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USDA Agricultural Projections to 2030

Interagency Agricultural Projections Committee

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Farm Production and Conservation Business Center
Foreign Agricultural Service
Agricultural Marketing Service
Office of the Chief Economist
Office of Budget and Program Analysis
Risk Management Agency
Natural Resources Conservation Service
National Institute of Food and Agriculture

USDA Long-Term Projections

USDA Agricultural Projections to 2030. Office of the Chief Economist, World Agricultural Outlook Board, U.S. Department of Agriculture. Prepared by the Interagency Agricultural Projections Committee. Long-term Projections Report OCE-2021-1, 103 pp.

Abstract

This report provides projections for the agricultural sector to 2030. Projections cover agricultural commodities, agricultural trade, and aggregate indicators of the sector, such as farm income. The projections are based on specific assumptions, including a consensus macroeconomic scenario, existing U.S. policy, and current international agreements. The Agriculture Improvement Act of 2018 is assumed to remain in effect through the projection period. The projections are one representative scenario for the agricultural sector and reflect a composite of model results and judgment-based analyses. The projections in this report were prepared using data through the October 2020 *World Agricultural Supply and Demand Estimates (*WASDE) report, except where noted otherwise.

Keywords: Projections, crops, livestock, biofuel, ethanol, biodiesel, U.S. dollar, crude oil, trade, farm income, U.S. Department of Agriculture, USDA.

Acknowledgments and Contacts

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USDA Long-Term Projections: Background

USDA's long-term agricultural projections presented in this report are a departmental consensus on a conditional long-run scenario for the agricultural sector. These projections provide a starting point for discussion of alternative outcomes for the sector.

The projections, colloquially referred to as the baseline projections, were prepared using data available through the October 2020 *World Agricultural Supply and Demand Estimates* (WASDE) report, except where noted. The Agriculture Improvement Act of 2018 is assumed to remain in effect through the projection period. The scenario presented in this report is not a USDA forecast about the future. Instead, it is a conditional, long-run scenario about what would be expected under the continuation of current farm legislation and other specific assumptions.

Critical long-term assumptions are made for U.S. and international macroeconomic conditions, U.S. and foreign agricultural and trade policies, and growth rates of agricultural productivity in the United States and abroad. The report assumes that there are no domestic or external shocks during the projection period that would affect global agricultural supply and demand. Changes in any of these assumptions can significantly affect the projections, and actual conditions that emerge will alter the outcomes.

The projections only include policies in place or are already expected to be implemented as of October 2020. Recent trade deals or negotiations such as the Phase One deal with China, the United States-Mexico-Canada (USMCA) agreement, and a Japan-U.S. free trade agreement were considered for these projections. The macroeconomic assumptions were completed in August 2020. Support payment programs to assist producers directly affected by the coronavirus pandemic in 2020 announced after the projections was developed, such as those under the Consolidated Appropriations Act 2021, are not included in the calculations here.

The projections analysis was conducted by interagency committees in USDA and reflect a composite of model results and judgment-based analyses. The Economic Research Service had the lead role in preparing the departmental report. The projections and the report were reviewed and cleared by the Interagency Agricultural Projections Committee, chaired by the World Agricultural Outlook Board. USDA participants in the projections analysis and review include the World Agricultural Outlook Board, the Economic Research Service, the Farm Production and Conservation Business Center, the Foreign Agricultural Service, the Agricultural Marketing Service, the Office of the Chief Economist, the Office of Budget and Program Analysis, the Risk Management Agency, the Natural Resources Conservation Service, and the National Institute of Food and Agriculture.

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Introduction and Projections Overview

The macroeconomic assumptions underlying USDA's long-term projections reflect the economic consequences of the global spread of the COVID-19 pandemic that began in early 2020. As a result of the pandemic, the United States and most other global economies contracted sharply in 2020 but are expected to rebound during 2021 and beyond. Despite the anticipated recovery, the current macroeconomic projection indicates that aggregate demand for agricultural commodities will remain below projections made last year in this report.

The COVID-19 pandemic introduces greater than normal uncertainty into the macroeconomic assumptions underlying the USDA agricultural projections. The economic impact of the pandemic is unprecedented in recent history, and the path to controlling the pandemic and ensuing economic recovery cannot be known with certainty. Although the macroeconomic assumptions underlying the projections call for widespread economic recovery beginning in 2021, the actual pace will depend on the success of national pandemic control measures and policies that support the recovery of businesses and consumer demand.

Total planted acreage to the eight major field crops in the U.S. is expected to increase over the first several years of the projection period, and to decline slightly thereafter. A three-million-acre increase from 24 to 27 million acres in the legislated cap to the Conservation Reserve Program (CRP) is anticipated to allow for a quick expansion in CRP acreage. CRP acreage is expected to remain close to the cap throughout the remaining years. Total eight-crop acreage ranges between 251.2 million acres and 253.3 million acres during the projection period. In the livestock sector, relatively low projected feed costs and efficiency gains are expected to continue to expand the production of all animal products.

Prices for most crops remain low or stable relative to the recent past. Only cotton, rice, and wheat experience nominal price increases while the other crop prices decline modestly over the course of the projection period. Because the United States is a net exporter of major field crops (except barley and oats), the restrained growth in prices reflects the expectation of abundant global supplies and continued competition from other exporters.

Despite relatively low feed costs, cattle- and hog-to-feed price ratios generally decline over the projection period, but increased production of beef and pork is driven by gains in slaughter weights—particularly for cattle—and in feeding efficiency. Nominal prices for beef cattle and hogs rise in 2022, but then decline through most of the projection period as beef and pork production rises. Broiler prices also increase in 2022 and then remain generally flat going forward. Egg prices increase in 2022 and continue to rise through 2025 before dropping each year thereafter. Nominal farm-level milk prices are projected to increase in

2022, decline for several years, and then climb to the highest levels by the end of the projection period.

Fluctuating prices and production in the beef sector lead to slightly variable but generally steady livestock receipts in the first half of the decade. Over the latter half of the decade, receipts grow as production gains outweigh lower prices for all species. Crop cash receipts, however, are expected to grow throughout the decade. Gross cash income rises continuously from $423.5 billion in 2021 to $466.1 billion in 2030. Net farm income declines by $19.5 billion in 2021 to $100.1 billion, and then fluctuates in a range between $99.3 billion and $109.8 billion to 2030.

Developments for global agricultural import demand and U.S. exports largely reflect income growth in developing countries and an initially relatively strong but slowly weakening U.S. dollar over the coming decade. With steady world economic growth resuming along with demand for animal products and feeds, U.S. exports in all major agricultural product aggregates are projected to continue to increase in value. However, global trade competition will remain strong, and the relatively strong U.S. dollar will restrain U.S. growth in some agricultural export markets. U.S. agricultural imports are projected to rise even more quickly in value, driven largely by horticultural products. The United States maintains an agricultural trade surplus of $7.5 billion at the end of the projection period.

General Policy Assumptions

U.S. Agricultural Policy

The projections include policies in place or expected to be implemented as of October 2020. The Agriculture Improvement Act of 2018, also known as the 2018 Farm Act, is assumed to be in effect through the projection period. Land enrolled in the Conservation Reserve Program (CRP) is assumed to rise to nearly 27 million acres, which is the maximum level legislated by the 2018 Farm Act.

Similarly, trade tariffs policies in place as of October 2020 are assumed to remain in effect throughout the next 10 years. Trade agreements implemented before October 2020 have also been considered in these projections, including the Phase One deal with China, which included agricultural purchase commitments in 2020 and 2021; the United States-Mexico-Canada Agreement (USMCA) agreement, which included larger tariff rate quotas (TRQs) for dairy, egg, and poultry exports to Canada; and the Japan-U.S. Free Trade Agreement, which included 5- to 15-year phase-in periods for tariff reductions on canola oil, wheat, beef, pork, feed grains, and oilseeds.

The effects of the COVID-19 pandemic, and some continuing impacts of trade tensions, led to significantly higher direct Government payments to farmers in 2020, primarily reflecting payments under the Coronavirus Food Assistance Program (versions 1 and 2), as well as increased payments under the Agriculture Risk Coverage (ARC) and Price Loss Coverage (PLC) programs, the marketing assistance loan program, and some residual payments under the Market Facilitation Program. Direct government payments are expected to be lower than the 2011-20 average of $16.0 billion, averaging $11.5 billion annually during 2021-30. The 2011-20 average is well above the 2001-2010 average of $12.6 billion due to the high payments in 2020. The projections in this report, however, do not assume any

additional ad hoc assistance payments after 2020, such as those under the Consolidated Appropriations Act, 2021. Projections of those payments, and similar future programs, are beyond the scope of the projections here.

International Policy

Agricultural trade projections assume that trade agreements, sanitary and phytosanitary restrictions, and domestic policies in place as of October 2020 remain in place throughout the projection period.

The ban Russia imposed on agricultural imports from Western countries (including the EU, United States, and Canada) was implemented in August 2014 and renewed each year since. We assume this policy will continue to be renewed and that Russia will continue to use policies to stimulate its domestic pork and poultry production and to reduce its reliance on imports.

During 2018, China imposed retaliatory tariffs of 25 percent or more on nearly all U.S. agricultural commodities. In March 2020, China began providing tariff exemptions for a range of agricultural products, including soybeans, pork, and cotton. The projections to 2030 assume the current set of tariffs and exemptions remain in effect throughout the projection period since there was no indication as of October 2020 when the tariffs would be removed or otherwise altered.

The projections reflect Argentina's March 2020 increase to 33 percent on export taxes for soybeans, soybean meal, and soybean oil, and an increase to 12 percent on export taxes on corn and wheat. The projections do not include the 2 percent differential between export taxes on whole soybeans and products, announced in October 2020.

The projections do not include the suspension by Brazil, announced in October 2020, of import tariffs on corn, soybeans, soybean meal, and soybean oil from countries outside of the Mercosur trade bloc (Argentina, Paraguay, and Uruguay). Prior to the suspension, the tariff on corn and soybean imports from outside Mercosur was 8 percent, 6 percent for soybean meal, and 10 percent for soybean oil.

Biofuel Assumptions

U.S. Biofuels

Final renewable fuel standards for cellulosic biofuel, advanced biofuel, and total renewable fuel for 2020 were announced by the U.S. Environmental Protection Agency (EPA) on December 19, 2019. The biomass-based diesel (BBD) standard for 2020 and 2021 was also set in December 2019. These projections were completed before any subsequent volume requirements were established by EPA.

Corn is the primary feedstock for U.S. ethanol, accounting for more than 98 percent of ethanol production. Over the projection period, corn use for ethanol production is projected to remain relatively flat, increasing by 0.5 percent over the decade. Ethanol exports are assumed to account for a small but growing share of ethanol consumption. Total ethanol consumption is assumed relatively stagnant due to gradually declining motor gasoline consumption. Ethanol imports remain mostly flat. Corn used to produce ethanol continues to

be a substantial source of demand for the sector, accounting for about one-third of total U.S. corn use through the projection period.

Underpinning the projection are declines in overall gasoline consumption in the United States. The United States is not projected to return to annual gasoline consumption levels seen prior to COVID-19, although there is expected to be an increase from 2019/20 levels. Additionally, the assumptions project the 10-percent ethanol “blend wall” remains in place, constraining domestic ethanol use over the next decade. Most gasoline in the United States continues to be a 10-percent ethanol blend (E10). Some growth is projected in the 15-percent ethanol blend (E15) market early in the projection period, but infrastructure and other constraints limit growth over the long term. The E85 market remains small.

The biomass-based diesel use volume requirement, as administered by the EPA under the Renewable Fuels Standard, was 2.1 billion gallons for 2019 and is raised to 2.43 billion gallons for 2020 and 2021, and is assumed to continue at that level. The Biobased Diesel (BBD) $1 per gallon federal tax credit is discontinued after 2022, and some production of biodiesel and renewable diesel above the biomass-based diesel volume requirement is assumed to continue meeting a portion of the nonspecific advanced biofuel requirement.

Soybean oil (methyl esters) for biodiesel production rises from 8.15 billion pounds in 2021/22 to 8.6 billion pounds by the end of the projection period. Other feedstocks used to produce biomass-based diesel continue to include corn oil, other first-use vegetable oils, animal fats, and used cooking oil.

International Biofuels

COVID-19 had a severe impact on transport fuel markets worldwide and especially ethanol-gasoline markets through stay-at-home orders. Full recovery in global ethanol-gasoline demand to pre-pandemic levels in 2021 is not expected. In most countries, ethanol blend rates were generally unchanged in early 2020. Subsequently, fuel ethanol decline and recovery is expected to mirror changes in gasoline pools where it is blended. Diesel markets (and renewables when blended) are generally holding up relatively better but are also adversely impacted.

Longer-term, global biofuel consumption (and production) is expected to increase further, though at a slower pace than recent years. Unlike past years, when the implementation of biofuel programs was followed by rising blend mandates, fewer new programs are expected and possibly none will be added by those with larger demand segments. Some with programs have reached or are near maximum blend levels due to domestic feedstock constraints and unwillingness to permit imports or lack of incentives for higher blends. Slower growth prospects are also consistent with lower projected crude oil prices. Alternative fuels and technologies (electric, natural gas), rising energy efficiency, and changing consumer transport habits slow the growth of light oils. Limited alternatives for heavy-duty and aviation fuel, as well as new strategic investments by oil companies, spur high growth rates for renewable drop-in diesel and Sustainable Aviation Fuel (SAF).

Brazil is expected to drive much of the global production expansion of fuel ethanol. Brazil, Indonesia, the E.U., and the U.S. drive much of biodiesel and renewable diesel's global expansion. SAF markets remain small but expand sharply, especially in Europe and North America. The United States remains the world’s leading exporter of ethanol, with Canada

and Brazil likely to remain leading importers. Indonesia and Argentina remain among the world's leading exporters of biodiesel, with the EU, the United States, and China likely to remain the leading importers. Blending goals announced by China and India for ethanol (and by India for biodiesel) are projected to remain unfulfilled.

Macroeconomic Assumptions

The macroeconomic assumptions underlying the projections reflect the economic consequences of the global spread of the COVID-19 pandemic that began in early 2020 and continued throughout the year. Because of the pandemic and the widespread lockdowns, business closures, and other control measures, the U.S. economy, as well as the economies of most other countries, contracted sharply in 2020. The forecast for 2021 and beyond indicates a substantial rebound in U.S. and global economic growth as the pandemic is brought under control and business activity resumes. Despite the projected recovery, real Gross Domestic Product (GDP) levels are projected to remain below earlier projections, indicating sustained lower levels of aggregate demand for agricultural and other goods than in the previous year's report.

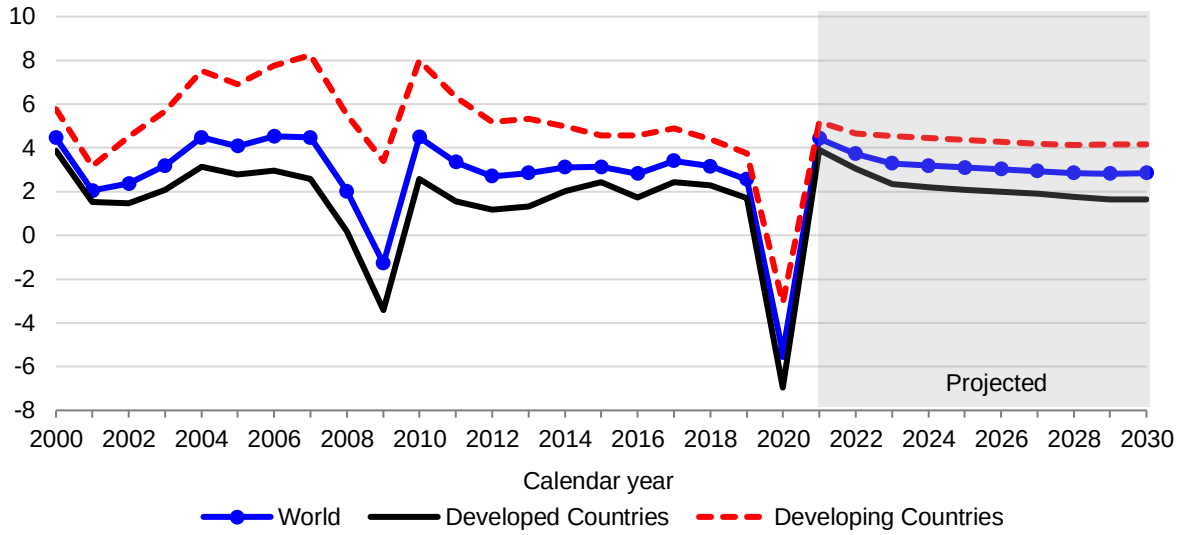
The COVID-19 pandemic introduces greater uncertainty into the macroeconomic assumptions underlying the USDA agricultural projections than normal. While cyclical declines in global economic activity are not uncommon, the scope and degree of the pandemic's impact is unprecedented in recent history. The path to control of the pandemic and economic recovery cannot be known with certainty. Although the assumptions underlying the projections call for widespread economic recovery beginning in 2021, the pace may vary across countries based on the success of pandemic control measures, as well as policies that support business recovery.

The macroeconomic assumptions underlying the projections are taken from multiple forecast services, U.S. government and international agency projections, and Economic Research Service (ERS) regional and country experts. The projections assume no policy changes, no additional shocks (e.g., political crises, major conflicts, disease outbreaks), and no oscillations caused by economic cycles. The macroeconomic projections were completed in August 2020 based on expectations at that time.

Global Growth Outlook

Figure 1. Real gross domestic product growth by global region, 2000-30

Percent change

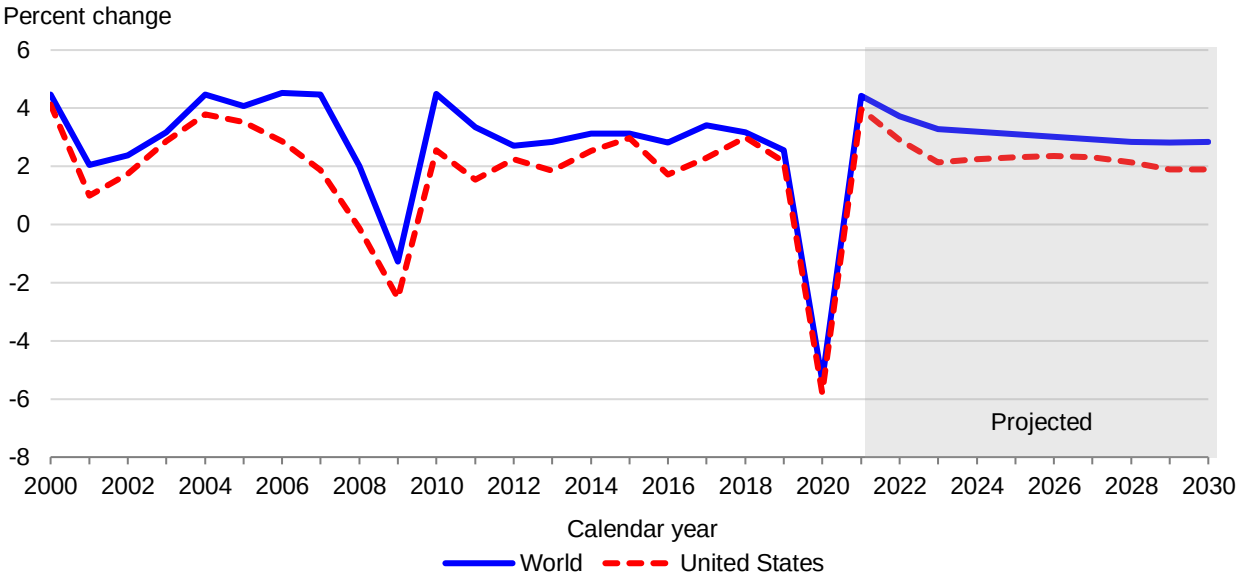


Note: The shaded region represents the projected period.
Source: International Financial Statistics of the International Monetary Fund, IHS Global Insight, Oxford Economics Forecasting, as well as estimated and projected values developed by the USDA, Economic Research Service.

The global pandemic is projected to deliver a lasting blow to the global economy. The current outlook expects GDP to be substantially smaller by the end of this decade than would otherwise have occurred. After contracting by 5.4 percent in 2020, and recovering to 4.4 percent growth in 2021, global real GDP growth is projected to average 3.2 percent annually during 2021-30 (table 1). Ultimately, the economic recovery will depend on public and private efforts to mitigate and contain the pandemic and to adapt the respective economies to changing conditions. (Note: tables are at the end of the section).

- In 2020, world real GDP is expected to contract 5.4 percent, a substantially larger demand shock than the 2009 recession when global GDP fell 1.3 percent. While a limited number of countries have maintained growth in 2020, the remainder have experienced contractions of up to 16.5 percent.
- In 2021, the rebound in global real GDP growth is forecast at 4.4 percent, enabled by eventual control of the pandemic and national measures aimed at stimulating economic recovery. However, there remains substantial uncertainty about the timing and length of the economic recovery, for individual countries and globally.
- During 2021-30, projected global growth is roughly in line with rates achieved during the pre-pandemic period, but insufficient to return global levels of aggregate demand to those projected prior to the pandemic.
- Developing country real GDP growth, an important driver of demand for agricultural products, is expected to continue to outpace developed country growth and average 4.4 percent annually during 2021-30, compared with an average of 2.3 percent for developed countries.

Figure 2. U.S. and world real gross domestic product growth, 2000-30



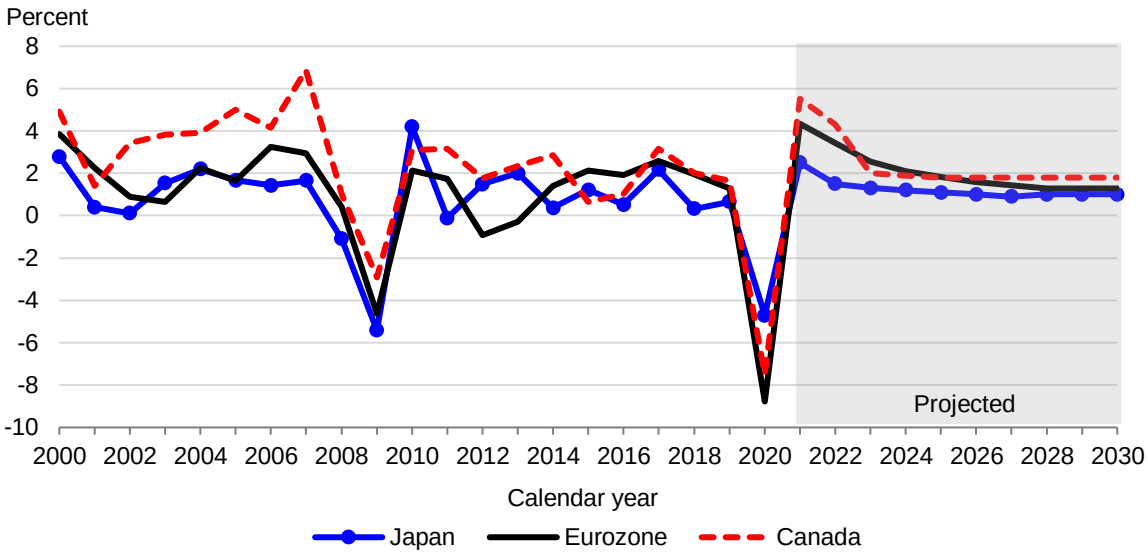
Note: The shaded region represents the projected period.
Source: International Financial Statistics of the International Monetary Fund, IHS Global Insight, Oxford Economics Forecasting, as well as estimated and projected values developed by the USDA, Economic Research Service.

As of August 2020, when the macroeconomic assumptions were completed, U.S. real GDP is forecast to decline 5.8 percent in 2020 with a recovery to 4.0 percent growth in 2021 (table 2). Despite fiscal relief measures, widespread business and institutional closures associated with changes in consumer behavior and state- and local measures to control the COVID-19 pandemic led to sharply higher unemployment, reducing demand for a range of goods and services. There have been severe declines in the food services, health care, retail trade, entertainment, public transport, travel and accommodation sectors that combined account for a substantial share of U.S. GDP. Globally and in the United States, the near-term outlook for the growth in the U.S. economy hinges on the success of economic and pandemic recovery measures.

- During the full projection period, 2021-2030, the U.S. post-pandemic real GDP growth is projected at 2.4 percent annually, substantially higher than the decadal rates seen since 2001. However, both the 2001-10 growth rate of 1.8 percent and the 2011-20 growth rate of 1.5 percent include the impacts of the 2009 financial recession and the 2020 pandemic related recession. Therefore, the relatively strong average projected growth for 2021-30 is largely the result of the recovery from the low 2020 base-year, together with the assumption of no new shocks to the economy. Absent these factors, the expected trend is for lower long-term trend growth rates in the United States, reflecting the expectation of slowing labor force and productivity growth.

Developed Country Outlook

Figure 3. Japan, Eurozone, and Canada real gross domestic product growth, 2000-30



Note: The shaded region represents the projected period.
Source: International Financial Statistics of the International Monetary Fund, IHS Global Insight, Oxford Economics Forecasting, as well as estimated and projected values developed by the USDA, Economic Research Service.

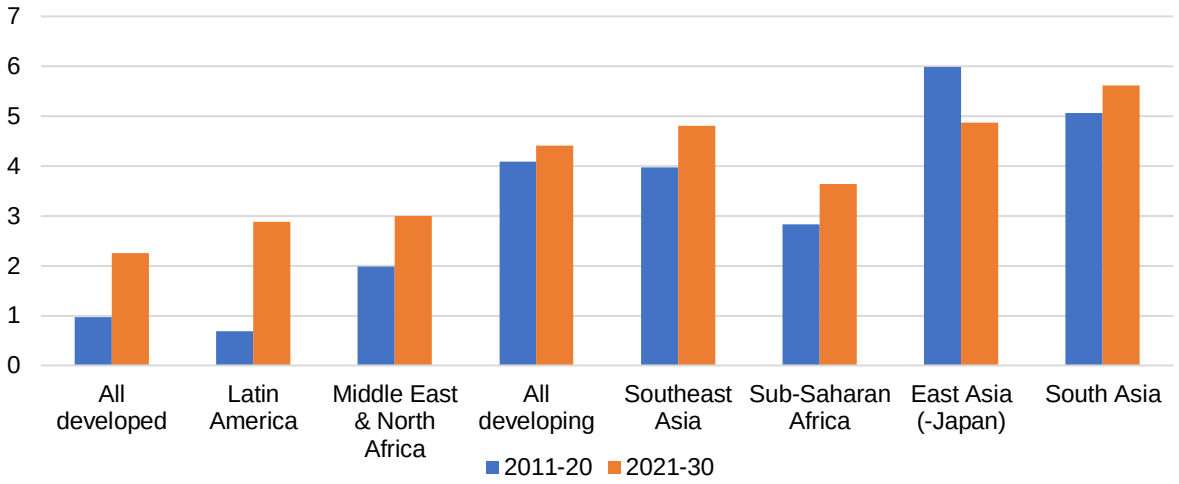
Developed economies, excluding the United States, are forecast to have a deeper contraction in real GDP in 2020 than the United States (table 1). Real GDP declines in these economies are expected to average 7.8 percent in 2020, with a recovery to 3.9 percent growth in 2021. Many of these economies experienced the impacts of the COVID-19 pandemic earlier in the year and endured associated effects on business activity, employment, and incomes for a larger portion of the year. Like the United States, these developed economies rely heavily on service sector activities requiring person-to-person contact to support economic growth. The near- and longer-term prospects for economic recovery and growth depend on the still uncertain success of measures to control the pandemic.

- In the European Union, an 8.9 percent drop in real GDP in 2020 is forecast to be followed by a recovery in 2021 and longer-term average growth of 2.2 percent. Longer-term growth is expected to continue the pre-pandemic downward trend as aging populations lead to slower labor force growth that is not completely offset by productivity gains.
- Japan's economy is expected to shrink 4.7 percent in 2020, with a 2.5 percent recovery in 2021. During 2021-30, growth is projected to average 1.3 percent, continuing an established downward growth-rate trend associated with an aging population and a declining labor force.
- The Canadian economy, linked closely to the United States and energy prices, is forecast to contract by 7.5 percent in 2020, rebound to 5.5 percent growth in 2021, and average 2.5 percent growth over 2021-30.

Developing Country Outlook

Figure 4. Real gross domestic product growth by developed and developing country regions, 2011-30

Average annual percent change



Source: International Financial Statistics of the International Monetary Fund, IHS Global Insight, Oxford Economics Forecasting, as well as estimated and projected values developed by the USDA, Economic Research Service.

Developing countries in all regions have been affected by the COVID-19 pandemic, and most have experienced contractions in real GDP in 2020 (table 1). Developing countries are a diverse set of economies with varying institutional and financial capacities to address the pandemic, resulting in a range of forecasts of economic impacts. As of August 2020, forecasts of real GDP for 2020 for individual developing countries ranged from small growth to double-digit contractions. Because the pandemic began affecting developing regions at different times during 2020, there remains substantial uncertainty about how overall economic impacts will unfold.

Despite substantial near-term setbacks to economic growth because of the pandemic, real GDP growth in developing regions is projected to continue to outpace growth in developed countries over 2021-30. Developing country economic growth is a key factor in assessing the global outlook for demand for agricultural products. Large shares of developing country consumers have relatively low incomes and are more likely than higher-income consumers to spend income gains on improving and diversifying their diets.

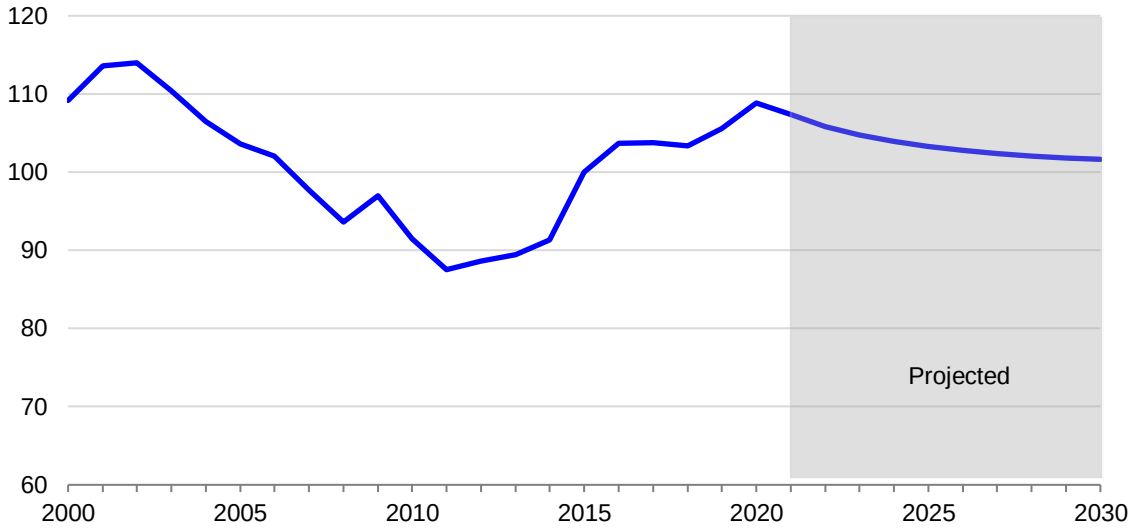
- During 2020, developing countries are estimated to average a 3.1 percent decline in real GDP, smaller than in developed countries. This is partly because developing economies are often less concentrated in the types of services hit hardest in more developed countries.
- In 2021, most developing country growth rates are forecast to rebound to rates above their long-term trend, but below what is needed to restore 2020 losses. The major exception is East Asia, where rebounds in China, Taiwan, and South Korea are forecast to more than compensate for relatively small pandemic effects in 2020.
- In the longer term, during 2021-30, developing regions are projected to reestablish growth rates that continue their pre-pandemic pattern and expand at rates substantially

higher than in developed regions. Growth in developing countries is projected to average 4.4 percent annually during 2021-30.

