

Feed Grains Outlook: Shifting Trade Patterns and Implications for the US Acreage Mix

May 23, 2018





The Growth of Chinese Imports May Reshape World Trade in Corn

Brazil's Safrinha Crop Could Play a Key Role in Determining Trade Flows

Ukraine Growth is Expected be Limited by Changes in Agricultural Policy

US is Likely to Remain the Residual Exporter Outside the Western Hemisphere but Growing World Demand Should Increase Shipments

In the Long Term Crop Economics May Favor US Corn Acreage

In March 2016 China ended its support for domestic corn prices and changed agricultural policies that favored corn production.

As a result of the changes, China's corn acreage peaked in 2014/15 and declined by seven percent over the last two years.

China's usage grew almost 15 percent over the same period.

USDA estimates Chinese corn stocks peaked at just over 110 million tonnes in 2015/16, but have declined by 28 percent over the last two years. Estimates of the time it will take to work through Chinese inventories vary widely.

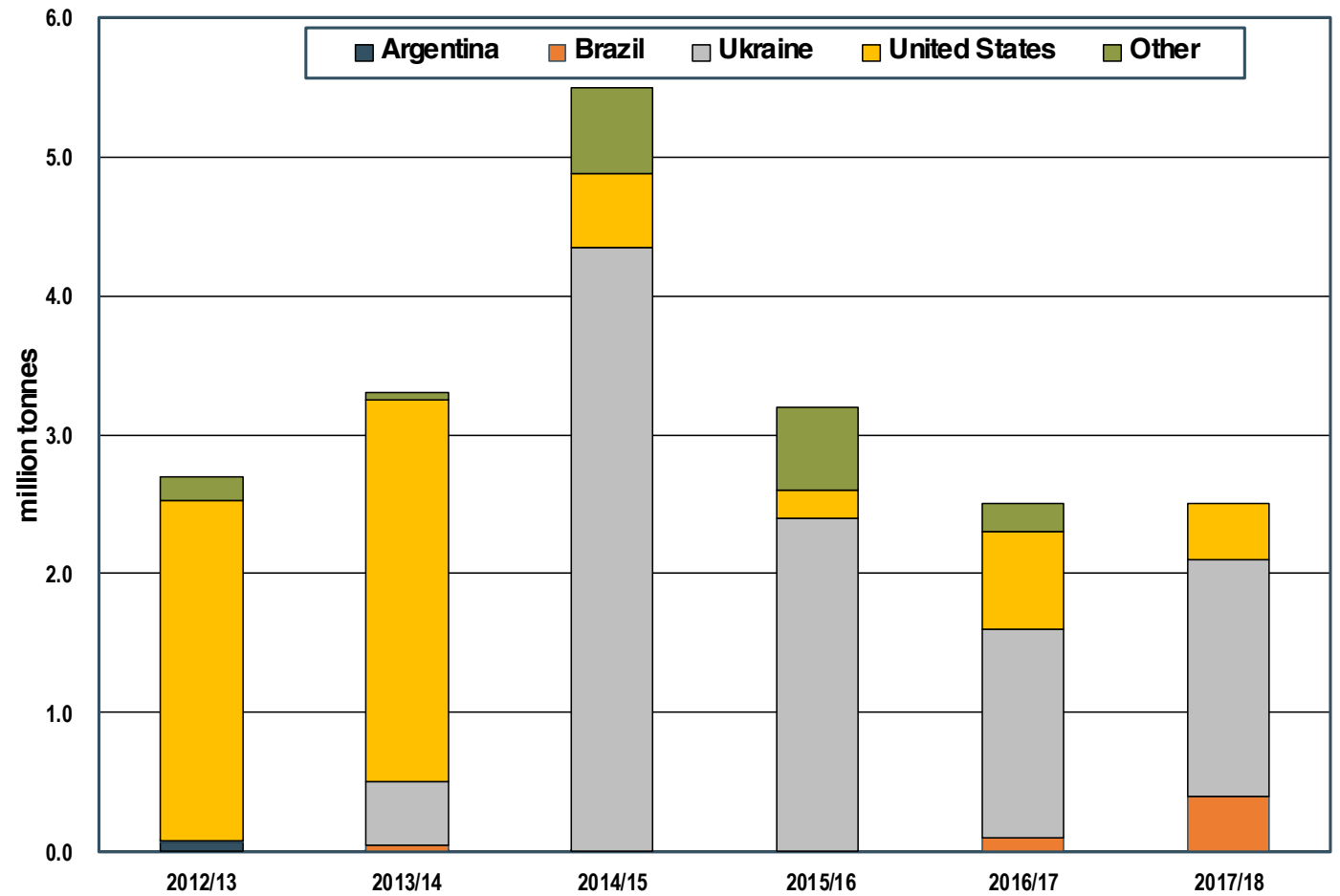
CHINA

Historically, Chinese corn imports have been relatively limited.

