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Outlook

Outlook for U.S. Agricultural Trade

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U.S. Agricultural Exports in Fiscal Year 2022 Forecast Up \$4.0 Billion to a Record \$177.5 Billion; Imports at \$159.5 Billion

U.S. agricultural exports in fiscal year (FY) 2022 are projected at \$177.5 billion, \$4.0 billion higher than the revised forecast for the preceding year. The FY 2021 export forecast of \$173.5 billion represents an increase of \$9.5 billion from May's projection, mainly due to higher livestock, poultry, and dairy exports, as well as the adoption of a new definition of "Agricultural Products." Beginning with this publication, the August 2021 release, the report is adopting the World Trade Organization's (WTO) definition of "Agricultural Products," which adds ethanol, distilled spirits, and manufactured tobacco products, among others, while removing rubber and allied products from the previous USDA definition. The net effect of the definitional change on historical values is that U.S. agricultural exports under the new definition averaged \$4.7 billion higher per year during FY 2018–2020 from the previous definition, and U.S. agricultural imports averaged \$9.9 billion higher annually during the same period. For details on the transition to the new definition, please see Appendix A: Updated Agricultural Products Definition.

The FY 2022 forecast value increase is primarily driven by higher export values for soybeans, cotton, and horticultural products. Soybean exports are projected to increase by \$3.3 billion from FY 2021 to a record \$32.3 billion on higher prices, which more than offset lower projected volumes. Cotton exports are forecast up \$500 million to \$6.8 billion on higher unit values. Horticultural product exports are forecast up \$600 million to a record \$37.7 billion, led by higher exports of tree nuts. Livestock, poultry, and dairy exports are forecast up \$400 million to \$36.8 billion in FY 2022, primarily due to growth in dairy and poultry products. Grain and feed exports are forecast down \$1.1 billion from prior forecast levels, primarily due to lower corn export prospects. Agricultural exports to China are forecast at \$39.0 billion—an increase of \$2.0 billion from FY 2021—largely due to higher expected soybean prices and strong cotton and sorghum demand. Agricultural exports to Canada and Mexico are forecast at \$23.8 billion and \$22.3 billion, respectively.

U.S. agricultural imports in FY 2022 are forecast at \$159.5 billion, \$2.0 billion higher than the revised FY 2021 due to higher imports of livestock and beef products, oilseeds and products, and horticulture products. FY 2021 imports are forecast at \$157.5 billion, up \$15.7 billion from the previous forecast, primarily resulting from the inclusion of distilled spirits and other products in the new “Agricultural Products” definition. Record-level import values in the third quarter of FY 2021 largely due to pent-up demand from the pandemic shutdowns of entertainment and service industries, which was released driving up purchases and prices of wine, beer, fruits and vegetables, and other horticultural products, at least in the short term.

Effective January 1, 2021, the separation of the United Kingdom (UK) from the European Union-27 (EU27) was complete, including trade between both entities. Starting with this August 2021 release, the *Outlook for U.S. Agricultural Trade* is reporting on EU27 and the UK separately, rather than a joint EU27+UK in previous quarters.

The forecasts in this report are based on policies in effect at the time of the August 12, 2021, *World Agricultural Supply and Demand Estimates (WASDE)* release and the U.S. production forecasts thereof.

Table 1—U.S. agricultural trade, fiscal years 2015–22, year ending September 30

Item	2015	2016	2017	2018	2019	2020	Forecast fiscal year 1/		
							2021		2022
							May 2/	August	August
<i>Billion dollars</i>									
Exports	144.1	133.7	144.8	148.6	140.1	139.7	164.0	173.5	177.5
Imports	121.6	121.1	127.2	136.5	141.4	143.4	141.8	157.5	159.5
Balance	22.5	12.6	17.6	12.1	-1.3	-3.7	22.2	16.0	18.0

Note: Due to rounding, balance may not agree with import and export data.

1/ Reflects forecasts in the August 12, 2021, World Agricultural Supply and Demand Estimates report. 2/ The May fiscal year 2021 forecast is based on the previous USDA definition of "Agricultural Products," all other years reflect the new definition.

Sources: USDA, Economic Research Service and USDA, Foreign Agricultural Service analysis and forecasts using data from U.S. Department of Commerce, Bureau of the Census.

Economic Outlook

Economic Growth Holds Positive Outlook Across Regions in 2022

The global COVID-19 pandemic remains the primary factor affecting economic activity across the globe. The prevalence of the Delta variant has renewed concerns over pandemic-induced pressure on public health infrastructures, softening consumer spending and global supply chain recovery. Microchip manufacturing and the shipping of physical goods are two aspects of the global economy that continue to observe elevated prices from supply chain disruptions. Despite these economic challenges, employment statistics and consumer confidence have remained strong, pointing to a continued economic recovery through the end of 2021. World real gross domestic product (GDP) is projected to increase by 5.7 percent in the remainder of 2021, and subsequently increase by 4.6 percent in 2022.

Growth projections for U.S. real GDP in 2021 are raised to 6.2 percent from previous estimates of 5.8 percent. The U.S. economy has already grown at an annualized rate of 6.4 percent during the first half of 2021. Second-quarter output was, however, diminished by drawdowns in private inventories as firms struggled to source goods in the presence of strong consumption demand. Strong demand and low inventories pressured the prices of many goods higher, drawing concerns about inflation. The latest July Consumer Price Index (CPI) showed prices increased by a sizable 5.4 percent over the past 12 months, which was largely due to price increases in used cars and categories aligned with the reopening of the economy. Those categories showed signs of slowing price growth in July. However, after factoring out some of the more disrupted categories of prices, inflation remains notable. Prices of shelter, which is the largest component of consumer prices, observed the two highest monthly price increases in June and July since the Bureau of Labor Statistics (BLS) revised how they measured shelter following the 2008 Great Recession. Inflation is expected to remain an important consideration going forward, particularly in relation to economic growth. The U.S. economy is forecast to grow in real terms by 4.2 percent in 2022.

Real GDP in North America is expected to grow by a projected 6.0 percent in 2021 and 3.9 percent in 2022. Real GDP forecasts for both Canada and Mexico in 2021 are revised upwards to 6.5 and 5.6 percent, respectively.

The Eurozone economic growth projection is raised from 4.2 to 4.6 percent for 2021, as vaccination rollout continues to make progress in addition to the further recovery of tourism and the service-sector economy. Collectively, South American real GDP is projected to grow by 6.0

percent in 2021, revised upward from 4.6 percent in the previous quarter. Argentina is expected to grow by 5.9 percent in 2021. 2022 cumulative growth expectations in South America are tempered at 3.7 percent. Across the globe in 2022, GDP growth expectations return to more historically average levels after the large, atypical swing of record decreases in 2020, followed by the rebalancing upswing in growth in 2021.

Despite targeted lockdowns in response to the Delta variant in several cities, China's 2021 real GDP is expected to grow by 8.1 percent. Continued domestic and international attention has focused on China's manufacturing industry, which has seen growth rates slow in recent months due to high input prices. Further bottlenecks in shipping containers and their ensuing record prices also reduce the growth potential of further goods demand. China's real GDP growth for 2022 is forecast to grow by 5.7 percent. Japan's real GDP growth for 2021 is revised downwards to 2.6 percent from 3.0 percent previously, mainly due to continued economic disruption from COVID-19. Japan's economy shrank by 4.8 percent during the first quarter of this year due to the pandemic. South Korea's real GDP growth is revised upwards from 3.6 to 3.9 percent in 2021 and is forecast to expand by a further 2.9 percent in 2022.

Many economic sectors are still in the process of establishing a new footing after the substantial shocks and changes from the pandemic. Commodity price increases have subsided but many remain at elevated levels. Crude oil prices continue to exceed pre-pandemic levels, though the near-term outlook remains uncertain. The Organization of the Petroleum Exporting Countries' (OPEC) and Russia's supply management—along with the slow recovery of U.S. oil and gas production—has created uncertainty around supply levels. Demand is still returning strong, but with increased uncertainty due to variants creating new possible drawbacks for consumer behavior and travel demand.

Higher commodity prices, as well as low interest rates across central banks, are expected to continue to support inflationary pressures. Monetary policy will continue to be closely monitored around the world, as multiple central banks have already begun to adjust rates higher. Interest rates for U.S. government debt are expected to remain low, but above those observed in other advanced economies. The relatively higher rates are expected to help support the U.S. dollar during the rest of 2021, though the U.S. agricultural-exports weighted dollar is anticipated to depreciate on average by 2.4 percent in 2021. The annual average depreciation is due in large part to weakness of the dollar at the start of 2021.