- China's economy is forecast to sustain 1.5 percent real GDP growth in 2020, and a relatively large 7.1 percent recovery in 2021. China's growth is supported by efforts to control the COVID-19 virus, fiscal spending, and strong exports. China's average longer-term growth during 2021-30 is projected at 5.3 percent, continuing a downward trend in the annual growth-rate observed since 2010 as the economy gradually becomes more consumer-oriented and population growth declines.
- Other East Asian economies, including Taiwan, South Korea, and particularly Japan and Hong Kong, saw economic contraction in 2020 because of COVID-19 impacts. In Japan and Hong Kong, relatively weak forecast recoveries compared with 2020 declines will limit the rebound in demand. In the longer term, these economies are projected to continue the pre-pandemic pattern of slowing growth.
- In South Asia, India's real GDP declined an estimated 6.9 percent in 2020 because of a prolonged national lockdown aimed at controlling the spread of COVID-19; while Pakistan and Bangladesh are forecast to sustain smaller shocks spread across 2020 and 2021. During 2021-30, South Asian economies are projected to recover and average 5.6 percent real GDP growth, the highest in the world.
- Latin American economies are estimated to be among the most affected by the COVID-19 pandemic, with an average contraction in real GDP of 8.9 percent in 2020, and only a partial 3.8 percent recovery in 2021. Growth is projected at 2.9 percent annually during 2021-30. The Argentine and Brazilian economies are expected to be slowed by the costs associated with the pandemic, as well as policy uncertainty. Similarly, Mexico is expected to experience sluggish near-term growth because of the pandemic, while longer-term growth is slowed by weakening investment and private consumption and rising borrowing costs.
- Real GDP in Sub-Saharan Africa, the poorest region in the world, contracted an estimated 4.1 percent in 2020 and is expected to partially recover with 3.3 percent growth in 2021. Growth is projected to average 3.6 percent per year during 2021-30. South Africa and Nigeria, the region's largest economies, have been the most severely affected by the pandemic and face moderate near-term growth. The West African community outside of Nigeria continues to out-perform its neighbors and is expected to average 4.5 percent growth during 2021-30.
- Most of the North Africa and the Middle East region economies are estimated to have contracted sharply in 2020 because of measures to control the pandemic, as well as its impact on the region's oil exports. Only a partial recovery is forecast in the Middle East region in 2021. Egypt's economy is forecast to contract 8.3 percent in 2021, after also declining in 2020. In the longer term, a relatively weak outlook for world oil prices causes real GDP in both the Middle East and North Africa to grow at an annual average rate of 3 percent.
- The countries of the Former Soviet Union region experienced an average estimated contraction in real GDP of 7 percent in 2020, linked to the domestic impacts of the COVID-19 pandemic and weakening global demand for the region's important energy exports. Only a partial 3.4 percent rebound is forecast for 2021 and a modest 2.5 percent annual growth rate is projected for 2021-30.

Exchange Rate Outlook

Figure 5. Agricultural trade-weighted U.S. dollar exchange rate, 2000-30



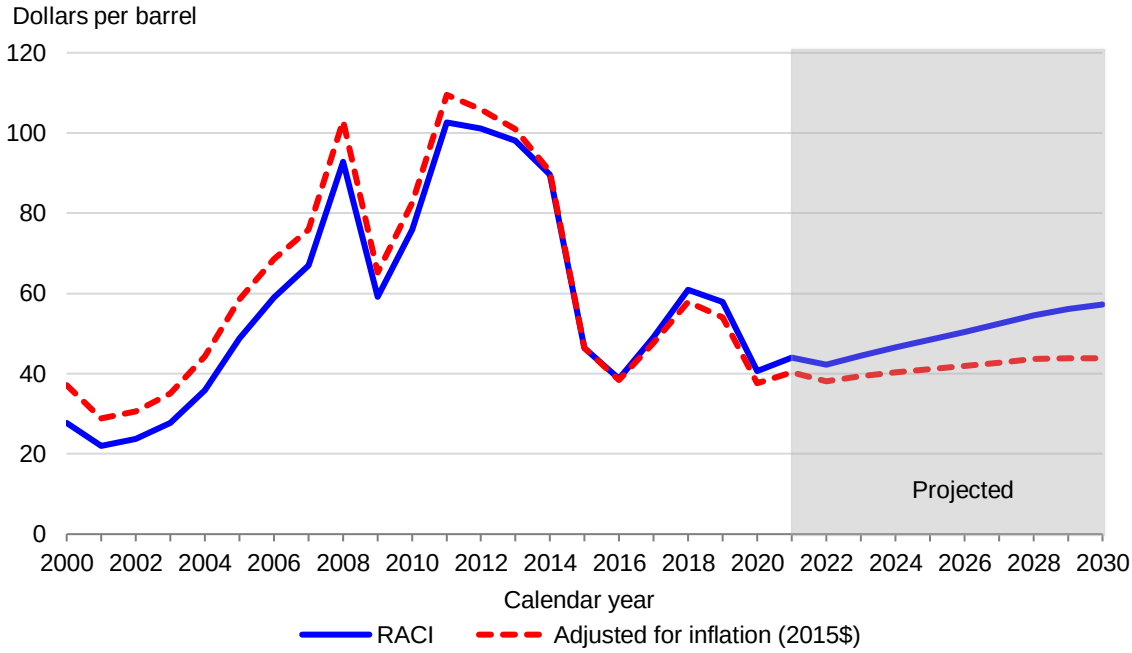
Note: The shaded region represents the projected period. Source: International Financial Statistics of the International Monetary Fund, IHS Global Insight, Oxford Economics Forecasting, as well as estimated and projected values developed by the USDA, Economic Research Service. Projection based on data as available August 2020.

In 2020, the inflation-adjusted agricultural trade-weighted exchange rate for the U.S. dollar continued an upward trend that began in 2010 and reached its highest level since 2002. Among other things, the strength of the U.S. dollar since 2010 has been associated with the U.S. economic recovery from the 2009 recession and the relative safety of U.S. financial markets for foreign investors. Since the macroeconomic assumptions were completed in August 2020, the dollar depreciated against a number of countries through the latter half of 2020 but remained relatively strong on balance according to the agricultural trade-weighted method.

- During 2020, the U.S. dollar was broadly stronger in real terms across many currencies, particularly currencies from developing countries, including most of the sizable agricultural trading partners in North America, East and Southeast Asia, and the Middle East. Despite low U.S. interest rates, the depth and safety of U.S. capital markets tends to strengthen demand for U.S. dollars during periods of global economic stress and uncertainty. Among the few exceptions to the pattern of dollar appreciation in 2020 were the Euro and the Japanese yen, against which the dollar depreciated in 2020.
- Over the 2021-30 projection period, the U.S. dollar is forecast to weaken gradually, but remain strong compared with much of the period since 2007 (table 3). The projected gradual weakening of the dollar is primarily because of anticipated expansionary U.S. fiscal and monetary policies leading to low U.S. interest rates relative to many other countries. Notable exceptions to this pattern include the Chinese Yuan renminbi, New Taiwan dollar, and Argentine peso, against which the U.S. dollar is projected to gradually appreciate during 2021-30.

Oil Price Outlook

Figure 6. Crude oil price: refiner's acquisition cost of imports (RACI), 2000-30



Note: The shaded region represents the projected period. Source: International Financial Statistics of the International Monetary Fund, IHS Global Insight, Oxford Economics Forecasting, as well as estimated and projected values developed by the USDA, Economic Research Service. Projection based on data as available August 2020.

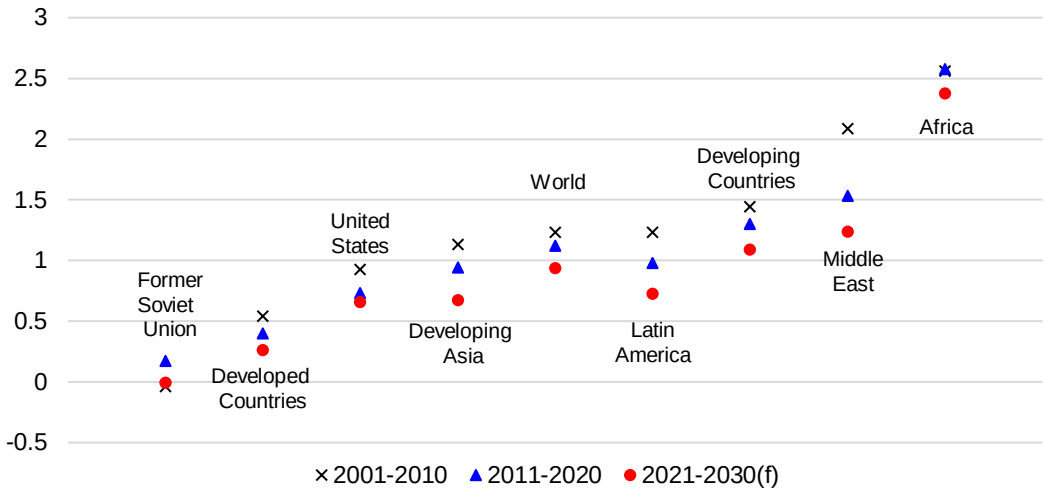
Despite significant market uncertainty in the near term, the global oil market has adjusted relatively swiftly to shifting demand and supply conditions. Crude oil prices are forecast to remain relatively low and move in a narrow range in 2020 and 2021 as both demand and supply recover gradually from the pandemic environment. In the longer term, while crude oil demand is projected to slow, nominal oil prices are expected to rise during 2021-30 because of supply management measures by Organization of Petroleum Exporting Countries (OPEC) and Russia (table 2).

- In the longer term, nominal crude oil prices are projected to rise from $41 per barrel in 2020 to $57 per barrel in 2030, with projected prices averaging well below the 2011-20 decade. The outlook for relatively low petroleum prices during the projection period will help moderate increases in production costs for agricultural producers in the United States and other countries.
- Demand for petroleum continues to grow fastest in emerging market countries, and particularly China and India, countries with the largest populations and fast-growing economies. In developed countries, oil demand is expected to remain relatively stable as increased energy efficiency offsets growth in transportation and industrial activity.

Population Projections

Figure 7. World population growth rates, 2001-30

Average annual growth rate (percent)



Note: Developing Asia = Asia less Japan. Source: U.S. Department of Commerce, Bureau of the Census, International Financial Statistics of the International Monetary Fund, IHS Global Insight, Oxford Economics Forecasting, as well as estimated and projected values developed by the USDA, Economic Research Service. Projection based on data as available August 2020.

World population growth is projected to continue to slow during 2021-30, with annual growth projected at 0.9 percent per year compared with 1.1 percent over the prior decade (table 4).

- Developed countries have relatively low projected population growth rates, averaging 0.3 percent per year over the coming decade. U.S. population growth is projected to remain faster than other developed countries, growing 0.7 percent per year on average. Only small population increases are expected for the European Union, while Japan's population is projected to continue to decline.
- Population growth rates in *developing countries* are generally higher than in developed countries but are also projected to slow during 2021-30. Slowing population growth in developing regions is associated with rising incomes, literacy rates, and life expectancy, all of which tend to lower birth rates. The average population growth rate for developing countries is projected to decline from 1.3 percent during 2011-20 to 1.1 percent during 2021-30.
- Across developing regions, population growth rates vary inversely with per capita income. East Asia, with generally high incomes on average, is projected to have a population growth rate near zero during 2021-30, while lower income regions, including Southeast Asia (0.8 percent), South Asia (1.1 percent), and the Middle East (1.2 percent) have higher projected growth rates. Population growth in the lowest income region, Sub-Saharan Africa, is projected to average 2.5 percent during 2021-30. In all cases, developing region population growth is projected to slow during 2021-30 compared with previous decades.
- Average annual population growth in the former Soviet Union region is expected to decline to zero during the 2021-30 projection period. Key factors for declining growth include continued emigration, low birth rates, and relatively high mortality rates.

Table 1. Global real Gross Domestic Product (GDP) shares and GDP growth assumptions

Region/country	GDP 2020	GDP share 2018-20	Per capita GDP, 2020	2020	2021	2022	2023	2024	2025	Average 2001-10	Average 2011-20	Average 2021-30
	Billion 2015 dollars	Percent	2015 dollars	Percent change in real GDP								
World	79,382	100.0	10,452	-5.4	4.4	3.7	3.3	3.2	3.1	3.0	2.2	3.2
North America	20,370	25.8	55,006	-5.9	4.1	3.0	2.1	2.2	2.3	1.8	1.4	2.4
Canada	1,555	2.0	41,266	-7.5	5.5	4.3	2.0	1.9	1.8	3.0	1.1	2.5
United States	18,815	23.8	56,562	-5.8	4.0	2.9	2.1	2.3	2.3	1.8	1.5	2.4
Latin America	4,818	6.3	7,834	-8.9	3.8	2.8	2.7	2.7	2.8	3.2	0.7	2.9
Mexico	1,104	1.5	8,582	-12.0	5.0	2.7	2.2	2.1	2.1	1.5	1.0	2.5
Caribbean & Central America	579	0.7	6,463	-5.0	2.6	2.9	2.8	2.9	2.9	3.1	1.7	2.9
South America	3,136	4.1	7,901	-8.5	3.7	2.8	2.9	2.9	3.0	3.8	0.4	3.0
Argentina	508	0.7	11,164	-11.0	4.0	2.4	2.5	2.6	2.4	3.7	-0.7	2.6
Brazil	1,683	2.2	7,948	-7.0	3.8	2.6	2.7	2.8	2.9	3.7	-0.1	3.0
Other South America	945	1.2	6,766	-9.7	3.3	3.3	3.4	3.3	3.4	4.3	2.1	3.3
Europe	17,430	22.6	31,746	-8.7	4.3	3.3	2.7	2.3	2.0	1.5	0.5	2.2
European Union	16,260	21.1	31,342	-8.9	4.3	3.4	2.7	2.3	2.0	1.4	0.5	2.2
Other Europe	1,171	1.5	38,670	-6.1	3.9	2.9	2.6	2.4	2.3	1.9	1.0	2.3
Former Soviet Union (FSU)	1,930	2.5	6,733	-7.0	3.4	2.6	2.5	2.5	2.4	5.5	1.2	2.5
Russia	1,337	1.7	9,434	-7.5	3.4	2.5	2.3	2.2	2.1	4.9	0.7	2.1
Ukraine	92	0.1	2,084	-10.1	3.5	3.1	3.2	3.2	3.2	4.5	-0.9	3.3
Other FSU-10 1/	502	0.6	4,965	-5.0	3.3	2.9	3.0	3.0	3.1	8.3	3.3	3.1
Asia and Oceania	29,157	35.6	7,071	-1.7	5.2	4.7	4.6	4.4	4.3	5.4	4.4	4.4
East Asia	21,428	25.9	13,342	-0.3	5.6	4.6	4.4	4.3	4.1	5.6	4.5	4.2
China	14,538	17.3	10,429	1.5	7.1	5.7	5.6	5.4	5.2	10.6	6.8	5.3
Hong Kong	308	0.4	42,486	-7.6	4.0	3.2	2.9	2.6	2.3	4.1	1.5	2.4
Japan	4,338	5.5	34,566	-4.7	2.5	1.5	1.3	1.2	1.1	0.7	0.4	3.8
Korea	1,598	2.0	30,835	-2.0	2.2	3.4	2.1	2.0	1.9	4.7	2.4	2.0
Taiwan	595	0.7	25,202	-0.1	3.3	2.2	2.1	2.1	2.1	4.3	2.5	2.2
Southeast Asia	2,853	3.6	4,296	-5.1	4.3	5.7	5.4	5.2	5.0	5.3	4.0	4.8
Cambodia	24	0.0	1,439	2.6	5.7	6.2	6.2	6.2	6.2	8.0	6.7	6.1
Indonesia	1,018	1.3	3,812	-3.0	3.3	5.7	5.5	5.3	5.1	5.2	4.5	4.9
Malaysia	332	0.4	10,181	-8.6	4.6	8.6	7.9	7.2	6.5	4.6	3.7	5.9
Burma	86	0.1	1,523	2.8	5.7	6.0	6.0	6.0	6.0	12.0	6.1	5.9
Philippines	363	0.5	3,326	-8.3	7.7	6.1	5.6	5.4	5.3	4.8	4.8	5.3
Thailand	429	0.5	6,213	-6.9	3.3	2.7	2.8	2.9	3.0	4.6	2.2	3.0
Vietnam	254	0.3	2,572	1.1	5.5	5.9	5.9	5.9	5.9	6.6	5.8	5.9
South Asia	3,248	4.1	1,792	-5.7	5.1	5.0	5.2	5.4	5.5	6.3	5.1	5.6
Bangladesh	264	0.3	1,624	1.0	-2.7	5.9	5.9	5.8	5.7	5.6	6.3	4.9
India	2,529	3.2	1,907	-6.9	6.5	5.1	5.3	5.5	5.7	6.8	5.2	5.9
Pakistan	314	0.4	1,347	-2.4	2.1	3.8	4.0	4.1	4.2	4.3	3.6	4.1
Oceania	1,628	2.1	40,429	-6.0	1.7	4.3	4.1	3.7	3.1	3.0	1.8	3.0
Australia	1,401	1.8	55,002	-6.1	1.6	4.3	4.1	3.8	3.1	3.0	1.8	3.0
New Zealand	190	0.2	38,589	-5.5	2.3	4.3	3.9	3.4	3.0	2.6	2.2	2.9
Middle East	3,198	4.3	9,553	-8.5	4.1	3.4	3.3	3.1	2.9	4.2	2.0	3.0
Iran	322	0.4	3,786	-12.2	3.4	2.5	2.4	2.3	2.0	4.5	-1.7	2.2
Iraq	173	0.2	4,447	-16.5	11.4	5.3	4.8	4.3	3.8	5.0	3.2	4.2
Saudi Arabia	621	0.8	18,180	-8.4	3.0	2.4	2.5	2.6	2.7	3.5	2.1	2.8
Turkey	925	1.2	11,274	-6.5	3.9	3.6	3.4	3.3	3.2	4.1	4.3	3.2
Other Middle East	1,158	1.5	12,212	-7.7	3.9	3.8	3.5	3.1	2.9	4.7	1.5	3.0
Africa	2,478	3.1	1,883	-4.5	1.7	3.8	3.5	3.5	3.6	5.2	2.6	3.4
North Africa	737	0.9	3,662	-5.3	-2.1	4.4	3.2	3.2	3.3	4.6	2.0	3.0
Egypt	412	0.5	3,961	2.6	-8.3	2.6	2.8	3.1	3.4	4.9	3.5	2.4
Morocco	107	0.1	2,997	-5.1	3.3	3.2	3.3	3.3	3.3	5.0	2.5	3.3
Sub-Saharan Africa	1,741	2.2	1,562	-4.1	3.3	3.5	3.6	3.6	3.7	5.6	2.8	3.6
South Africa, Republic	297	0.4	5,266	-8.9	3.2	1.9	1.9	2.0	2.1	3.5	0.5	2.2
Nigeria	483	0.6	2,259	-5.4	2.6	2.9	3.1	3.2	3.3	8.0	2.3	3.3
Other West African Community	230	0.3	1,234	-1.0	4.9	5.5	5.2	4.9	4.6	3.8	5.2	4.5
Other Sub-Saharan Africa	730	0.9	1,110	-2.1	3.3	3.9	4.0	4.2	4.3	5.8	3.7	4.1

Note: 1/ Includes: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Tajikistan, Turkmenistan, Uzbekistan. Source: World Bank, World Development Indicators, IHS Global Insight, Oxford Economics Forecasting, as well as estimated and projected values developed by the U.S. Department of Agriculture, Economic Research Service.

Table 2. U.S. macroeconomic assumptions

Item	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Gross Domestic Product (GDP)												
Nominal billion dollars	21,433	20,339	21,317	22,302	23,213	24,218	25,301	26,440	27,622	28,807	29,970	31,181
Real 2015 chain-weighted dollars	19,972	18,815	19,560	20,128	20,556	21,020	21,508	22,014	22,525	23,008	23,445	23,891
Percent change	2.2	-5.8	4.0	2.9	2.1	2.3	2.3	2.4	2.3	2.1	1.9	1.9
Disposable personal income												
Nominal billion dollars	16,348	16,674	16,621	17,399	18,122	18,897	19,718	20,535	21,385	22,271	23,194	24,154
Percent change	3.7	2.0	-0.3	4.7	4.2	4.3	4.3	4.1	4.1	4.1	4.1	4.1
Nominal per capita, dollars	49,763	50,128	49,616	51,577	53,353	55,260	57,281	59,267	61,330	63,474	65,703	68,021
Percent change	3.2	0.7	-1.0	4.0	3.4	3.6	3.7	3.5	3.5	3.5	3.5	3.5
Real 2015 chain-weighted dollars	15,234	15,425	15,251	15,703	16,048	16,401	16,762	17,097	17,439	17,788	18,144	18,507
Percent change	1.9	1.3	-1.1	3.0	2.2	2.2	2.2	2.0	2.0	2.0	2.0	2.0
Real per capita, 2015 chained dollars	46,370	46,371	45,526	46,548	47,247	47,962	48,694	49,345	50,013	50,697	51,398	52,117
Percent change	1.4	0.0	-1.8	2.2	1.5	1.5	1.5	1.3	1.4	1.4	1.4	1.4
Personal consumption expenditures												
Real 2015 chain-weighted dollars	13,685	12,932	13,317	13,677	14,049	14,414	14,780	15,173	15,580	15,983	16,338	16,665
Percent change	2.6	-5.5	3.0	2.7	2.7	2.6	2.5	2.7	2.7	2.6	2.2	2.0
Inflation measures												
GDP chained price index, 2015=100	107.3	108.1	109.0	110.8	112.9	115.2	117.6	120.1	122.6	125.2	127.8	130.5
Percent change	1.8	0.7	0.8	1.7	1.9	2.0	2.1	2.1	2.1	2.1	2.1	2.1
CPI-U, 1982-84=100	255.7	258.1	261.2	266.0	271.8	278.0	284.4	290.9	297.6	304.5	311.5	318.6
Percent change	1.8	0.9	1.2	1.9	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3
PPI, finished goods 1982=100	205.7	203.7	206.6	210.4	214.7	219.0	223.5	228.2	232.6	237.5	242.3	247.1
Percent change	0.8	-1.0	1.4	1.8	2.0	2.0	2.0	2.1	2.0	2.1	2.0	2.0
PPI, crude goods 1982=100	185.9	159.2	164.3	167.8	171.2	174.4	177.3	180.2	183.0	185.9	187.9	189.2
Percent change	-7.1	-14.4	3.2	2.1	2.1	1.8	1.7	1.6	1.6	1.6	1.0	0.7
Crude oil price, dollar per barrel												
EIA Refiner acquisition cost, imports	57.9	40.7	44.0	42.3	44.4	46.5	48.5	50.5	52.5	54.6	56.1	57.3
Percent change	-4.9	-33.0	7.9	-3.8	5.1	4.6	4.2	4.1	4.0	4.0	2.8	2.0
Real 2015 chain-weighted dollars	54.0	37.7	40.3	38.1	39.4	40.4	41.2	42.0	42.8	43.6	43.9	43.9
Percent change	-6.6	-30.2	7.0	-5.4	3.2	2.6	2.1	1.9	1.9	1.9	0.7	-0.1
Labor compensation per hour												
nonfarm business, 2015=100	112.1	117.4	119.4	122.2	125.6	129.2	133.3	137.8	142.5	147.2	152.1	157.1
Percent change	3.8	4.8	1.7	2.4	2.7	2.9	3.2	3.4	3.4	3.3	3.3	3.3
Interest rates, percent												
3-month Treasury bills	2.06	0.39	0.16	0.16	0.16	0.18	0.20	0.32	0.61	1.09	1.58	2.08
Bank prime rate	5.28	3.54	3.25	3.25	3.25	3.38	3.63	3.90	4.40	4.90	5.25	5.25
10-year Treasury bonds	2.14	0.88	0.89	1.12	1.37	1.63	1.90	2.25	2.56	2.82	3.00	3.18
Labor and population												
Civilian unemployment rate, percent	3.7	10.6	8.4	7.1	6.5	6.0	5.6	5.2	4.8	4.5	4.5	4.5
Civilian nonfarm employees, millions	150.9	139.8	142.9	146.0	147.8	149.8	151.6	153.2	154.9	156.2	157.2	158.0
Percent change	1.4	-7.4	2.2	2.2	1.2	1.3	1.2	1.1	1.1	0.9	0.6	0.5
Total population, millions	328.5	332.6	335.0	337.3	339.7	342.0	344.2	346.5	348.7	350.9	353.0	355.1
Percent change	0.5	1.3	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.6

Note: Domestic macroeconomic assumptions were completed in August 2020. CPI-U is the consumer price index for all urban consumers. PPI is the producer price index. EIA is the Energy Information Administration, U.S. Department of Energy. Source: U.S. Bureau of Labor Statistics, International Financial Statistics International Monetary Fund, HIS Global Insight, Oxford Economics Forecasting, as well as estimated and projected values developed by the Economic Research Service.

Table 3. Real exchange rate growth rates assumptions

Region/country	Local currency per U.S. dollar, 2020	2019	2020	2021	2022	2023	2024	Average 2001-10	Average 2011-20	Average 2021-30
	Index value, 2015 base	Percent change in real exchange rate								
Total all countries	108.86	2.1	3.1	-1.4	-1.4	-1.0	-0.8	-1.7	1.8	-0.7
North America										
Canada	1.37	2.3	3.1	-0.3	-1.3	-0.9	-0.8	-3.1	3.0	-0.8
Latin America	119.71	0.6	10.2	0.7	-2.7	-0.8	-0.4	-1.9	3.0	-0.5
Mexico	19.75	-1.7	12.7	1.7	-3.8	-0.9	-0.4	0.9	3.9	-0.6
Caribbean and Central America	106.98	1.6	1.9	0.8	-0.2	0.1	0.2	-5.1	0.3	0.2
South America	119.48	6.5	11.8	-2.3	-2.0	-1.3	-1.0	-2.9	4.1	-0.7
Argentina	15.38	14.2	4.6	6.8	3.6	1.0	-7.3	12.8	9.2	0.8
Brazil	4.48	6.0	27.3	-6.8	-4.5	-2.2	-0.5	-3.5	7.9	-1.2
South America	114.10	6.3	8.1	-1.4	-1.5	-1.2	-0.8	-2.9	3.1	-0.6
Europe	103.66	5.6	-1.7	-3.3	0.6	0.9	1.2	-2.5	2.0	0.7
European Union	0.93	5.6	-1.7	-3.3	0.5	0.9	1.1	-2.5	2.1	0.6
Other Europe	105.30	4.4	-2.0	-1.8	2.3	2.6	2.6	-3.4	1.4	1.9
Former Soviet Union (FSU) 1/	102.96	0.6	2.9	-1.8	-4.2	-2.0	-1.7	-15.9	4.2	-1.5
Russia	61.89	0.7	5.7	-2.2	-5.0	-1.8	-1.5	-8.0	4.6	-1.5
Ukraine	18.01	-10.3	0.8	-0.4	-3.2	-2.9	-2.8	-3.8	4.0	-2.3
Other FSU-10	118.39	5.1	-2.8	-1.5	-2.7	-2.3	-1.8	-15.1	3.7	-1.4
Asia and Oceania	105.20	2.3	0.9	0.1	-0.6	-0.4	-0.3	-1.3	0.5	-0.2
East Asia	105.54	2.8	1.1	0.4	-0.6	-0.4	-0.2	-0.7	0.5	0.0
China	6.96	3.3	1.7	0.0	0.2	0.5	0.5	-1.7	-0.2	0.2
Hong Kong	7.61	-1.1	-1.4	-0.5	0.2	0.5	0.5	2.0	-1.4	0.3
Japan	115.42	0.0	-0.1	2.3	-2.9	-2.8	-2.2	0.9	3.6	-0.5
Korea	1,244.91	7.4	3.8	-0.7	-0.8	-0.5	-0.2	-0.1	0.7	-0.2
Taiwan	31.25	3.8	-2.6	-0.2	1.3	1.0	0.7	1.7	0.3	0.2
Southeast Asia	102.85	-0.7	0.2	-0.6	-1.1	-0.8	-0.7	-2.6	0.5	-0.8
Cambodia	3,932.27	0.1	-0.5	-0.5	-0.3	-0.6	-0.7	-1.8	-1.4	-0.6
Indonesia	13,688.55	-1.8	2.5	-0.7	-1.1	-1.1	-1.2	-4.5	2.2	-1.5
Malaysia	4.38	3.8	5.6	0.2	-5.7	-4.6	-3.7	-1.4	2.9	-2.2
Myanmar	1,266.86	-0.7	0.6	-0.8	-1.2	-0.7	-0.4	-15.7	1179.1	-0.3
Philippines	47.28	-2.3	-5.0	-1.7	0.0	0.1	-0.1	-1.7	-0.1	-0.8
Thailand	33.73	-2.9	3.4	0.0	-1.8	-1.2	-0.8	-2.4	0.5	-0.4
Vietnam	21,673.77	1.0	-1.4	0.0	-0.3	0.0	0.0	-2.1	-1.3	-0.2
South Asia	104.15	1.6	0.2	-1.2	-2.9	-2.7	-2.4	-2.7	0.0	-2.1
Bangladesh	70.82	-2.4	-3.4	0.7	-0.4	-0.1	0.2	-0.8	-2.6	0.3
India	63.06	-2.6	0.8	-0.7	-3.8	-3.7	-3.7	-3.3	0.1	-3.4
Pakistan	130.27	13.4	1.0	-3.5	-3.1	-2.7	-2.2	-1.2	1.5	-1.6
Oceania	110.58	7.0	1.8	-1.2	2.6	2.4	1.9	-4.6	2.6	0.6
Australia	1.48	7.7	1.8	-1.7	2.7	2.5	1.9	-4.7	3.0	0.5
New Zealand	1.58	5.2	1.9	0.3	2.6	2.4	2.0	-4.2	1.6	1.1
Middle East	116.05	2.5	2.9	2.1	0.7	-0.5	-0.7	-3.6	1.9	-0.4
Iran	28,022.69	-25.2	18.3	3.9	-7.8	-4.9	-3.0	19.1	1.3	-3.6
Iraq	1,247.22	2.0	-1.4	2.4	2.2	1.9	1.3	-17.3	-0.2	0.4
Saudi Arabia	3.87	4.0	-2.9	-1.7	0.4	0.5	0.6	-0.2	-0.4	0.1
Turkey	4.14	3.9	8.6	7.0	0.6	-2.2	-2.7	-3.7	7.6	-1.1
Other Middle East	101.69	1.8	0.9	-0.6	1.0	0.5	0.4	-2.2	-0.1	0.1
Africa	111.95	-2.6	-0.5	-0.9	-2.0	-1.4	-0.8	30.6	1.3	-0.5
North Africa	111.01	-6.4	-5.7	0.2	-1.4	-0.8	-0.4	-0.1	1.6	-0.1
Egypt	9.08	-12.0	-7.6	0.3	-3.4	-2.7	-2.1	0.0	2.1	-1.2
Morocco	9.80	4.1	-1.2	-1.6	2.3	2.5	2.5	-1.6	1.9	1.9
Sub-Saharan Africa	112.98	2.2	5.7	-2.1	-2.7	-1.9	-1.3	31.1	1.2	-0.9
South Africa, Republic	14.50	6.7	13.5	-6.0	-3.8	-2.0	-1.3	-1.1	5.5	-0.7
Nigeria	208.34	-8.4	5.9	-0.6	-3.7	-3.0	-2.3	-5.5	-0.2	-1.4
Other West African Communit	102.43	6.2	-1.6	-2.4	-1.7	-1.2	-0.8	-2.5	2.5	-0.8
Other Sub-Saharan Africa	121.50	9.4	5.4	-1.6	-1.8	-1.3	-0.6	31.5	1.2	-0.6

Note: 1/ Includes: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Tajikistan, Turkmenistan, Uzbekistan. Source: International Financial Statistics International Monetary Fund, IHS Global Insight, Oxford Economics Forecasting, as well as estimated and projected values developed by the Economic Research Service.