Ukraine and the United States have historically been the largest sources of Chinese imports.

CHINA

China Corn Imports by Country



CHINA CORN SUPPLY AND DEMAND (1,000 hectares, 1,000 tonnes)

	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	2023/2024
Area Harvested	35,030	36,318	37,123	38,119	36,768	35,445	36,500	36,500	36,500	36,500	36,500	36,500
Yield	5.87	6.02	5.81	5.89	5.97	6.09	6.16	6.10	6.16	6.22	6.27	6.33
Beginning Stocks	59,344	67,579	81,323	100,472	110,774	100,713	79,554	60,504	31,454	10,404	10,354	10,304
Production	205,614	218,489	215,646	224,632	219,552	215,891	225,000	222,500	225,000	227,000	229,000	231,000
Imports	2,702	3,277	5,516	3,174	2,464	4,000	5,000	7,500	15,000	45,000	55,000	65,000
Total Supply	267,660	289,345	302,485	328,278	332,790	320,604	309,554	290,504	271,454	282,404	294,354	306,304
Domestic Consumption	200,000	208,000	202,000	217,500	232,000	241,000	249,000	259,000	261,000	272,000	284,000	296,000
Feed	144,000	150,000	140,000	153,500	162,000	167,000	172,000	176,000	182,000	188,000	195,000	201,000
FSI Consumption	56,000	58,000	62,000	64,000	70,000	74,000	77,000	83,000	79,000	84,000	89,000	95,000
Exports	81	22	13	4	77	50	50	50	50	50	50	50
Total Usage	200,081	208,022	202,013	217,504	232,077	241,050	249,050	259,050	261,050	272,050	284,050	296,050
Ending Stocks	67,579	81,323	100,472	110,774	100,713	79,554	60,504	31,454	10,404	10,354	10,304	10,254

Source: USDA, Jacobsen Projections

As China's corn stocks decline in the coming years, its demand for imports is expected to grow dramatically, which will reshape world trade flows.

CHINA

Brazilian exports of corn have grown by more than 400 percent in the last ten years.

Strong feed demand competes with exports for supplies.

Production growth has been driven by the safrinha crop and may support growth in exports and domestic feed usage.