Table 2—Macroeconomic variables affecting U.S. agricultural exports 1/ 2/

Region/Country 3/	Real exchange rate 3/		Real GDP per capita growth rate			Share of World		Share of U.S.
	FY 2021	FY 2022	FY 2021	FY 2022	FY 2021 Previous forecast	GDP	Population	Agricultural exports
	Percent change					2018–20 average		
World	-2.4	-0.1	5.7	4.6	5.5			
North America	-8.0	-1.5	6.0	3.9	5.4	27.5	7.8	28.3
United States	--	--	6.2	4.2	5.8	24.1	4.2	--
Canada	-7.5	-0.6	6.5	4.5	5.0	2.0	0.5	15.2
Mexico	-8.5	-2.4	5.6	2.9	5.0	1.4	1.6	13.1
Emerging markets 4/	-4.2	-1.6	6.0	5.0	5.3	24.1	43.3	15.7
Brazil	-1.4	-2.4	5.3	2.5	3.5	2.5	2.7	0.8
Russia	-1.3	-8.6	3.9	2.9	3.4	1.9	1.8	0.2
India	-2.1	-0.6	8.6	6.6	9.6	3.3	17.5	1.3
Indonesia	-0.5	-0.2	3.1	5.0	4.3	1.3	3.4	2.0
China	-5.5	-1.9	8.1	5.7	8.2	15.1	17.9	11.4
Europe & Central Asia	-3.5	0.5	4.7	4.4	4.3	26.9	10.8	10.2
Eurozone	-4.7	-0.2	4.6	4.4	4.2	15.3	4.5	7.7
Ukraine	-2.4	-6.8	3.9	4.1	4.0	0.1	0.5	0.1
Turkey	5.7	7.9	5.8	4.2	5.3	1.1	1.1	0.9
Asia & Oceania	-0.1	1.8	3.5	3.8	4.0	39.3	59.1	43.6
Japan	4.4	1.0	2.6	2.8	3.0	6.0	1.6	8.5
South Korea	-3.1	4.4	3.9	2.9	3.6	1.9	0.7	5.5
Australia	-10.6	3.4	3.4	3.0	3.9	1.6	0.3	1.1
Other Southeast Asia 5/	-2.0	0.2	4.4	5.8	5.4	1.6	7.6	6.7
South America	-0.2	-2.8	6.0	3.7	4.6	4.9	8.3	10.7
Argentina	6.8	-2.2	5.9	3.5	5.8	0.8	0.6	0.3
Other South America 6/	-0.4	-2.8	6.0	3.8	5.9	1.2	1.6	4.9
Middle East & North Africa	-8.1	-2.1	3.8	3.7	3.7	4.2	6.5	5.9
Sub-Saharan Africa	-4.7	-1.2	3.4	4.1	3.4	2.0	16.9	1.2

1/ Real values have a 2015 base year. 2/ Gross Domestic Product (GDP) is the total value of finished goods and services produced in a country in a given period. 3/ Local currency per U.S. dollar. A negative growth rate indicates a depreciation of the dollar. 4/ World real exchange rate is a U.S. agricultural exports-weighted index. 5/ Countries listed under "emerging markets" are also included under other listed regions. 6/ Includes Malaysia, Philippines, Thailand, and Vietnam. 7/ Includes Chile, Colombia, Peru, Bolivia, Paraguay, and Uruguay.

Sources: Calculations and compilation by USDA, Economic Research Service using data and forecasts from *Reuters*; IHS Markit; the International Monetary Fund; and Oxford Economics.

Export Products

FY 2022 U.S. grain and feed exports are forecast at \$41.8 billion, down by \$1.1 billion from FY 2021 on lower corn and feed and fodder exports, despite higher sorghum exports. Corn exports are forecast at \$17.1 billion, down by \$1.0 billion on reduced volumes from stronger foreign competition, though unit values are expected to be higher. Sorghum exports are forecast at \$2.5 billion, up by \$300 million from the FY 2021 estimate on larger exportable supplies and expected continued strong demand from China. Feeds and fodders exports are forecast at \$8.3 billion, down \$400 million, as lower unit values more than offset higher volumes. Wheat exports are forecast at \$7.1 billion, unchanged from the previous fiscal year. Because of tight exportable supplies, unit values are expected higher but are offset by lower volumes. Rice exports are forecast at \$2.0 billion, unchanged from the FY 2021 estimate as lower volumes offset higher unit values. New sales to Iraq and continued strong demand from Venezuela will not be enough to offset the expected loss in sales to Brazil.

FY 2021 U.S. grain and feed exports are forecast at \$42.9 billion, up by \$1.7 billion from the May forecast, as higher wheat, corn, and feeds and fodders exports more than offset lower sorghum exports. Corn exports are forecast at \$18.1 billion, up by \$900 million, as volumes are expected to reach a record high on top of higher unit values. Sorghum exports are forecast at \$2.2 billion, down \$200 million on slightly lower volumes and unit values. Feeds and fodders exports are forecast at \$8.7 billion, up by \$600 million on both higher volumes and unit values, particularly for distiller's dried grains with solubles (DDGS). Wheat exports are forecast at \$7.1 billion, up \$200 million on higher unit values. With lower 2021/22 production for the United States and other major exporters, wheat prices have climbed higher. Rice exports are forecast at \$2.0 billion, unchanged from the May forecast.

FY 2022 oilseed and product exports are forecast at \$43.5 billion, a new record, up \$3.5 billion from FY 2021 mostly on higher soybean unit values. Soybean export values are projected to reach a new record of \$32.3 billion although volumes are expected to fall below the previous year. U.S. soybean volume exports are expected to decline from last year due to a combination of factors, including higher soybean prices, tight U.S. supplies, slowing growth in China's global demand, and increased competition from Brazil. Soybean meal exports are forecast at \$5.7 billion, down by \$200 million from FY 2021 on lower unit values. Soybean oil exports are forecast at nearly \$1.0 billion, up nearly \$200 million from FY 2021 as higher unit values offset lower volumes.

FY 2021 oilseed and product exports are forecast at \$40.3 billion, down by \$300 million from the May forecast. Soybeans are forecast at \$29.0 billion, up \$100 million on higher unit values. Soybean volumes are slightly lower, though still a record. Soybean meal exports remain at record value and volumes, despite a downward revision of \$100 million to \$5.9 billion on slightly lower volumes and unit values. Soybean oil exports are down \$400 million to \$800 million on lower volumes and unit values. High premiums for U.S. soybean oil have reduced export volumes 60 percent year-over-year to the lowest level in 10 years.

FY 2022 cotton exports are forecast at \$6.8 billion, up by \$500 million from FY 2021—the highest in over a decade—owing to higher unit values amid strong projected import demand and consumption. Global consumption is projected at a 14-year high, driven by forecast world economic growth particularly in China and the United States. China is the world’s largest consumer of cotton lint and the United States is the largest importer of cotton apparel and end products.

FY 2021 U.S. cotton exports are forecast at \$6.3 billion, up by \$200 million from the May forecast due to greater unit values. Robust global import demand, low levels of available nearby exportable supplies, and expectations of sustained progress in recovering from COVID-19 have boosted prices significantly higher compared with FY 2020.

FY 2022 livestock, poultry, and dairy exports are forecast up by \$400 million from FY 2021 to \$36.8 billion primarily due to growth in dairy and poultry products. Dairy product exports are up \$200 million to \$7.5 billion on stronger import demand from Mexico and Asia for skimmed milk powder and cheese. Poultry and poultry products are forecast \$100 million higher to \$5.9 billion, largely on robust Chinese demand for chicken paws. Hides and skins are forecast \$100 million higher to \$1.0 billion as global economic recovery supports consumer goods demand. Pork exports are forecast \$100 million lower to \$7.1 billion as U.S. products face headwind in China. Beef exports are forecast \$100 million down to \$8.3 billion on lower exportable supplies.

FY 2021 livestock, poultry, and dairy exports are raised by \$2.2 billion from the May forecast to \$36.4 billion due to increases in all product groups except pork. Beef is forecast up by \$800 million to \$8.4 billion on higher unit values and volumes to China, Mexico, and South Korea. Poultry and poultry products are forecast \$300 million higher to \$5.8 billion on elevated prices and volumes to major markets. Dairy product exports are raised by \$300 million to \$7.3 billion due to higher unit values and higher volumes of skimmed milk powder and whey and whey products to China. Hides, skins, and furs are raised by \$100 million to \$900 million as prices strengthen on global economic recovery. Pork is unchanged at \$7.2 billion.

FY 2022 forecast for horticultural products is a record \$37.7 billion, up \$600 million from FY 2021. Whole and processed tree nuts are forecast \$400 million higher to \$9.0 billion on stronger shipments to Europe and Asia. Fresh fruit and vegetables, as well as processed fruit and vegetables, are each forecast \$100 million higher to \$7.3 billion and \$7.1 billion, respectively, on higher exports to Canada and Mexico. Other horticultural product forecasts are unchanged at \$14.3 billion on steady shipments of miscellaneous products—other food preparations, beer, and mixed seasonings—to Canada, Mexico, and the European Union.

The FY 2021 estimate for horticultural products is raised by \$3.0 billion to \$37.1 billion. “Other horticultural products” are forecast up by \$2.2 billion to \$14.3 billion primarily due to the addition of distilled spirits and nonalcoholic beverages to the horticultural products group following the adaptation of the World Trade Organization’s internationally recognized definition of “Agricultural Products.” Fresh fruit and vegetables are raised by \$300 million to \$7.2 billion on higher shipments to Canada and Mexico. Processed fruit and vegetables are raised \$500 million to \$7.0 billion also on higher shipments to Canada and Mexico. Whole and processed tree nuts are unchanged at \$8.6 billion on steady trade to the European Union, Canada, and India.

