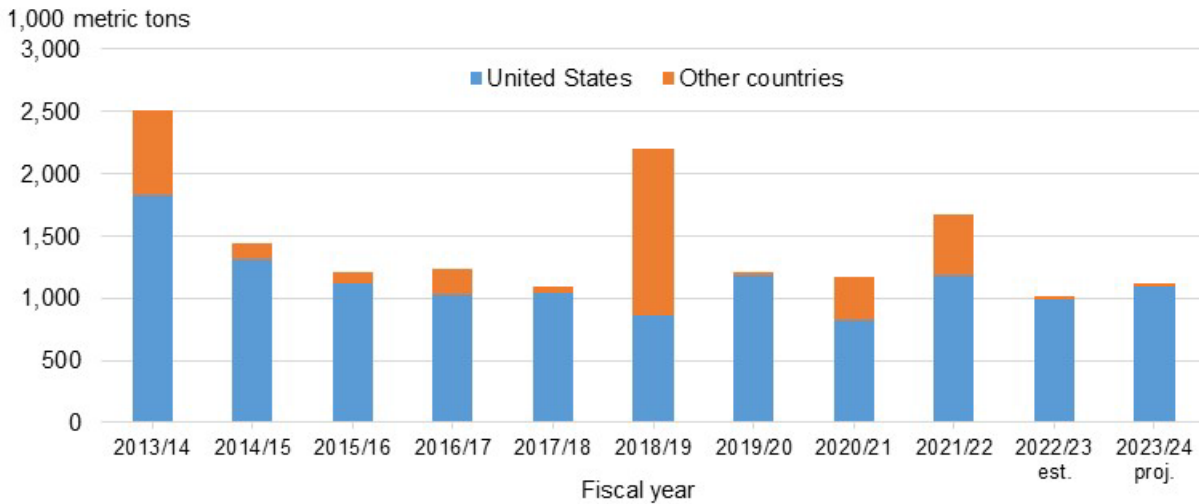
Lower Exports from Mexico in 2022/23 and 2023/24

Mexico's 2022/23 exports to the United States are reduced from last month 54,000 MT to 989,000 using the U.S. Department of Commerce, Bureau of the Census trade data, which for the *WASDE* purposes, is considered the final volume of sugar exported from Mexico into the United States. Conversely, exports to other countries are unchanged at 21,860 matching what CONADESUCA published in its September 2023 *National Sugar Balance*. As such, Mexico's total exports in 2022/23 are lowered by 54,000 MT to 1.011 million, the second lowest exports since 2013/14 behind 2017/18's 1.099 million (figure 21).

Total Mexican exports in 2023/24 are also decreased from last month by 124,000 MT to 1.124 million given the expectation of a drought-reduced production. All the 124,000-MT reduction is taken out from Mexican exports to other countries, which are reduced to 25,000 MT—comparable with 2022/23's 22,000 MT. Exports to the United States are unchanged at 1.099 million MT, which is the volume that U.S. Department of Commerce calculated in September 2023 per the suspension agreements.

Figure 21

Mexican sugar exports by destination, by fiscal year, 2012/13–2023/24



est. = estimated; proj. = projected.

Source: USDA, World Agricultural Outlook Board; Mexico's National Committee for the Sustainable Development of Sugarcane (CONADESUCA).