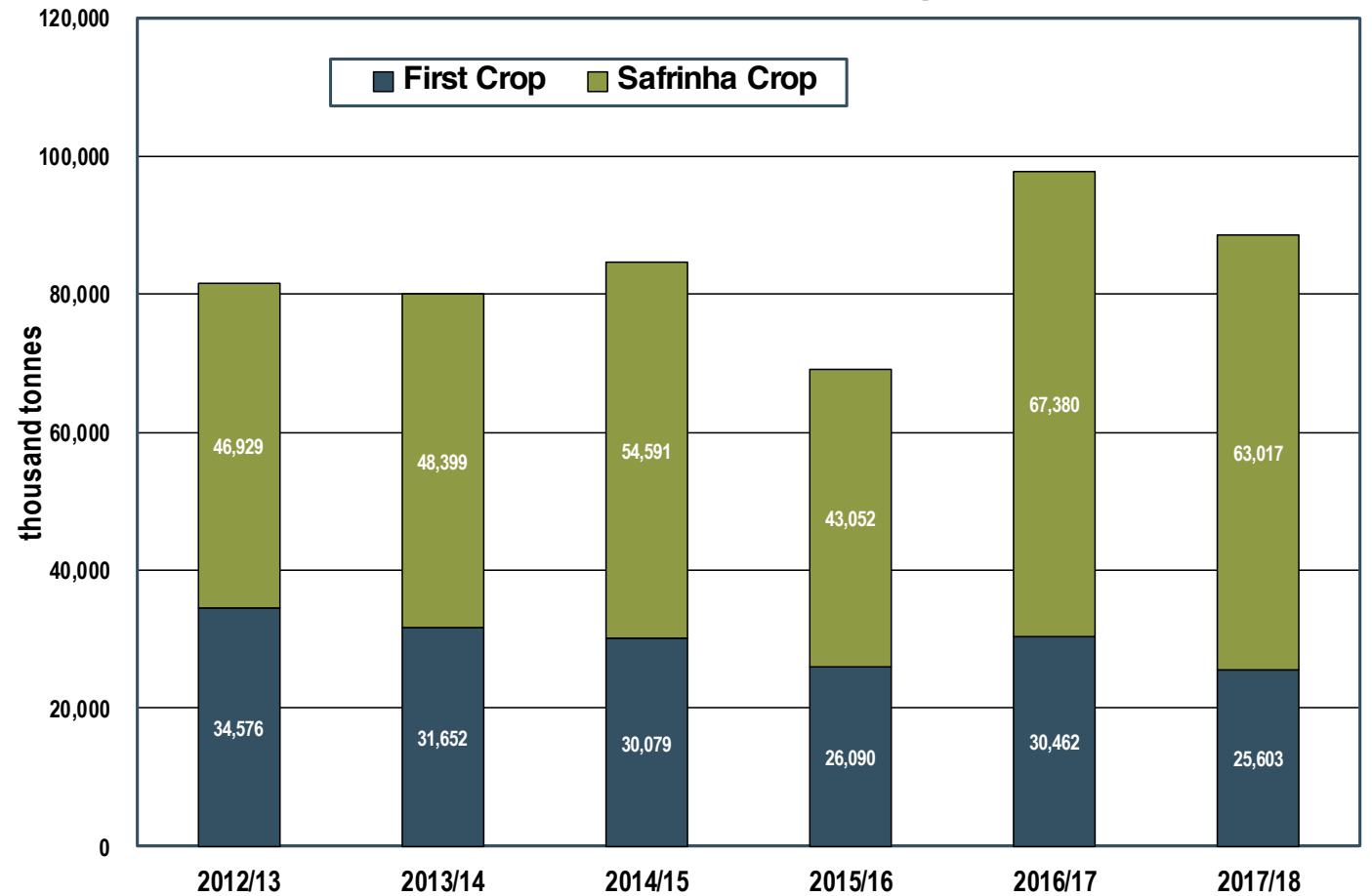
The growth in the amount of total production represented by the safrinha crop has also increased the volatility in Brazilian output.

Brazilian yields remain well below US yields and may continue to grow more slowly than US yields due to the variability of the safrinha crop.

BRAZIL

The growth in Brazilian corn production has been driven entirely by the growth in the safrinha crop. However, total Brazilian production remain relatively stable and has become more volatile as the safrinha crop has grown.

Brazil Corn Production by Crop



Source: CONAB

BRAZIL

BRAZIL CORN SUPPLY AND DEMAND (1,000 hectares, 1,000 tonnes)

	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	2023/2024
Area Harvested	15,800	15,800	15,750	16,000	17,600	17,100	17,700	18,000	18,500	19,000	19,500	20,000
Yield	5.16	5.06	5.40	4.19	5.60	5.09	5.42	5.53	5.67	5.80	5.93	6.06
Beginning Stocks	4,212	9,150	13,972	7,842	6,769	14,019	9,419	9,619	10,369	10,119	9,869	10,619
Production	81,500	80,000	85,000	67,000	98,500	87,000	96,000	99,500	105,000	110,000	115,500	121,500
Imports	886	789	331	3,423	854	400	700	750	750	750	750	750
Total Supply	86,598	89,939	99,303	78,265	106,123	101,419	106,119	109,869	116,119	120,869	126,119	132,869
Domestic Consumption	52,500	55,000	57,000	57,500	60,500	62,000	65,500	62,000	63,500	66,000	68,000	70,500
Feed	44,500	46,000	48,000	49,000	51,000	52,500	55,000	52,000	53,000	55,000	57,000	59,000
FSI Consumption	8,000	9,000	9,000	8,500	9,500	9,500	10,500	10,000	10,500	11,000	11,000	11,500
Exports	24,948	20,967	34,461	13,996	31,604	30,000	31,000	37,500	42,500	45,000	47,500	52,500
Total Usage	77,448	75,967	91,461	71,496	92,104	92,000	96,500	99,500	106,000	111,000	115,500	123,000
Ending Stocks	9,150	13,972	7,842	6,769	14,019	9,419	9,619	10,369	10,119	9,869	10,619	9,869

Source: USDA, Jacobsen Projections

Growth in acreage will be key determinant in the level of Brazilian exports in the coming years.