FY 2022 U.S. ethanol exports are forecast at \$2.4 billion, up \$200 million from FY 2021 on volume and unit value gains. Higher expected corn prices keep ethanol unit values elevated. Modest volume gains are projected for many markets, as gasoline fuel markets continue to recover and demand for industrial ethanol grows with the economic recovery and continued elevated demand for disinfectants. The largest export gains for U.S. ethanol are expected for Brazil and the United Kingdom. An expected sharp sales increase to Brazil is supported by the recent drought and frost damage that lowered sugarcane yields, higher sugar prices, and ongoing fuel demand recovery. The United Kingdom raises its fuel ethanol blend to E10 this fall, increasing their overall demand. India’s push to meet its E20 by 2025 target continues to expand the demand for industrial ethanol, whereas uncertainty persists on the future of fuel ethanol exports to China. The proportion of U.S. ethanol exports used as fuel remains at an historically low 60 percent since the pandemic eroded gasoline use and spurred demand for disinfectants.

FY 2021 U.S. ethanol exports are forecast at \$2.2 billion, down by \$60 million from the previous year with higher export unit values only partially offsetting lower export volume. U.S. exports of fuel ethanol to Brazil in FY 2021 have fallen to levels not seen in a decade. Colombia’s lower blend mandate has reduced imports from the United States. Export sales to Mexico and Nigeria are down from last year’s records, following the earlier demand surge for medical-grade ethanol. U.S. industrial ethanol sales to India are lower due to higher U.S. prices and the substitution of

surplus sugar supplies to ethanol. U.S. fuel ethanol exports to China reached their second-highest level on record due to low, early-year U.S. prices. U.S. sales to Canada and South Korea are up on fuel demand recovery and record demand for industrial product, respectively.

Table 3—U.S. agricultural exports: Value and volume by commodity, fiscal years 2020–2022

Commodity	October–June		Fiscal year 2020	Forecast Fiscal year 2021		2022 August
	FY 2020	FY 2021		May 1/	August	
VALUE						
	<i>–Billion dollars–</i>					
Grains and feeds 2/	22.258	32.785	29.933	41.2	42.9	41.8
Wheat 3/	4.503	5.079	6.268	6.9	7.1	7.1
Rice	1.476	1.596	1.798	2.0	2.0	2.0
Corn	6.071	14.138	8.220	17.2	18.1	17.1
Sorghum	0.786	1.709	1.032	2.4	2.2	2.5
Feeds and fodders	5.949	6.613	7.950	8.1	8.7	8.3
Oilseeds and products 4/	20.094	33.020	27.527	40.6	40.3	43.5
Soybeans	12.630	24.044	17.844	28.9	29.0	32.3
Soybean meal 5/	3.371	4.544	4.381	6.0	5.9	5.7
Soybean oil	0.797	0.768	0.980	1.2	0.8	1.0
Livestock, poultry, and dairy	24.042	26.991	31.596	34.2	36.4	36.8
Livestock products 4/	15.336	17.320	20.069	21.7	23.3	23.5
Beef and veal 6/	4.926	6.023	6.639	7.6	8.4	8.3
Pork 6/	5.306	5.440	6.717	7.2	7.2	7.1
Beef and pork variety meats 6/	1.229	1.388	1.602	1.8	1.8	1.8
Hides, skins, and furs	0.667	0.757	0.858	0.8	0.9	1.0
Poultry and products	3.833	4.353	5.072	5.5	5.8	5.9
Broiler meat 6/ 7/	2.371	2.595	3.098	3.2	3.4	3.4
Dairy products	4.872	5.319	6.455	7.0	7.3	7.5
Tobacco and products 4/	0.669	0.775	0.894	0.7	0.9	0.9
Cotton 4/ 8/	4.364	5.092	5.649	6.1	6.3	6.8
Seeds	1.363	1.381	1.646	1.6	1.6	1.6
Horticultural products 4/ 9/	26.611	28.469	34.777	34.1	37.1	37.7
Fruits and vegetables, fresh	5.097	5.276	6.962	6.9	7.2	7.3
Fruits and vegetables, processed	4.964	5.304	6.537	6.5	7.0	7.1
Tree nuts, whole and processed	7.013	6.989	8.537	8.6	8.6	9.0
Sugar and tropical products 10/	4.055	4.178	5.404	5.7	5.7	5.9
Ethanol 11/	1.835	1.887	2.261	NA	2.2	2.4
Total	105.291	134.578	139.686	164.0	173.5	177.5
Major bulk products 12/	32.217	30.525	41.618	64.2	64.7	67.8
<i>– Million metric tons –</i>						
VOLUME						
Wheat 3/	19.176	18.508	26.826	25.5	25.1	24.0
Rice	2.685	2.965	3.127	3.6	3.7	3.6
Corn	34.100	57.024	46.927	78.1	72.5	61.0
Sorghum	4.153	6.146	5.386	70.0	7.5	8.3
Feeds and fodders	15.102	16.139	20.779	20.6	21.2	21.8
Soybeans	34.908	52.209	48.980	62.1	61.5	55.9
Soybean meal 5/	9.641	9.915	12.550	12.9	12.8	12.9
Soybean oil	1.040	0.739	1.287	1.0	0.8	0.7
Beef and veal 6/	0.701	0.821	0.952	1.1	1.1	1.1
Pork 6/	1.950	1.948	2.507	2.5	2.5	2.5
Beef and pork variety meats 6/	0.534	0.557	0.693	0.7	0.7	0.7
Broiler meat 6/ 7/	2.484	2.612	3.310	3.4	3.4	3.4
Cotton 8/	2.745	2.909	3.625	3.5	3.5	3.3
Major bulk products 12/	97.768	139.762	134.871	172.9	173.8	156.1

Note: Totals may not add up due to rounding.

1/ The May fiscal year 2021 forecast is based on the previous USDA definition of "Agricultural Products". 2/ Includes barley, oats, rye, corn gluten feed and meal, and processed grain products. 3/ Excludes wheat flour. 4/ Includes products added with the change in definition of "Agricultural Products." 5/ Includes soy flours made from protein meals. 6/ Includes chilled, frozen, and processed meats. 7/ Includes only federally inspected product. 8/ Includes linters and waste. 9/ Includes food preparations, essential oils, and wine. 10/ Includes coffee and cocoa. 11/ Non-beverage ethanol. 12/ Includes wheat, rice, coarse grains, soybeans, and cotton.

Sources: Compiled by USDA, Economic Research Service and USDA, Foreign Agricultural Service analysis and forecasts using data from U.S. Department of Commerce, Bureau of the Census.

Regional Exports

Outlook for Fiscal Year 2022 Exports

Agricultural exports in FY 2022 are forecast at \$177.5 billion, an increase of \$4.0 billion over the revised FY 2021 estimate. Overall bulk export values are forecast to surge by \$3.1 billion, primarily on higher prices for soybeans, and higher prices and volumes for cotton. High-value product exports are forecast to increase by \$900 million, led by higher projected exports of tree nuts. China, Canada, and Mexico are expected to remain the top three U.S. markets.

Asia

The export forecast for China is \$39.0 billion, \$2.0 billion higher than the revised FY 2021 estimate. Sharply higher projected soybean prices more than offset lower expected volumes and helped boost U.S. soybean export value. Continued strong demand for sorghum, cotton, and poultry products also contribute to the increased forecast. U.S. corn export prospects are expected to be steady as higher projected unit values offset lower volume resulting from strong Ukrainian competition.

Exports to Japan are projected to be unchanged at \$13.3 billion. Lower corn and beef export prospects are balanced by higher unit values of soybeans.

Exports to South Korea are forecast up by \$400 million to \$9.6 billion, primarily due to greater expected tree nut sales and higher prices of soybeans and soybean oil.

Exports to Southeast Asia are forecast up a collective \$500 million to \$15.1 billion. Higher soybean prices help buoy export values to Indonesia, Vietnam, and Thailand. Strong dairy demand in Indonesia and Vietnam—and continued recovery in cotton demand in Vietnam—help boost the overall export prospects to the region.

The export forecast for South Asia is up \$100 million to \$4.3 billion due to higher cotton exports to Pakistan.

Western Hemisphere

The export forecast for Canada is raised by \$200 million to \$23.8 billion, largely due to expected higher sales of horticultural products. Exports to Mexico are forecast up \$300 million to \$22.3 billion on higher expected exports of fruits, vegetables, and dairy products.

Exports to Brazil are forecast up \$200 million to \$1.0 billion, largely on expectations of higher ethanol sales.

Europe, Africa, the Middle East, and Oceania

Exports to EU27 are forecast at \$11.2 billion, up by \$300 million from FY 2021, on the strength of continued strong demand for horticultural products, particularly tree nuts.

Exports to the United Kingdom are forecast up by \$100 million to \$1.8 billion, on higher prospect of ethanol sales.

Exports to the Middle East are projected at \$5.5 billion, unchanged from the revised FY 2021 estimate.