Table 4. Population growth assumptions

Region/country	Population in 2020	2019	2020	2021	2022	2023	2024	Average 2001-10	Average 2011-20	Average 2021-30
	Millions	Percent change in population								
World 1/	7,595	1.1	1.0	1.0	1.0	1.0	1.0	1.2	1.1	0.9
North America	370	0.9	0.7	0.7	0.7	0.7	0.7	0.9	0.8	0.7
Canada	38	0.8	0.8	0.8	0.8	0.7	0.7	1.0	1.0	0.7
United States	333	0.9	0.7	0.7	0.7	0.7	0.7	0.9	0.7	0.7
Latin America	615	0.9	0.9	0.8	0.8	0.8	0.8	1.2	1.0	0.7
Mexico	129	1.1	1.0	1.0	1.0	0.9	0.9	1.3	1.2	0.9
Caribbean and Central America	90	0.9	0.9	0.9	0.8	0.8	0.8	1.2	1.0	0.8
South America	397	0.8	0.8	0.8	0.8	0.7	0.7	1.2	0.9	0.7
Argentina	45	0.9	0.9	0.8	0.8	0.8	0.8	1.0	1.0	0.8
Brazil	212	0.7	0.7	0.7	0.6	0.6	0.6	1.2	0.8	0.6
Other South America	140	1.0	1.0	0.9	0.9	0.9	0.9	1.3	1.1	0.8
Europe	549	0.2	0.2	0.1	0.1	0.1	0.1	0.3	0.2	0.1
European Union	519	0.2	0.2	0.1	0.1	0.1	0.1	0.4	0.2	0.1
Other Europe	30	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.3	0.2
Former Soviet Union (FSU)	287	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.2	0.0
Russia	142	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.3	-0.1	-0.3
Ukraine	44	0.0	-0.1	-0.3	-0.5	-0.5	-0.5	-0.7	-0.4	-0.5
Other FSU-10 2/	101	0.7	0.7	0.7	0.6	0.6	0.6	0.7	0.8	0.5
Asia and Oceania	4,123	0.8	0.8	0.8	0.8	0.7	0.7	1.1	0.9	0.6
East Asia	1,606	0.3	0.3	0.2	0.2	0.1	0.1	0.5	0.4	0.0
China	1,394	0.4	0.3	0.3	0.2	0.2	0.1	0.5	0.4	0.1
Hong Kong	7	0.3	0.2	0.2	0.2	0.1	0.1	0.5	0.3	0.0
Japan	126	-0.2	-0.3	-0.3	-0.3	-0.3	-0.4	0.1	-0.2	-0.4
Korea	52	0.4	0.4	0.3	0.3	0.3	0.2	0.5	0.5	0.2
Taiwan	24	0.1	0.1	0.1	0.1	0.0	0.0	0.4	0.2	0.0
Southeast Asia	664	1.0	0.9	0.9	0.9	0.9	0.8	1.3	1.0	0.8
Cambodia	17	1.5	1.4	1.4	1.3	1.3	1.2	1.6	1.6	1.2
Indonesia	267	0.8	0.8	0.8	0.7	0.7	0.7	1.3	0.9	0.7
Malaysia	33	1.3	1.3	1.3	1.2	1.2	1.2	2.0	1.4	1.2
Burma	57	0.9	0.9	0.8	0.8	0.8	0.7	1.0	1.0	0.7
Philippines	109	1.6	1.5	1.5	1.5	1.5	1.5	2.0	1.6	1.4
Thailand	69	0.3	0.3	0.2	0.2	0.2	0.2	0.6	0.3	0.1
Vietnam	99	0.9	0.8	0.8	0.8	0.7	0.7	1.2	1.0	0.7
South Asia	1,813	1.3	1.2	1.2	1.2	1.2	1.1	1.6	1.3	1.1
Bangladesh	163	1.0	1.0	1.0	0.9	0.9	0.9	1.3	1.0	0.9
India	1,326	1.1	1.1	1.1	1.1	1.0	1.0	1.5	1.2	1.0
Pakistan	234	2.1	2.1	2.0	2.0	2.0	1.9	2.4	2.2	1.9
Oceania	40	1.5	1.4	1.3	1.3	1.2	1.2	1.6	1.5	1.1
Australia	25	1.5	1.4	1.3	1.3	1.2	1.1	1.5	1.5	1.1
New Zealand	5	1.6	1.5	1.3	1.2	1.1	1.0	1.2	1.4	0.9
Middle East	335	1.4	1.3	1.4	1.5	1.5	1.4	2.1	1.5	1.2
Iran	85	1.2	1.1	1.0	1.0	0.9	0.9	1.2	1.2	0.8
Iraq	39	2.2	2.2	2.1	2.1	2.0	2.0	2.5	2.9	1.9
Saudi Arabia	34	1.6	1.6	1.6	1.6	1.6	1.6	2.7	2.0	1.5
Turkey	82	0.5	0.5	0.6	0.7	0.6	0.6	1.2	0.9	0.6
Other Middle East	95	2.0	1.8	2.0	2.4	2.5	2.0	3.5	1.6	1.8
Africa	1,316	2.5	2.5	2.5	2.5	2.4	2.4	2.6	2.6	2.4
North Africa	201	1.9	1.8	1.7	1.7	1.6	1.6	1.8	1.9	1.5
Egypt	104	2.4	2.3	2.2	2.2	2.1	2.0	2.2	2.5	1.9
Morocco	36	1.0	1.0	0.9	0.9	0.9	0.8	1.2	1.1	0.8
Sub-Saharan Africa	1,114	2.6	2.6	2.6	2.6	2.6	2.6	2.7	2.7	2.5
South Africa, Republic	56	1.0	1.0	1.0	0.9	0.9	0.9	1.3	1.0	0.9
Nigeria	214	2.6	2.6	2.6	2.5	2.5	2.5	2.8	2.6	2.5
Other West African Community	186	2.7	2.7	2.7	2.7	2.7	2.6	2.8	2.8	2.6
Other Sub-Saharan Africa	658	2.8	2.8	2.8	2.7	2.7	2.7	2.8	2.9	2.6

1/ Note: Totals for the world and world less U.S. include countries not otherwise included in the table.

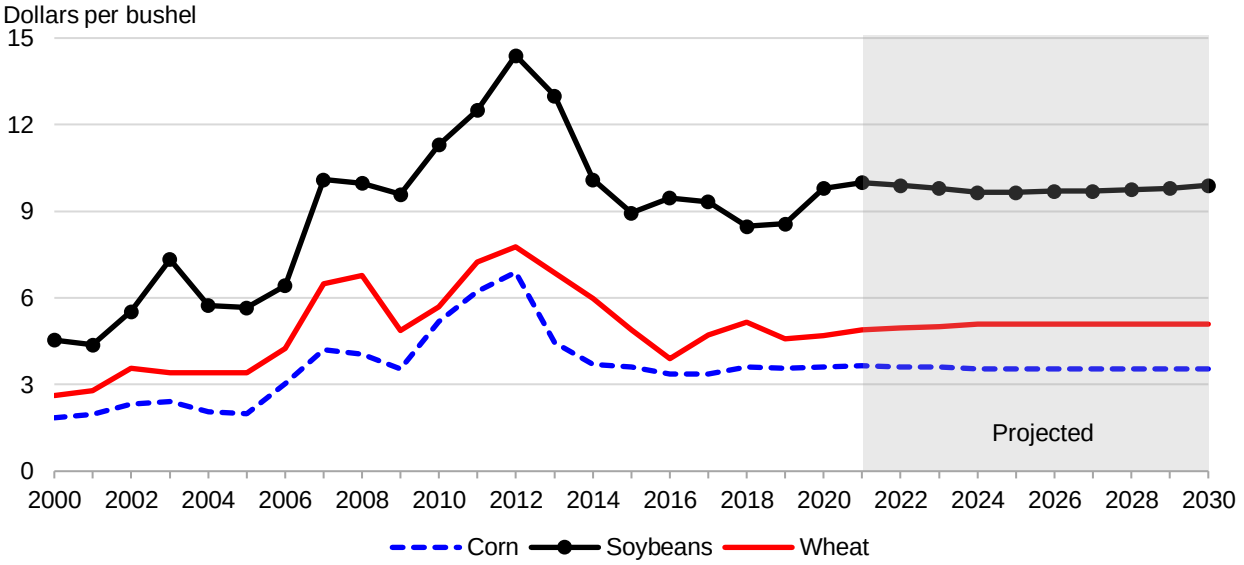
2/ Note: Includes: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Tajikistan, Turkmenistan, Uzbekistan.

Source: U.S. Department of Commerce, Bureau of the Census. The population assumptions were completed in August 2020.

U.S. Crops

Rising global demand for diversified diets and protein will continue to stimulate import demand for feed grains and soybeans. Increased demand for these crops—as well as for wheat, rice, and cotton—are accompanied by rising competition for market share from countries such as Brazil, Argentina, the EU, and the Black Sea region. The United States also faces challenges related to ongoing tensions with trade partners and a relatively strong U.S. dollar, which tends to keep U.S. commodity prices relatively high in foreign currency terms. Although strong trade competition continues, U.S. commodities remain generally competitive in global agricultural markets, with U.S. corn, soybean, and cotton exports projected at record highs by 2030/31. Nominal prices for wheat, cotton, and rice are expected to rise modestly between 2021/22 and 2030/31. Tables for each of the crops are provided at the end of this section.

Figure 8. Corn, soybean, and wheat price, 2000-30



Note: The shaded region represents the projected period.
Source: Projections from Office of the Chief Economist, World Agricultural Outlook Board, U.S. Department of Agriculture. Prepared by the Interagency Agricultural Projections Committee, as of November 6, 2020. Please see the National Agricultural Statistics Service (NASS) Quick Stats database for any changes to recent historical data. Short term projections are updated each month in the *World Agricultural Supply and Demand Estimates* report.

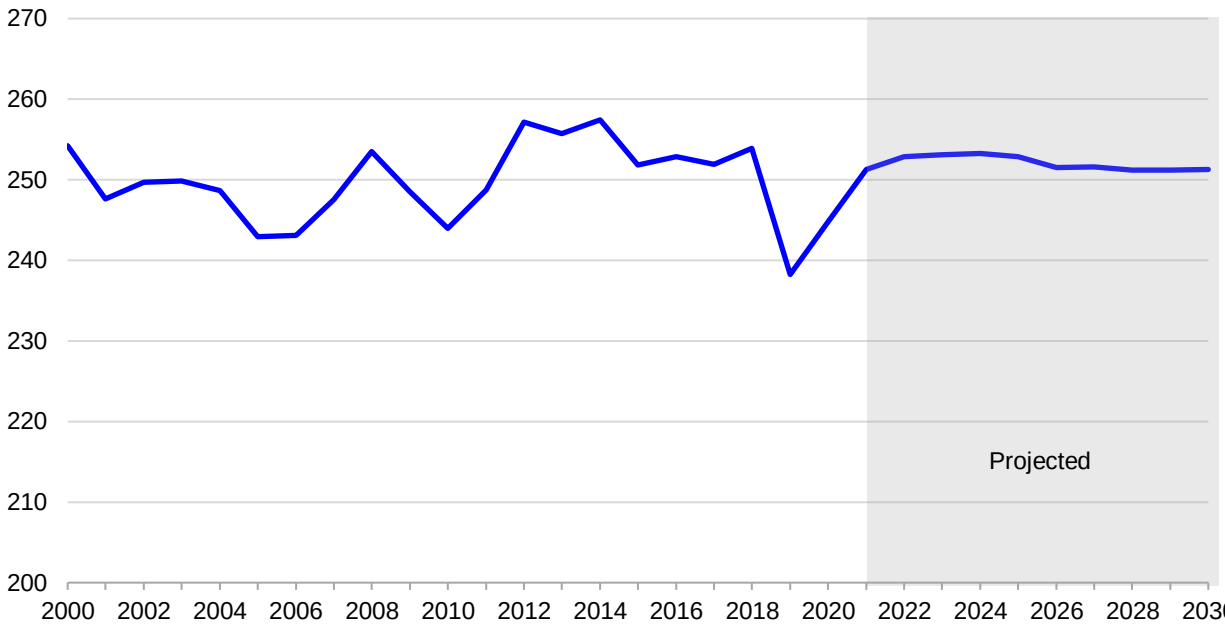
Nominal corn prices are projected to fall from $3.65 per bushel in 2021/22 to $3.55 in 2024/25, but then remain stable through 2030/31. Growth in domestic corn demand is strongest for feed and residual use, driven by domestic meat production to meet both domestic and export demand for beef, pork, and poultry. The baseline projects corn use for ethanol to be relatively flat, but steady.

Nominal soybean prices are projected to start at $10 per bushel in 2021/22, and to fall through 2025/26 before slowly rising the remainder of the projection period. The baseline projects that Brazil will take the biggest share of China's future soybean demand, but U.S. exports and prices also benefit from revived Chinese demand. Demand in the rest of the world is not expected to grow as fast as in China, but emerging economies continue to

expand the use of soybeans as a feedstock as diets diversify to include more animal products.

The baseline does not project demand growth—either domestic or export—to significantly tighten the all wheat balance sheet, nor is it expected to provide significant price support. Despite COVID-19 restrictions leading to an uptick in domestic food use during the summer and fall months of 2020, domestic use is expected to continue to grow slowly as declining per capita consumption is offset by a rising population. Rising global demand, particularly from emerging economies, supports projected growth in wheat trade, but sustained price competition from Russia, Ukraine, and the EU is projected to keep U.S. exports flat.

Figure 9. Planted area for the eight major row crops, 2000-30



Note: The shaded region represents the projected period.
Source: Projections from Office of the Chief Economist, World Agricultural Outlook Board, U.S. Department of Agriculture. Prepared by the Interagency Agricultural Projections Committee, as of November 6, 2020. Please see the National Agricultural Statistics Service (NASS) Quick Stats database for any changes to current or recent historical data. Short term projections are updated each month in the *World Agricultural Supply and Demand Estimates* report.

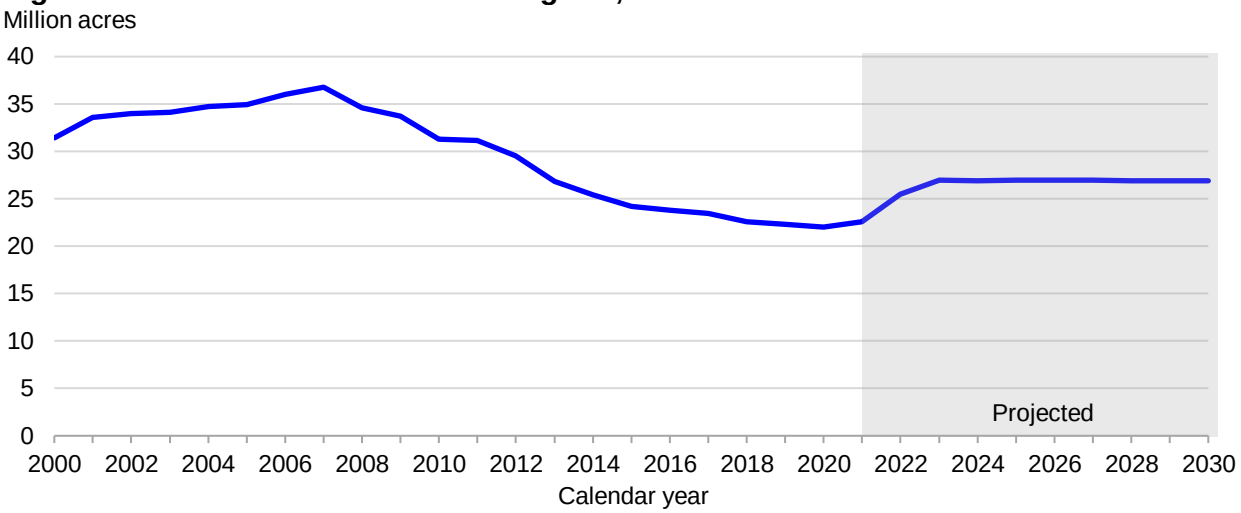
The baseline projects net returns per acre (returns over variable costs) to be on an upward trend for all crops except sorghum and oats. Planted acres for corn and soybeans are relatively steady, while wheat acres decline slowly. Upland cotton is the only crop with projected acres rising steadily. Plantings of the eight major U.S. crops are expected to range between 251.2 million and 253.1 million acres over the next decade. Except for sorghum, yield growth and relatively steady or rising acreage lifts the production of all crops, with corn and soybean output ending the projection period at record high levels.

Rising corn yields and stable projected costs lead to gradually increasing corn net returns per acre. The baseline projects relatively steady demand for corn to support prices and area early in the projections but, as growth in production outpaces demand and nominal prices remain flat over the longer term, area planted gradually declines.

Strengthening soybean prices are projected to contribute to a continued recovery in area planted during 2021/22. The outlook is for area to remain elevated through 2030/31 based on steady demand for soybean meal and oil. The outlook for higher yields and stable prices is projected to lead to a gradual increase in net returns through 2030/31.

The baseline projects wheat area planted to rise moderately as demand recovers early in the projections before resuming its long-term gradual decline through 2030/31. The lack of growth in area is attributable to weak relative returns that are not expected to encourage shifting of sowings out of other crops and into wheat.

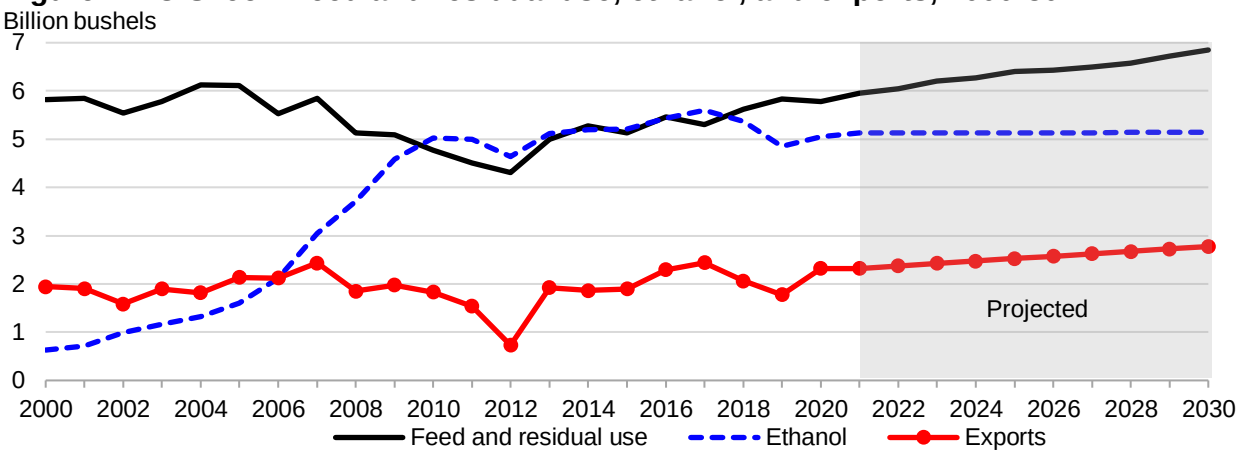
Figure 10. Conservation Reserve Program, 2000-30



Note: The shaded region represents the projected period.
Source: Projections from Office of the Chief Economist, World Agricultural Outlook Board, U.S. Department of Agriculture. Prepared by the Interagency Agricultural Projections Committee, as of November 6, 2020. Please see the National Agricultural Statistics Service (NASS) Quick Stats database for any changes to current or recent historical data. Short term projections are updated each month in the *World Agricultural Supply and Demand Estimates* report.

The baseline assumes farm programs included in the 2018 Farm Act remain in place through the 2021/22-2030/31 projection period. Acreage enrolled in the Conservation Reserve Program (CRP) rises to nearly 27 million acres, which is the maximum level legislated by the 2018 Farm Act, up from the maximum of 24.0 million acres under the 2014 Farm Act. The total acreage enrolled in CRP is projected to rise from 22.6 million acres in 2021 to 26.9 million acres in 2030 (data as of November 6, 2020).

Figure 11. U.S. corn feed and residual use, ethanol, and exports, 2000-30

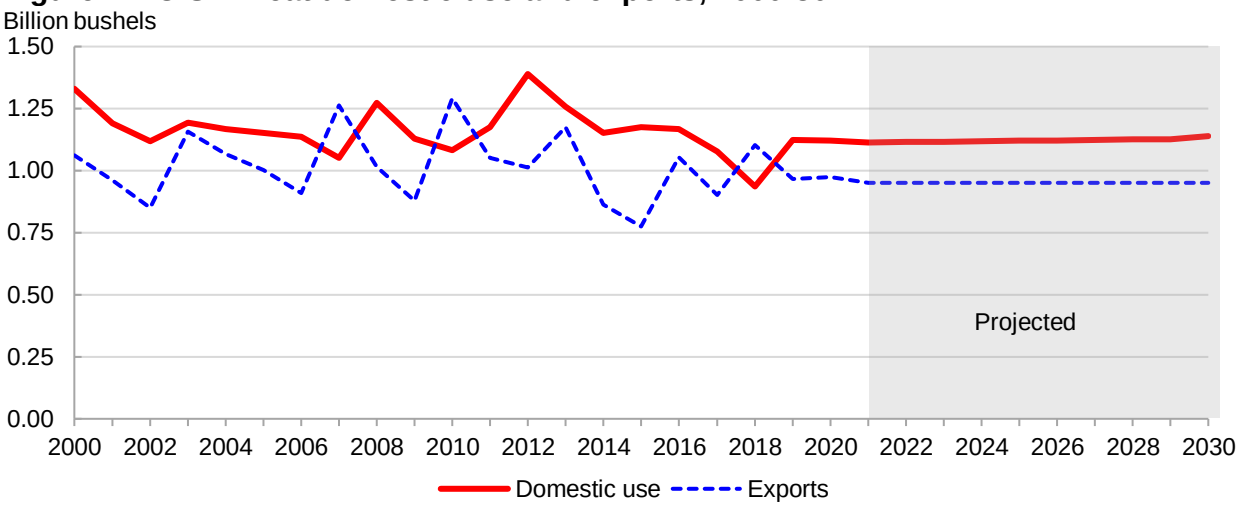


Note: The shaded region represents the projected period.
Source: Projections from Office of the Chief Economist, World Agricultural Outlook Board, U.S. Department of Agriculture. Prepared by the Interagency Agricultural Projections Committee, as of November 6, 2020. Please see the National Agricultural Statistics Service (NASS) Quick Stats database for any changes to current or recent historical data. Short term projections are updated each month in the *World Agricultural Supply and Demand Estimates* report.

The baseline projects U.S. corn production to grow over the next decade as yield gains offset a gradual decline in acreage. Expanding meat production is expected to boost feed and residual use over the baseline period. Planted area is stable at 90.0 million acres in the near-term (2021/22-2025/26), and then recedes to 89.0 million acres for the rest of the projection period. Yield growth supports rising production during most of the projection. Through the baseline period, supply grows somewhat faster than use, raising the stocks-to-use ratio. Season average nominal producer prices decline moderately from $3.65 per bushel in 2021/22 to $3.55 per bushel for second half of the projection period. Additionally, the baseline projects the following outlook for the corn market:

- Corn-based ethanol production marginally increases over the projection period, from 5.125 billion bushels to 5.150 billion by 2030/31, lower than in recent years. Trends in fuel efficiency gradually reduce overall gasoline consumption, in addition to the sharp reduction in gasoline consumption during the COVID-19 pandemic that began during 2019/20.
- Food, seed, and industrial (FSI) use of corn (other than ethanol production) gradually declines through the middle of the projection period, largely driven by declining high-fructose corn syrup (HFCS) production. Corn for food and beverage use grows in line with population growth, although production of glucose and dextrose and starch are projected to remain flat for the next decade.
- In 2021/22, the baseline projects U.S. corn exports at 59.1 million tons (2.3 billion bushels) compared with the next largest exporters: Brazil (41.3 million tons), Argentina (33.6), and Ukraine (32.9). A gradual weakening of the U.S. dollar modestly improves U.S. export prospects. With continued competition from Brazil, Argentina, and Ukraine, together with growing domestic feed use and stable corn use for ethanol, the U.S. market share of global corn exports is projected to remain relatively flat at about 31 percent during the projection period. Prior to 2010, the U.S. market share of global exports was more than 50 percent.

Figure 12. U.S. wheat domestic use and exports, 2000-30

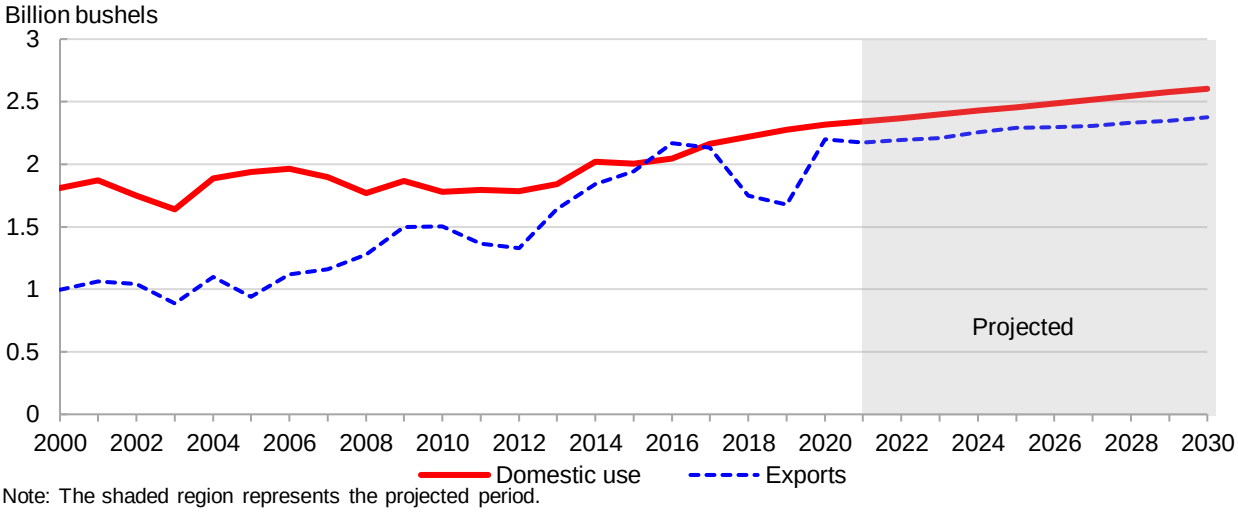


Note: The shaded region represents the projected period.
Source: Projections from Office of the Chief Economist, World Agricultural Outlook Board, U.S. Department of Agriculture. Prepared by the Interagency Agricultural Projections Committee, as of November 6, 2020. Please see the National Agricultural Statistics Service (NASS) Quick Stats database for any changes to current or recent historical data. Short term projections are updated each month in the *World Agricultural Supply and Demand Estimates* report.

During the projection period, U.S. plantings of wheat are projected to start at 46.0 million acres in 2021/22 and decline to 44.5 million acres by 2030/31, remaining below the recent five-year average of 46.7 million. The pattern is attributable to weak relative returns that do not encourage shifting acreage out of other row crops and into wheat. Neither domestic nor export demand are expected to significantly tighten the U.S. wheat balance sheet, nor do they provide significant price support. Domestic wheat use, especially for food utilization, is expected to grow slowly as population growth slightly outpaces declining per capita consumption. On expectations of continued growth in production and exportable supplies for key global competitors, the United States is expected to maintain flat export sales while gradually losing global market share. Additionally, the baseline projects the following wheat market outlook:

- Despite an uptick in monthly food use that began in April 2020 when COVID-19 restrictions temporarily boosted domestic flour and pasta consumption, food use for wheat returns to the long-term trend of slow growth, reflecting a mature market and long-term per capita trends.
- Wheat-to-corn price ratios remain relatively stable throughout the projection period and do not favor increased wheat feeding as corn supplies remain ample. Feed and residual use remains essentially flat through 2030/31, consistent with relatively level production and limited demand for wheat feed use generally.
- Generally flat production and slightly increased utilization supports a modest increase in wheat imports, primarily durum and spring wheat from Canada.
- Rising incomes, particularly in emerging economies with rising per capita demand, support growth in global demand and a corresponding increase in global wheat trade. Sustained price competition from Russia, Ukraine, and the European Union tempers U.S. exports.

Figure 13. U.S. soybean domestic use and exports, 2000-30

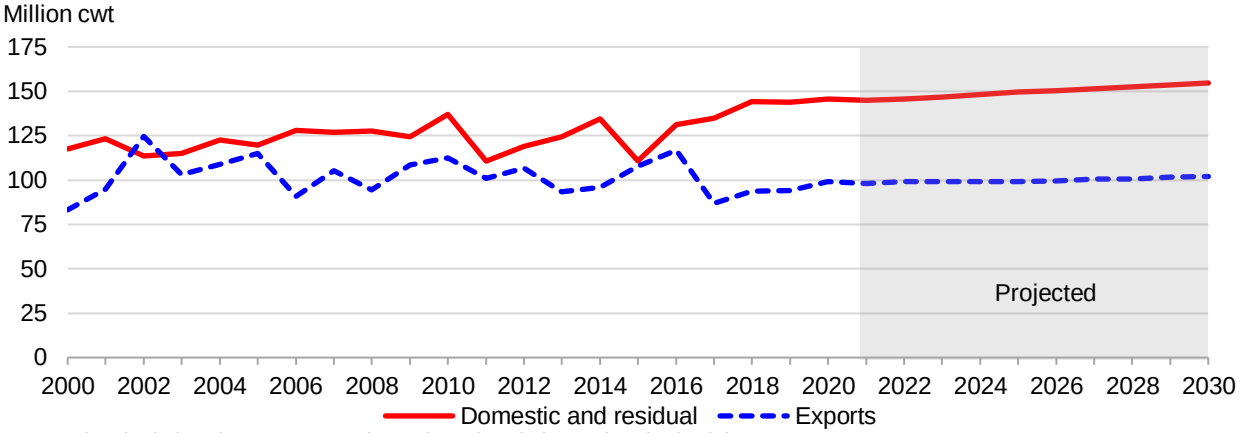


Note: The shaded region represents the projected period.
Source: Projections from Office of the Chief Economist, World Agricultural Outlook Board, U.S. Department of Agriculture. Prepared by the Interagency Agricultural Projections Committee, as of November 6, 2020. Please see the National Agricultural Statistics Service (NASS) Quick Stats database for any changes to current or recent historical data. Short term projections are updated each month in the *World Agricultural Supply and Demand Estimates* report.

U.S. soybean plantings rebounded sharply after 2019/20 and the baseline projects area to remain elevated over the course of the decade. Plantings remain near 90 million acres, supported by higher prices and net returns relative to the last 5 years. In addition, the baseline projects the following outlook for the soybean market:

- U.S. soybean prices have improved since 2019/20 even with bigger crops as record crush and exports leave 2020/21 projected ending stocks near a record low relative to use. Nominal soybean prices start higher but then gradually decline through the middle of the projection period as production gains exceed increases in use, and then rise modestly in the later years.
- Growth in domestic soybean meal and oil demand remains steady, supporting a continued increase in soybean crush over the next decade. Gains in crush reflect moderate feed prices, increasing animal product production, stable but historically high soybean oil use for biodiesel, and gradually increasing demand by importers.
- U.S. soybean exports are sharply higher after slumping in 2019/20. Exports climb to record highs as consumption recovers, particularly in China. The U.S. share of global trade drops from 34.2 to 29.5 percent between 2021/22 and 2030/31.
- U.S. soybean oil and meal exports continue to face strong competition from South America during the projection period. Argentina's share of world soybean meal exports grows to nearly 45 percent by 2030/31. Brazil is expected to boost its soybean meal market share to about 25 percent by 2030/31. Despite increasing meal exports, the United States loses global share, slipping from about 18 percent to 17 percent of the market by the end of the decade.
- Soybean oil to produce biodiesel increases from 8.15 billion pounds in 2021/22 to 8.6 billion pounds by the end of the projection period, supporting an annual production of over 1.1 billion gallons of soybean oil-based biodiesel. The projections assume some additional demand for biodiesel and renewable diesel meets a portion of the Renewable Fuel Standard's advanced biofuel requirement.

Figure 14. U.S. rice domestic and residual use and exports, 2000-30

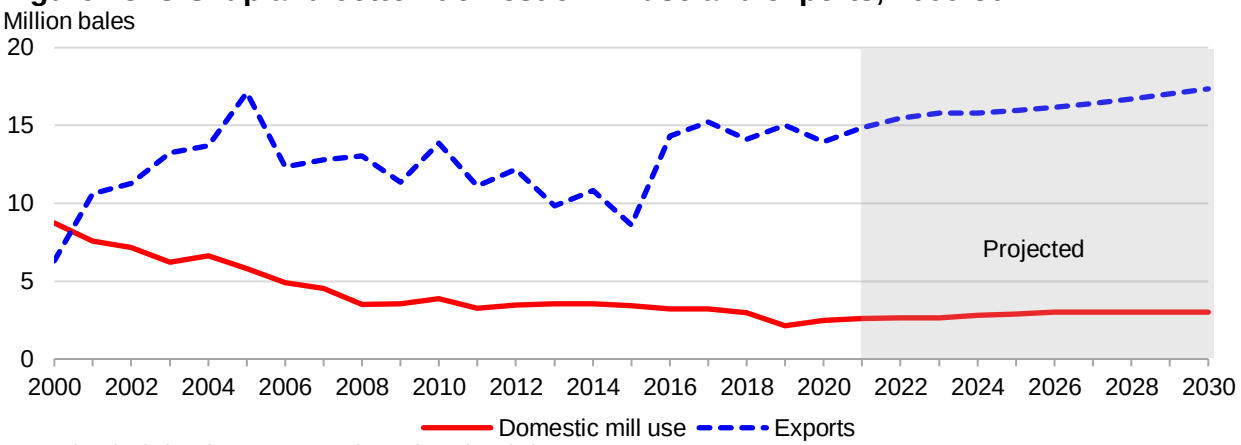


Notes: The shaded region represents the projected period. cwt=hundredweight.
Source: Projections from Office of the Chief Economist, World Agricultural Outlook Board, U.S. Department of Agriculture. Prepared by the Interagency Agricultural Projections Committee, as of November 6, 2020. Please see the National Agricultural Statistics Service (NASS) Quick Stats database for any changes to current or recent historical data. Short term projections are updated each month in the *World Agricultural Supply and Demand Estimates* report.

After increasing almost 20 percent in marketing year 2020/21, the baseline projects U.S. rice planted area to drop more than 14 percent in 2021/22 and then increase nearly 4 percent in 2022/23, remaining unchanged thereafter. Long grain, the dominant class produced in the United States, is expected to have an area gain of about 5 percent in 2022/23 and remain unchanged thereafter. Medium- and short-grain planted area remains unchanged throughout the baseline, with California expected to account for the bulk of the area. Slight annual yield increases push production higher each year. In addition, the baseline projects the following rice market outlook:

- Domestic and residual use remains the primary component of demand, expanding 0.7 percent annually, driven by a rising population and increasing consumer preferences for imported aromatic varieties. Demand for imports grows around 2 percent per year. Imports are mostly Asian long-grain aromatic varieties from Thailand, India, Pakistan, and Vietnam.
- U.S. exports slowly expand over the baseline, with a total increase of just 4.1 percent. Long-grain exports increase more than 4 percent, with Latin America accounting for the bulk of sales and nearly all the growth. Growth of U.S. sales to these core markets will be limited by strong competition from South American suppliers.
- U.S. exports of medium- and short-grain increase about 3 percent by 2030/31. Shipments to East Asia—the largest U.S. market for these classes—remain steady, while North Africa and the Middle East account for nearly all the slight gain.
- Although total U.S. rice exports increase, global trade expands more, with the U.S. share of global exports dropping to 6.1 percent by the end of the decade from 6.8 percent in 2021/22. The United States is projected to ship very little rice to Sub-Saharan Africa, the largest and fastest growing global rice market on a commercial basis due to uncompetitive prices and competition from Asian suppliers.
- Nominal U.S. long-grain and southern medium- and short-grain prices increase 2 percent by 2030/31, while California medium- and short-grain prices increase more than 5 percent.