BRAZIL

Ukraine corn exports have grown dramatically in recent years but may be limited in the longer term.

Growth in planted acreage may be limited in the longer term following changes to support programs and increase in oilseed production.

Ukraine enjoys logistical advantage to EU-28 and China.

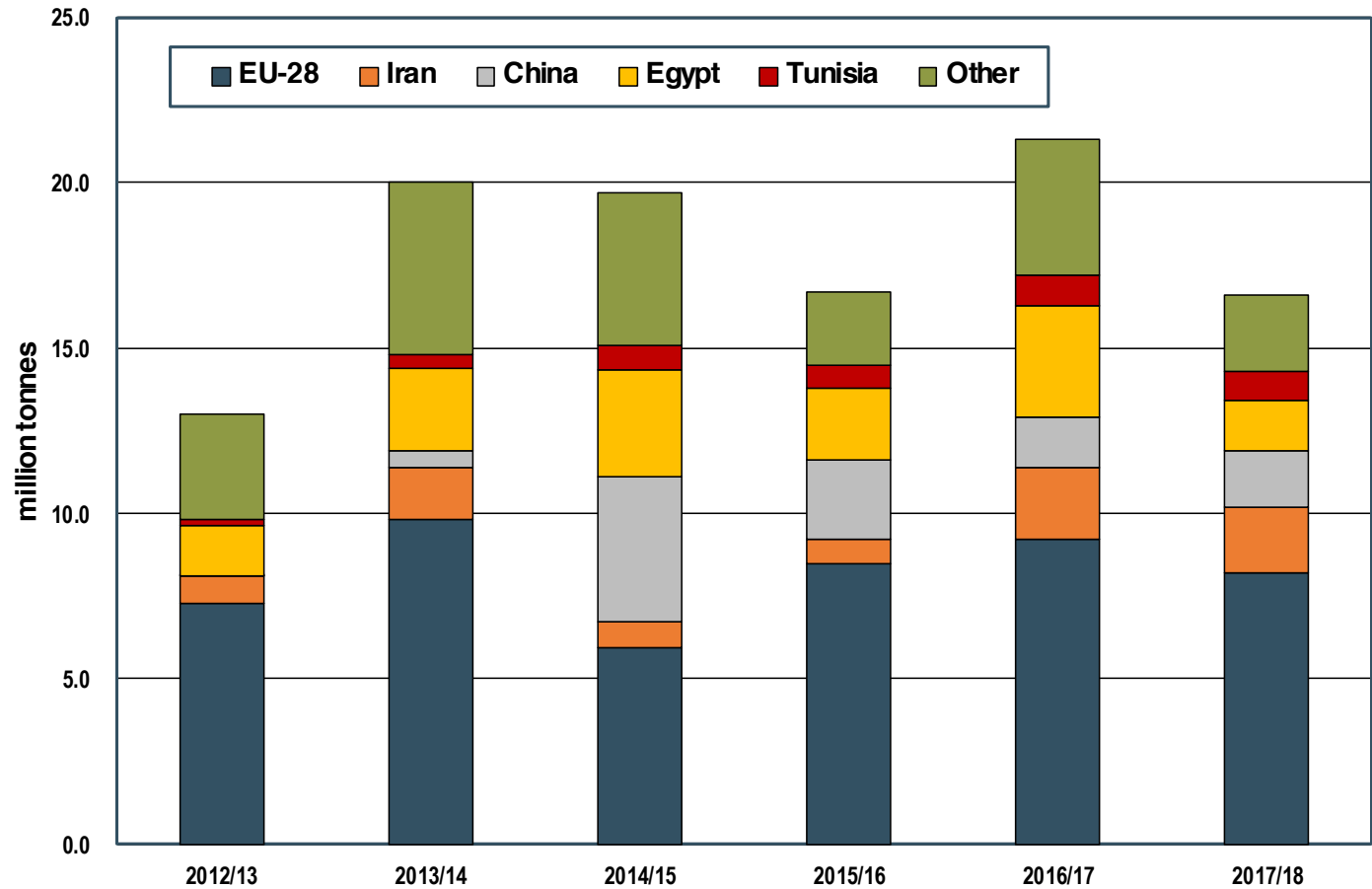
The relatively large percentage of Ukraine exports to smaller countries may support growth in shipments to China.