Exports to Africa are forecast at \$5.3 billion, unchanged from the revised FY 2021 estimate.

Exports to Oceania are projected to be unchanged at \$2.2 billion.

Revised Outlook for Fiscal Year 2021

The forecast for agricultural exports is up by \$9.5 billion from May, to \$173.5 billion. Part of the increase is due to the transition to the WTO “Agricultural Product” definition, which adds ethanol, distilled spirits, manufactured tobacco, and others to the agricultural total.

Asia

Compared to the last quarter, exports to China are boosted by \$2.0 billion to \$37.0 billion, mainly due to a quickening pace of corn shipments in recent months, strong sales of beef, and the addition of ethanol.

Exports to Japan are up \$900 million to \$13.3 billion, primarily due to strong corn and soybean exports, as well as the addition of distilled spirits. Exports to Hong Kong are lowered by \$300 million to \$1.9 billion on continued lackluster sales of beef and tree nuts. Exports to South Korea are up \$700 million due to the addition of ethanol and strong corn and beef shipments. Exports to Southeast Asia are up \$400 million, mainly due to stronger-than-expected shipments of pork and poultry products to the Philippines and soybeans to Indonesia. Exports to India are up \$300 million, primarily a result of the addition of ethanol.

Western Hemisphere

Exports to Canada are raised by \$2.0 billion from last quarter to \$23.6 billion on stronger-than-expected third-quarter shipments, particularly of fruits and vegetables, as well as the addition of

ethanol and distilled spirits. Exports to Mexico are up by \$2.5 billion to \$22.0 billion, buoyed by robust shipments of corn, dairy, and pork products during the third quarter.

Exports to Dominican Republic are adjusted upward by \$200 million, on higher-than-expected sales of soybean meal and tobacco products.

Exports to Central America are raised by \$400 million due to strong shipments of corn, soybean meal, and beer.

Exports to Colombia are up \$100 million on robust soybean meal exports and the addition of ethanol. Exports to Peru are down \$100 million based on shipments to date, though the revised estimate still exceeds FY 2020 by 25 percent.

Europe, Africa, the Middle East, and Oceania

Exports to EU27 and the United Kingdom are estimated at \$10.9 billion and \$1.7 billion, respectively. The combined total of \$12.6 billion, which is \$1.2 billion above the forecast for EU27 + UK in the previous quarter, driven largely by the addition of distilled spirits and ethanol.

The estimate for Egypt is reduced by \$500 million, as shipments during the third quarter slowed down drastically. The estimate for Nigeria is up \$100 million on strong wheat sales.

Exports to Oceania are up \$100 million to \$2.2 billion due to the addition of distilled spirits.

Table 4—U.S. agricultural exports: Value by region, fiscal years 2020–2022

Region and country 1/	October–June		Fiscal year	Share of	Forecast fiscal year		
	FY 2020	FY 2021	2020	2020 total	2021 May 2/	August	2022 August
	–Billion dollars–			Percent	–Billion dollars–		
VALUE							
Asia	44.276	65.072	59.738	42.8	80.3	84.0	87.0
East Asia	30.440	50.290	41.853	30.0	61.9	65.2	67.6
Japan	9.060	10.436	11.643	8.3	12.4	13.3	13.3
China	11.072	28.284	16.973	12.2	35.0	37.0	39.0
Hong Kong	1.869	1.367	2.311	1.7	2.2	1.9	1.9
Taiwan	2.511	2.974	3.275	2.3	3.8	3.8	3.8
South Korea	5.918	7.221	7.638	5.5	8.5	9.2	9.6
Southeast Asia	10.231	11.351	13.468	9.6	14.2	14.6	15.1
Indonesia	2.072	2.504	2.706	1.9	3.1	3.3	3.5
Philippines	2.298	2.610	3.205	2.3	3.4	3.7	3.7
Malaysia	0.840	0.890	1.082	0.8	1.1	1.1	1.1
Thailand	1.395	1.404	1.733	1.2	1.9	1.8	1.9
Vietnam	2.634	2.864	3.437	2.5	3.8	3.8	4.0
South Asia	3.605	3.431	4.416	3.2	4.2	4.2	4.3
India	1.336	1.247	1.738	1.2	1.3	1.6	1.6
Western Hemisphere	41.715	48.823	55.040	39.4	57.4	62.6	63.3
North America	30.299	35.226	40.318	28.9	41.1	45.6	46.1
Canada	16.223	17.787	22.017	15.8	21.6	23.6	23.8
Mexico	14.073	17.439	18.297	13.1	19.5	22.0	22.3
Caribbean	2.762	3.204	3.552	2.5	3.8	4.0	4.0
Dominican Republic	1.092	1.370	1.387	1.0	1.5	1.7	1.7
Central America	3.274	4.242	4.218	3.0	4.9	5.3	5.3
South America	5.381	6.150	6.953	5.0	7.6	7.7	7.9
Brazil	0.821	0.582	1.054	0.8	0.8	0.8	1.0
Colombia	2.304	2.548	2.907	2.1	3.1	3.2	3.2
Peru	0.647	0.836	0.880	0.6	1.2	1.1	1.1
Venezuela	0.246	0.479	0.340	0.2	0.6	0.6	0.6
Europe/Eurasia	9.914	10.491	12.948	9.3	12.6	13.5	14.0
European Union-27 3/	7.925	8.376	10.238	7.3	NA	10.9	11.2
United Kingdom 3/	1.276	1.303	1.728	1.2	NA	1.7	1.8
FSU-12 4/	0.349	0.368	0.465	0.3	0.5	0.5	0.5
Russia	0.136	0.179	0.195	0.1	0.2	0.3	0.3
Middle East	4.320	4.327	5.395	3.9	5.5	5.5	5.5
Turkey	0.985	0.915	1.212	0.9	1.1	1.1	1.1
Saudi Arabia	0.995	1.085	1.243	0.9	1.3	1.3	1.3
Africa	3.435	4.231	4.357	3.1	5.6	5.3	5.3
North Africa	2.105	2.651	2.590	1.9	3.8	3.3	3.3
Egypt	1.425	1.687	1.738	1.2	2.5	2.0	2.0
Sub-Saharan Africa	1.330	1.580	1.767	1.3	1.8	2.0	2.0
Nigeria	0.369	0.438	0.478	0.3	0.4	0.5	0.5
Oceania	1.632	1.633	2.208	1.6	2.1	2.2	2.2
Total	105.291	134.578	139.686	100.0	164.0	173.5	177.5

Notes: Totals may not add up due to rounding.

1/ Projections are based primarily on trend or recent average growth analysis. 2/ The May fiscal year 2021 forecast is based on the previous USDA definition of "Agricultural Products". 3/ "NA" indicates that values were not forecast in the previous edition of this report. 4/ The 15 Republics of the Former Soviet Union (FSU), not including the 3 Baltic Republics; Estonia, Latvia, and Lithuania. Sources: USDA, Economic Research Service and USDA, Foreign Agricultural Service analysis and forecasts using data from U.S. Department of Commerce, Bureau of the Census.

Import Products

In FY 2022, total agricultural imports are expected to increase \$2.0 billion above the FY 2021 forecast—to \$159.5 billion—due to higher imports of livestock and beef products, oilseeds and products, and horticulture products. Total imports in FY 2022 are expected to be \$16.1 billion more than FY 2020 totals.

Most of the increases in total agricultural imports are expected in FY 2021 as third-quarter imports have been at record levels, largely due to pent-up demand from the pandemic shutdowns of entertainment and service industries, which was released driving up purchases and prices, at least in the short term. Imports in FY 2021 are forecast to rise by \$15.7 billion from the previous forecast to \$157.5 billion. \$9.2 billion of the forecast increase for FY 2021 imports can be attributed to the addition of distilled spirits—a horticultural product—to the list of products USDA includes for the purposes of measuring agricultural trade beginning this year (Appendix A). The remainder of the increased forecast can be attributed to other horticultural, oilseed, and livestock, dairy, and poultry products.

Horticultural product imports are expected to reach \$83.8 billion in FY 2022. This would be approximately \$500 million above FY 2021 forecasts and it would be \$8.0 billion higher than FY 2020 totals. The new FY 2021 forecast also represents an upward adjustment of \$10.3 billion from the previous forecast.

In FY 2021, values of fresh fruit imports are expected to grow by \$1.2 billion over FY 2020 values to \$15.2 billion. While fresh fruit forecast volumes were adjusted downward from the previous forecast, they are still expected to increase over FY 2020, increasing the value of imports to \$12.0 billion. Although a continuing upward trend in fresh fruit imports of commodities such as bananas, avocados, strawberries, and blueberries, reduced U.S. production of citrus due to poor weather conditions also contributed to increased reliance on fruit imports this season. The trend is expected to plateau somewhat in FY 2022, resulting in a \$200 million increase above FY 2021 imports. Import values of tree nuts are expected to decrease by \$200 million in FY 2021 to \$2.6 billion, as unit values slip due to increased global production, and remain constant in FY 2022.