Total Domestic Sugar Deliveries in Mexico Raised in 2022/23 and 2023/24

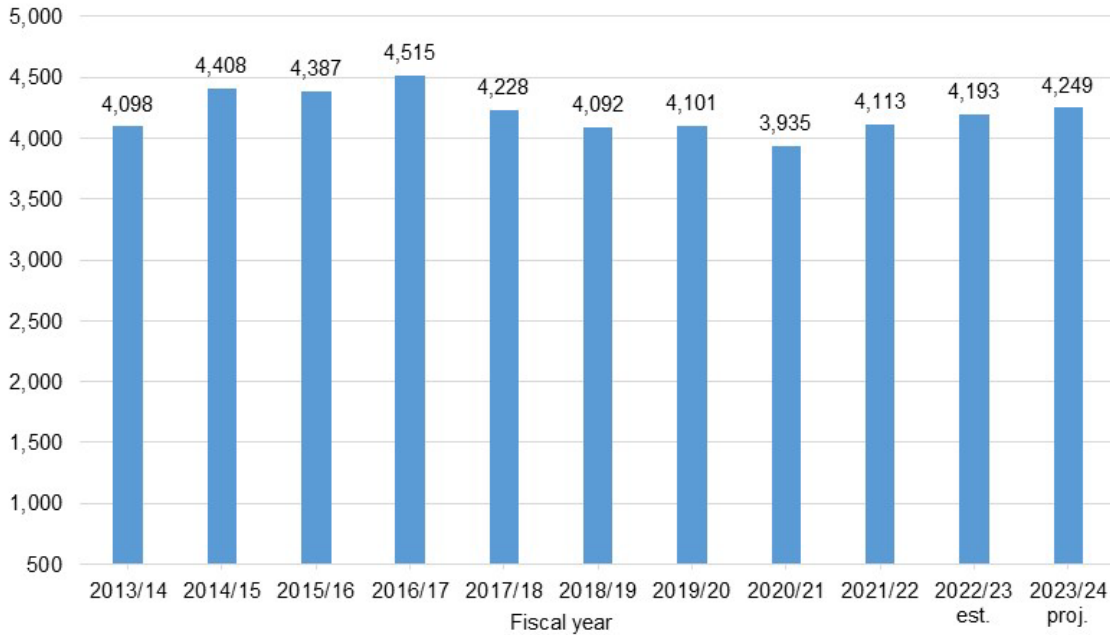
The 2022/23 total sugar deliveries (domestic consumption and IMMEX) are raised from last month by 130,000 MT to 4.627 million. The upward adjustment is driven by a 109,000-MT increase in domestic consumption delivery, which is now estimated at 4.194 million. This estimate is consistent with CONADESUCA's 4.193 million MT published in its September 2023 *National Sugar Balance*. The 4.194-million MT estimate represents an 81,000-MT increase (2 percent) from 2021/22 and would be the largest volume of domestic sugar delivered in the last 5 years (figure 22). The upward adjustment implies that domestic sugar consumption has increased in 2 straight years, despite the government's front-of-pack labeling regulation introduced on October 1, 2020, reversing the consecutive years of declining trend observed since 2016/17.

The observed increased pace in sugar delivered to the domestic consumption in 2022/23 is assumed to carryover in 2023/24. Thus, along with factoring in population growth, the outlook for 2023/24 is raised from last month by 110,000 MT to 4.249 million. If realized, the 4.249-million MT forecast for 2023/24 would reflect an annual increase of 55,000 MT (1 percent) from 2022/23 marking 3 consecutive years of growth.

Figure 22

Mexican sugar deliveries for domestic consumption, by fiscal year, 2013/14–2023/24

1,000 metric tons, actual weight



est. = estimated; proj. = projected.

Source: Mexico's National Committee for the Sustainable Development of Sugarcane (CONADESUCA).

Conversely, the *WASDE* estimate for IMMEX in 2022/23 was slightly reduced from last month by 7,000 MT to 406,000, about 126,000-MT lower (24 percent) than last year. The *WASDE*'s 406,000-MT is comparable to CONADESUCA's 386,745 MT after the *WASDE*'s estimate of 25,000-MT worth of imports for IMMEX are added (386,745 MT + 25,000 = 411,745).⁵ The November *WASDE* will be adjusted accordingly to adopt the official CONADESUCA number. Nonetheless, it is apparent that the record low sugar production in 2022/23 contributed to significant reduction in sugar deliveries for IMMEX.

For 2023/24, the forecast is for IMMEX deliveries to return to an average level, which is about 450,000 MT. If the 2023/24 sugar production in 2023/24 becomes more negatively affected by the widespread drought conditions, then there is downside risk to IMMEX deliveries as was the case in 2022/23.

⁵ While the *WASDE* includes imports for IMMEX in its domestic deliveries for IMMEX line, CONADESUCA does not. CONADESUCA only reports sugar deliveries from domestic sources in its "Ventax a IMMEX", and thus CONADESUCA's IMMEX is usually lower than that of the *WASDE*.

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