UKRAINE

Ukraine is the largest exporter of corn to the European Union and China and supplies more than 50 percent of imports to each.

UKRAINE

Ukraine Corn Exports by Destination



UKRAINE CORN SUPPLY AND DEMAND (1,000 hectares, 1,000 tonnes)

	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	2023/2024
Area Harvested	4,370	4,825	4,625	4,085	4,239	4,433	4,600	4,750	4,750	4,750	4,750	4,750
Yield	4.79	6.40	6.15	5.71	6.60	5.44	6.52	6.52	6.69	6.85	7.02	7.19
Beginning Stocks	1,300	940	1,302	1,519	1,385	1,549	889	1,114	1,239	1,364	1,389	1,414
Production	20,922	30,900	28,450	23,333	27,969	24,115	30,000	31,000	32,000	32,500	33,500	34,000
Imports	44	66	28	28	29	25	25	25	25	25	25	25
Total Supply	22,266	31,906	29,780	24,880	29,383	25,689	30,914	32,139	33,264	33,889	34,914	35,439
Domestic Consumption	8,600	10,600	8,600	6,900	6,500	4,800	5,800	8,400	8,400	9,000	9,000	9,500
Feed	7,300	9,200	7,200	5,500	5,100	3,500	4,500	7,000	7,000	7,500	7,500	8,000
FSI Consumption	1,300	1,400	1,400	1,400	1,400	1,300	1,300	1,400	1,400	1,500	1,500	1,500
Exports	12,726	20,004	19,661	16,595	21,334	20,000	24,000	22,500	23,500	23,500	24,500	24,500
Total Usage	21,326	30,604	28,261	23,495	27,834	24,800	29,800	30,900	31,900	32,500	33,500	34,000
Ending Stocks	940	1,302	1,519	1,385	1,549	889	1,114	1,239	1,364	1,389	1,414	1,439

Source: USDA, Jacobsen Projections

The potential for limited growth in acreage due to changes in Ukraine's agricultural policy. In addition, political uncertainty may limit the growth of Ukrainian corn exports in the long term.

UKRAINE

The US is the residual corn exporter outside of the Western Hemisphere.

Changes in US environmental policy could have a significant impact on the availability of US exports.