Figure 15. U.S. upland cotton domestic mill use and exports, 2000-30



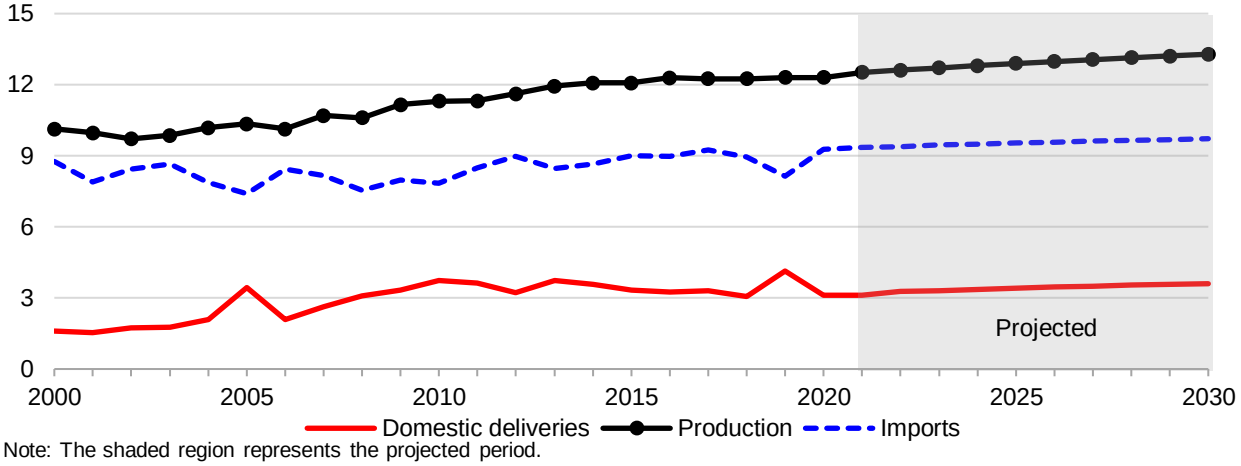
Note: The shaded region represents the projected period.
Source: Projections from Office of the Chief Economist, World Agricultural Outlook Board, U.S. Department of Agriculture. Prepared by the Interagency Agricultural Projections Committee, as of November 6, 2020. Please see the National Agricultural Statistics Service (NASS) Quick Stats database for any changes to recent historical data. Short term projections are updated each month in the *World Agricultural Supply and Demand Estimates* report.

The market year average prices for upland cotton start the projection period at 63.0 cents per pound and rise to 69.5 cents per pound in nominal terms by the end of the decade. The cotton price ratio is higher relative to corn and essentially unchanged with soybeans for 2021-30 compared with the previous 10 years. The baseline projects that farmers will plant 11.2 million acres in 2021/22, rising to 12.8 million acres at the end of the projection. The average plantings for the projection period are roughly 0.5 million acres higher than in the prior decade. Domestic mill use recovers from a recent low of 2.14 million bales in 2019/20, gradually rises to 3.0 million bales by 2026/27, and remains at that level through 2030/31. Upland cotton exports grow throughout the projections, rising from 14.85 million bales to 17.35 million by the final year, the highest on record. In addition, the baseline projects the following outlook for the cotton market:

- U.S. mill use recovers from the recent lows in 2019/20, the lowest since before 1960. Mill use makes up about 15 percent of total U.S. disappearance of upland cotton over the projection period. While mill use in the late 1990s was closer to 60 percent of total U.S. cotton use, increased competition from foreign manufacturing of both cotton and synthetic fibers, such as polyester, have reduced mill use in more recent years. Cotton demand is highly sensitive to income growth and was heavily impacted by the COVID-19-related slowdown of the global economy.
- U.S. upland cotton export growth remains strong and trends higher throughout the projection period. The United States remains the largest cotton exporter and is expected to export between 14.85 million and 17.35 million bales of upland cotton per year over the next decade. With growing international demand and strong export growth in Brazil and to a lesser extent in Australia, India, and West Africa, the U.S. trade share (for all cotton, Upland plus Extra Long Staple) declines modestly from about 36 percent in 2021/22 to 33 percent in 2030/31. Brazil, India, and the countries that are part of the Economic Community of West African States (ECOWAS) exported roughly 16.1 million bales combined in 2019/20 and the baseline projects their exports to increase to 24.9 million bales by 2030/31.

Figure 16. U.S. sugar domestic deliveries, production, and imports, 2000-30

Million short tons



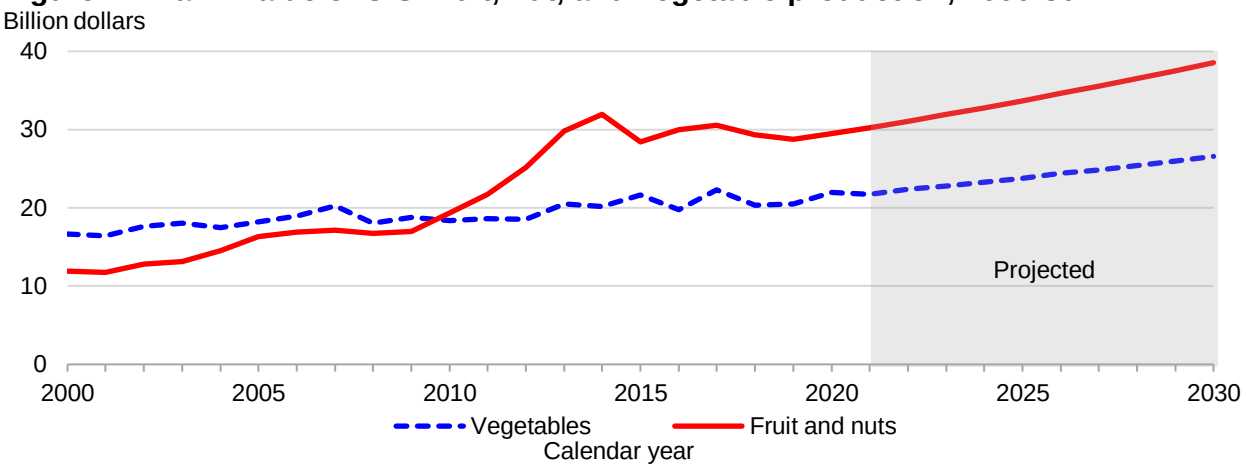
Note: The shaded region represents the projected period.

Source: Projections from Office of the Chief Economist, World Agricultural Outlook Board, U.S. Department of Agriculture. Prepared by the Interagency Agricultural Projections Committee, as of November 6, 2020. Please see the National Agricultural Statistics Service (NASS) Quick Stats database for any changes to current or recent historical data. Short term projections are updated each month in the *World Agricultural Supply and Demand Estimates* report.

The baseline projects total caloric sweetener deliveries (which include non-sugar sweeteners such as High Fructose Corn Syrup) to decline, although, domestic sugar use increases in line with population growth during the projection period. Domestic sugar production and imports (primarily from Mexico) both rise to meet growing use. Domestic sugar use increases from 12.5 million short tons, raw value (STRV) in 2021/22 to 13.3 million in 2030/31.

- Domestic sugar production increases from 9.4 million STRV in 2021/22 to 9.7 million by 2030/31. Beet sugar production remains about 5.2 million STRV. Sugarbeet harvested area gradually declines after 2021/22 due to higher input costs but increasing yields and factory sucrose recovery rates offset lower area. Cane sugar production is less affected by higher input costs and increases from 4.2 million STRV in 2021/22 to 4.5 million STRV by 2030/31, with modest increases in harvested area, yields, and recovery rates.
- Total imports grow at 1.6 percent per year, filling the gap between domestic use and production. The baseline expects most U.S. sugar imports to be imported under multilateral or bilateral trade agreements.
- Trade with Mexico will continue to be governed by the terms of the Suspension Agreements signed between the Mexican industry, the Government of Mexico, and the U.S. Department of Commerce in 2014 and amended in 2017. Imports from Mexico increase over the course of the period, consistent with calculated U.S. Needs—as defined by the agreements.
- U.S. prices for both sugarcane and sugarbeet growers increase gradually in nominal terms by 2030/31, as relatively tight projected ending stock levels support raw and refined sugar prices. There are no expected forfeitures to the Commodity Credit Corporation (CCC), nor public expenditures, under the U.S. sugar program in the projection.

Figure 17. Farm value of U.S. fruit, nut, and vegetable production, 2000-30



Note: The shaded region represents the projected period.
Source: USDA, Economic Research Service.

The total combined farm value of fruit, tree nuts, vegetable, and pulse crop production is projected to reach $65.1 billion by calendar year 2030, up from $51.4 billion in 2020. By 2030, fruit contributes nearly 38 percent of the total value, tree nuts approximately 21 percent, and vegetable and pulse crops roughly 41 percent. The baseline outlook for these crops also includes:

- Combined production of fruit, tree nuts, vegetable, and pulses grow slightly over the next decade, reaching 189 billion pounds by 2030, up from 186 billion in 2020. By 2030, fruit contributes nearly 27 percent of total output, tree nuts approximately 4.5 percent, and vegetable and pulse crops roughly 68.5 percent.

- Vegetable and pulse crop production grows only slightly to 2030. This primarily reflects technical measurement issues and rising import competition. Technical issues largely center on the rapid growth of the protected culture subsector (mostly greenhouses and urban vertical farms) which is slowly replacing field-grown production for several major fresh vegetables. With some exceptions, this sector is not well represented in traditional USDA data collection programs which have recorded declining field-grown area and production for some crops. In recent years there has been a rapid rise of import volume across many fresh and processed vegetables. This projection assumes imports continue to rise.

- The vegetable category is split into five main categories: fresh, processing, potatoes, pulses, and other. Fresh-market domestic output remains at about 31 percent of vegetable production as imports largely fill stronger demand through 2030. Processing vegetable production increases its share from about 26 percent to 27 percent by 2030 largely due to slower import growth compared with fresh crops. Potatoes are expected to see reduced market share as exports remain sluggish and domestic demand wanes for processed products such as frozen french fries. Pulse crops are projected to account

for about 5 percent of all vegetable production by 2030, up from about 4 percent in 2019.

- Buoyed in-part by increasing production of higher-priced organic vegetables, the value of fresh-market vegetable production rises by one-third between 2018-20 and 2028-30. The value of production for fresh market vegetables accounts for about 60 percent of vegetable and pulse receipts by 2030—up from an estimated 57 percent in 2020.

- Key vegetable commodities in the fresh-market include lettuce, tomatoes, onions, and sweet potatoes. Within the lettuce subsector, growth is projected in romaine and leaf production while iceberg output continues to decline. Production of sweet potatoes continues to trend upward based primarily on rising exports.

- Vegetables for processing account for about one-fourth of annual vegetable and pulse output. Processing tomatoes accounted for about 72 percent of processing vegetables in 2020, a share that is projected to rise to 80 percent by 2030. Processing tomato output is expected to remain relatively stable, but the value of production is projected about 20 percent higher during the 2020s compared with the 2010s.

- Domestic area and production of most other processing vegetables are projected lower through 2030. Processing vegetable area has been declining for the past two decades and the baseline expects this trend to continue as consumers focus increasingly on fresh vegetables and imports.

- Production of potatoes rises slightly over the next 10 years as both domestic and foreign demand remains sluggish. A downward trend in acres harvested is more than offset by a gain in yields. The potato industry also faces increasing competition from imported products, especially among frozen products. Potato prices rise slowly in nominal terms and potato crop values rise modestly over the projection period.

- Production of pulse crops between the three-year periods 2018-20 and 2028-30 rises about 10 percent. This increase is expected even though dry bean production likely reached a peak in 2020 due to unusually strong pandemic-inspired demand. Chickpeas and dry edible peas continue exhibiting the strongest growth, and the total value of pulse crop production trends higher through 2030.

- U.S. fruit and tree nut production (pounds) grows 0.35 percent annually throughout the projection period, reaching roughly 59 billion pounds by 2030. Citrus output declines 0.65 percent annually, while fruit production grows due to gains in non-citrus production. However, higher prices are expected to raise the farm value of U.S. citrus.

- The farm value of fruit and tree nuts grows 2.7 percent annually over the production period, with tree nuts growing 3.0 percent, citrus at 2.9 percent, and non-citrus at 2.5 percent.

Table 5: U.S. acreage for major field crops and Conservation Reserve Program (CRP) assumptions, long-term projections

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
						Million acres						
Planted acreage, eight major crops												
Corn	89.7	91.0	90.0	90.0	90.0	90.0	90.0	89.0	89.0	89.0	89.0	89.0
Sorghum	5.3	5.8	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7
Barley	2.8	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Oats	2.8	3.0	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7
Wheat	45.5	44.3	46.0	46.0	46.0	45.5	45.0	45.0	45.0	44.5	44.5	44.5
Rice	2.5	3.0	2.6	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Upland cotton	13.5	11.9	11.2	11.8	12.0	12.2	12.3	12.4	12.5	12.6	12.7	12.8
Soybeans	76.1	83.1	89.0	90.0	90.0	90.5	90.5	90.0	90.0	90.0	90.0	90
Total	238.2	244.8	251.3	252.9	253.1	253.3	252.9	251.5	251.6	251.2	251.2	251.3
CRP acreage assumptions												
Total CRP	22.3	22.0	22.6	25.5	27.0	26.9	27.0	26.9	26.9	26.9	26.9	26.9
Total planted plus CRP	260.6	266.8	273.9	278.4	280.1	280.2	279.9	278.4	278.5	278.1	278.1	278.2
Harvested acreage, eight major crops												
Corn	81.3	82.5	82.5	82.5	82.5	82.5	82.5	81.5	81.5	81.5	81.5	81.5
Sorghum	5.0	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
Barley	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
Oats	0.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Wheat	37.4	36.7	38.5	38.5	38.5	38.1	37.7	37.7	37.7	37.3	37.3	37.3
Rice	2.5	3.0	2.6	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Upland cotton	11.4	8.8	9.5	10.0	10.2	10.4	10.5	10.5	10.6	10.7	10.8	10.9
Soybeans	74.9	82.3	88.2	89.2	89.2	89.7	89.7	89.2	89.2	89.2	89.2	89.2
Total	215.6	222.7	230.7	232.3	232.5	232.7	232.4	231.0	231.1	230.8	230.9	230.9

Note: The projections were completed in October 2020.

Table 6: U.S. corn long-term projections

Item	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Area (million acres):												
Planted acres	89.7	91.0	90.0	90.0	90.0	90.0	90.0	89.0	89.0	89.0	89.0	89.0
Harvested acres	81.3	82.5	82.5	82.5	82.5	82.5	82.5	81.5	81.5	81.5	81.5	81.5
Yield:												
Bushels per harvested acre	167.5	178.4	180.5	182.5	184.5	186.5	188.5	190.5	192.5	194.5	196.5	198.5
Supply and use (million bushels):												
Beginning stocks	2,221	1,995	2,167	2,257	2,367	2,442	2,562	2,672	2,687	2,742	2,812	2,847
Production	13,620	14,722	14,890	15,055	15,220	15,385	15,550	15,525	15,690	15,850	16,015	16,180
Imports	42	25	25	25	25	25	25	25	25	25	25	25
Supply	15,883	16,742	17,082	17,337	17,612	17,852	18,137	18,222	18,402	18,617	18,852	19,052
Feed and residual	5,827	5,775	5,950	6,050	6,200	6,275	6,400	6,425	6,500	6,575	6,725	6,850
Food, seed, and industrial	6,282	6,475	6,550	6,545	6,545	6,540	6,540	6,535	6,535	6,555	6,555	6,550
Ethanol and byproducts	4,852	5,050	5,125	5,125	5,125	5,125	5,125	5,125	5,125	5,150	5,150	5,150
Domestic use	12,109	12,250	12,500	12,595	12,745	12,815	12,940	12,960	13,035	13,130	13,280	13,400
Exports	1,778	2,325	2,325	2,375	2,425	2,475	2,525	2,575	2,625	2,675	2,725	2,775
Total use	13,887	14,575	14,825	14,970	15,170	15,290	15,465	15,535	15,660	15,805	16,005	16,175
Ending stocks	1,995	2,167	2,257	2,367	2,442	2,562	2,672	2,687	2,742	2,812	2,847	2,877
Stocks-to-use ratio, percent	14.4	14.9	15.2	15.8	16.1	16.8	17.3	17.3	17.5	17.8	17.8	17.8
Prices (dollars per bushel):												
Farm price	3.56	3.60	3.65	3.60	3.60	3.55	3.55	3.55	3.55	3.55	3.55	3.55
Variable costs of production (dollars):												
Per acre	339	341	338	337	336	336	337	338	337	337	335	333
Returns over variable costs (dollars per acre):												
Net returns	257	301	321	320	328	326	332	338	346	353	362	372

Note: Totals may not add due to rounding. Marketing year beginning September 1 for corn.
The projections were completed in October 2020.

Table 7: U.S. sorghum long-term projections

Item	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Area (million acres):												
Planted acres	5.3	5.8	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Harvested acres	4.7	5.0	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
Yield:												
Bushels per harvested acre	73.0	74.1	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0
Supply and use (million bushels):												
Beginning stocks	64	29	30	32	34	36	33	30	32	34	36	33
Production	341	371	427	427	427	427	427	427	427	427	427	427
Imports	0	0	0	0	0	0	0	0	0	0	0	0
Supply	405	400	457	459	461	463	460	457	459	461	463	460
Feed and residual	97	70	70	70	70	70	70	65	65	65	65	65
Food, seed, and industrial	75	40	40	40	40	40	40	40	40	40	40	40
Domestic use	172	110	110	110	110	110	110	105	105	105	105	105
Exports	204	260	315	315	315	320	320	320	320	320	325	325
Total use	376	370	425	425	425	430	430	425	425	425	430	430
Ending stocks	29	30	32	34	36	33	30	32	34	36	33	30
Stocks-to-use ratio, percent	7.9	8.1	7.5	8.0	8.5	7.7	7.0	7.5	8.0	8.5	7.7	7.0
Prices (dollars per bushel):												
Farm price	3.34	3.60	3.80	3.75	3.75	3.70	3.70	3.70	3.70	3.70	3.70	3.70
Variable costs of production (dollars):												
Per acre	131	132	130	130	130	131	132	133	133	134	134	134
Returns over variable costs (dollars per acre):												
Net returns	113	135	132	129	128	124	123	122	122	121	121	121

Note: Totals may not add due to rounding. Marketing year beginning September 1 for sorghum.
The projections were completed in October 2020.

Table 8: U.S. barley long-term projections

Item	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Area (million acres):												
Planted acres	2.8	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Harvested acres	2.2	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
Yield:												
Bushels per harvested acre	77.7	77.5	76.8	77.5	78.2	79.0	79.7	80.5	81.2	81.9	82.7	83.4
Supply and use (million bushels):												
Beginning stocks	87	80	79	80	83	82	83	80	79	80	82	86
Production	172	165	169	171	172	174	175	177	179	180	182	183
Imports	7	7	10	10	10	10	10	10	10	10	10	10
Supply	266	253	258	261	265	266	268	267	268	270	274	279
Feed and residual	44	25	30	30	35	35	40	40	40	40	40	45
Food, seed, and industrial	136	143	143	143	143	143	143	143	143	143	143	143
Domestic use	180	168	173	173	178	178	183	183	183	183	183	188
Exports	6	6	5	5	5	5	5	5	5	5	5	5
Total use	186	174	178	178	183	183	188	188	188	188	188	193
Ending stocks	80	79	80	83	82	83	80	79	80	82	86	86
Stocks-to-use ratio, percent	43.2	45.2	44.9	46.6	44.8	45.4	42.6	42.0	42.6	43.6	45.7	44.6
Prices (dollars per bushel):												
Farm price	4.69	4.55	4.60	4.55	4.55	4.50	4.50	4.50	4.50	4.50	4.50	4.50
Variable costs of production (dollars):												
Per acre	176	177	176	176	177	178	179	180	181	182	182	183
Returns over variable costs (dollars per acre):												
Net returns	189	175	177	177	179	178	180	182	184	186	190	193

Note: Totals may not add due to rounding. Marketing year beginning June 1 for barley.
The projections were completed in October 2020.

Table 9: U.S. oats long-term projections

Item	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Area (million acres):												
Planted acres	2.8	3.0	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.7	2.7
Harvested acres	0.8	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Yield:												
Bushels per harvested acre	64.3	65.1	66.6	66.9	67.2	67.5	67.8	68.1	68.4	68.7	69.0	69.3
Supply and use (million bushels):												
Beginning stocks	38	37	40	40	39	38	37	36	39	42	40	38
Production	53	65	67	67	67	68	68	68	68	69	69	69
Imports	92	94	95	95	95	95	95	95	95	95	95	95
Supply	183	196	202	202	201	201	200	199	202	206	204	202
Feed and residual	63	75	80	80	80	80	80	75	75	80	80	75
Food, seed, and industrial	81	79	80	81	81	82	82	83	83	84	84	85
Domestic use	144	154	160	161	161	162	162	158	158	164	164	160
Exports	2	2	2	2	2	2	2	2	2	2	2	2
Total use	146	156	162	163	163	164	164	160	160	166	166	162
Ending stocks	37	40	40	39	38	37	36	39	42	40	38	40
Stocks-to-use ratio, percent	25.1	25.7	24.7	23.9	23.3	22.6	22.0	24.4	26.3	24.1	22.9	24.7
Prices (dollars per bushel):												
Farm price	2.82	2.70	2.70	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65	2.65
Variable costs of production (dollars):												
Per acre	129	130	129	129	129	130	131	132	133	133	133	133
Returns over variable costs (dollars per acre):												
Net returns	52	46	51	48	49	49	49	48	49	49	49	50

Note: Totals may not add due to rounding. Marketing year beginning June 1 for oats.
The projections were completed in October 2020.

Table 10: U.S. wheat long-term projections

Item	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Area (million acres):												
Planted acres	45.5	44.3	46.0	46.0	46.0	45.5	45.0	45.0	45.0	44.5	44.5	44.5
Harvested acres	37.4	36.7	38.5	38.5	38.5	38.1	37.7	37.7	37.7	37.3	37.3	37.3
Yield:												
Bushels per harvested acre	51.7	49.7	49.1	49.5	49.9	50.3	50.7	51.1	51.6	52.0	52.4	52.8
Supply and use (million bushels):												
Beginning stocks	1,080	1,028	883	830	796	776	749	720	704	706	701	709
Production	1,932	1,826	1,890	1,906	1,921	1,916	1,911	1,926	1,945	1,940	1,955	1,969
Imports	105	125	120	125	125	125	130	130	130	130	130	130
Supply	3,117	2,979	2,893	2,861	2,842	2,817	2,790	2,776	2,779	2,776	2,786	2,808
Food	962	960	961	963	965	967	969	971	973	975	977	979
Seed	60	61	62	62	61	61	61	61	60	60	60	59
Feed and residual	102	100	90	90	90	90	90	90	90	90	90	100
Domestic use	1,123	1,121	1,113	1,115	1,116	1,118	1,120	1,122	1,123	1,125	1,127	1,138
Exports	965	975	950	950	950	950	950	950	950	950	950	950
Total use	2,089	2,096	2,063	2,065	2,066	2,068	2,070	2,072	2,073	2,075	2,077	2,088
Ending stocks	1,028	883	830	796	776	749	720	704	706	701	709	720
Stocks-to-use ratio, percent	49.2	42.1	40.2	38.5	37.6	36.2	34.8	34.0	34.0	33.8	34.1	34.5
Prices (dollars per bushel):												
Farm price	4.58	4.70	4.90	4.95	5.00	5.10	5.10	5.10	5.10	5.10	5.10	5.10
Variable costs of production (dollars):												
Per acre	132	132	131	131	131	132	133	134	134	135	135	134
Returns over variable costs (dollars per acre):												
Net returns	105	101	109	114	118	125	126	127	129	130	133	135

Note: Totals may not add due to rounding. Marketing year beginning June 1 for wheat.
The projections were completed in October 2020.

Table 11: U.S. soybeans and soybean products long-term projections

Item	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Soybeans												
Area (million acres):												
Planted	76.1	83.1	89.0	90.0	90.0	90.5	90.5	90.0	90.0	90.0	90.0	90.0
Harvested	74.9	82.3	88.2	89.2	89.2	89.7	89.7	89.2	89.2	89.2	89.2	89.2
Yield, bushels per harvested acre	47.4	51.9	50.6	51.2	51.7	52.3	52.8	53.4	53.9	54.5	55.0	55.6
Supply (million bushels)												
Beginning stocks, September 1	909	523	290	255	271	285	299	303	297	300	294	291
Production	3,552	4,268	4,465	4,565	4,610	4,685	4,735	4,760	4,810	4,855	4,905	4,955
Imports	15	15	15	15	15	15	15	15	15	15	15	15
Total supply	4,476	4,806	4,770	4,835	4,896	4,985	5,049	5,078	5,122	5,170	5,214	5,261
Use (million bushels)												
Crush	2,165	2,180	2,200	2,230	2,260	2,290	2,315	2,345	2,375	2,405	2,435	2,460
Seed and residual	112	136	140	140	141	141	141	141	142	142	142	143
Exports	1,676	2,200	2,175	2,195	2,210	2,255	2,290	2,295	2,305	2,330	2,345	2,375
Total use	3,953	4,516	4,515	4,565	4,611	4,686	4,746	4,781	4,822	4,877	4,922	4,978
Ending stocks, August 31												
Total ending stocks	523	290	255	271	285	299	303	297	300	294	291	284
Stocks-to-use ratio, percent	13.2	6.4	5.7	5.9	6.2	6.4	6.4	6.2	6.2	6.0	5.9	5.7
Prices (dollars per bushel)												
Soybean price, farm	8.57	9.80	10.00	9.90	9.80	9.65	9.65	9.70	9.70	9.75	9.80	9.90
Variable costs of production (dollars):												
Per acre	162	164	161	161	161	161	162	162	162	162	162	162
Returns over variable costs (dollars per acre):												
Net returns	244	345	345	345	346	343	348	356	361	369	377	388
Soybean oil (million pounds)												
Beginning stocks, October 1	1,775	1,740	1,755	1,725	1,655	1,770	1,770	1,820	1,880	1,900	1,930	1,925
Production	24,890	25,265	25,520	25,880	26,240	26,600	26,900	27,260	27,620	27,980	28,345	28,645
Imports	325	350	450	450	450	350	350	350	350	350	350	350
Total supply	26,990	27,355	27,725	28,055	28,345	28,720	29,020	29,430	29,850	30,230	30,625	30,920
Domestic disappearance	22,450	23,000	23,500	24,000	24,275	24,550	24,800	25,050	25,300	25,550	25,800	26,050
Biodiesel 1/	7,850	8,100	8,150	8,200	8,250	8,300	8,350	8,400	8,450	8,500	8,550	8,600
Food, feed, and other industrial	14,600	14,900	15,350	15,800	16,025	16,250	16,450	16,650	16,850	17,050	17,250	17,450
Exports	2,800	2,600	2,500	2,400	2,300	2,400	2,400	2,500	2,650	2,750	2,900	2,950
Total use	25,250	25,600	26,000	26,400	26,575	26,950	27,200	27,550	27,950	28,300	28,700	29,000
Ending stocks, September 30	1,740	1,755	1,725	1,655	1,770	1,770	1,820	1,880	1,900	1,930	1,925	1,920
Soybean oil price (dollars per pound)	0.297	0.325	0.340	0.345	0.350	0.350	0.353	0.355	0.355	0.358	0.360	0.363
Soybean meal (thousand short tons)												
Beginning stocks, October 1	402	400	400	400	400	400	400	400	400	400	400	400
Production	51,028	51,400	51,975	52,625	53,300	53,975	54,650	55,325	56,000	56,675	57,350	58,025
Imports	620	400	400	400	400	400	400	400	400	400	400	400
Total supply	52,050	52,200	52,775	53,425	54,100	54,775	55,450	56,125	56,800	57,475	58,150	58,825
Domestic disappearance	37,750	38,300	38,725	39,225	39,750	40,275	40,800	41,325	41,850	42,375	42,900	43,425
Exports	13,900	13,500	13,650	13,800	13,950	14,100	14,250	14,400	14,550	14,700	14,850	15,000
Total use	51,650	51,800	52,375	53,025	53,700	54,375	55,050	55,725	56,400	57,075	57,750	58,425
Ending stocks, September 30	400	400	400	400	400	400	400	400	400	400	400	400
Soybean meal price (dollars per ton)	300	335	350	347	345	341	341	344	345	348	350	355
Crushing yields (pounds per bushel)												
Soybean oil	11.47	11.59	11.60	11.61	11.61	11.62	11.62	11.63	11.63	11.64	11.64	11.65
Soybean meal	47.02	47.15	47.20	47.19	47.19	47.18	47.18	47.17	47.16	47.16	47.15	47.15
Crush margin (dollars per bushel)	1.87	1.86	2.20	2.29	2.40	2.46	2.49	2.54	2.56	2.62	2.64	2.69

Note: Totals may not add due to rounding. Marketing year beginning September 1 for soybeans; October 1 for soybean oil and soybean meal.
1/ Reflects biodiesel made from methyl ester as reported by the U.S. Department of Energy, Energy Information Administration.
The projections were completed in October 2020.

Table 12: U.S. rice long-term projections, total rice, rough basis

Item	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Area (thousand acres):												
Planted	2,540	3,037	2,600	2,700	2,700	2,700	2,700	2,700	2,700	2,700	2,700	2,700
Harvested	2,472	2,991	2,552	2,650	2,650	2,650	2,650	2,650	2,650	2,650	2,650	2,650
Yield:												
Pounds per harvested acre	7,471	7,567	7,645	7,668	7,702	7,732	7,762	7,796	7,823	7,853	7,887	7,917
Supply and use (million hundredweight):												
Beginning stocks	44.9	28.7	47.7	39.3	38.5	38.2	38.5	39.2	40.1	40.3	41.1	41.4
Production	184.7	226.3	195.1	203.2	204.1	204.9	205.7	206.6	207.3	208.1	209.0	209.8
Imports	37.3	37.3	39.5	40.5	41.5	42.5	43.5	44.3	45.0	45.8	46.5	47.3
Total supply	266.8	292.2	282.3	283.0	284.1	285.6	287.7	290.1	292.4	294.2	296.6	298.5
Domestic use and residual	144.0	145.5	145.0	145.6	146.9	148.2	149.5	150.5	151.6	152.6	153.7	154.7
Exports	94.2	99.0	98.0	99.0	99.0	99.0	99.0	99.5	100.5	100.5	101.5	102.0
Total use	238.2	244.5	243.0	244.6	245.9	247.2	248.5	250.0	252.1	253.1	255.2	256.7
Ending stocks	28.7	47.7	39.3	38.5	38.2	38.5	39.2	40.1	40.3	41.1	41.4	41.8
Stocks-to-use ratio, percent	12.0	19.5	16.2	15.7	15.6	15.6	15.8	16.0	16.0	16.2	16.2	16.3
Price (dollars per hundredweight):												
Average farm price	13.20	12.80	13.20	13.00	13.10	13.30	13.40	13.50	13.50	13.50	13.50	13.50
Variable costs of production (dollars):												
Per acre	571	574	566	565	567	569	572	575	577	580	581	581
Returns over variable costs (dollars per acre):												
Net returns	415	395	443	432	442	459	468	477	479	480	484	487

Note: Totals may not add due to rounding. Marketing year beginning August 1 for rice.
The projections were completed in October 2020.

Table 13. U.S. rice long-term projections, long-grain rice, rough basis

Item	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Area (thousand acres):												
Planted	1,778	2,336	1,900	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Harvested	1,730	2,309	1,862	1,960	1,960	1,960	1,960	1,960	1,960	1,960	1,960	1,960
Yield:												
Pounds per harvested acre	7,261	7,361	7,430	7,460	7,500	7,530	7,560	7,600	7,630	7,660	7,700	7,730
Supply and use (million hundredweight):												
Beginning stocks	32.6	16.9	34.4	27.2	26.6	26.5	26.7	27.2	27.7	27.9	28.4	28.9
Production	125.6	170.0	138.3	146.2	147.0	147.6	148.2	149.0	149.5	150.1	150.9	151.5
Imports	29.8	29.5	31.5	32.3	33.0	33.8	34.5	35.3	36.0	36.8	37.5	38.3
Total supply	188.0	216.4	204.2	205.6	206.6	207.8	209.4	211.4	213.2	214.7	216.8	218.6
Domestic use and residual	106.4	111.0	108.0	109.1	110.1	111.2	112.2	113.3	114.3	115.4	116.4	117.5
Exports	64.6	71.0	69.0	70.0	70.0	70.0	70.0	70.5	71.0	71.0	71.5	72.0
Total use	171.1	182.0	177.0	179.1	180.1	181.2	182.2	183.8	185.3	186.4	187.9	189.5
Ending stocks	16.9	34.4	27.2	26.6	26.5	26.7	27.2	27.7	27.9	28.4	28.9	29.2
Stocks-to-use ratio, percent	9.9	18.9	15.4	14.8	14.7	14.7	14.9	15.1	15.0	15.2	15.4	15.4
Price (dollars per hundredweight):												
Average farm price	12.00	11.50	12.00	11.70	11.80	11.90	12.00	12.10	12.20	12.20	12.20	12.20

Note: Totals may not add due to rounding. Marketing year beginning August 1 for rice.
The projections were completed in October 2020.