Fresh vegetable imports are expected to increase \$400 million from FY 2020 to FY 2021—to \$10.3 billion—and are expected to hold that value in FY 2022 as current pressures on unit values and demand ease. In FY 2021, processed vegetable imports are expected to exceed the previous forecast by \$200 million, due to recent uptick in volumes and unit values. Further

increases in the volume of processed vegetable imports in FY 2022 are expected to result in values of \$6.6 billion.

Both wine and beer forecasts are increased \$300 million from their previous FY 2021 projections to \$6.8 billion and \$6.3 billion, respectively, as imports volumes and values upward trend accelerates. As with imports overall, these sharper increases are expected to slow in the following year resulting in a forecast increase of \$100 million in imports of wine and beer in FY 2022. As mentioned earlier, distilled spirits imports are forecast for the first time in this report at \$9.2 billion for FY 2021 and they are expected to decrease by \$100 million to \$9.1 billion in FY 2022.

The imports forecast of cut flowers and nursery products for FY 2021 are adjusted upward by \$300 million to \$2.7 billion on increased unit values due to reduced planting from producers expecting decreased demand during the COVID-19 pandemic. However, demand was stronger than expected leading to shortages of cut flowers and nursery products driving up market prices. The forecast value for FY 2022 is unchanged.

U.S. imports of sugar and tropical products are forecast to be worth \$24.2 billion in FY 2021, a \$400 million upward adjustment from the previous forecast. In FY 2022, sugar and tropical product imports are expected to hold at that value. Sweeteners and products, cocoa and products, and coffee and products forecasts are adjusted upward by \$100 million, \$200 million, and \$100 million, respectively, for FY 2021 on increased import volumes. Each are unchanged in FY 2022.

In FY 2021, livestock, dairy, and poultry imports are raised \$700 million to \$19.3 billion. Beef imports are forecast up by \$800 million to \$7.2 billion on strong unit values and volumes. Pork imports are forecast \$100 million higher to \$1.8 billion on tighter expected pork supplies. The forecast for poultry and products is \$900 million as strong domestic demand supports increased Chilean shipments. Live swine imports are unchanged. The cattle import forecast is adjusted down by \$100 million to \$1.6 billion. Dairy is revised down by \$400 million to \$3.3 billion largely due to the adoption of the World Trade Organization's recognized definition of "Agricultural Products," which excluded some products previously identified as dairy products.

For FY 2022, the forecast for U.S. imports of livestock, dairy, and poultry products is increased by \$800 million FY-over-FY to \$20.1 billion. Beef imports are raised by \$200 million to \$7.4

billion on higher demand for lean trimmings. The cattle and calves import forecast is raised \$100 million to \$1.7 billion on higher unit values and head of cattle numbers.

In FY 2021, imports of oilseeds and products are forecast to grow by \$2.2 billion from the previous forecast to \$11.9 billion, due to increases in oilseed prices resulting from unfavorable weather in many oilseed producing parts of the globe. In FY 2022, oilseed and product imports are expected to continue to grow by \$500 million to \$12.4 billion. Total grains and feed imports for FY 2021 are expected to remain constant at \$15.3 billion but increase in FY 2022 by \$200 million to \$15.5 billion to support growing animal product consumption and exports.

Table 5--U.S. agricultural imports: Value and volume by commodity, fiscal years 2020--2022

Commodity	October--June		Fiscal year 2020	Forecast Fiscal year 2021		Forecast
	FY 2020	FY 2021		May	August	Fiscal year 2022 August
VALUE						
<i>-Billion dollars-</i>						
Livestock, dairy, and poultry	13.492	14.835	18.247	18.6	19.3	20.1
Livestock and meats 1/	10.485	11.505	14.194	14.1	15.2	15.9
Cattle and calves	1.438	1.211	1.793	1.7	1.6	1.7
Swine	0.199	0.369	0.249	0.5	0.5	0.4
Beef and veal	4.819	5.076	6.813	6.4	7.2	7.4
Pork	1.089	1.381	1.472	1.7	1.8	1.8
Poultry 2/	0.565	0.636	0.765	NA	0.9	0.9
Dairy products	2.442	2.694	3.288	3.7	3.3	3.3
Cheese	0.859	1.025	1.173	1.3	1.4	1.5
Grains and feed 1/	10.483	11.396	14.294	15.3	15.3	15.5
Grain products	7.142	8.163	9.812	10.8	10.8	11.0
Oilseeds and products 1/	7.330	8.851	9.844	9.7	11.9	12.4
Vegetable oils	4.270	5.138	5.724	5.9	6.8	7.3
Horticulture products 1/	57.426	65.083	75.846	73.0	83.3	83.8
Fruits, fresh	11.305	12.384	14.046	15.1	15.2	15.4
Fruits, processed	4.171	4.801	5.550	6.1	6.1	6.1
Fruit juices	1.420	1.604	1.821	2.0	2.0	2.0
Tree nuts, whole and processed	2.178	2.026	2.774	2.8	2.6	2.6
Vegetables, fresh	7.775	8.254	9.889	10.2	10.3	10.3
Vegetables, processed	4.323	4.894	5.786	6.2	6.4	6.6
Wine	4.690	5.335	6.247	6.5	6.8	6.9
Malt beer	3.803	4.678	5.458	6.0	6.3	6.4
Distilled spirits 2/	6.331	7.184	8.790	NA	9.2	9.1
Essential oils	2.953	3.326	4.060	4.4	4.4	4.4
Cut flowers and nursery stock	1.655	2.222	2.129	2.4	2.7	2.7
Sugar and tropical products	16.288	17.624	21.686	23.8	24.2	24.2
Sweeteners and products	3.812	3.887	5.126	5.0	5.1	5.1
Confections	1.414	1.579	1.908	2.0	2.0	2.0
Cocoa and products	3.773	4.068	4.950	5.0	5.2	5.2
Coffee and products	4.584	4.762	5.984	6.1	6.2	6.2
Other imports 1/ 3/	2.556	2.950	3.500	1.4	3.5	3.5
Total agricultural imports	107.575	120.739	143.417	141.8	157.5	159.5
VOLUME						
<i>-Million metric tons-</i>						
Cattle and calves 4/	1.698	1.468	2.131	2.0	1.9	2.0
Swine 4/	3.839	4.745	5.110	6.0	6.2	5.7
Beef and veal	0.792	0.762	1.139	1.0	1.0	1.1
Pork	0.280	0.325	0.377	0.4	0.4	0.4
Vegetable oils 5/	3.516	3.279	4.641	4.6	4.6	4.8
Fruits, fresh	8.995	9.262	11.871	12.8	12.4	12.4
Fruits, processed	1.452	1.556	1.943	2.0	2.0	2.2
Fruit juices 5/	3.136	3.117	3.864	4.3	3.8	3.8
Vegetables, fresh	6.509	7.105	8.183	8.7	8.7	8.7
Vegetables, processed	3.262	3.595	4.339	4.6	4.6	4.8
Wine 5/	1.098	1.259	1.477	1.5	1.6	1.6
Malt beer 5/	2.846	3.437	4.058	4.4	4.4	4.4
Distilled spirits 2/ 6/	0.645	0.702	0.883	NA	1.0	1.0
Cocoa and products	1.057	1.166	1.371	1.4	1.5	1.5
Coffee and products	1.235	1.201	1.595	1.6	1.6	1.6

Notes: Totals may not add due to rounding.

1/ Includes products added with the change in definition of "Agricultural Products." 2/ "NA" indicates that values were not forecast in the previous edition of this report. 3/Largely unmanufactured tobacco, planting seeds, mineral and aerated waters, and ethanol. 4/ Million head. 5/ Billion liters. 6/ Proof gallon equivalent liters.

Sources: USDA, Economic Research Service and USDA, Foreign Agricultural Service analysis and forecasts using data from U.S. Department of Commerce, Bureau of the Census.

Regional Imports

Outlook for Fiscal Year 2021 and 2022 Imports

Western Hemisphere

Regional imports from the Western Hemisphere are forecast to increase by \$8.1 billion from the previous forecast to \$78.9 billion. At \$35.5 billion, Mexico is expected to remain the largest foreign supplier of agricultural goods to the United States, while the European Union—at \$31.5 billion—is projected to overtake Canada, with \$28.3 billion, for the second largest. Mexico's FY 2021 sales are adjusted up by \$4.0 billion from the previous forecast largely on increases in beef, fresh fruit, distilled spirits, and beer. The forecast value of Canadian agricultural products sold to the United States is enhanced by \$2.8 billion on upward adjustments to U.S. imports of meat products, oilseeds, nursery products, and distilled spirits.

In FY 2022, the U.S. is projected to import \$36.1 billion from Mexico, with increased imports of fresh fruit, beer, and cattle. Imports from Canada are projected at \$29.1 billion with increased beef grain and oilseed imports going to the United States.

Imports from South America in FY 2021 are projected to rise by \$1.1 billion from the previous forecast to \$16.6 billion. Imports from Brazil are expected to increase \$900 million from the previous forecast due to imports of coffee and products, sweeteners and products, and the addition of ethanol to the agricultural products definition. Imports from Chile and Columbia are each adjusted upward by \$100 million on poultry and nursery products, respectively. There is no change to South America's projected import value from FY 2021 to FY 2022.