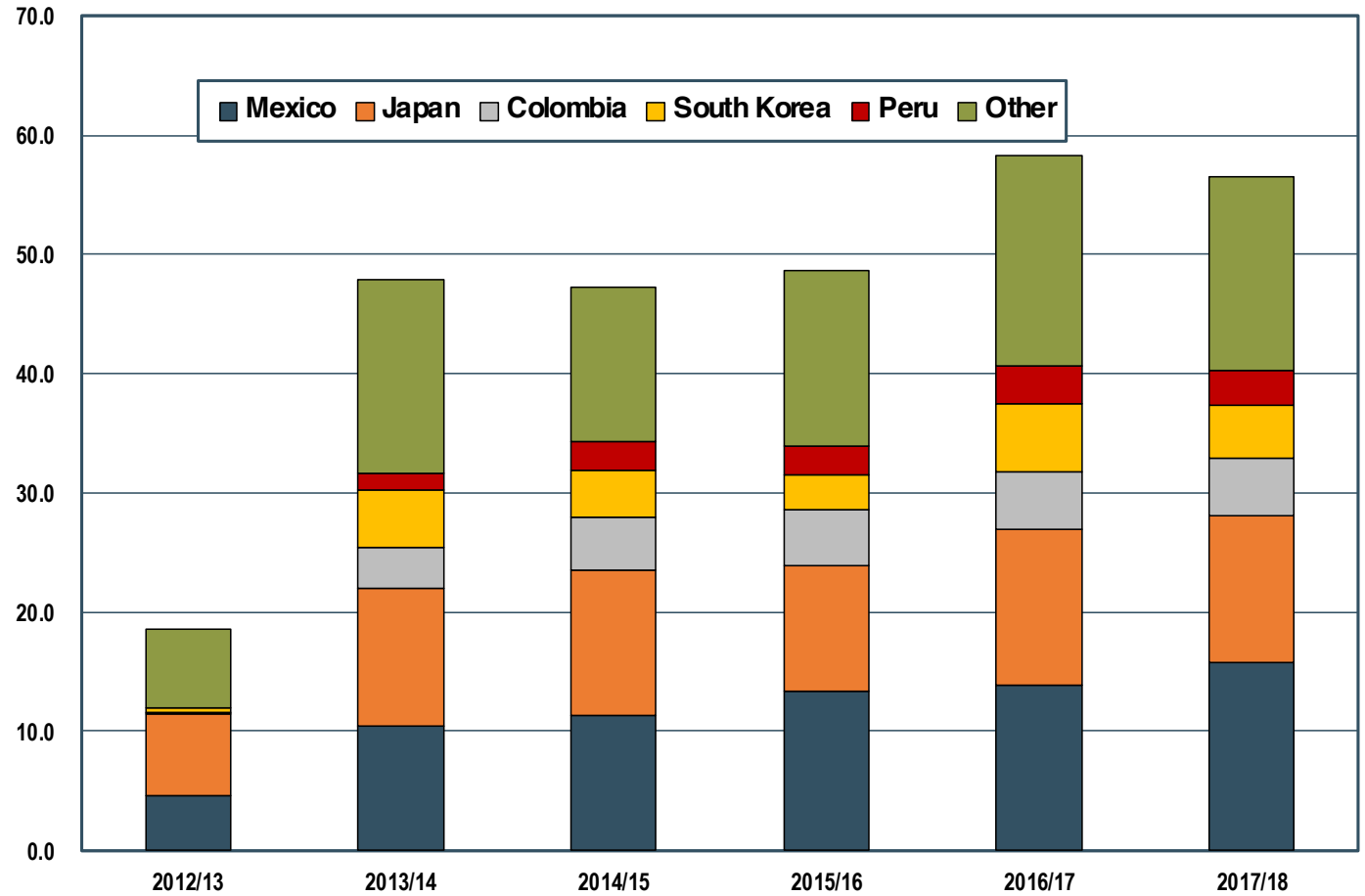
The US advantage over the rest of the world in yields may translate into economic advantage that will favor corn production in the US in the long term.

Two of the largest destinations for US corn exports (Japan and Mexico) have significant advantages (favor US quality, logistical) that will make it difficult to significantly reduce US volumes shipped to those countries.

UNITED STATES

While the US has “anchor” destinations, it exports significant volumes to smaller Western Hemisphere countries that are price sensitive and may be better served by South American countries.

United States Corn Exports by Destination



UNITED STATES

UNITED STATES CORN SUPPLY AND DEMAND (million acres, million bushels)

	2012/2013	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023	2023/2024
Area Harvested	87.4	87.5	83.1	80.8	86.7	82.7	80.7	84.0	86.5	82.8	80.3	84.0
Yield	123.1	158.1	171.0	168.4	174.6	176.6	174.0	174.8	176.8	179.1	181.1	183.2
Beginning Stocks	989	821	1,232	1,731	1,737	2,293	2,182	1,682	1,950	2,651	2,092	1,611
Production	10,755	13,829	14,215	13,602	15,148	14,604	14,040	14,684	15,294	14,822	14,546	15,393
Imports	160	36	32	68	57	50	50	51	51	51	51	51
Total Supply	11,904	14,686	15,479	15,401	16,942	16,947	16,272	16,418	17,296	17,524	16,689	17,056
Domestic Consumption	10,353	11,533	11,881	11,763	12,356	12,540	12,490	12,499	12,480	12,873	12,519	12,991
Feed	4,309	5,002	5,284	5,114	5,472	5,500	5,375	5,374	5,315	5,315	5,256	5,236
FSI Consumption	6,044	6,531	6,597	6,648	6,883	7,040	7,115	7,126	7,165	7,559	7,263	7,755
Exports	730	1,921	1,867	1,901	2,293	2,225	2,100	1,968	2,165	2,559	2,559	2,559
Total Usage	11,083	13,454	13,748	13,664	14,649	14,765	14,590	14,468	14,645	15,432	15,078	15,550
Ending Stocks	821	1,232	1,731	1,737	2,293	2,182	1,682	1,950	2,651	2,092	1,611	1,505