Table 14. U.S. rice long-term projections, medium- and short-grain rice, rough basis

Item	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Area (thousand acres):												
Planted	762	701	700	700	700	700	700	700	700	700	700	700
Harvested	742	682	690	690	690	690	690	690	690	690	690	690
Yield:												
Pounds per harvested acre	7,960	8,266	8,230	8,260	8,280	8,300	8,330	8,350	8,380	8,400	8,420	8,450
Supply and use (million hundredweight):												
Beginning stocks	10.2	10.7	12.3	11.1	10.9	10.7	10.8	11.0	11.4	11.4	11.7	11.5
Production	59.1	56.4	56.8	57.0	57.1	57.3	57.5	57.6	57.8	58.0	58.1	58.3
Imports	7.6	7.8	8.0	8.3	8.5	8.8	9.0	9.0	9.0	9.0	9.0	9.0
Total supply	77.8	74.8	77.1	76.4	76.5	76.8	77.3	77.6	78.2	78.4	78.8	78.8
Domestic use and residual	37.6	34.5	37.0	36.5	36.8	37.0	37.3	37.3	37.3	37.3	37.3	37.3
Exports	29.6	28.0	29.0	29.0	29.0	29.0	29.0	29.0	29.5	29.5	30.0	30.0
Total use	67.1	62.5	66.0	65.5	65.8	66.0	66.3	66.3	66.8	66.8	67.3	67.3
Ending stocks	10.7	12.3	11.1	10.9	10.7	10.8	11.0	11.4	11.4	11.7	11.5	11.6
Stocks-to-use ratio, percent	16.0	19.7	16.9	16.6	16.3	16.3	16.7	17.2	17.1	17.5	17.2	17.2
Price (dollars per hundredweight):												
Average farm price	16.50	16.50	16.80	17.00	17.10	17.30	17.50	17.50	17.50	17.50	17.50	17.50
California	18.70	18.80	19.00	19.40	19.60	19.80	20.00	20.00	20.00	20.00	20.00	20.00
Other States	11.60	11.60	12.00	11.80	11.90	12.00	12.10	12.20	12.30	12.30	12.30	12.30

Note: Totals may not add due to rounding. Marketing year beginning August 1 for rice; California marketing year beginning October 1.
The projections were completed in October 2020.

Table 15: U.S. upland cotton long-term projections

Item	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Area (million acres):												
Planted acres	13.5	11.9	11.2	11.8	12.0	12.2	12.3	12.4	12.5	12.6	12.7	12.8
Harvested acres	11.4	8.8	9.5	10.0	10.2	10.4	10.5	10.5	10.6	10.7	10.8	10.9
Yield:												
Pounds per harvested acre	810	899	850	855	860	865	870	875	880	885	890	895
Supply and use (thousand bales):												
Beginning stocks	4,636	6,868	6,940	6,360	6,130	5,925	5,975	6,075	6,075	6,125	6,075	6,000
Production	19,227	16,500	16,900	17,900	18,300	18,700	19,000	19,200	19,500	19,700	20,000	20,300
Imports	0	0	5	5	5	5	5	5	5	5	5	5
Supply	23,863	23,368	23,845	24,265	24,435	24,630	24,980	25,280	25,580	25,830	26,080	26,305
Domestic use	2,135	2,480	2,580	2,630	2,655	2,800	2,900	3,000	3,000	3,000	3,000	3,000
Exports	15,021	13,950	14,850	15,450	15,800	15,800	15,950	16,150	16,400	16,700	17,025	17,350
Total use	17,156	16,430	17,430	18,080	18,455	18,600	18,850	19,150	19,400	19,700	20,025	20,350
Ending stocks	6,868	6,940	6,360	6,130	5,925	5,975	6,075	6,075	6,125	6,075	6,000	5,900
Stocks-to-use ratio, percent	40.0	42.2	36.5	33.9	32.1	32.1	32.2	31.7	31.6	30.8	30.0	29.0
Prices (dollars per pound):												
Farm price	0.596	0.610	0.630	0.655	0.660	0.665	0.670	0.675	0.680	0.685	0.690	0.695
Variable costs of production (dollars):												
Per acre	442	459	455	457	459	462	466	470	473	477	479	482
Returns over variable costs (dollars per acre):												
Net returns*	122	205	193	215	220	223	227	232	236	241	246	253

Note: Marketing year beginning August 1 for upland cotton.
* Includes revenue from cottonseed, beginning with USDA Agricultural Projections to 2026. Previously, net returns were calculated using an assumed cottonseed to lint ratio. The net return values use projections of cottonseed prices and yields, so are not directly comparable to values from years prior to 2017.
The projections were completed in October 2020.

Table 16: U.S. sugar long-term projections

Item	Units	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Sugarbeets													
Planted area	1,000 acres	1,132	1,165	1,188	1,172	1,171	1,160	1,153	1,144	1,135	1,126	1,117	1,108
Harvested area	1,000 acres	979	1,149	1,167	1,151	1,150	1,139	1,132	1,123	1,115	1,106	1,097	1,088
Yield	Tons/acre	29.2	31.2	31.7	32.1	32.4	32.7	33.0	33.3	33.6	33.9	34.1	34.4
Production	Million short tons	28.6	35.8	37.0	36.9	37.2	37.3	37.4	37.4	37.4	37.4	37.4	37.4
Sugarcane													
Harvested area	1,000 acres	869	887	884	884	885	885	886	887	888	889	889	890
Yield	Tons/acre	34.9	36.6	36.6	36.8	37.0	37.2	37.4	37.6	37.8	38.0	38.2	38.4
Production	Million short tons	30.3	32.5	32.3	32.5	32.7	32.9	33.1	33.3	33.5	33.8	34.0	34.2
Supply:													
Beginning stocks	1,000 short tons	1,783	1,702	1,749	1,694	1,708	1,721	1,733	1,745	1,757	1,768	1,779	1,789
Production	1,000 short tons	8,128	9,268	9,366	9,377	9,450	9,481	9,531	9,569	9,610	9,646	9,686	9,720
Beet sugar	1,000 short tons	4,293	5,206	5,215	5,189	5,223	5,216	5,226	5,224	5,225	5,219	5,218	5,211
Cane sugar	1,000 short tons	3,835	4,062	4,152	4,189	4,226	4,265	4,305	4,345	4,386	4,427	4,468	4,509
Total Imports	1,000 short tons	4,136	3,120	3,127	3,284	3,308	3,369	3,409	3,456	3,497	3,539	3,574	3,610
TRQ Imports	1,000 short tons	2,071	1,832	1,869	1,873	1,877	1,881	1,884	1,888	1,892	1,896	1,900	1,900
Imports from Mexico	1,000 short tons	1,382	888	852	974	995	1,053	1,090	1,135	1,173	1,212	1,244	1,281
Other imports	1,000 short tons	683	400	405	437	436	435	434	434	432	431	430	429
Total supply	1,000 short tons	14,047	14,089	14,243	14,356	14,465	14,571	14,673	14,770	14,864	14,954	15,039	15,119
Use:													
Exports	1,000 short tons	45	35	35	35	35	35	35	35	35	35	35	35
Domestic deliveries	1,000 short tons	12,300	12,305	12,514	12,613	12,710	12,803	12,892	12,979	13,061	13,140	13,215	13,286
Total use	1,000 short tons	12,345	12,340	12,549	12,648	12,745	12,838	12,927	13,014	13,096	13,175	13,250	13,321
Ending stocks	1,000 short tons	1,702	1,749	1,694	1,708	1,721	1,733	1,745	1,757	1,768	1,779	1,789	1,798
Raw sugar price:													
New York, No. 16 contract [1]	Cents/lb.	26.94	25.57	25.66	25.93	26.11	26.31	26.46	26.64	26.80	26.94	27.09	27.23
Raw sugar loan rate	Cents/lb.	19.75	19.75	19.75	19.75	19.75	19.75	19.75	19.75	19.75	19.75	19.75	19.75
Beet sugar loan rate	Cents/lb.	25.83	25.83	25.83	25.83	25.83	25.83	25.83	25.83	25.83	25.83	25.83	25.83
Grower prices:													
Sugarbeets	Dollars/ton	38.40	50.25	46.90	49.46	49.13	49.77	49.82	50.04	49.94	50.13	50.02	50.35
Sugarcane	Dollars/ton	37.80	33.15	35.33	35.71	36.04	36.39	36.72	37.06	37.39	37.71	38.04	38.36

Note: Data shown is for an October-September year. The projections were completed in October 2020.

[1] Price for July-September quarter.

Table 17. Fruit, nuts, and vegetables long-term projections

Item	Unit	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Production, farm weight													
Fruit and nuts	Mil. lbs.	56,772	57,484	55,635	56,201	56,458	56,919	57,332	57,763	58,191	58,623	59,057	59,493
Citrus	Mil. lbs.	16,280	15,560	14,184	14,602	14,475	14,514	14,502	14,505	14,504	14,505	14,505	14,505
Noncitrus	Mil. lbs.	33,861	34,600	34,220	34,220	34,457	34,733	35,011	35,291	35,573	35,858	36,145	36,434
Tree nuts	Mil. lbs.	6,631	7,324	7,231	7,378	7,525	7,672	7,819	7,966	8,113	8,260	8,407	8,554
Vegetables [1]	Mil. lbs.	123,552	128,213	130,687	128,234	129,026	128,735	129,032	128,943	129,323	129,348	129,704	129,447
Fresh market	Mil. lbs.	37,974	40,476	39,639	39,595	39,115	39,339	39,278	39,322	39,411	39,566	39,648	39,586
Processing	Mil. lbs.	31,615	33,214	34,050	33,223	33,399	33,562	33,740	33,887	34,025	34,155	34,277	34,390
Potatoes	Mil. lbs.	42,442	41,548	45,393	43,637	44,189	43,407	43,573	43,121	43,124	42,792	42,789	42,398
Pulses	Mil. lbs.	5,478	6,391	5,385	5,601	6,095	6,160	6,193	6,291	6,447	6,526	6,652	6,738
Other [2]	Mil. lbs.	6,042	6,584	6,219	6,179	6,229	6,267	6,248	6,322	6,316	6,309	6,337	6,335
Total fruit, nuts, vegetables	Mil. lbs.	180,324	185,697	186,322	184,435	185,484	185,654	186,364	186,706	187,514	187,971	188,760	188,940
Farm value													
Fruit and nuts	Million dollars	28,770	29,453	30,247	31,071	31,919	32,790	33,685	34,604	35,549	36,519	37,517	38,542
Citrus	Million dollars	3,400	3,398	3,490	3,593	3,699	3,809	3,922	4,038	4,157	4,280	4,407	4,537
Noncitrus	Million dollars	15,446	15,833	16,228	16,634	17,050	17,476	17,913	18,361	18,820	19,291	19,773	20,267
Tree nuts	Million dollars	9,924	10,222	10,528	10,844	11,170	11,505	11,850	12,205	12,571	12,949	13,337	13,737
Vegetables	Million dollars	20,466	21,941	21,690	22,411	22,757	23,302	23,788	24,383	24,866	25,421	25,945	26,573
Fresh market	Million dollars	11,716	12,532	12,609	12,921	13,296	13,606	13,973	14,350	14,709	15,083	15,471	15,886
Processing	Million dollars	1,614	1,784	1,862	1,858	1,891	1,922	1,962	1,994	2,025	2,057	2,089	2,120
Potatoes	Million dollars	4,138	4,275	3,899	4,131	4,025	4,164	4,131	4,216	4,215	4,279	4,288	4,354
Pulses	Million dollars	1,017	1,176	1,188	1,329	1,334	1,359	1,427	1,488	1,537	1,576	1,626	1,695
Other	Million dollars	1,981	2,174	2,131	2,173	2,212	2,252	2,295	2,335	2,380	2,425	2,470	2,518

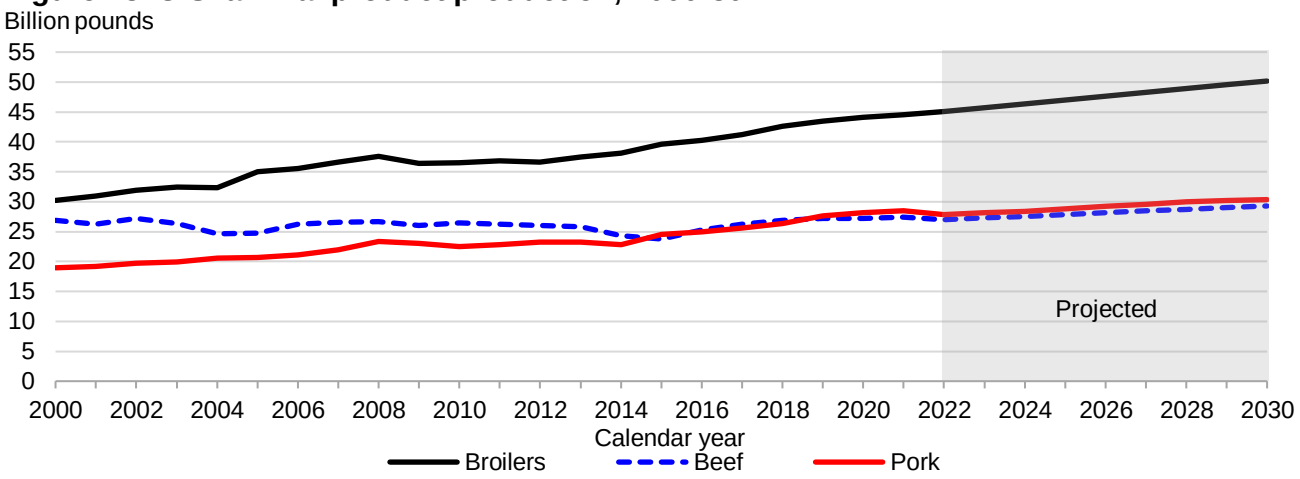
[1] Includes melons, sweet potatoes, and mushrooms. Utilized production is used for potatoes. Pulses include edible dry beans and peas, lentils, and other peas.

[2] Other includes melons and mushrooms. Sweet potatoes included with fresh vegetables.

Note: Totals may not add due to rounding. The projections were completed in November 2020.

U.S. Livestock

Figure 18. U.S. animal product production, 2000-30

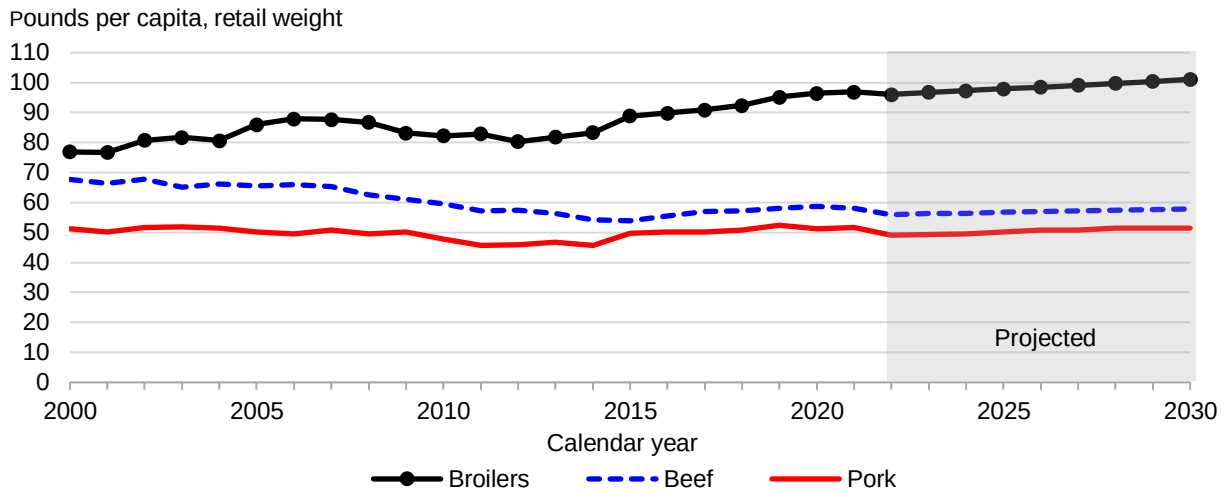


Note: The shaded region represents the projected period.
Source: Projections from Office of the Chief Economist, World Agricultural Outlook Board, U.S. Department of Agriculture. Prepared by the Interagency Agricultural Projections Committee, as of November 6, 2020. Please see the National Agricultural Statistics Service (NASS) Quick Stats database for any changes to current or recent historical data. Short term projections are updated each month in the *World Agricultural Supply and Demand Estimates* report.

Rebounding domestic and global demand following the 2020 COVID-19 pandemic provides incentives for growth of the U.S. livestock sector over the next 10 years. In the beef cattle industry, the cattle-corn price ratio is expected to decline over the projection period as cattle prices decline more rapidly than corn prices. In the hog industry, the hog-feed price ratio is expected to reach a high point in 2022, and then decline. The broiler industry's feed price ratio increases gradually in the first half of the projections and then declines until the end. With live animal prices mostly stable or declining, combined domestic and global demand for beef, pork, and poultry are expected to rise throughout the projection period because of efficiency gains and structural change. Milk production is anticipated to rise throughout the projection period with growth to the dairy herd along with gains in milk per cow.

- The cattle herd is expected to decline cyclically during the first part of the projection period as producers respond to lower returns. This decline in cattle numbers early in the period is expected to lead to higher cattle prices, after which a modest herd expansion pushes cattle prices lower through the end of the period. Rising slaughter weights will further support production gains.
- Slowly increasing corn prices and slowly declining hog prices reduce the hog/feed price ratio (hog price/corn price), causing declines in farrowings at both the beginning and at the end of the projections. However, farrowing volatility is more than offset by continued gains in pigs per litter and hog carcass weights that drive a positive trend in pork production. Pork production exceeds beef production by a widening amount throughout the projection period.
- Broiler production is expected to continue increasing steadily over the forecast period, driven by increasing domestic and foreign demand. However, production growth will largely reflect a continuation of the shift toward the production of heavier-weight birds. After contracting between 2018-20, turkey production is expected to increase over the projection period, while per capita disappearance is forecast to decline.

Figure 19. U.S. per capita meat disappearance, 2000-30



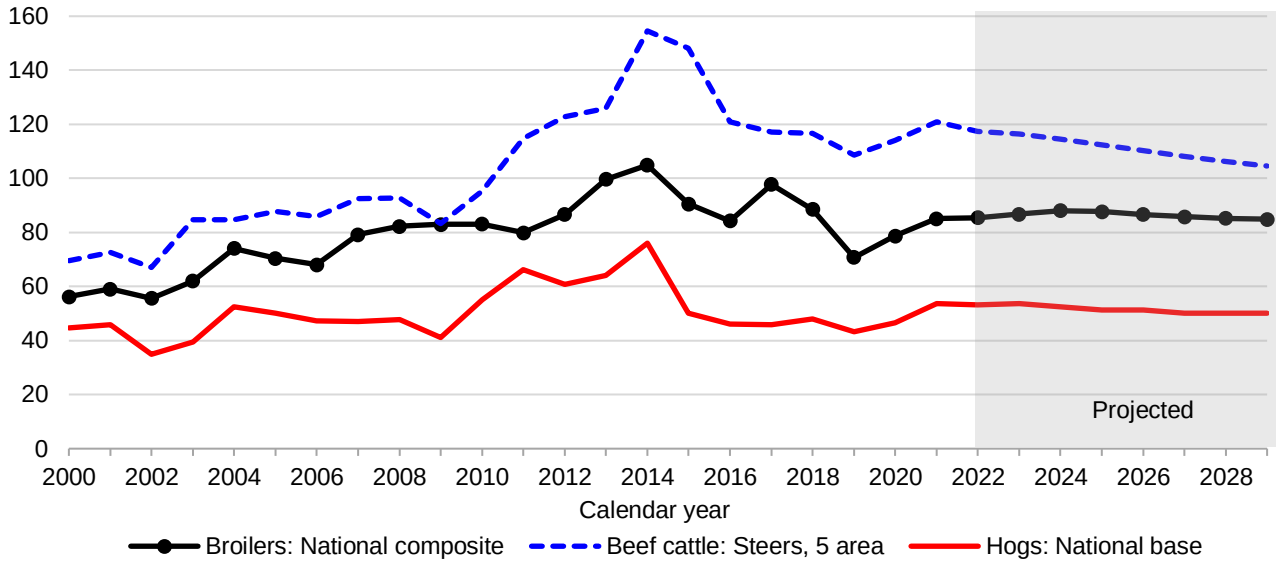
Note: The shaded region represents the projected period.
Source: USDA, Economic Research Service.

U.S. per capita disappearance of red meat (beef, veal, pork, lamb, and mutton) and poultry (broilers and turkey) is projected to range from 219.1 to 228.1 pounds during 2022-30, with poultry meat continuing to account for most of the projected growth.

- While U.S. per capita beef disappearance is expected to increase over the projection period, its rate of change in the early years of the period is expected to be slow. Disappearance is projected at 55.9 pounds per capita in 2022, increasing to 56.4 in both 2023 and 2024, and then climbing to 57.8 pounds per capita by 2030. Growth rates of commercial beef production in each year of the projection period beyond 2022 supports higher per capita consumption.
- Expected per capita pork disappearance is 49.0 pounds in 2022, ticks up slowly to 51.4 pounds in 2028, and remaining at that level through 2030.
- Broiler per capita disappearance is expected to increase steadily, growing from 96.0 pounds in 2022 to 101.1 pounds by 2030. Per capita turkey disappearance is expected to decline slowly over the decade, dropping to 15.0 pounds per person in 2030 from 15.5 in 2022.

Figure 20. U.S nominal livestock prices, 2000-30

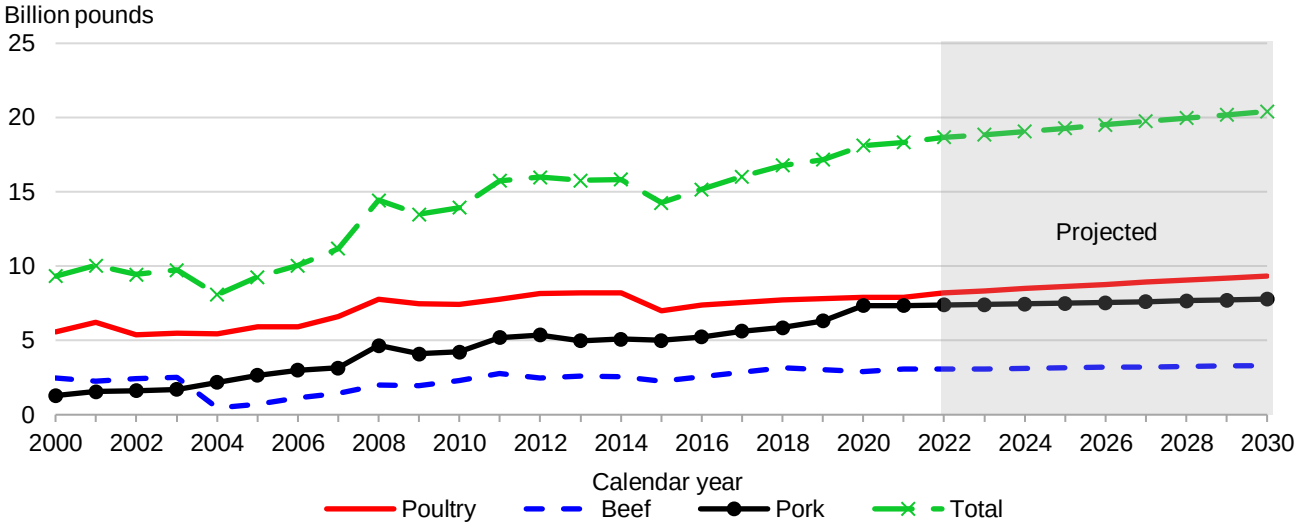
Dollars per cwt



Notes: The shaded region represents the projected period. cwt=hundredweight.
Source: Projections from Office of the Chief Economist, World Agricultural Outlook Board, U.S. Department of Agriculture. Prepared by the Interagency Agricultural Projections Committee, as of November 6, 2020. Please see the National Agricultural Statistics Service (NASS) Quick Stats database for any changes to current or recent historical data. Short term projections are updated each month in the *World Agricultural Supply and Demand Estimates* report.

- With supplies of beef projected to keep pace with or exceed demand over the next decade, nominal beef cattle prices decline throughout the projection period. Tighter supplies of fed cattle at the start of the projections period coupled with continued demand strength will support live steer prices in the 5-area marketing region to almost $121 per hundredweight (cwt) in 2022. However, as the cattle herd expands and beef production grows throughout the remainder of the period, steer prices are expected to decline to less than $105 per cwt.
- Despite some volatility early in the period, progressively increasing supplies of pork are expected to pressure prices lower through 2028, before reversing and rising through the end of the projection period. National base prices for live-equivalent hogs are expected to average about $52 per cwt. over the projection period.
- Broiler prices are projected to rise through 2025, as U.S. and foreign demand strengthen following the pandemic, and then trend downward as productivity gains match growth in demand.

Figure 21. U.S. meat exports, 2000-30

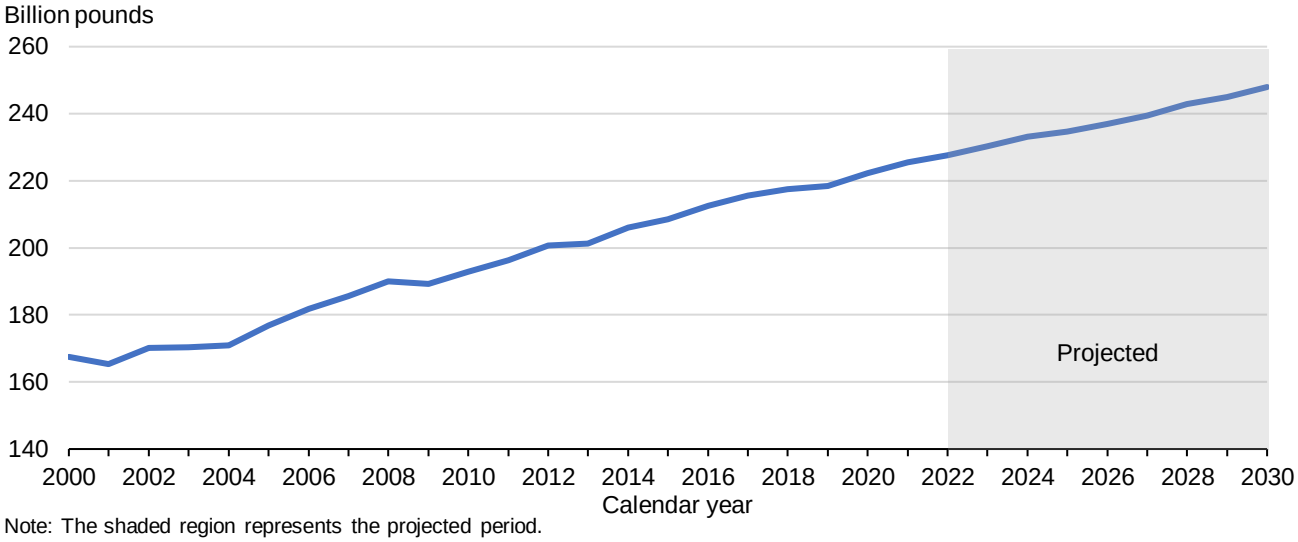


Note: The shaded region represents the projected period.
Source: Projections from Office of the Chief Economist, World Agricultural Outlook Board, U.S. Department of Agriculture. Prepared by the Interagency Agricultural Projections Committee, as of November 6, 2020. Please see the National Agricultural Statistics Service (NASS) Quick Stats database for any changes to current or recent historical data. Short term projections are updated each month in the *World Agricultural Supply and Demand Estimates* report.

While the U.S. dollar is generally expected to weaken during 2022-30, it remains comparatively strong relative to its value during the last decade. Despite the outlook for a relatively strong dollar, total U.S. red meat and poultry exports are projected to rise through 2030 as global economic growth supports foreign demand for U.S. products.

- Through most of the forecast period, the United States is expected to import more beef than it exports by a small margin. Global beef production is expected to rise, increasing competition for U.S. exports, while U.S. demand for processing-grade beef is expected to support growth in imports. Brazil is projected to remain the largest global beef exporter, while the United States, India, and Australia are expected to compete for the second position. Among the major global beef exporters, the U.S. market share is expected to decline, particularly relative to Brazil.
- The annual percent change in U.S. pork exports averages less than 1 percent over the projection period, compared to poultry exports whose year-over-year growth averages 1.6 percent, and beef export growth, which fluctuates, but also averages less than 1 percent. Production efficiency gains in the hog sector continue to enhance the sector's international competitiveness. The presence of African Swine Fever (ASF) in China and other markets is also expected to continue to support increased global import demand for U.S. pork, at least in the short term. The United States is expected to maintain its position as the second-largest exporter of pork behind the European Union (EU), and well ahead of Brazil and Canada.
- U.S poultry exports are expected to grow over the next 10 years, primarily driven by broiler exports, as turkey export growth is expected to slow in the second half of the period. Broiler export growth is expected to continue to benefit from gains in production efficiency, along with increasing global demand. The U.S. is expected to maintain its position as the second-largest exporter of poultry behind Brazil, which expands its market share, while the EU and Thailand remain third and fourth. Among major poultry exporters, about 84 percent of all exports are projected to come from these four countries in 2030.

Figure 22. U.S. milk production, 2000-30



Note: The shaded region represents the projected period.
Source: Projections from Office of the Chief Economist, World Agricultural Outlook Board, U.S. Department of Agriculture. Prepared by the Interagency Agricultural Projections Committee, as of November 6, 2020. Please see the National Agricultural Statistics Service (NASS) Quick Stats database for any changes to current or recent historical data. Short term projections are updated each month in the *World Agricultural Supply and Demand Estimates* report.

Milk production is projected to rise at a compound annual growth rate of 1.1 percent over the next 10 years, reaching 248 billion pounds in 2030. With slow growth in domestic demand as the economy recovers from the pandemic, the dairy herd will remain relatively flat in the middle of the decade but grow in the latter years. In 2030, milk cows are projected to number 9.43 million head. Economies of scale trends are expected to continue, leading to further farm consolidation. Technological and genetic developments will contribute to increasing yields. In 2030, milk production per cow is projected to average 26,295 pounds.

- Commercial use of dairy products is expected to rise faster than the growth in the U.S. population over the next decade. Demand for cheese is expected to rise because of continued greater consumption of prepared foods and increased away-from-home eating. Butter demand is also expected to grow significantly. The decline in per capita consumption of fluid milk products is expected to continue.
- Global demand for U.S. dairy products is expected to continue to grow over the next 10 years, with the largest increases being in exports of products with high skim-solids content such as dry skim milk products (nonfat dry milk and skim milk powder), whey products, and lactose. By 2030, U.S. dairy exports are expected to be 4.0 percent of milk production on a milk-fat milk-equivalent basis and 22.6 percent on a skim-solids milk-equivalent basis.
- The all-milk price in 2021 is expected to be lower than 2020 as milk production increases significantly. At the time the projections were made, some Government purchase programs were scheduled to be discontinued at the end of 2020. Feed prices are expected to increase from 2020 to 2021. Milk production in 2022 is projected to grow at a rate slower than in 2020 and 2021 because of lagged supply response to relatively low milk prices and relatively high feed prices in 2021. With slow milk production growth in 2022 and an increase in demand as the economy is recovering from the pandemic, the all-milk price is projected to increase in 2022. As the industry adjusts, the all milk price dips to lower levels in 2023-25. The all milk price then increases in nominal terms later in the decade.

Table 18: Per capita meat consumption, retail weight

Item	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
						Pounds						
Beef	58.1	58.8	58.0	55.9	56.4	56.4	56.7	56.9	57.2	57.4	57.6	57.8
Veal	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Pork	52.4	51.3	51.6	49.0	49.4	49.6	50.2	50.8	50.9	51.4	51.4	51.4
Lamb & mutton	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
Total red meat	111.9	111.4	111.0	106.2	107.1	107.3	108.2	109.0	109.4	110.1	110.4	110.5
Broilers	95.1	96.4	96.9	96.0	96.7	97.3	97.9	98.5	99.1	99.8	100.4	101.1
Other chicken	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Turkeys	16.0	15.8	15.7	15.5	15.4	15.3	15.2	15.2	15.2	15.1	15.1	15.0
Total poultry	112.5	113.7	114.0	112.8	113.5	114.0	114.5	115.1	115.7	116.3	116.9	117.6
Red meat & poultry	224.4	225.0	224.9	219.1	220.6	221.3	222.7	224.1	225.1	226.4	227.3	228.1

Note: Totals may not add due to rounding. The projections were completed in October 2020.