Europe

The \$4.3 billion increase in projected FY 2021 imports over FY 2020 from the EU27 is mainly due to the large portion of distilled spirit imports for which they are responsible. In FY 2022, imports from the EU27 are projected at \$31.7 billion on expected increased imports of wine and cheese.

Asia

The forecast for imports from Asia is increased by \$400 million to \$24.4 billion in FY 2021 as an expected increase of processed vegetable imports from China, oilseeds from Indonesia, and distilled spirits from Japan more than offset an expected decrease of nuts and nut products from

Vietnam. An increase is also expected in FY 2022 of \$300 million to \$24.7 billion assuming another increase in processed vegetables from China and oilseeds from Indonesia.

Oceania

The forecast for imports from Oceania is raised by \$100 million from the previous forecast to \$6.0 billion in FY 2021 because of the addition of bottled water products from Fiji. The FY 2022 forecast is also \$6.0 billion.

Africa and Middle East

Imports from Africa in FY 2021 are adjusted upward by \$200 million to \$3.7 billion due to expected increases in imports of cocoa and products from Côte d'Ivoire and remain unchanged in FY 2022. Imports from the Middle East are expected to remain unchanged from the May forecast at \$1.6 billion.

Table 6—U.S. agricultural imports: Value by region, fiscal years 2020–22

Region and country	October–June		Fiscal year 2020	Forecast		Forecast
	FY 2020	FY 2021		Fiscal year 2021		Fiscal year 2022
			May	August	August	
VALUE						
<i>—Billion dollars—</i>						
Western Hemisphere	60.273	68.237	79.524	78.9	87.0	88.4
Canada	18.365	21.055	24.825	25.5	28.3	29.1
Mexico	24.687	28.213	31.844	31.5	35.5	36.1
Central America	4.658	4.711	6.076	5.7	5.7	5.7
Costa Rica	1.197	1.278	1.587	1.7	1.7	1.7
Guatemala	1.712	1.721	2.232	2.2	2.2	2.2
Other Central America	1.749	1.712	2.257	1.8	1.8	1.8
Caribbean	1.032	1.400	1.468	0.7	0.9	0.9
South America	11.531	12.858	15.311	15.5	16.6	16.6
Argentina	1.068	1.054	1.433	1.3	1.3	1.3
Brazil	2.908	3.343	3.872	3.6	4.5	4.5
Chile	2.147	2.293	2.756	2.8	2.9	2.9
Colombia	2.028	2.361	2.691	2.9	3.0	3.0
Peru	1.997	2.191	2.703	3.0	3.0	3.0
Other South America	1.383	1.616	1.856	2.0	1.9	1.9
Europe and Eurasia	21.538	24.196	29.329	27.9	34.8	35.0
European Union-27 1/	19.921	22.681	27.151	NA	31.5	31.7
United Kingdom 1/	1.617	1.515	2.178	NA	3.3	3.3
Asia	16.126	17.950	21.603	24.0	24.4	24.8
East Asia	4.522	5.122	6.114	6.3	6.4	6.5
China	2.768	2.930	3.715	3.8	3.9	4.0
Other East Asia	1.754	2.192	2.399	2.5	2.5	2.5
Southeast Asia	9.546	10.274	12.527	14.4	14.7	14.9
Indonesia	1.890	2.066	2.459	2.9	3.3	3.5
Malaysia	0.793	0.700	1.082	1.0	1.0	1.0
Thailand	2.078	2.053	2.785	3.1	3.1	3.1
Vietnam	1.556	1.577	2.064	2.1	2.0	2.0
Other Southeast Asia	3.229	3.878	4.137	5.3	5.3	5.3
South Asia	2.058	2.554	2.962	3.4	3.4	3.4
India	1.804	2.251	2.597	2.9	2.9	2.9
Oceania	4.557	4.406	6.237	5.9	6.0	6.0
Australia	2.530	2.279	3.464	3.2	3.2	3.2
New Zealand	1.888	1.946	2.578	2.5	2.5	2.5
Africa	2.384	2.756	3.134	3.5	3.7	3.7
Sub-Saharan	1.925	2.196	2.516	2.7	2.9	2.9
Côte d'Ivoire	0.658	0.892	0.791	1.0	1.2	1.2
Middle East	1.163	1.395	1.519	1.6	1.6	1.6
Turkey	0.756	0.894	0.968	1.0	1.0	1.0
World total	107.575	120.739	143.417	141.8	157.5	159.5

Note: Totals may not add up due to rounding.

1/ "NA" indicates that values were not forecast in the previous edition of this report.

Sources: USDA, Economic Research Service and USDA, Foreign Agricultural Service analysis and forecasts using data from U.S. Department of Commerce, Bureau of the Census.

Reliability Tables

Table 7—Reliability of quarterly U.S. export projections, by commodity and quarter

Commodity	Root mean squared error (RMSE) 1/ Fiscal year 2016–2020					Forecast errors Fiscal year 2020				
	Aug.	Nov.	Feb.	May	Aug.	Aug.	Nov.	Feb.	May	Aug.
Export value	<i>RMSE</i>					<i>Percent</i>				
Grains and feeds	2.5	2.2	2.4	1.3	0.4	0	-2	-1	-2	0
Wheat	1.1	0.9	0.7	0.3	0.3	0	-4	2	-3	-1
Rice	0.1	0.1	0.2	0.2	0.0	5	5	10	10	-1
Coarse grains	4.6	4.5	4.6	4.4	4.1	5	2	-3	-3	1
Corn	1.9	1.8	1.8	1.0	0.2	14	10	3	-3	1
Feeds and fodders	0.5	0.3	0.6	0.5	0.2	-3	-3	-2	-2	0
Oilseeds and products	2.7	2.0	2.1	1.8	1.1	-6	-1	-1	-7	-7
Soybeans	2.7	2.1	1.8	1.5	1.1	-7	0	2	-8	-10
Soybean meal	0.5	0.5	0.5	0.3	0.1	-2	3	-4	-4	-4
Soybean oil	0.2	0.2	0.2	0.1	0.0	-34	-29	-29	-8	2
Livestock, dairy, and poultry	2.6	1.6	0.6	0.5	0.3	0	2	3	3	1
Livestock products	1.7	1.2	0.6	0.5	0.3	4	5	5	4	2
Beef and veal	1.0	0.8	0.5	0.4	0.1	17	14	13	8	1
Pork	0.4	0.3	0.2	0.2	0.1	-6	0	0	3	4
Beef and pork variety meats	0.2	0.1	0.1	0.1	0.0	5	6	6	6	0
Hides, skins, and furs	0.5	0.4	0.2	0.1	0.1	-2	5	5	4	17
Poultry and products	0.4	0.3	0.3	0.3	0.1	4	3	10	8	-1
Broiler meat	0.3	0.2	0.3	0.2	0.1	6	6	19	16	0
Dairy products	0.7	0.6	0.3	0.2	0.1	-15	-10	-7	-4	1
Tobacco, unmanufactured	0.1	0.1	0.1	0.1	0.1	17	17	17	3	3
Cotton	1.3	1.1	0.7	0.4	0.2	3	9	11	-7	-4
Planting seeds	0.2	0.2	0.2	0.1	0.1	22	22	22	9	3
Horticultural products	1.8	1.8	1.1	0.9	0.4	5	5	5	5	2
Fruits and vegetables, fresh	0.4	0.4	0.3	0.3	0.2	2	2	2	2	1
Fruits and veget., processed	0.4	0.4	0.4	0.3	0.1	7	7	7	7	1
Tree nuts, whole and processed	1.1	1.1	0.8	0.4	0.1	7	7	7	7	2
Sugar and tropical products	0.3	0.3	0.3	0.3	0.2	9	9	9	9	5
Major bulk products	7.0	5.9	6.0	4.1	2.6	-1	1	2	-6	-5
Total agricultural exports	6.8	4.5	4.6	2.9	1.4	1	2	3	0	-1
Export volume										
Wheat	3.3	3.2	2.3	1.3	1.3	-2	-6	3	-2	0
Rice	0.5	0.4	0.5	0.4	0.1	18	18	21	18	5
Coarse grains	9.4	9.3	8.8	5.9	1.3	10	1	-5	0	1
Corn	9.5	9.3	8.9	6.0	1.4	17	7	0	0	1
Feeds and fodders	0.5	1.6	1.7	1.6	0.7	5	5	4	2	-2
Soybeans	6.2	4.7	4.3	4.0	2.6	-2	-2	0	-8	-9
Soybean meal	1.1	1.1	1.1	1.0	0.3	-3	-5	-6	-4	-3
Soybean oil	0.2	0.2	0.2	0.1	0.0	-38	-38	-30	-7	1
Beef and veal	0.1	0.1	0.1	0.0	0.0	12	14	14	5	-6
Pork	0.1	0.1	0.1	0.1	0.0	-7	-4	-4	0	4
Beef and pork variety meats	0.1	0.1	0.1	0.1	0.0	10	15	15	15	2
Broiler meat	0.1	0.1	0.1	0.0	0.0	-1	0	0	-2	0
Tobacco, unmanufactured	0.1	0.1	0.1	0.1	0.0	3	55	55	3	3
Cotton	0.4	0.4	0.3	0.2	0.1	3	0	0	-8	-3
Major bulk products	11.7	11.5	12.5	8.4	2.7	3	-1	0	-3	-3

Notes: 1/ Root mean squared error (RMSE) is the squared root of the average squared difference between the forecast and actual values.