Source: USDA, Jacobsen Projections

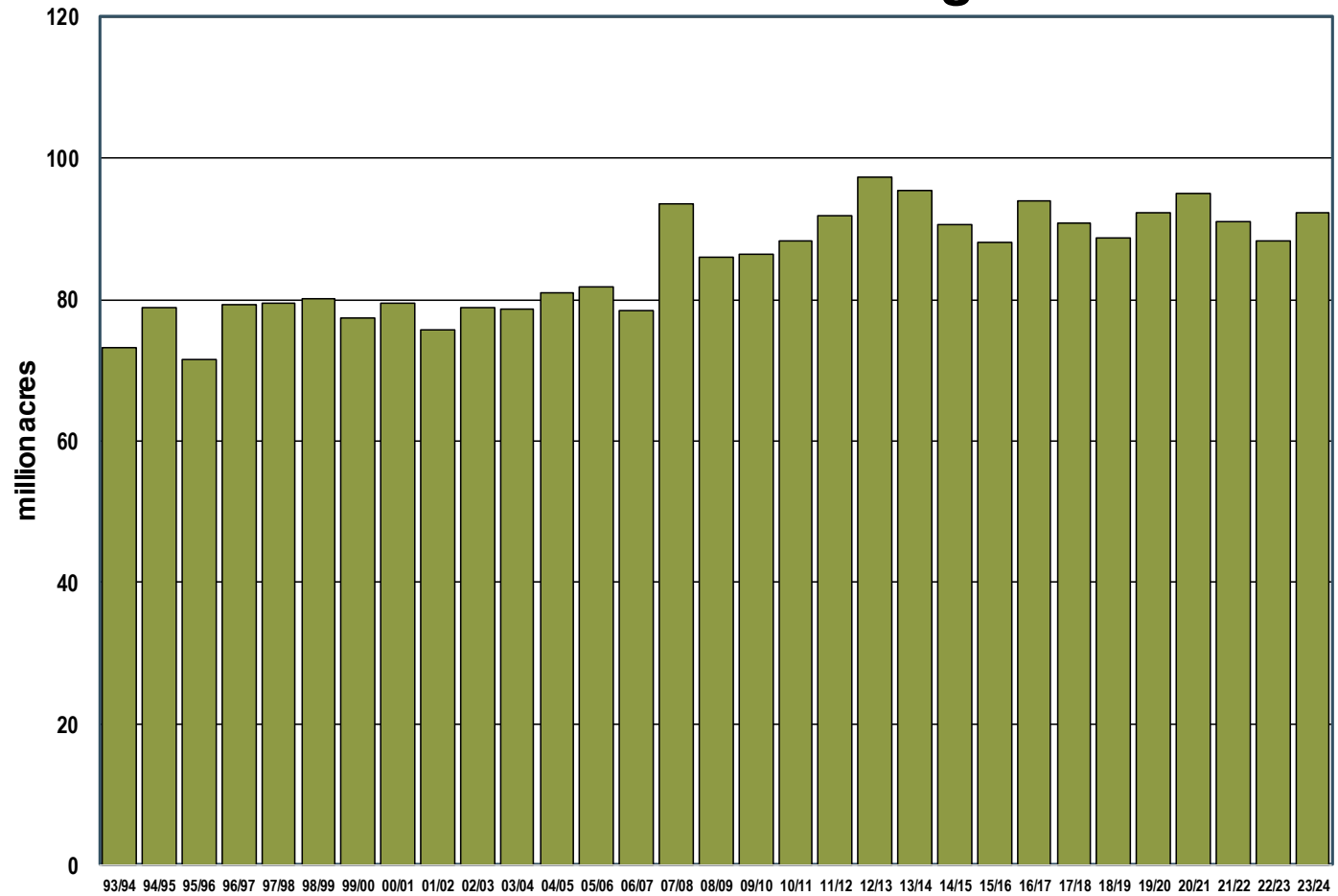
The potential for limited growth in acreage and political uncertainty may limit the growth of Ukrainian corn exports in the long term.

UNITED STATES

Growth in import demand from China may drive an increase in US exports and tightening global stocks. The resulting increase in corn prices could drive an increase in corn acreage in the near term.

In the longer term, the US advantage in yields and production economics may ultimately result in increased specialization in production with the US producing more corn and South America producing more soybeans.

US Corn Planted Acreage



UNITED STATES