Table 19: Beef long-term projections

Item	Units	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Beginning stocks	Mil. lbs.	662	642	670	650	650	650	650	650	650	650	650	650
Commercial production	Mil. lbs.	27,155	27,138	27,365	26,916	27,246	27,454	27,766	28,074	28,384	28,680	28,957	29,212
Change from previous year	Percent	1.1	-0.1	0.8	-1.6	1.2	0.8	1.1	1.1	1.1	1.0	1.0	0.9
Farm production	Mil. lbs.	69	69	69	69	69	69	69	69	69	69	69	69
Total production	Mil. lbs.	27,224	27,207	27,434	26,985	27,315	27,523	27,835	28,143	28,453	28,749	29,026	29,281
Imports	Mil. lbs.	3,058	3,447	3,135	3,048	3,133	3,166	3,208	3,245	3,279	3,309	3,336	3,359
Total supply	Mil. lbs.	30,944	31,296	31,239	30,683	31,098	31,339	31,693	32,038	32,382	32,708	33,012	33,290
Exports	Mil. lbs.	3,026	2,896	3,080	3,093	3,078	3,111	3,152	3,188	3,221	3,251	3,277	3,300
Ending stocks	Mil. lbs.	642	670	650	650	650	650	650	650	650	650	650	650
Total disappearance	Mil. lbs.	27,276	27,730	27,509	26,940	27,370	27,579	27,891	28,200	28,510	28,807	29,085	29,340
Per capita, retail weight	Pounds	58.1	58.8	58.0	55.9	56.4	56.4	56.7	56.9	57.2	57.4	57.6	57.8
Change from previous year	Percent	1.4	1.2	-1.3	-3.7	0.9	0.1	0.5	0.5	0.5	0.4	0.4	0.3
Prices:													
Beef cattle, farm	$/cwt	116.09	109.03	114.31	121.32	117.71	116.84	114.92	112.75	110.52	108.43	106.54	104.90
Calves, farm	$/cwt	156.75	153.13	155.17	166.09	166.00	165.25	162.59	159.44	156.18	153.17	150.54	148.35
Steers, 5-area	$/cwt	116.78	108.71	114.00	120.99	117.39	116.52	114.61	112.44	110.22	108.14	106.25	104.61
Feeder steers, Oklahoma City	$/cwt	142.23	136.80	138.50	148.25	148.16	147.49	145.12	142.31	139.40	136.71	134.36	132.41
Feed price ratio:													
Beef cattle-corn	Ratio	32.2	30.6	31.8	34.1	32.7	32.5	32.4	31.8	31.1	30.5	30.0	29.5
Cattle inventory	1,000 head	94,805	94,413	95,000	95,000	93,632	93,757	94,114	94,458	94,768	95,017	95,197	95,306
Beef cow inventory	1,000 head	31,691	31,317	31,030	30,868	30,824	30,944	31,079	31,203	31,300	31,366	31,397	31,395
Total cow inventory	1,000 head	41,044	40,651	40,400	40,259	40,236	40,376	40,532	40,676	40,794	40,880	40,932	40,951

Note: Totals may not add due to rounding. Cwt = hundredweight. The projections were completed in October 2020.

Table 20: Pork long-term projections

Item	Units	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Beginning stocks	Mil. lbs.	559	646	525	575	610	620	630	640	650	660	670	680
Commercial production	Mil. lbs.	27,638	28,157	28,510	27,791	28,099	28,349	28,808	29,263	29,510	29,931	30,141	30,333
Change from previous year	Percent	5.0	1.9	1.3	-2.5	1.1	0.9	1.6	1.6	0.8	1.4	0.7	0.6
Farm production	Mil. lbs.	14.0	14.2	14.2	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
Total production	Mil. lbs.	27,652	28,171	28,524	27,805	28,113	28,363	28,822	29,277	29,524	29,945	30,155	30,347
Imports	Mil. lbs.	945	871	945	950	954	959	964	969	974	979	983	988
Total supply	Mil. lbs.	29,155	29,688	29,994	29,330	29,677	29,942	30,416	30,886	31,147	31,583	31,808	32,015
Exports	Mil. lbs.	6,321	7,347	7,350	7,387	7,424	7,461	7,498	7,554	7,611	7,668	7,726	7,784
Ending stocks	Mil. lbs.	646	525	575	610	620	630	640	650	660	670	680	680
Total disappearance	Mil. lbs.	22,189	21,816	22,069	21,333	21,634	21,851	22,278	22,682	22,876	23,245	23,402	23,551
Per capita, retail weight	Pounds	52.4	51.3	51.6	49.0	49.4	49.6	50.2	50.8	50.9	51.4	51.4	51.4
Change from previous year	Percent	2.8	-2.2	0.7	-5.0	0.7	0.3	1.3	1.2	0.2	1.0	0.1	0.0
Prices:													
Hogs, farm	$/cwt	51.91	48.17	51.83	59.83	59.31	59.73	58.48	57.16	57.08	55.83	55.87	55.92
National base, live equivalent	$/cwt	47.95	43.25	46.50	53.68	53.21	53.58	52.46	51.28	51.21	50.09	50.12	50.17
Feed price ratio:													
Hog-corn	Ratio	14.4	13.5	14.4	16.8	16.5	16.6	16.5	16.1	16.1	15.7	15.7	15.8
Hog inventory, December 1, previous year	1,000 head	75,070	79,048	78,600	80,250	80,688	81,236	82,293	83,331	83,770	84,701	85,030	85,307

Note: Totals may not add due to rounding. Cwt = hundredweight. The projections were completed in October 2020.

Table 21: Young chicken long-term projections

Item	Units	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Beginning stocks	Mil. lbs.	845	937	900	915	958	970	983	996	1009	1023	1036	1050
Federally inspected slaughter	Mil. lbs.	43,905	44,602	45,060	45,570	46,242	46,843	47,478	48,107	48,748	49,403	50,050	50,709
Change from previous year	Percent	3.1	1.6	1.0	1.1	1.5	1.3	1.4	1.3	1.3	1.3	1.3	1.3
Production	Mil. lbs.	43,435	44,125	44,578	45,082	45,747	46,342	46,970	47,593	48,226	48,875	49,515	50,167
Total supply	Mil. lbs.	44,411	45,208	45,610	46,153	46,852	47,470	48,109	48,752	49,401	50,067	50,723	51,393
Change from previous year	Percent	2.9	1.8	0.9	1.2	1.5	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Exports	Mil. lbs.	7,103	7,246	7,260	7,482	7,599	7,730	7,858	7,987	8,116	8,245	8,374	8,503
Ending stocks	Mil. lbs.	937	900	915	958	970	983	996	1,009	1,023	1,036	1,050	1,063
Disappearance	Mil. lbs.	36,371	37,062	37,435	37,712	38,282	38,757	39,255	39,755	40,262	40,786	41,300	41,827
Per capita, retail weight	Pounds	95.1	96.4	96.9	96.0	96.7	97.3	97.9	98.5	99.1	99.8	100.4	101.1
Change from previous year	Percent	2.8	1.4	0.5	-1.0	0.8	0.6	0.6	0.6	0.6	0.7	0.6	0.7
Prices:													
Broilers, farm	Cents/lb.	48.2	36.4	40.3	43.5	43.7	44.3	45.0	44.8	44.3	43.9	43.6	43.4
Broilers, National composite	Cents/lb.	88.6	70.8	78.8	85.2	85.5	86.8	88.0	87.7	86.7	85.9	85.3	84.8
Feed price ratio:													
Broiler-feed 1/	Ratio	4.7	3.6	3.7	3.9	4.0	4.0	4.2	4.1	4.1	4.0	4.0	3.9

Note: Totals may not add due to rounding. 1/ Broiler feed price based on 58 percent corn price and 42 percent soybean price, as used by USDA, National Agricultural Statistics Service. The projections were completed in October 2020.

Table 22: Turkey long-term projections

Item	Units	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Beginning stocks	Mil. lbs.	303	233	215	230	235	236	235	233	231	229	227	226
Production	Mil. lbs.	5,818	5,738	5,770	5,832	5,862	5,880	5,907	5,938	5,970	5,995	6,019	6,040
Total supply	Mil. lbs.	6,133	5,991	6,001	6,080	6,116	6,136	6,162	6,192	6,224	6,248	6,270	6,291
Change from previous year	Percent	-1.2	-2.3	0.2	1.3	0.6	0.3	0.4	0.5	0.5	0.4	0.4	0.3
Exports	Mil. lbs.	639	550	570	622	652	670	683	693	701	710	717	725
Ending stocks	Mil. lbs.	233	215	230	235	236	235	233	231	229	227	226	224
Disappearance	Mil. lbs.	5,261	5,226	5,201	5,222	5,229	5,231	5,247	5,268	5,293	5,311	5,327	5,342
Per capita, retail weight	Pounds	16.0	15.8	15.7	15.5	15.4	15.3	15.2	15.2	15.2	15.1	15.1	15.0
Change from previous year	Percent	-1.1	-1.2	-1.0	-1.3	-0.6	-0.6	-0.4	-0.2	-0.2	-0.3	-0.3	-0.3
Prices:													
Turkey, farm	Cents/lb.	57.9	70.3	69.9	70.2	69.5	69.9	69.5	70.0	69.7	69.6	69.6	69.5
Hen turkeys, National	Cents/lb.	89.2	106.1	105.5	106.0	104.9	105.5	104.9	105.7	105.3	105.0	105.0	104.9
Feed price ratio:													
Turkey-feed 1/	Ratio	6.2	7.8	7.3	7.1	7.0	7.1	7.1	7.2	7.1	7.1	7.0	7.0

Note: Totals may not add due to rounding.
1/ Turkey feed price based on 51 percent corn price, 28 percent soybean price, and 21 percent wheat price, as used by USDA, National Agricultural Statistics Service.
The projections were completed in October 2020.

Table 23: Egg long-term projections

Item	Units	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Beginning stocks	Million dozen	23	32	31	33	33	34	35	36	37	38	39	40
Production	Million dozen	9,447	9,253	9,390	9,578	9,750	9,924	10,098	10,272	10,446	10,620	10,794	10,968
Change from previous year	Percent	2.6	-2.1	1.5	2.0	1.8	1.8	1.8	1.7	1.7	1.7	1.6	1.6
Imports	Million dozen	15	14	16	16	16	16	16	16	16	16	16	16
Total supply	Million dozen	9,485	9,299	9,437	9,627	9,799	9,974	10,149	10,324	10,499	10,674	10,849	11,024
Change from previous year	Percent	2.6	-2.0	1.5	2.0	1.8	1.8	1.8	1.7	1.7	1.7	1.6	1.6
Hatching use	Million dozen	1,081	1,078	1,105	1,106	1,109	1,112	1,116	1,121	1,126	1,131	1,136	1,142
Exports	Million dozen	334	350	335	355	370	390	405	415	425	435	450	460
Ending stocks	Million dozen	32	31	33	33	34	35	36	37	38	39	40	41
Disappearance	Million dozen	8,038	7,840	7,964	8,133	8,287	8,437	8,592	8,752	8,911	9,069	9,222	9,381
Per capita	Number	293.6	285.0	288.0	289.1	292.6	295.9	299.3	302.9	306.4	310.0	313.3	316.8
Change from previous year	Percent	2.1	-2.9	1.1	0.4	1.2	1.1	1.2	1.2	1.2	1.1	1.1	1.1
Prices:													
Eggs, farm	Cents/doz.	79.7	93.5	88.4	104.3	103.5	107.4	109.3	112.0	114.4	116.9	119.4	121.9
New York, Grade A large	Cents/doz.	94.0	116.7	109.5	121.3	120.4	124.9	127.1	130.3	133.0	136.0	138.8	141.7
Feed price ratio:													
Egg-feed 1/	Ratio	9.5	11.2	9.9	11.7	11.6	12.1	12.5	12.8	13.0	13.3	13.5	13.8

Note: Totals may not add due to rounding.
1/ Egg feed price based on 75 percent corn price and 25 percent soybean price, as used by USDA, National Agricultural Statistics Service.
The projections were completed in October 2020.

Table 24: Dairy long-term projections

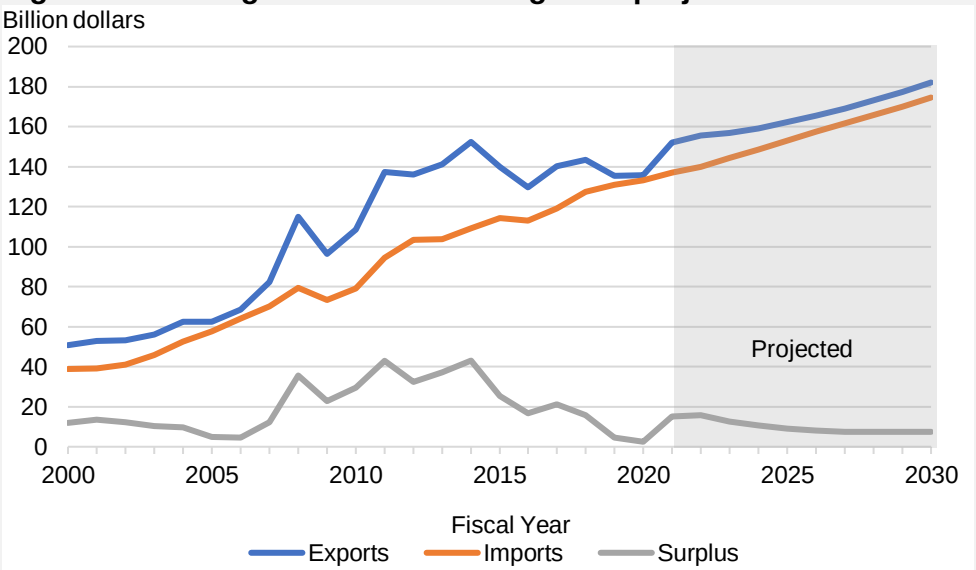
Item	Units	2019	2020 1/	2021	2022	2023	2024 1/	2025	2026	2027	2028 1/	2029	2030
Milk production and marketings:													
Number of cows	Thousand	9,336	9,365	9,370	9,365	9,375	9,375	9,370	9,370	9,375	9,390	9,405	9,430
Milk per cow	Pounds	23,391	23,735	24,070	24,305	24,560	24,865	25,040	25,290	25,540	25,865	26,045	26,295
Milk production	Billlion lbs.	218.4	222.3	225.5	227.6	230.3	233.1	234.6	237.0	239.4	242.9	245.0	248.0
Farm use	Billlion lbs.	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Marketings	Billlion lbs.	217.4	221.3	224.5	226.6	229.2	232.1	233.6	235.9	238.4	241.9	243.9	247.0
Supply and use, milkfat basis:													
Beginning commercial stocks	Billlion lbs.	13.8	13.6	14.0	13.8	14.4	15.2	16.0	16.7	17.0	17.4	17.9	18.3
Marketings	Billlion lbs.	217.4	221.3	224.5	226.6	229.2	232.1	233.6	235.9	238.4	241.9	243.9	247.0
Imports	Billlion lbs.	6.9	6.9	6.7	6.3	6.2	6.1	6.0	6.1	6.0	6.0	6.0	6.0
Commercial supply	Billlion lbs.	238.1	241.8	245.2	246.7	249.8	253.4	255.6	258.7	261.4	265.3	267.8	271.3
Domestic commercial use 2/	Billlion lbs.	215.2	218.2	221.9	222.8	224.8	227.6	228.8	231.7	234.0	237.4	239.5	242.5
Commercial exports	Billlion lbs.	9.1	9.3	9.5	9.5	9.8	9.8	10.1	10.0	10.0	10.0	10.0	9.9
CCC donations 3/	Billlion lbs.	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ending commercial stocks	Billlion lbs.	13.6	14.0	13.8	14.4	15.2	16.0	16.7	17.0	17.4	17.9	18.3	18.9
Supply and use, skim solids basis:													
Beginning commercial stocks	Billlion lbs.	10.7	10.2	10.5	10.2	10.3	10.8	11.3	11.7	11.9	12.1	12.4	12.5
Marketings	Billlion lbs.	217.4	221.3	224.5	226.6	229.2	232.1	233.6	235.9	238.4	241.9	243.9	247.0
Imports	Billlion lbs.	5.8	5.7	5.7	5.4	5.5	5.4	5.4	5.3	5.3	5.2	5.1	5.1
Commercial supply	Billlion lbs.	233.9	237.2	240.7	242.2	245.0	248.3	250.3	252.9	255.6	259.2	261.4	264.6
Domestic commercial use 2/	Billlion lbs.	181.9	179.5	182.7	183.3	184.6	186.3	186.9	188.4	190.0	192.2	193.7	195.7
Commercial exports	Billlion lbs.	41.5	47.1	47.8	48.6	49.6	50.7	51.7	52.6	53.5	54.6	55.2	56.1
CCC donations 3/	Billlion lbs.	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ending commercial stocks	Billlion lbs.	10.2	10.5	10.2	10.3	10.8	11.3	11.7	11.9	12.1	12.4	12.5	12.8
Prices:													
All milk	$/hundredweight	18.63	18.00	17.60	18.40	17.95	17.60	17.60	18.15	18.55	18.80	19.30	19.60
Cheese	$/lb.	1.76	1.91	1.80	1.82	1.75	1.69	1.66	1.70	1.74	1.76	1.78	1.79
Butter	$/lb.	2.24	1.60	1.70	1.83	1.83	1.91	1.91	1.98	2.00	2.04	2.10	2.16
Nonfat dry milk	$/lb.	1.04	1.04	1.05	1.20	1.16	1.09	1.09	1.08	1.09	1.09	1.16	1.18
Dry whey	$/lb.	0.38	0.35	0.36	0.38	0.39	0.39	0.41	0.43	0.43	0.42	0.42	0.42

Note: Totals may not add due to rounding. 1/ Leap year. 2/ Dairy domestic commercial use for 2020 includes significant milk marketed but not processed. 3/ CCC donations include purchases made through the USDA Trade Mitigation program (funded through CCC) but not under other programs. The Commodity Credit Corporation (CCC) is a wholly-owned Government corporation administered by USDA. The projections were completed in October 2020.

Breakout Box: U.S. Agricultural Trade Projections

Projected U.S. total agricultural export values increase by 12.0 percent in fiscal year 2021 to within $350 million of the 2014 record level because of higher prices and stronger export quantities of major field crops. Forecast gains are driven by initially large global demand for agricultural goods compared with fiscal year 2020, as the world's economies recover from effects of the pandemic. Agricultural exports are expected to grow at an annual rate averaging 2.2 percent per year for the rest of the decade. The value of U.S. agricultural imports is projected to increase, as domestic preferences for a diverse array of agricultural goods continue to exceed domestic production.

Figure 23. U.S. agricultural trade long-term projections



Note: The shaded region represents the projected period.
Sources: U.S. Department of Agriculture and U.S. Department of Commerce, Bureau of the Census.

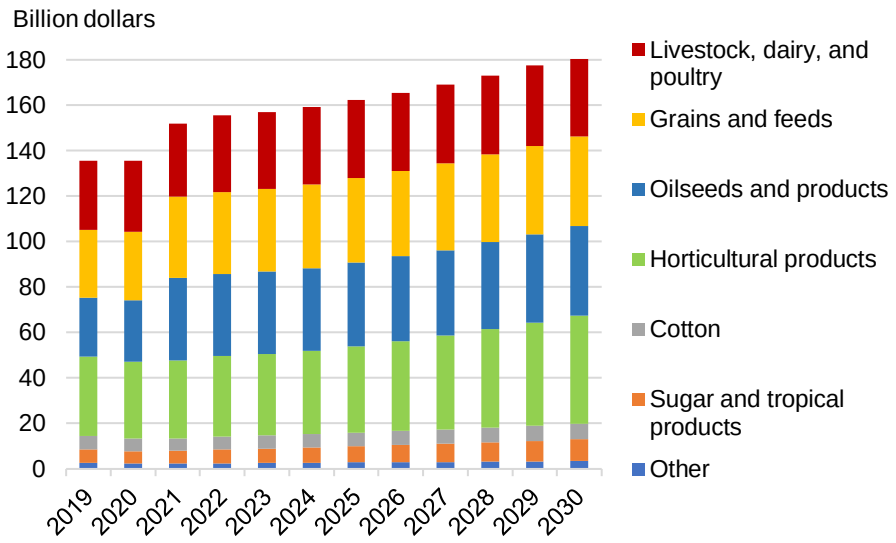
The outlook for U.S. commodity prices contributes to the projected upward trend in the value of U.S. agricultural exports. While soybean prices decline for a period after a 2021 peak and then gradually increase through 2030, prices for other crops are expected to remain relatively flat throughout the projection period as volumes for bulk commodities rise. Animal product export values are projected to increase over the next decade despite prices declining.

As the effects of the pandemic subside and global economies recover, the dollar is expected to gradually depreciate relative to many trade partner currencies through 2030. A depreciating dollar is associated with increased exports due to increased purchasing power of trade partners, and with decreased imports because the same dollar buys less in the global market. However, the magnitude of the projected depreciation is small compared with fluctuations in recent decades and is not expected to offset the production and global demand trends of recent years. U.S. export values are expected to surpass the 2014 record level in fiscal year 2022 and continue upward through the projection period.

-Continued

U.S. Agricultural Trade Projections *(Continued)*

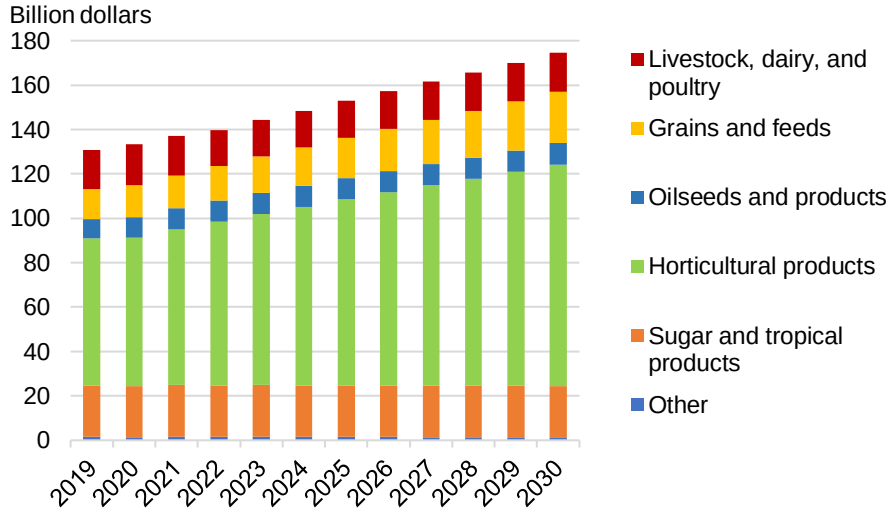
Figure 24. Projected U.S. agricultural exports by commodity group



Sources: USDA and U.S. Department of Commerce, Bureau of the Census.

Compared with bulk commodities, such as soybeans, corn, and wheat, U.S. exports of high-value products, including horticultural and animal products, have grown as a share of total exports, increasing from about a 53-percent share in 1996 to 69.4 percent in 2020. However, in fiscal year 2021, the bulk commodity share is expected to rebound as they account for much of the forecast increase in exports. In the longer term, exports of high-value agricultural products are expected to continue to outpace the growth in bulk commodities through fiscal year 2030.

Figure 25. Projected U.S. agricultural imports by commodity group



Sources: USDA and U.S. Department of Commerce, Bureau of the Census.

-Continued

U.S. Agricultural Trade Projections *(Continued)*

Growing consumer demand for a wide variety of foods, and for year-round availability of seasonal foods, drives increases in U.S. agricultural imports over the projection period. Agricultural imports grow throughout the decade, with the value of imports rising from $133.2 billion in fiscal year 2020 to $174.5 billion by fiscal year 2030. The United States largely imports products that are out of season or not widely grown domestically. Many imported products are differentiated or high-value products for which demand is less sensitive to price and currency fluctuations. The highest growth commodity sector by value is expected to be horticultural products, which are projected to expand about 5 percent per year, largely driven by fresh fruit and vegetable purchases.

Table 25: U.S. agricultural trade long-term projections, fiscal years

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
						Billion dollars						
Agricultural exports (value)												
Livestock, dairy, and poultry	30.2	31.4	32.3	33.8	33.8	34.1	34.2	34.4	34.8	34.9	35.3	35.7
Livestock and meats	19.4	19.8	20.5	21.5	21.4	21.7	21.7	21.7	21.8	21.8	21.9	22.1
Dairy products	5.7	6.5	6.6	6.8	6.8	6.7	6.8	6.9	7.0	7.1	7.3	7.5
Poultry products	5.1	5.1	5.2	5.5	5.6	5.7	5.8	5.9	5.9	6.0	6.0	6.1
Grains and feeds	30.0	30.0	35.6	35.8	36.3	36.7	37.2	37.6	38.1	38.5	39.0	39.4
Coarse grains	9.5	9.3	14.8	14.9	15.1	15.2	15.5	15.8	16.0	16.3	16.6	16.9
Feeds and fodder	7.8	8.0	8.1	8.1	8.3	8.4	8.5	8.6	8.7	8.7	8.9	8.9
Oilseeds and products	25.8	27.2	36.3	36.3	36.2	36.3	36.9	37.3	37.5	38.2	38.7	39.7
Soybeans and products	22.1	23.3	32.3	32.3	32.2	32.3	32.8	33.1	33.4	34.0	34.4	35.2
Horticultural products 1/	34.9	33.8	34.5	35.3	35.7	36.6	38.0	39.6	41.4	43.4	45.4	47.5
Fruits and vegetables, fresh	7.1	7.0	6.9	7.1	7.2	7.5	7.8	8.2	8.5	8.9	9.3	9.6
Fruits and veg., processed	6.9	6.5	6.5	6.6	6.7	6.9	7.2	7.6	8.0	8.4	8.8	9.2
Tree nuts, whole & processed	9.0	8.5	9.0	9.2	9.2	9.3	9.7	10.1	10.6	11.3	11.9	12.6
Cotton	6.1	5.6	5.3	5.7	5.9	6.0	6.1	6.2	6.3	6.5	6.7	6.8
Sugar and tropical products	5.8	5.4	5.7	6.0	6.4	6.7	7.1	7.5	8.0	8.4	9.0	9.5
Other exports 1/	2.7	2.3	2.3	2.5	2.6	2.7	2.8	3.0	3.1	3.2	3.4	3.5
Total agricultural exports	135.5	135.7	152.0	155.5	156.9	159.1	162.3	165.6	169.1	173.2	177.4	182.0
Major bulk commodities 2/	41.4	41.5	55.2	55.7	56.2	56.6	57.4	58.0	58.5	59.4	60.2	61.3
High-value product exports 3/	94.1	94.2	96.8	99.7	100.7	102.5	104.9	107.6	110.6	113.8	117.2	120.7
						Percent						
High-value product share	69.5	69.4	63.7	64.1	64.2	64.4	64.6	65.0	65.4	65.7	66.1	66.3
						Million metric tons						
Agricultural exports (volume)												
Volume in million metric tons	129.9	159.7	159.9	161.9	163.6	166.2	168.5	170.0	171.6	173.6	175.5	177.7
						Billion dollars						
Agricultural imports (value)												
Livestock, dairy, and poultry	17.8	18.3	17.8	16.2	16.5	16.6	16.9	17.0	17.1	17.2	17.3	17.4
Livestock and meats	13.3	13.9	13.5	11.9	12.1	12.2	12.3	12.4	12.4	12.5	12.5	12.5
Dairy products	3.7	3.7	3.6	3.6	3.7	3.7	3.8	3.8	3.9	4.0	4.0	4.1
Grains and feeds	13.4	14.3	14.7	15.5	16.3	17.2	18.1	19.0	20.0	21.1	22.1	23.3
Grain products	9.4	9.8	10.0	10.6	11.3	11.9	12.7	13.5	14.3	15.1	16.1	17.1
Oilseeds and products	8.8	9.3	9.4	9.5	9.6	9.5	9.6	9.6	9.6	9.6	9.6	9.6
Vegetable oils	5.5	5.7	6.0	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2	6.2
Horticultural products	66.1	66.9	70.2	73.7	77.0	80.3	83.8	87.1	90.2	93.2	96.4	99.7
Fruits and vegetables, fresh	22.9	23.9	25.1	26.5	27.8	29.1	30.3	31.6	32.8	34.1	35.3	36.6
Fruits and vegetables, processed	11.2	11.3	11.8	12.2	12.5	12.9	13.3	13.7	14.0	14.3	14.7	15.1
Sugar and tropical products	23.1	23.0	23.2	23.1	23.3	23.2	23.2	23.2	23.2	23.2	23.2	23.1
Sugar and related products	4.5	5.1	4.7	4.7	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7
Cocoa, coffee, and products	11.0	10.9	10.9	10.9	10.8	10.8	10.8	10.8	10.8	10.7	10.7	10.7
Other imports 4/	1.7	1.4	1.7	1.7	1.6	1.6	1.5	1.5	1.5	1.4	1.4	1.4
Total agricultural imports	130.8	133.2	137.0	139.8	144.2	148.4	153.1	157.4	161.6	165.6	170.0	174.5
Net agricultural trade balance	4.6	2.5	15.0	15.7	12.7	10.7	9.2	8.2	7.6	7.5	7.5	7.5

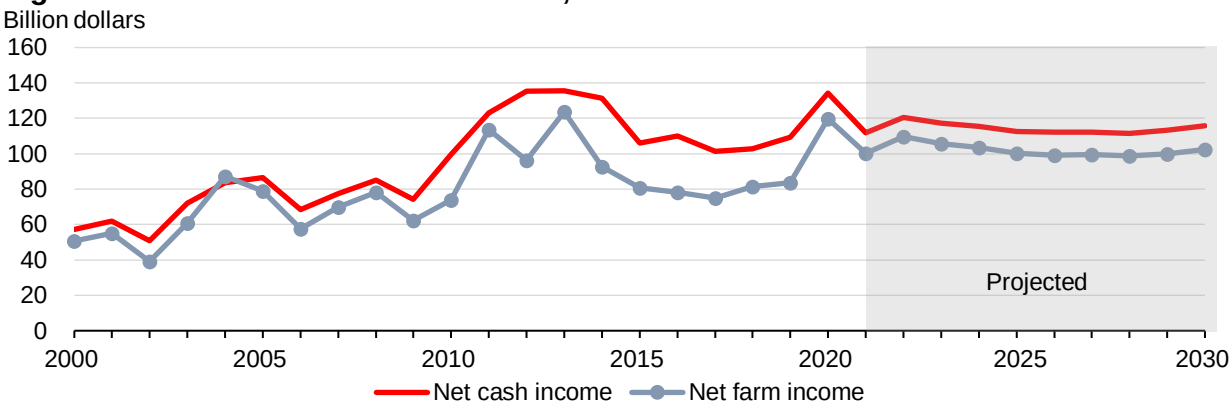
Notes: U.S. trade value projections were completed in December 2020. For updates of the nearby year forecasts, see USDA's Outlook for U.S. Agricultural Trade report, published in February, May, August, and November.1/ Includes planting seeds, unmanufactured tobacco, and cotton linters. 2/ Includes bulk grains, soybeans, cotton, and tobacco. 3/ The category "high-value product exports" is calculated as total exports less bulk commodities. The category includes semiprocessed and processed grains and oilseeds, animals and animal products, horticultural products, and sugar and tropical products. 4/ Includes planting seeds, unmanufactured tobacco, and cotton. Sources: U.S. Department of Agriculture and U.S. Department of Commerce, Bureau of the Census.

-End

U.S. Farm Income

After four consecutive years of increase, net farm income and net cash income are projected to decrease in 2021. Net farm income is projected to decrease $19.5 billion (16.3 percent) in 2020 to $100.1 billion in 2021. Net cash farm income is projected to decrease $22.4 billion (16.7 percent) in 2020 to $111.7 billion for 2021. The projected decline in net farm income for 2021 is primarily because of lower government payments relative to 2020. Farmers received an estimated $24.3 billion in direct payments from the Coronavirus Food Assistance Programs 1 and 2 during 2020. The 2021 farm income value does not include payments made under the Consolidated Appropriations Act 2021 that was passed after the projections were tabulated. The agricultural programs section of this Act includes Section 751, which provides $11.2 billion for support for agricultural producers, processors, and other groups.