Sources: USDA, Economic Research Service and USDA, Foreign Agricultural Service.

Table 8—Reliability of quarterly U.S. export projections, by country and quarter

Region and country	Root mean squared error (RMSE) 1/ Fiscal year 2016–2020					Forecast errors Fiscal year 2020				
	Aug.	Nov.	Feb.	May	Aug.	Aug.	Nov.	Feb.	May	Aug.
Export value	<i>RMSE</i>					<i>Percent</i>				
Asia	4.6	3.0	2.9	2.7	2.2	-9	-4	-2	-4	-5
East Asia	3.8	2.0	1.9	2.4	1.8	-13	-6	-4	-7	-6
Japan	1.2	1.0	0.7	0.5	0.4	12	9	5	5	2
China	5.3	4.0	2.9	3.5	2.3	-56	-36	-18	-24	-18
Hong Kong	0.9	0.8	0.6	0.3	0.2	57	57	31	9	9
Taiwan	0.4	0.3	0.3	0.3	0.2	19	13	10	10	4
South Korea	0.9	0.8	0.7	0.6	0.4	14	11	7	3	1
Southeast Asia	1.7	1.6	1.5	1.2	0.6	2	2	2	0	-2
Indonesia	0.4	0.4	0.4	0.3	0.1	7	7	7	7	7
Philippines	0.2	0.2	0.2	0.2	0.1	-1	-5	-5	-5	-5
Malaysia	0.2	0.1	0.1	0.1	0.1	39	21	21	21	2
Thailand	0.4	0.4	0.3	0.2	0.1	10	10	4	4	4
Vietnam	0.8	0.6	0.6	0.5	0.2	8	8	8	2	0
South Asia	0.7	0.7	0.7	0.5	0.1	-2	-2	8	8	3
India	0.2	0.2	0.2	0.3	0.2	8	8	29	29	8
Western Hemisphere	1.8	1.2	1.0	1.0	0.6	5	4	4	4	2
North America	1.6	1.5	1.4	1.3	0.8	6	6	6	6	2
Canada	0.9	0.8	0.7	0.6	0.5	3	3	3	2	0
Mexico	1.0	0.9	0.9	0.9	0.5	10	10	10	10	5
Caribbean	0.2	0.2	0.1	0.1	0.1	6	6	6	6	6
Dominican Republic	0.1	0.1	0.1	0.1	0.1	0	0	0	0	0
Central America	0.2	0.2	0.2	0.2	0.2	-5	-5	-5	5	5
South America	0.4	0.3	0.6	0.6	0.3	0	-1	-6	-6	-3
Brazil	0.2	0.2	0.2	0.2	0.2	-14	-14	-14	-14	-14
Colombia	0.3	0.3	0.2	0.2	0.1	0	-3	-3	-3	0
Peru	0.3	0.2	0.2	0.2	0.1	33	33	-3	-3	-3
Venezuela	0.1	0.1	0.1	0.1	0.0	-42	-42	-42	-42	-13
Europe and Eurasia	1.3	1.2	0.8	0.5	0.4	22	19	10	4	1
European Union-27+UK 2/	1.2	1.1	0.8	0.5	0.4	21	19	10	3	0
Other Europe	0.1	0.1	0.1	0.1	0.1	23	23	23	23	2
FSU-12 3/	0.1	0.1	0.1	0.0	0.1	32	32	10	10	10
Russia	0.1	0.1	0.1	0.1	0.0	57	57	5	5	5
Middle East	0.5	0.5	0.5	0.3	0.1	11	11	11	10	4
Turkey	0.3	0.3	0.5	0.4	0.4	19	19	27	27	2
Saudi Arabia	0.2	0.2	0.2	0.1	0.1	14	14	6	6	-2
Africa	0.7	0.7	0.7	0.5	0.2	2	-3	0	-3	-3
North Africa	0.8	0.8	0.8	0.6	0.2	-3	-11	-11	-11	-3
Egypt	0.6	0.6	0.6	0.5	0.1	-6	-17	-17	-17	-6
Sub-Saharan Africa	0.2	0.2	0.2	0.2	0.1	10	10	16	10	-1
Nigeria	0.1	0.2	0.2	0.2	0.2	41	41	65	41	-6
Oceania	0.1	0.1	0.1	0.1	0.0	2	2	2	2	2

1/ Root mean squared error (RMSE) is the squared root of the average squared difference between the forecast and actual values. 2/ The United Kingdom (UK) remained in the European Union (EU) Customs Union through December 31, 2020. 3/ The 15 Republics of the Former Soviet Union (FSU) minus the 3 Baltic Republics; Latvia, Estonia, and Lithuania.

Sources: USDA, Economic Research Service and USDA, Foreign Agricultural Service.

Table 9—Reliability of quarterly U.S. import projections, by commodity and quarter

Commodity	Root mean squared error (RMSE) 1/ Fiscal year 2016–2020					Forecast errors Fiscal year 2020				
	Aug.	Nov.	Feb.	May	Aug.	Aug.	Nov.	Feb.	May	Aug.
Import value	<i>RMSE</i>					<i>Percent</i>				
Livestock, dairy, and poultry	1.2	1.0	0.8	0.5	0.2	-3	-4	-4	-4	-2
Livestock and meats	1.2	0.9	0.8	0.6	0.3	-5	-5	-5	-6	-2
Cattle and calves	0.4	0.3	0.0	0.1	0.1	0	0	0	-11	-5
Swine	0.1	0.0	0.0	0.0	0.0	60	20	20	20	-20
Beef and veal	0.8	0.7	0.6	0.5	0.2	-16	-15	-15	-10	-5
Pork	0.2	0.2	0.2	0.1	0.0	9	9	2	-5	2
Dairy products	0.2	0.2	0.2	0.2	0.1	2	-1	-1	2	-1
Cheese	0.2	0.1	0.1	0.1	0.1	19	11	11	11	11
Grains and feed	1.1	0.9	0.7	0.6	0.3	-9	-4	-3	-3	-2
Grain products	0.8	0.6	0.5	0.4	0.2	-11	-3	-1	-1	0
Oilseeds and products	0.9	0.9	0.6	0.4	0.2	2	2	3	-2	-2
Vegetable oils	0.7	0.7	0.6	0.4	0.3	10	10	12	5	5
Horticulture products	4.4	4.1	3.5	2.9	1.7	-4	-1	-1	-4	-1
Fruits, fresh	0.9	0.9	0.8	0.6	0.3	-5	7	9	5	2
Fruits, preserved	0.5	0.5	0.3	0.2	0.1	4	8	6	6	-3
Fruit juices	0.3	0.3	0.2	0.1	0.1	21	21	15	4	-7
Tree nuts whole and processed	0.5	0.5	0.4	0.3	0.2	23	23	19	19	8
Vegetables, fresh	0.9	0.9	0.8	0.8	0.5	-15	-15	-14	-16	-9
Vegetables, processed	0.2	0.2	0.2	0.2	0.1	-5	-5	-5	-5	-1
Wine	0.3	0.3	0.3	0.2	0.1	5	5	5	-2	-2
Malt beer	0.2	0.2	0.2	0.2	0.2	-1	3	6	-6	-6
Essential oils	0.4	0.3	0.3	0.2	0.1	3	3	1	1	1
Cut flowers and nursery stock	0.1	0.1	0.1	0.1	0.1	-6	-6	-1	-1	-1
Sugar and tropical products	2.2	2.3	2.2	0.7	0.3	0	2	2	2	0
Sweeteners and products	0.3	0.3	0.3	0.2	0.1	-8	-8	-6	-4	-4
Confections	0.1	0.1	0.1	0.1	0.1	-6	-6	-6	0	0
Cocoa and products	0.4	0.3	0.3	0.2	0.1	-5	-1	-1	-1	-5
Coffee beans and products	0.7	0.7	0.7	0.3	0.2	0	4	2	2	2
Natural rubber	0.5	0.5	0.4	0.2	0.1	26	18	18	18	18
Other imports	0.2	0.2	0.1	0.1	0.1	19	26	19	19	19
Total agricultural imports	7.8	7.1	5.3	3.9	2.2	-3	-1	-1	-2	-1
Import volume										
Wine	0.1	0.1	0.1	0.1	0.1	-11	-4	-4	-11	-11
Malt beer	0.2	0.2	0.1	0.1	0.1	1	6	6	-6	-6
Fruit juices	0.6	0.6	0.6	0.3	0.1	24	24	29	12	2
Cattle and calves	0.2	0.2	0.0	0.0	0.1	-1	-1	-1	-1	-6
Swine	0.5	0.4	0.2	0.2	0.1	-4	-2	-2	-2	-2
Beef and veal	0.1	0.1	0.1	0.1	0.0	-12	-10	-10	-12	-3
Pork	0.1	0.0	0.0	0.0	0.0	6	6	6	6	6
Fruits--fresh	0.3	0.4	0.3	0.2	0.1	-1	4	4	1	-1
Fruits--processed	0.1	0.1	0.1	0.1	0.1	3	3	3	3	-2
Vegetables--fresh	0.4	0.4	0.3	0.2	0.2	-2	-1	-1	-3	-1
Vegetables--processed	0.2	0.2	0.1	0.1	0.1	-3	-3	-3	-3	-1
Vegetable oils	0.7	0.6	0.6	0.5	0.5	1	3	5	-3	-3
Cocoa and products	0.1	0.1	0.1	0.1	0.1	-5	2	2	2	2
Coffee beans and products	0.1	0.1	0.1	0.1	0.1	-6	7	3	7	7

Notes: 1/ Root mean squared error (RMSE) is the squared root of the average squared difference between the forecast and actual value.