Figure 26. U.S. farm income indicators, 2000-30

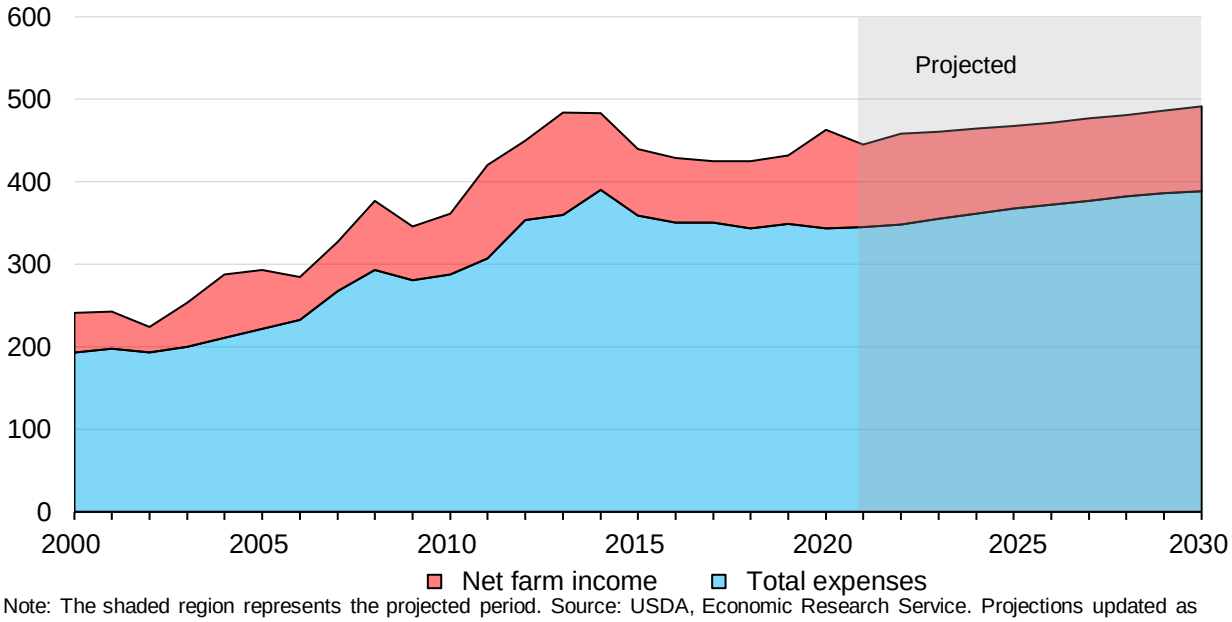


Note: The shaded region represents the projected period.
Source: USDA, Economic Research Service. Projections updated as of December 2020. The projection for 2021 does not include payments made under the Consolidated Appropriations Act 2021 that was passed after the projections were developed. The agricultural programs section of this Act includes Section 751, which provides $11.2 billion for support for agricultural producers, processors, and other groups.

- Farm cash receipts are projected to increase through 2030 with increases in both crop and livestock cash receipts because of steady domestic and international demand for U.S. agricultural products. Livestock receipts are expected to decrease slightly in 2023 because of lower projected market prices, but then resume growth.
- Total direct government payments are projected to decline by $35.0 billion to $11.5 billion in 2021 followed by a smaller decrease to $11.1 billion in 2022. Government payments are projected to increase in 2023 and fall after 2024 based on program elections and market conditions. Agriculture Risk Coverage (ARC) payments are expected to decline the most, from $1.1 billion in 2020 to $56.3 million in 2030, while Price Loss Coverage (PLC) payments are expected to decline from $5.0 billion in 2020 to about $4.4 billion in 2030.
- Total farm production expenses are projected to increase to $344.9 billion in 2021 after declining in 2020. The increase is primarily because of higher capital consumption expenses and feed prices. Overall, nominal farm production expenses are projected to increase each year after 2021 through the projection period.

Figure 27. U.S. total gross income, 2000-30

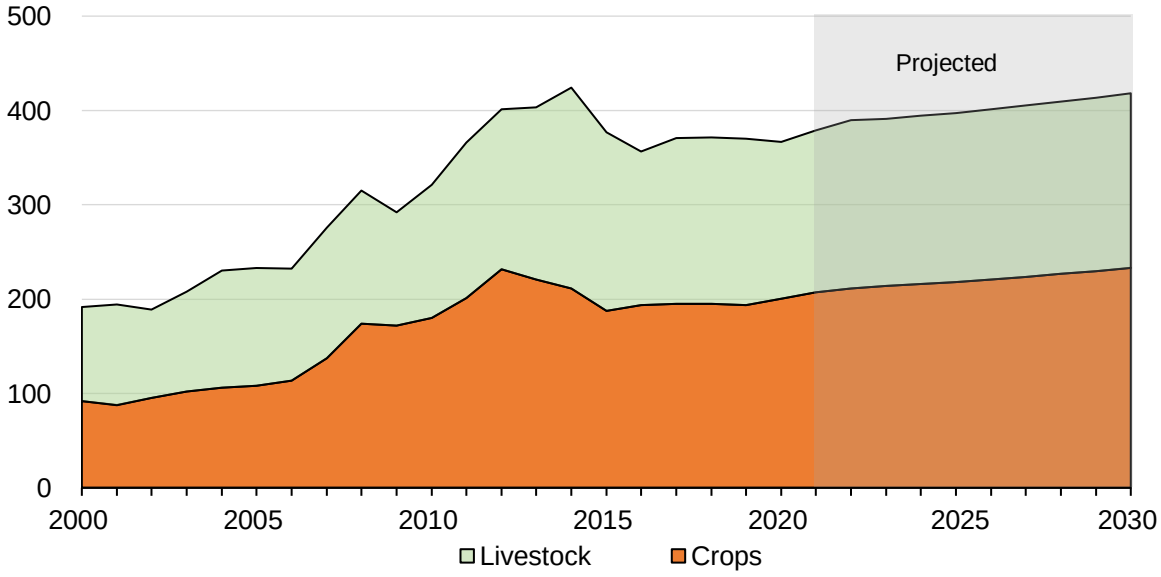
Billion dollars



Note: The shaded region represents the projected period. Source: USDA, Economic Research Service. Projections updated as of December 2020. The projection for 2021 does not include payments made under the Consolidated Appropriations Act 2021 that was passed after the projections were developed. The agricultural programs section of this Act includes Section 751, which provides $11.2 billion for support for agricultural producers, processors, and other groups.

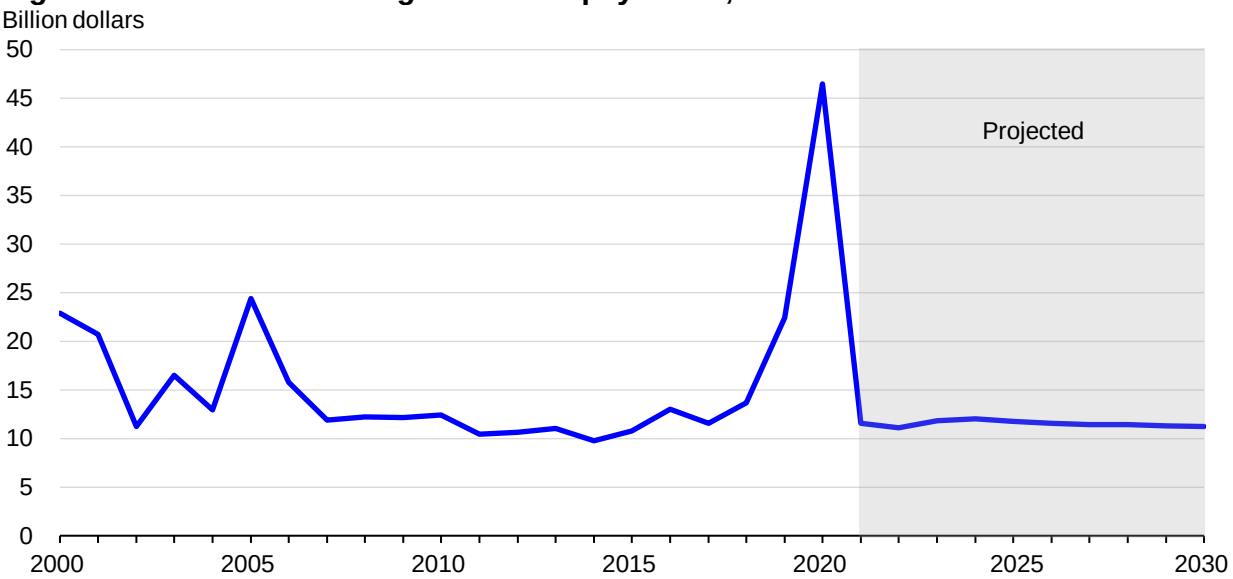
Figure 28. U.S. cash receipts, 2000-30

Billion dollars



Note: The shaded region represents the projected period.
Source: USDA, Economic Research Service. Projections updated as of December 2020.

Figure 29. Total U.S. direct government payments, 2000-30



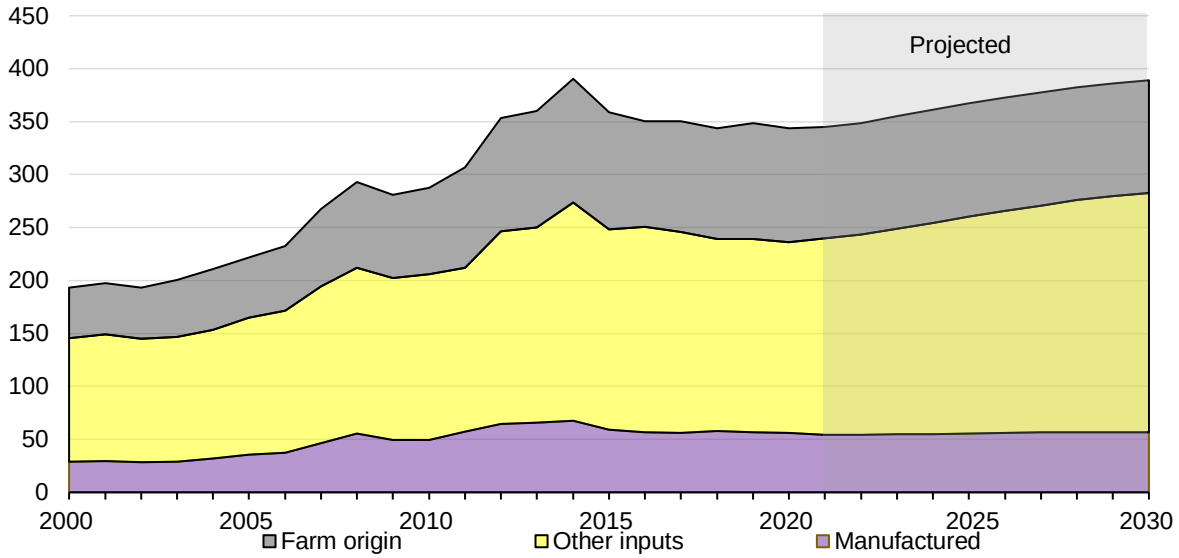
Note: The shaded region represents the projected period. Source: USDA, Economic Research Service. Projections updated as of December 2020. The projection for 2021 does not include payments made under the Consolidated Appropriations Act 2021 that was passed after the projections were developed. The agricultural programs section of this Act includes Section 751, which provides $11.2 billion for support for agricultural producers, processors, and other groups.

After falling $35 billion in 2021 to $11.5 billion, direct government payments are projected to decline again in 2022 as market prices are expected to improve and ad hoc payment programs expire. Government payments are then expected to climb before decreasing after 2024 through 2030. The Conservation Reserve Program (CRP), ARC and PLC payments collectively account for the largest share of direct government payments to the agricultural sector over 2021-30. These projections also assume no government payments from potential new farm sector programs.

- Acreage enrolled in the CRP is assumed to be at or slightly less than its legislative maximum of 27 million acres under the 2018 Farm Act. As crop prices rise again, average rental rates for land in the CRP will also increase. CRP payments are projected to gradually increase from $1.9 billion in 2020 to $2.3 billion in 2030.
- Payments under the ARC and PLC programs decrease after 2020 from about $6.1 billion to $5.9 billion in 2021 onwards because of projected crop price increase. While these payments decline as crop prices rise, they fall to nearly $5.5 billion in 2022. For the 2020-30 projection period, producers are assumed to have permission to change their base acre election between the ARC and PLC programs annually starting in 2021. PLC payments increase through 2024 largely because of increased participation for corn and soybeans. From 2025-27, corn and soybeans prices are flat, but wheat and seed cotton prices are up, decreasing PLC payments. ARC payments increase marginally starting in 2024.

Figure 30. U.S. farm expenses, 2000-30

Billion dollars



Note: The shaded region represents the projected period.
Source: USDA, Economic Research Service. Projections updated as of December 2020.

- Total farm production expenses are projected to increase in 2021 because of a rise in capital consumption expenditures and an upward trend in feed expenses. The rise in production expenses after 2020 is higher than 2 percent per year through 2030. Expenses for farm-origin inputs, other manufactured inputs, and aggregate expenses for other nonfarm-origin inputs are expected to increase below the general inflation rate. However, interest expenses and fuel and oil costs are expected to increase at a rate higher than the general inflation during these years.
- Capital expenditures rise over 2 percent annually over the projection period. Property taxes and net rent to landlords are also expected to increase. Higher government payments in 2020 and low interest rates are expected to drive increased farm equipment purchases in 2021.

Table 26. Farm receipts, expenses, and income, long-term projections

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
						Billion dollars						
Cash income statement												
Cash receipts	369.7	366.5	378.8	389.5	391.1	394.1	397.0	401.3	405.2	409.1	413.8	418.5
Crops	193.7	200.2	207.0	211.6	213.9	216.1	218.4	221.1	223.7	226.6	229.8	233.2
Livestock	176.0	166.3	171.8	177.9	177.2	178.0	178.6	180.3	181.5	182.5	184.0	185.3
Direct Government payments	22.4	46.5	11.5	11.1	11.8	12.0	11.8	11.6	11.4	11.4	11.3	11.2
Farm-related income	34.7	34.1	33.2	34.9	35.1	35.2	35.4	35.6	35.8	36.0	36.2	36.4
Gross cash income	426.9	447.1	423.5	435.5	438.0	441.4	444.1	448.5	452.4	456.5	461.3	466.1
Cash expenses	317.5	313.0	311.8	315.1	320.9	325.9	331.5	336.3	340.3	344.9	348.1	350.2
Net cash income	109.4	134.1	111.7	120.4	117.1	115.4	112.6	112.2	112.1	111.6	113.2	115.9
Farm income statement												
Gross cash income	426.9	447.1	423.5	435.5	438.0	441.4	444.1	448.5	452.4	456.5	461.3	466.1
Non-money income	18.4	19.5	20.4	21.2	21.6	22.1	22.5	22.8	23.2	23.6	23.8	24.1
Value of inventory change	-12.9	-3.4	1.1	1.6	1.0	1.4	1.2	0.7	1.3	1.2	1.3	1.3
Total gross income	432.3	463.2	445.0	458.3	460.6	464.8	467.8	472.0	476.9	481.3	486.3	491.5
Total expenses	348.7	343.6	344.9	348.5	355.1	361.1	367.5	372.7	377.3	382.6	386.3	388.9
Net farm income	83.6	119.6	100.1	109.8	105.6	103.7	100.3	99.3	99.6	98.7	100.0	102.6

Note: The projections were completed in February 2021. History for 2019 and short-term forecasts for 2020 are from USDA, Economic Research Service, December 2, 2020.

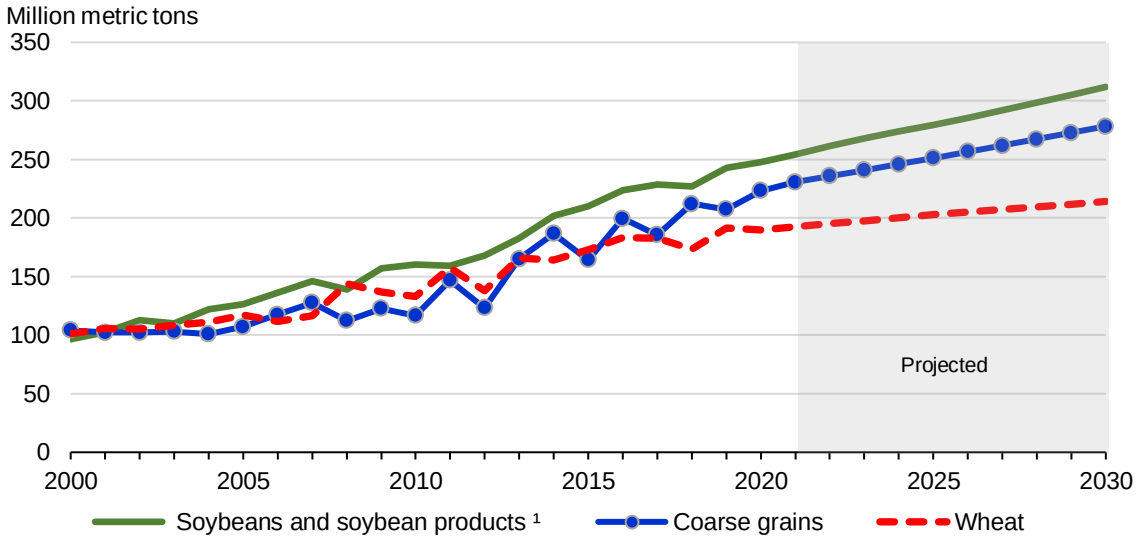
World trade overview

World agricultural trade is projected to continue to expand during 2021/22–2030/31, supported by the outlook for a broad-based recovery in economic growth following the 2020 COVID-19 pandemic. Expanding trade is expected for all the major agricultural commodities projected. As in the past, several fundamental factors will continue to underlie the growth and pattern of import demand for agricultural goods.

Growth in global agricultural trade is driven primarily by rising food and feed demand in developing countries. Developing countries account for about 80 percent of the projected increase in world demand for grains, oilseeds, and meats, and most of the growth in cotton consumption. Consumers in developing countries typically allocate relatively large shares of increased income to improving their diets, and this pattern, along with urbanization and population growth, drives demand for an increasingly diverse set of crop and animal products. In contrast, typically, higher-income consumers in developed countries tend to have more established diets, leading to stable but slower growth in agricultural trade.

Expanding global meat consumption, particularly in developing countries, is a major driver of meat trade, and trade in energy and protein feeds (primarily corn and soybeans). Combined world demand for beef, pork, and poultry is projected to increase by more than 17 percent (1.8 percent annually) through 2030. Relatively few countries have agro-climatic conditions suitable for efficient production of corn and soybeans, the key feedstuffs used in commercial animal production, leading to increasing reliance on trade. Through 2030, world corn trade is projected to increase 22.5 percent (41.8 million tons) and soybean trade 26.7 percent (36.2 million tons), the largest projected gains among bulk commodities.

Figure 31. Global trade: wheat, coarse grain, soybeans, and soybean products, 2000-30



Notes: 1 Total of soybeans, soybean meal, and soybean oil.
Source: USDA, Interagency Agricultural Projection Committee, October 2020.

Growth in global demand and trade for staple food grains—primarily rice and wheat—remains steady and slower than for animal products and feedstuffs. Increases in rice and wheat consumption are mostly among lower-income households and countries where the demand

to increase staple-food consumption remains strong. World rice consumption is projected to increase a total of 4.1 percent over the projection period and rice trade by 17.3 percent (7.3 million tons). World wheat consumption is projected to grow a total of 6.9 percent over the decade, while wheat trade expands 11.2 percent (21.5 million tons).

International Projection Highlights

Coarse grains. Global coarse grain consumption is projected to expand by 12.3 percent during 2021/22–2030/31, with feed use growing 16.4 percent and accounting for more than 80 percent of the total expansion. While the largest producers—China, Brazil, the United States, and the European Union—account for the largest shares of gains, developing countries and regions, including Mexico, India, Iran, and Southeast Asia show the strongest growth in feed demand. Total coarse grain production is projected to increase 13.1 percent over the projection period, with China and Brazil posting the largest gains and fastest growth among major producers. Overall, area expansion provides about 30 percent of the expected growth in world coarse grain output gains, whereas yield growth provides about 70 percent. Total coarse grain import demand expands about 21 percent over the projection period, with an array of developing countries in South America, Southeast Asia, North Africa, and the Middle East accounting for much of the increase. About 88 percent of the increased import demand is comprised of corn and is supplied primarily by Brazil, the United States, and Ukraine.

Wheat. Global wheat consumption increases 6.9 percent above 2020/21 levels by 2030/31. China is a major contributor to expanding wheat use, primarily because of continuing to hold large stocks and anticipated higher levels of wheat feed use. The regions with the greatest increase in food use over the projection period are West Africa (25.1 percent), the rest of Sub-Saharan Africa (24.0 percent), Southeast Asia (17.4 percent), and North Africa (11.4 percent). Global wheat production is projected to increase by about 8.0 percent over the decade, with higher yields accounting for most of the gains. Just seven countries, the European Union, China, India, Russia, the United States, Canada, and Ukraine, account for almost 75 percent of world wheat production. Africa, the Middle East, and Southeast Asia combined account for about 85 percent of the projected increase in world wheat import demand. The European Union and Ukraine supply more than 60.0 percent of the projected increase in import demand, followed by Canada, Australia, Argentina, and Russia.

Rice. World rice consumption increases by 4.1 percent over the projection period, with about 30 percent of the increase accounted for by population growth, rather than gains in per capita consumption in India, Bangladesh, Nigeria, and the Philippines. Africa and the Middle East combined are expected to contribute about 54.0 percent to the increase in world rice consumption over the projection period. Global rice production is projected to increase by almost 5.9 percent from 2021/22 to 2030/31, driven mostly by increasing yields; yields grow by 4.2 percent and area grows by 1.5 percent. Rice trade is projected to increase by 17.3 percent, reaching 53.3 million tons by 2030/31. Projected rice imports grow the fastest in West Africa, the rest of Sub-Saharan Africa, and the Middle East, which together account for almost 79 percent of the projected growth. India is expected to remain the largest rice-exporting country through 2030/31, followed by Thailand, Vietnam, and Pakistan.

Soybeans and products. Total global soybean meal demand increases by 23.6 percent between 2021/22 and 2030/31. China, along with other major animal product producers, including Brazil, the United States, and the European Union, account for the largest share of soybean meal demand. In 2019 these three countries and the European Union combined

accounted for 63.2 percent of global soybean meal consumption. However, the projected increase in demand by less developed countries is 30.6 percent, which far exceeds the 9.5 percent increase projected for developed countries. Projected global use of soybean oil grows 23.2 percent over the decade, with China, Brazil, India, and the United States accounting for 84 percent of expected growth. Global soybean production is projected to increase by 21.4 percent over the projection period, with Brazil, the United States, and Argentina supplying about 84 percent of expected growth. Increased planted area drives about 57 percent of projected production gains and yield growth about 43 percent. With a large projected increase in soybean imports, China joins major soybean producers Brazil, the United States, Argentina, and India in accounting for most of the expected increase in global soybean crush, and in soybean meal and soybean oil production.

World soybean imports increase by 26.7 percent between 2021/22 and 2031/31, with China accounting for about 79 percent of the projected increase, and Brazil meeting about 70 percent of the increased demand, followed by the United States, Other South America, and Argentina. Soybean meal import demand expands 10.4 percent and is broad-based, including gains by the European Union, the largest global importer, and an array of other importers. Argentina, Brazil, and the United States remain the major soybean meal exporters. Soybean oil imports rise 13.1 percent over the projection period based on demand by India, the world's largest importer, and other developing country markets. Argentine exports meet virtually all increased import demand.

Cotton. Global demand for cotton fiber to produce cotton yarn is projected to increase 20.6 percent between 2021/22 and 2030/31, with China and India, the two largest producers, accounting for most of the increase, along with smaller, but fast-growing, markets including Vietnam, Bangladesh, and Pakistan. Growth in cotton production, also projected at 20.6 percent, is concentrated in the three largest-producing countries of India, China, and the United States. Yield growth accounts for about 70 percent of projected gains in global cotton production, and increased area about 30 percent. China, Vietnam, and Bangladesh together account for more than 90 percent of the projected 26.0 percent increase in world cotton imports during the projection period, while Brazil—followed by the United States and Australia—supplies the bulk of the increase in exports.

Beef, Pork, and Poultry. Global consumption of beef, pork, and poultry is projected to grow 8.9 percent, 17.3 percent, and 16.3 percent, respectively, between 2021 and 2030. China accounts for the largest single share of increased consumption of all three meat commodities and, following a recent decline in consumption due to an outbreak of African swine fever, a dominant 73-percent share of the projected increase in pork demand. Projected demand growth for all meats is fastest among middle-income developing regions, including Southeast Asia, Latin America, Africa, and the Middle East. Consistent with its position as the cheapest of the meat commodities, growth in poultry consumption is the most broad-based, including significant gains in lower-income developing countries.

Brazil, China, the United States, and India account for about 60 percent of the projected growth in beef production, with particularly strong gains expected in Brazil, as well as smaller producers in the Middle East, North Africa, and the Former Soviet Union (FSU). While China accounts for the dominant share of growth in world pork production, large gains are also anticipated in the European Union, Brazil, and the United States, as well as smaller pork-consuming countries in Southeast Asia and Latin America. About 50 percent of projected gains in poultry production are accounted for by the United States, China, Brazil, and India,

but a number of Southeast Asian, Middle Eastern, and Latin American countries also register strong growth.

China, South Korea, and the Middle East region account for the largest shares of projected gains in beef import demand, with major exporters Brazil, Argentina, and India supplying most of the increased demand. Brazil alone supplies over 50 percent of projected growth in beef exports. Growth in pork import demand is led by China, Mexico, and the Other South America and Southeast Asia regions. The European Union accounts for the largest share of projected growth in pork exports, followed by Brazil, Canada, and the United States. The projected expansion of poultry import demand is broad-based, with China and Mexico showing the largest gains, as well as relatively rapid growth throughout Southeast Asia and Sub-Saharan Africa. Brazil and the United States, the world's largest exporters, along with Thailand and the European Union, supply the largest shares of projected growth in poultry imports.

Breakout Box: China's Imports Surged in 2020

With continued economic growth, urbanization, changing diets, growth in food service and e-commerce, and "rural revitalization" initiatives, China is one of the world's largest and most dynamic food markets. During 2020, China resumed its position as one of the top export markets for U.S. agricultural products after signing the Phase One agreement that set targets for Chinese imports of U.S. products and called for the elimination of some technical barriers to trade.

In the early months of 2020 China enacted strict lockdowns to curb the spread of COVID-19, but the country's economy began to reopen in April. China is one of the few countries to report positive gross domestic product (GDP) growth in 2020. USDA projections assume strong gross domestic products (GDP) growth for China that exceeds the world average by approximately 2 percentage points through 2030.

China reported a near-record grain harvest in 2020 despite COVID-19 lockdowns during spring planting through summer flooding, and despite crop damage from typhoons. Chinese authorities pledged to prevent loss of cropland, raised minimum procurement prices for wheat and rice, subsidized double cropping of rice in southern provinces, and promised to improve technical services for farmers to maintain grain output over the long-term.

Despite a large corn harvest, China's corn prices rose to near-record levels in 2020. Its corn imports also surged as a large stockpile of corn was depleted following five years of auction sales. USDA's projections assumed corn imports would not exceed China's 7.2-million metric tons tariff rate quota in the next 10 years, but imports during the calendar year exceeded the quota by a substantial margin despite policy pronouncements in September of 2020 by China's National Development and Reform Commission of unchanged import quotas for calendar year 2020 and 2021— after the projections were completed.

China's Imports Surged in 2020 (*continued***)**

In 2018/19, China's tariffs on U.S. sorghum greatly reduced most imports until the retaliatory tariff was suspended in 2020. Projections assume China's sorghum imports will be unencumbered by high tariffs in the coming decade.

China is now the world's top meat importer due to curtailed pork supplies following its 2018–19 African swine fever epidemic. China's pork and beef imports boomed during 2020, and the country's poultry output expanded. Imports were record-high despite extensive testing of imported frozen meat for the COVID-19 virus and China's suspension of pork imports from Germany after discovering African swine fever in wild boars there.

China is projected to remain the world's largest meat importer despite reports of the swine herd's rapid recovery in 2020. An influx of industrialized livestock farms in China may encounter challenges such as high costs for feed, scarcity of labor and land, costs of manure collection and treatment, needs for production credit, continued disease pressures, and a new ban on antibiotics in animal feed.

-End

Breakout Box: Effects of COVID-19 on Global Agricultural Trade

The outbreak of the novel coronavirus elicited one of the most significant macroeconomic shocks of the early 21st century, propelling the international economy into a global recession. Nevertheless, agricultural trade has proved remarkably resilient relative to other economic sectors. This is emblematic of the sheer necessity of food products, but also the stability of global supply chains. Still, austere policy measures meant to safeguard national interests, combined with efforts to mitigate the spread of the virus (i.e. social distancing, teleworking, remote learning, etc.), have led to shifts in consumption patterns and a deviation of trade flows from recent trends.

In many countries, initial policy responses to the COVID-19 outbreak focused on curbing the spread of the virus, as well as ensuring domestic supply of food products given uncertainty about the stability in global agricultural trade. Some major agricultural exporters, such as Russia, Ukraine, and Vietnam, introduced export quotas or outright bans of international shipments, primarily of food products. However, as lockdown measures were relaxed and countries adjusted to life under the pandemic, subsequent policy measures eased restrictions, while other countries faced logistical challenges in the early days of the pandemic.

At the outset of the COVID-19 outbreak, shipping containers accumulated in China's ports due to concerns about sanitation conditions for re-use. As a result, perishable items across the globe spoiled awaiting shipment. However, as national policies evolved to meet the challenges of the pandemic, measures meant to safeguard agricultural sectors helped to ease the logistical challenges of exporting. In Australia, for example, the government established an air freight network to expedite the shipment of perishable items in an effort to maintain pre-COVID shipping volumes.

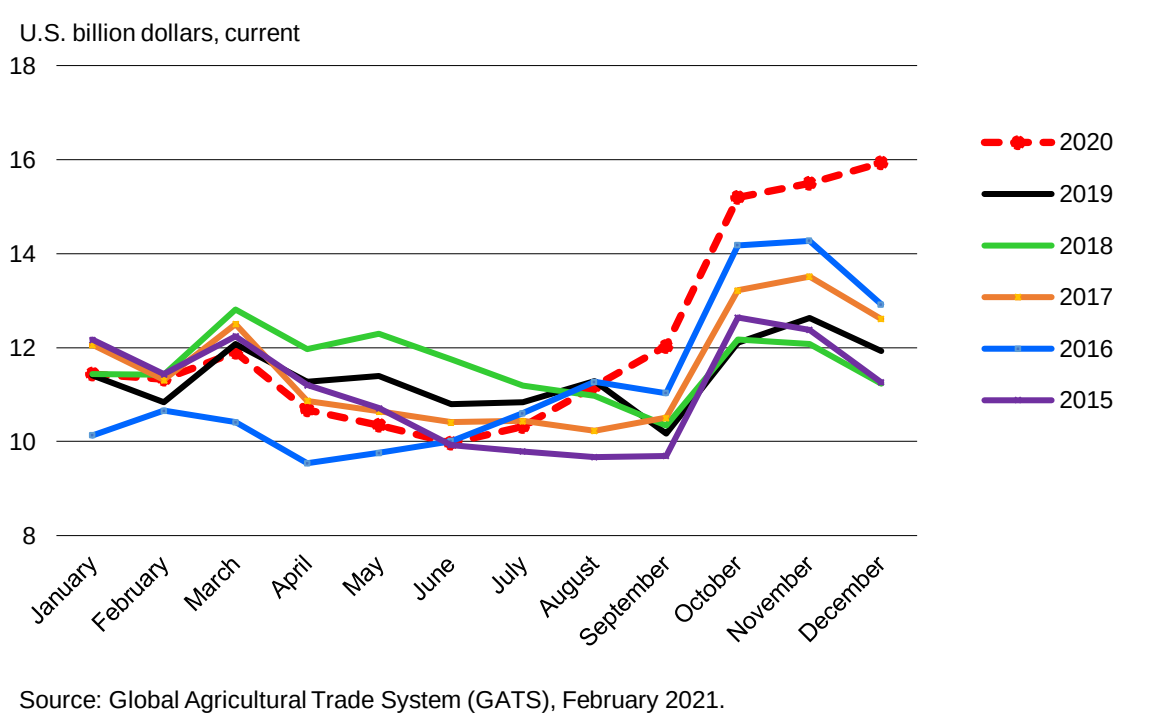
-Continued

Effects of COVID-19 on Global Agricultural Trade (*continued*)

The overall resilience of agricultural trade in the face of the COVID-19 outbreak conceals significant shifts in consumption patterns since the start of the pandemic. Primarily in developed countries, many consumers are turning to home-prepared meals rather than dining out. Food demand in restaurants and hotels has declined as a result of social distancing practices and limited travel. At the outset of the pandemic, exports of high-value agricultural products (e.g. fresh/processed fruits and vegetables, meats, and dairy products) saw a decline in demand by restaurants and tourism-related industries. These different types of changing food consumption patterns helped to maintain agricultural production, insulating one sector even as other sectors saw a downturn during the crisis.

Across regions, trends in global agricultural trade have varied. Agricultural exports to North America and Europe saw the greatest decline during the second quarter before rebounding along with other regions, reaching export totals consistent with or higher than previous years' totals. Spurred by strong demand for soybeans and meat products, East Asia is on pace to reach a five-year high in import value. Given the proportion that soybeans serve in total U.S. agricultural exports, demand for soybeans was a key source of support for U.S. agricultural exports in 2020. Steady demand for U.S. horticultural products, aided by favorable seasonality coinciding with the upswing in global trade during the last quarter of the year, also served to sustain U.S. export sales near a level consistent with recent years (Figures 32 and 33).