Sources: USDA, Economic Research Service and USDA, Foreign Agricultural Service.

Table 10—Reliability of quarterly U.S. import projections, by country and quarter

Region and country	Root mean squared error (RMSE) 1/ Fiscal year 2016–2020					Forecast errors Fiscal year 2020				
	Aug.	Nov.	Feb.	May	Aug.	Aug.	Nov.	Feb.	May	Aug.
Import value	<i>RMSE</i>					<i>Percent</i>				
Western Hemisphere	3.5	3.0	1.9	2.2	1.3	-5	-3	-3	-5	-3
Canada	1.3	1.2	0.8	0.6	0.4	-4	-4	-3	-5	-3
Mexico	2.1	1.8	1.5	1.5	0.8	-9	-5	-4	-8	-3
Central America	0.3	0.3	0.2	0.2	0.1	-4	-2	-2	-6	-2
Costa Rica	0.1	0.1	0.1	0.1	0.1	8	1	1	-5	-5
Guatemala	0.2	0.2	0.1	0.1	0.1	-5	0	0	-5	4
Other Central America	1.8	1.8	1.8	1.8	1.8	-70	-69	-69	-69	-69
Caribbean	0.1	0.1	0.1	0.1	0.1	0	0	0	0	0
South America	0.7	0.7	0.6	0.4	0.3	-2	0	1	-1	-4
Argentina	0.1	0.1	0.1	0.1	0.1	-1	0	0	-1	-1
Brazil	0.3	0.3	0.2	0.1	0.1	8	5	5	2	2
Chile	0.2	0.2	0.2	0.2	0.1	9	9	9	5	-5
Colombia	0.3	0.3	0.2	0.1	0.1	-3	1	1	1	-3
Peru	0.3	0.3	0.3	0.2	0.1	-15	-11	-7	-11	-7
Other South America	0.2	0.1	0.1	0.1	0.1	-18	-7	-7	-7	-7
Europe and Eurasia	1.3	1.4	1.1	0.8	0.6	-1	5	5	3	3
European Union-27+UK 2/	1.3	1.3	1.1	0.8	0.4	0	4	4	2	2
Other Europe	0.2	0.2	0.2	0.2	0.2	-8	10	10	10	10
Asia	2.4	2.4	2.0	1.5	0.7	3	3	3	3	2
East Asia	0.4	0.4	0.4	0.3	0.2	5	6	6	6	-2
China	0.5	0.5	0.5	0.4	0.2	20	20	20	20	7
Other East Asia	0.3	0.2	0.2	0.2	0.2	-22	-18	-18	-18	-18
Southeast Asia	1.6	1.5	1.4	1.0	0.5	2	1	1	1	4
Indonesia	0.6	0.5	0.5	0.4	0.2	16	10	10	10	10
Malaysia	0.1	0.1	0.1	0.0	0.0	-3	-4	-4	-3	-3
Thailand	0.3	0.2	0.2	0.2	0.1	-15	-8	-8	-8	1
Vietnam	0.3	0.3	0.3	0.2	0.2	19	14	14	14	14
Other Southeast Asia	1.3	1.3	1.3	0.9	0.4	-3	-3	-3	-3	-3
South Asia	0.8	0.8	0.6	0.3	0.1	1	2	2	1	1
India	0.7	0.7	0.6	0.3	0.1	4	3	3	3	4
Oceania	1.5	1.4	1.1	0.6	0.3	-2	-3	-3	3	3
Australia	1.0	0.9	0.8	0.5	0.3	-2	-2	-2	7	7
New Zealand	0.5	0.4	0.4	0.1	0.1	6	2	2	2	2
Africa	0.3	0.3	0.3	0.3	0.3	-6	-6	-6	-6	-9
Sub-Saharan Africa	0.3	0.3	0.3	0.3	0.2	1	5	5	5	1
Côte d'Ivoire	0.2	0.2	0.1	0.1	0.1	3	3	3	3	-9
Middle East	0.0	0.1	0.1	0.1	0.1	2	9	9	9	9
Turkey	0.1	0.1	0.2	0.0	0.0	7	6	6	7	7

1/ Root mean squared error (RMSE) is the squared root of the average squared difference between the forecast and actual value. 2/ The United Kingdom (UK) remained in the European Union (EU) Customs Union through December 31, 2020.

Sources: USDA, Economic Research Service and USDA, Foreign Agricultural Service.

Appendix A: Updated Agricultural Products Definition

The *Outlook for U.S. Agricultural Trade* report is adopting the WTO definition of “Agricultural Products” with the August 26, 2021 release, following an earlier move by the U.S. Department of Agriculture to change the way it defines "Agricultural Products" when reporting on international trade. Beginning with the release of the January 2021 monthly agricultural trade data product on March 5, 2021, USDA—in coordination with the U.S. Department of Commerce—adopted WTO’s definition, which includes ethanol, distilled spirits, and manufactured tobacco products, three product groups not included in the previous USDA definition.

The change harmonizes USDA’s trade reporting practices with those of the international community and ensures USDA numbers are aligned with those of the Office of the U.S. Trade Representative, which already uses the WTO definition when negotiating WTO binding trade agreements.

The following tables summarize the differences in agricultural exports and imports under the previous and newly adopted definitions.

Table 11—Comparison of previous versus current U.S. Agricultural Product trade definitions

Definition	Fiscal year					
	2015	2016	2017	2018	2019	2020
	-Billion dollars-					
Agricultural export total						
Previous definition	139.8	129.6	140.2	143.4	135.4	135.4
Current definition	144.1	133.7	144.8	148.6	140.1	139.7
Agricultural import total						
Previous definition	114.2	113.0	119.1	127.5	130.8	133.2
Current definition	121.6	121.1	127.2	136.5	141.4	143.4

Notes: The fiscal year occurs October 1 through September 30.

Source: U.S. Department of Commerce, Bureau of the Census.

Table 12—Changes to Agricultural Products definition for trade data as of calendar year 2021

U.S. agricultural exports			
Added products	FY 2020 Million dollars	Removed products	FY 2020 Million dollars
Ethanol, non-beverage	2,261	Enzymes, penicillin, and similar preps	686
Distilled spirits	1,392	Lecithin and industrial acids (6)	150
Industrial alcohols and fatty acids (1)	459	Donated food products for relief	64
Mineral and aerated waters	397	Rubber, jute, and misc. plant fibers	22
Dextrins, peptones, and proteins	217	Rennet	2
Manufactured tobacco (2)	212		
Misc. animal products (4)	90		
Live animals (3)	87		
Cotton waste	55		
Misc. plant material (5)	23		
Grand total	5,193	Grand total	924

U.S. agricultural imports			
Added products	FY 2020 Million dollars	Removed products	FY 2020 Million dollars
Distilled spirits	8,453	Rubber and allied products	1,268
Manufactured tobacco (2)	1,371	Enzymes, penicillin, and similar preps	847
Mineral and Aerated Waters	817	Lecithin and industrial acids (6)	178
Ethanol, non-beverage	681	Ramie fibers and misc. fibers	53
Industrial alcohols and fatty acids (1)	496	Other animal products	7
Dextrins, peptones, and proteins	305		
Live animals (3)	233		
Misc. plant material (5)	188		
Misc. animal products (4)	38		
Cotton waste	20		
Silk waste	0.26		
Grand total	12,603	Grand total	2,353

Notes: The fiscal year (FY) occurs October 1 through September 30. Miscellaneous is abbreviated "misc." 1. Includes sorbitol, glycerol, etc. 2. Includes cigars, cigarettes, and miscellaneous tobacco products. 3. Includes llamas, alpacas, and non-farm animals including reptiles, pets, bees, etc. 4. Includes degreas, wool waste, and animal products not elsewhere specified. 5. Includes seaweed, silk waste, gum arabic, miscellaneous. 6. Includes lecithin, phosphoaminolipids, palmitic, stearic, and oleic and linoleic acids.

Source: World Trade Organization; U.S. Department of Commerce, Bureau of the Census.

The quarterly *Outlook for Agricultural Trade of the United States* report is developed from contributions by analysts from USDA, Economic Research Service and USDA, Foreign Agricultural Service. The World Agricultural Outlook Board reviews and approves the report. Below are the names of those who have contributed to its development.

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