Figure 32. U.S. agricultural export values per month, 2015-20



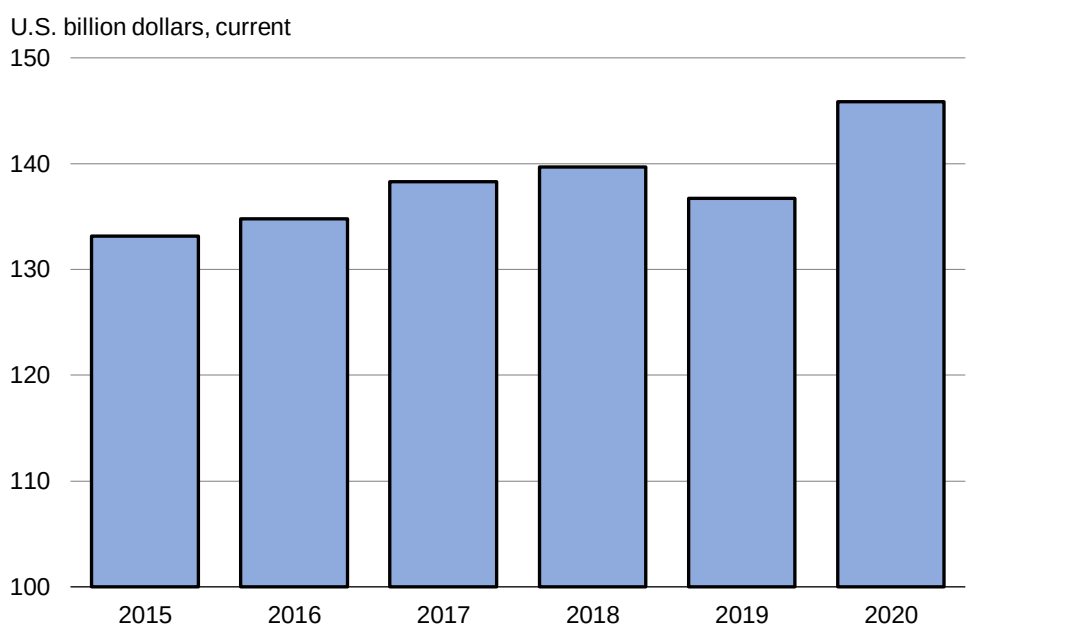
Source: Global Agricultural Trade System (GATS), February 2021.

-Continued

Effects of COVID-19 on Global Agricultural Trade (*continued*)

Other major agricultural exporters likewise saw export totals remain consistent with recent years. Brazil overcame challenges to its agricultural exports as a weakened domestic currency made Brazil's exports attractive on the international market, while also spurring demand for domestic products. Elsewhere, effective responses to the pandemic helped to sustain food and agricultural industries at levels commensurate with those of recent years. Despite significant declines in exports of beef and pork products at the outset of the pandemic, due primarily to limitations on exports to China, Canada's and Australia's exports of beef and pork products each recovered, with shipments remaining above the five-year average and are expected to continue their recovery into 2021.

Figure 33. U.S. agricultural export totals, 2015-20



Source: Global Agricultural Trade System (GATS), February 2021.

The extent of the pandemic's impact remains uncertain given its duration, and its effects on the global economy remain unknown. Current macroeconomic projections, including the assumptions underlying this report, indicate that global economic growth will rebound in 2021 as most countries bring the pandemic under control. Although the pace of recovery cannot be projected with certainty and is likely to be uneven across countries, the current outlook is for a relatively strong rebound in real GDP in U.S. and global markets, including China, Canada, Mexico, and East and Southeast Asia.

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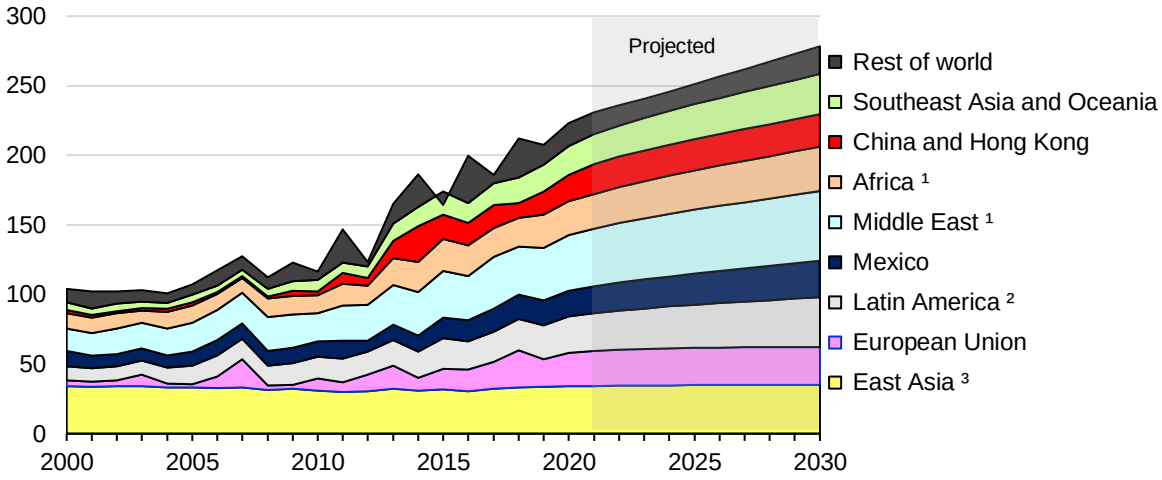
Figure 34. Global coarse grain imports

Million metric tons

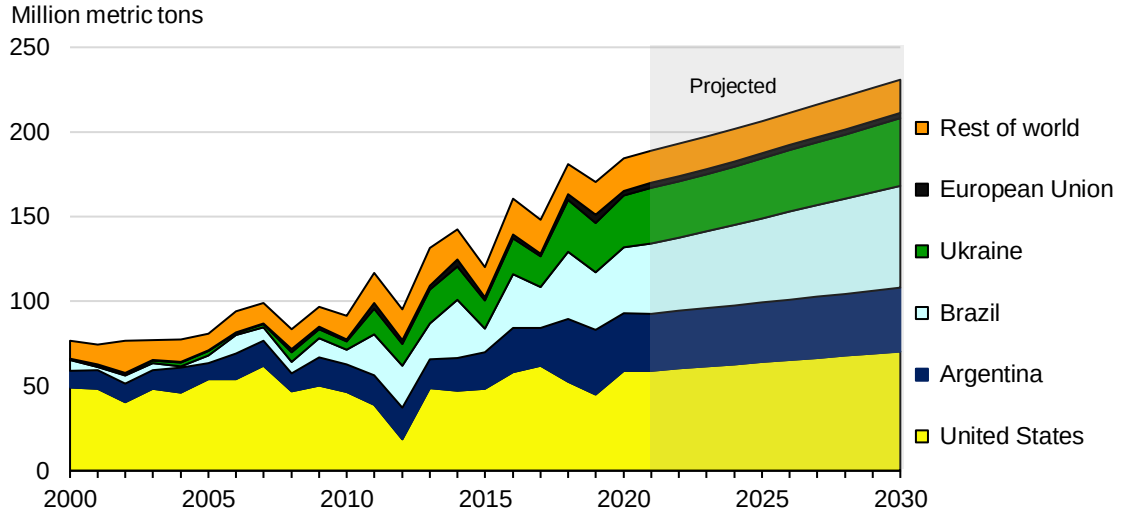


Notes: [1] Egypt is included in Africa and not the Middle East, [2] Excludes Mexico, [3] Japan, South Korea, and Taiwan.
Source: USDA, Interagency Agricultural Projection Committee, October 2020.

Expanding livestock production will continue to drive increases in coarse grain trade. Growth in livestock production is projected across countries in the Middle East, Africa, Southeast Asia, and Latin America. Corn trade is expected to account for about 82.9 percent of the world's coarse grain trade by 2030/31, with barley's share expected to decrease slightly to 12.2 percent. By 2030/31, the world's largest coarse grain importers are projected to be the European Union, Mexico, China, Japan, Vietnam, Iran, Saudi Arabia, Egypt, and South Korea.

- China's use of coarse grains in both feed and industrial processing rise after large stockpiles are depleted in 2020. Potential for further expansion of China's corn output may be limited since the crop already occupies one-fourth of the country's planted area following a 70-percent expansion during the last decade. Growth in corn imports is assumed to be constrained by China's tariff rate quota, so barley and sorghum account for most of its coarse grain import growth.
- Together, Africa and the Middle East account for about 34 percent of the growth in world coarse grain imports through 2030/31. Population growth and rising incomes foster strong demand growth for livestock products, while limited arable land and water constrain domestic grain production. By 2030/31, these regions will together account for nearly 30 percent of world coarse grains imports with three countries—Iran, Saudi Arabia, and Egypt—accounting for about 17 percent of world coarse grain imports.
- Mexico's imports account for 9.4 percent of the increase in global coarse grain trade by 2030/31 as rising demand for livestock products supports higher domestic meat production and commercial feeding. Corn imports expanded to an estimated 18.3 million tons in 2020/21 and are projected to reach 25.7 million tons in 2030/31, making Mexico the world's largest corn importer.
- Together South Asia, Southeast Asia, and Oceania coarse grain imports rise about 35 percent to 31.4 million tons by 2030/31 as relatively high rates of income growth continue to stimulate increased feed demand by livestock producers. These three regions account for 17 percent of expected growth in world corn imports. Vietnam is among the fastest-growing corn-importing countries in this region and Bangladesh is an emerging corn importer to supply its expanding poultry industry. Indonesia, however, has implemented policies to limit imports of both corn and feed wheat to support domestic corn production.

Figure 35. Global corn exports

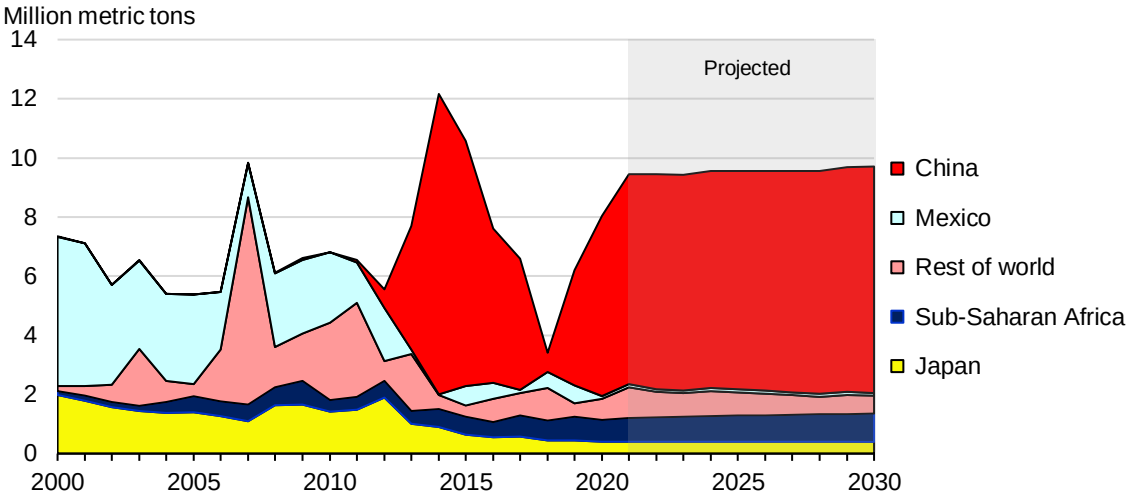


Source: USDA, Interagency Agricultural Projection Committee, October 2020.

U.S. corn exports are expected to increase 11.4 million tons to 70.5 million tons by 2030/31, while the U.S. share of world corn exports declines from the recent 5-year average of 33.0 percent to about 30.5 percent. Brazil is the only major exporter with a projected increase in market share, from 21.9 percent in 2021/22 to 26.1 percent in 2030/31. The four largest exporting countries, the United States, Brazil, Ukraine, and Argentina account for about 89 percent of global market share over the projection period.

- Brazil's annual corn exports have increased by 60 percent over the past decade and averaged 33.7 million tons in the past five years. Export growth continues to be associated with expanding production of second-crop corn following soybeans on new cropland in the Center-West region. Corn production in this region requires less fertilizer use since it follows soybeans and is better positioned for exports than for domestic use by the poultry industry that is concentrated in the southern part of the country. Exports of second-crop corn also benefit from reaching port during a period when port capacity is less constrained by soybean shipments. Brazilian exports are expected to rise nearly 46 percent over the projection period and reach 60.2 million tons by 2030/31.
- Annual corn exports by the FSU region are expected to rise 17.2 percent and reach 43.5 million tons in 2030/31. Ukraine is projected to account for about 92 percent of the region's exports, which increase by 7.1 million tons to 40.0 million tons by 2030/31, making it the third-largest global exporter. Favorable land resources and climate, increasing economic openness, and wider use of hybrid seed contribute to Ukraine's projected gains in corn production. Other former Soviet Union countries exhibit a decline of corn exports over the projection period by 720,000 tons.
- Argentina is projected to be surpassed by Ukraine as the world's third-largest exporter of corn during the projection period. However, area growth and improved yields are expected to continue to boost corn production, and exports are projected to increase 11.6 percent to 37.5 million tons by 2030/31.
- European Union (EU) exports are expected to remain steady at 3.0 million tons over the projection period, while corn exports from the Other Europe region—primarily Serbian exports to the EU–increase 10.5 percent to reach 3.9 million tons by 2030/31.
- South Africa has little projected growth in corn exports, which reach 2.5 million tons by 2030/31, while the rest of Sub-Saharan Africa corn exports remain stable near 700,000 tons.

Figure 36. Global sorghum imports



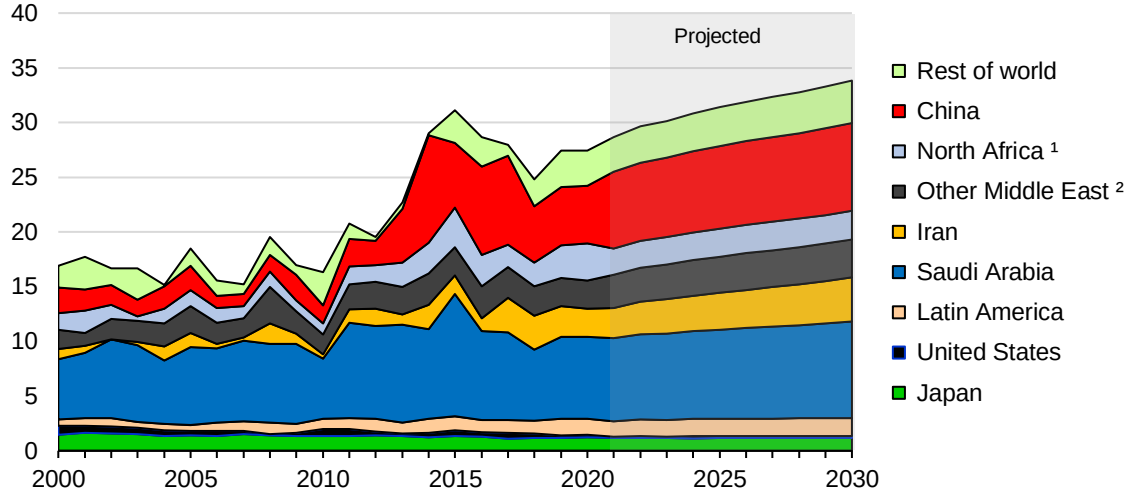
Source: USDA, Interagency Agricultural Projection Committee, October 2020.

World sorghum trade is projected to expand 2.7 percent between 2021/22 and 2030/31, reaching 9.7 million tons by the end of the projections. Sorghum trade bounced back in 2020, following a sharp decline in 2018/19 when China's imposition of a tariff on U.S. sorghum, the major global supplier, choked off most imports. China's tariff was removed in 2019 and is assumed to not be re-imposed during the projection period, but China's rebound is expected to keep imports by other countries at lower levels than in the past, due to the price relationship of sorghum and corn as feed substitutes.

- China displaced Mexico and Japan as top importers until Chinese tariffs on U.S. sorghum halted most imports in 2018/19. China's sorghum imports rebounded in 2020 with the lifting of retaliatory tariffs. China is projected to remain the leading sorghum importer, with imports rising from 7.1 million tons in 2021/22 to 7.7 million tons in 2030/31.
- U.S. sorghum exports grow about 3.2 percent to 8.3 million tons by 2030/31, continuing to account for about 85.0 percent of global sorghum import demand.
- Japan is expected to remain the world's second-largest individual sorghum importer, with imports projected to remain stable at 400,000 tons annually over the next decade.
- Mexico's sorghum imports are expected to remain steady at about 100,000 tons over the projection period. Mexico's sorghum imports declined sharply in recent years as alternative grains, primarily corn, have become more affordable.
- Argentina is projected to become the world's second-largest sorghum exporter by 2020/21, displacing Australia, with exports reaching 500,000 tons per year. Main Argentine export markets include Japan, Chile, Saudi Arabia, and Colombia. Australia's sorghum exports are expected to remain steady at 400,000 tons, primarily to China.

Figure 37. Global barley imports

Million metric tons



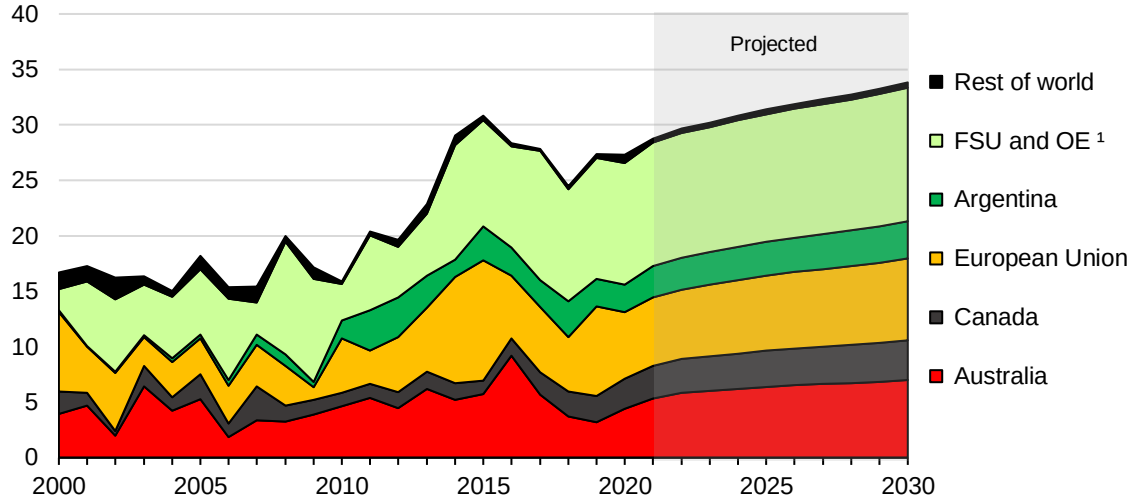
Notes: [1] Includes Egypt, [2] Excludes Iran and Saudi Arabia.
Source: USDA, Interagency Agricultural Projection Committee, October 2020.

Strong demand for feed barley—led by Middle Eastern countries, Iran, and China—is projected to drive growth in barley trade to 33.8 million tons by 2030/31.

- Saudi Arabia is the world's largest importer of barley and its imports are projected to increase nearly 16 percent to 8.8 million tons by 2030/31, accounting for about 26 percent of global barley import demand. Saudi Arabian barley imports are used primarily as feed for sheep, goats, and camels.
- Iran's barley imports are projected to expand by more than 47 percent to 4.0 million tons by 2030/31, while Turkey's imports remain stable near 0.6 million tons. In the Other Middle East region, barley imports are expected to grow about 13 percent to 2.8 million tons by the end of the projection period.
- China is expected to maintain strong demand for feed barley imports, but the volume will be less than the peak reached in 2014/15. China's barley imports are projected to increase from 7.0 million tons in 2021/22 to 8.0 million tons by 2030/31. China is the largest importer of malting barley—mainly for beer production—but its malting barley imports will grow less than its feed barley imports.

Figure 38. Global barley exports

Million metric tons

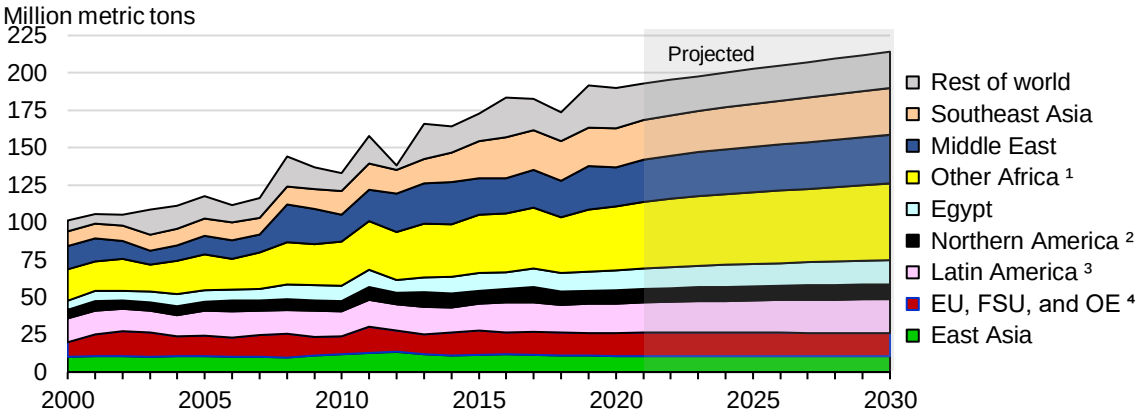


Notes: [1] Former Soviet Union and Other Europe.
Source: USDA, Interagency Agricultural Projection Committee, October 2020.

The EU, Russia, and Australia are the three largest barley exporters, followed by Ukraine, Canada, and Argentina. Global exports are projected to expand nearly 18 percent to 33.8 million tons between 2021/22 and 2030/31. Australia, the world's largest exporting country, is expected to capture an increasing market share, primarily at the expense of Russia.

- Australia's barley exports are expected to increase during the coming decade from 5.3 million tons in 2021/22 to 7.0 million tons by 2030/31, with Australia's global export market share increasing from 18.5 percent to 20.7 percent over the period.
- Barley exports by countries in the FSU region are projected to increase from 11.1 million tons in 2021/22 to 12.0 million tons in 2030/31. While Russia's exports are projected to show little growth, Ukraine's exports are expected to grow nearly 17.0 percent to 4.7 million tons by 2030/31. Kazakhstan is expected to increase its barley production and exports, primarily to Iran.
- The EU's barley exports are projected to increase from 6.2 million tons in 2021/22 to 7.4 million tons by 2030/31, in part due to the EU's logistical comparative advantage over Australia and Canada in meeting increased barley demand in the Middle East.
- Argentina's barley exports are projected to increase nearly 20 percent to 3.4 million tons by 2030/31. Major Argentine markets for feed barley are Saudi Arabia, United Arab Emirates, other Middle East countries, and North African countries. Most of Argentina's malting barley exports are destined for Brazil and other neighboring countries.
- The substantial price premium for malting barley will continue to influence planting decisions in Canada and Australia, where malting barley's share of total barley area is expected to rise over the next decade. Canada and Australia's combined total barley exports is expected to rise by about 28 percent over the projection period.

Figure 39. Global wheat imports

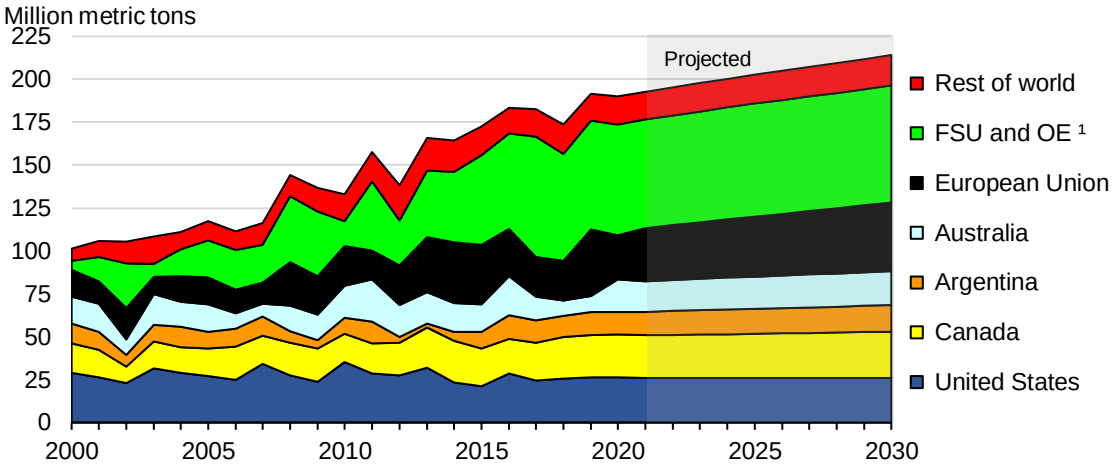


Notes: [1] Africa excluding Egypt, [2] Canada, U.S., and Mexico, [3] Exclude Mexico, [4] European Union, Former Soviet Union, and Other Europe. Source: USDA, Interagency Agricultural Projection Committee, October 2020.

World wheat trade is projected to expand by nearly 21.5 million tons between 2021/22 and 2030/31, reaching 214.2 million tons. Growth in wheat imports continues to be concentrated in developing countries where income, urbanization, westernization of diets, and population gains drive increases in demand. Over the projection period, the largest import increases are for Egypt, the Middle East and Southeast Asia, up about 20, 17, and 17 percent, respectively.

- The inability to economically produce wheat, policy restrictions, and rising use of wheat for feeding all support the expansion of wheat imports, particularly for a number developing countries. Further, rising incomes in Indonesia, Vietnam, and other Asian countries, are boosting demand for wheat-based products, including instant noodles and bakery products.
- Egypt and Indonesia are projected to remain the world's leading wheat importers, with annual imports climbing to 16.2 million tons and 12.5 million tons, respectively, by 2030/31. Indonesian imports are growing rapidly due to population growth, increased consumption of non-traditional instant noodles, and feed demand due to restrictions on corn imports. The Philippines, Turkey, and Bangladesh are the third-, fourth-, and fifth-largest wheat-importing countries in the projections.
- By 2030/31, countries in Africa and the Middle East are projected to increase wheat imports by 9.0 million and 4.7 million tons, respectively, accounting for 64 percent of the total increase in world wheat trade. In Saudi Arabia, despite the reversal of restrictions on wheat production, imports are projected to increase 0.6 million tons to 3.9 million tons by 2030/31.
- While China is expected to continue to hold a plurality of global wheat stocks, import demand is projected to remain strong due to relatively high domestic prices and a deficit of wheat suitable for use in bakery and specialty products. China's wheat imports are projected to increase from 6.0 million tons in 2021/22 to 6.7 million tons by 2030/31. Imports by Japan are expected to decrease slightly due to a declining population, while imports by South Korea are flat at 3.9 million tons and Taiwan wheat imports grow modestly over the 10-year projection period. Imports for the four East Asian countries are collectively expected to increase to 17.4 million tons by 2030/31 and to contribute about 25 percent of the world's increase in imports.
- Historically, India has alternated between being a wheat importer and exporter depending on government wheat supplies, trade policies, and weather. India is projected to export an annual average of 910,000 tons while importing about 20,000 tons.

Figure 40. Global wheat exports

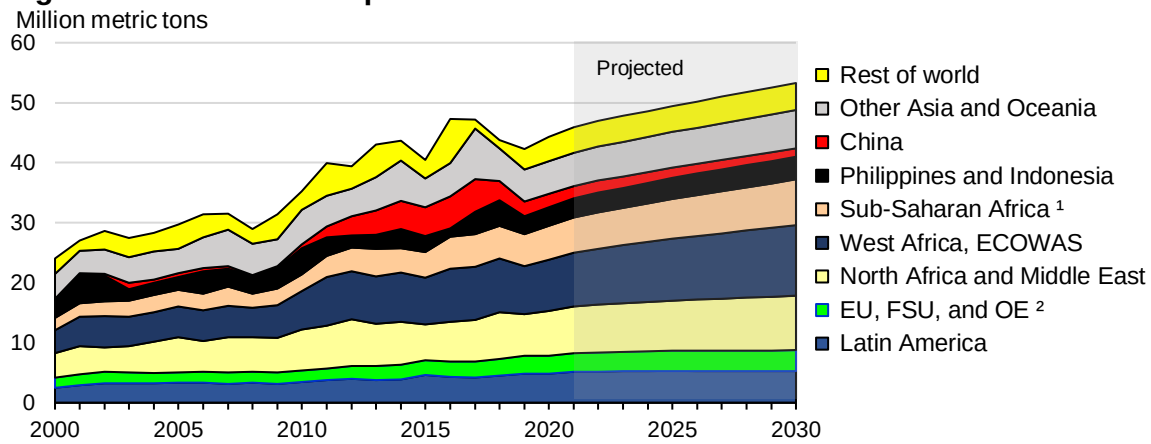


Notes: [1] Former Soviet Union and Other Europe. Source: USDA, Interagency Agricultural Projection Committee, October 2020.

The eight largest wheat exporters—the EU, Russia, Canada, the United States, Ukraine, Australia, Argentina, and Kazakhstan—are projected to account for 91.0 percent of world trade in 2030/31. Only the EU and Ukraine exhibit increasing world export share by 2030/31. The EU's export share increases from 16.1 percent to 18.7 percent by 2030/31, while Ukraine's share increases from 8.2 percent to 9.6 percent by 2030/31.

- U.S. wheat exports are projected to stabilize around 26.0 million tons over the coming decade. With rising global trade, the U.S. share of world exports decreases from 13.4 percent in 2021/22 to 12.1 percent by the end of the projection period.
- Under the assumption of normal or average weather, Ukraine's exports of wheat are expected to continue a pattern of strong growth climbing from 15.9 million tons in 2021/22 to 20.6 million tons in 2030/31. Exports from Russia are expected to grow more modestly, rising 1.5 million tons to 39.4 million tons in 2030/31. Together, exports from these two Black Sea countries account for about 31 percent of the projected increase in global wheat exports. Continued improvement in farm-level productivity and yields should generate the growth in domestic surpluses available for export.
- By 2030/31, the EU is expected to regain its rank as the top wheat-exporter, with exports growing 2.9 percent annually to 40.0 million tons. Rising EU exports are supported by increased production due to higher yields and a decline in domestic wheat feed use. Buoyed by strong imports, Turkey is expected to expand exports from 6.7 million tons in 2021/22 to 7.3 million tons by 2030/31.
- Canada's wheat exports are projected to grow from 25.0 million tons in 2021/22 to 27.1 million tons in 2030/31. Moderate production gains are due to yield growth despite a slight decline in wheat area. Declining domestic use contributes to greater exportable supplies.
- Assuming more typical weather patterns and production levels following several years of dry weather, Australia's wheat exports are projected to increase by 17.7 percent to 19.8 million tons by 2030/31. Australia is a major exporter to Southeast Asia and the Middle East, both of which exhibit strong growth in wheat demand and imports.
- Argentina's wheat exports are expected to rise throughout the projection period from 13.7 million tons in 2021/22 to 15.5 million tons in 2030/31. Argentine exports are supported by increased demand from its MERCOSUR trade partner Brazil.

Figure 41. Global rice imports

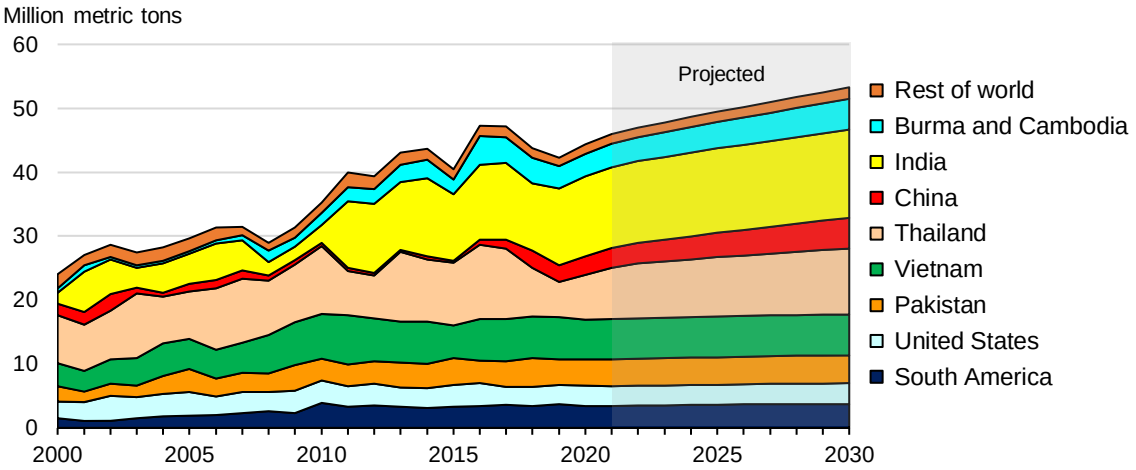


Notes: [1] Excludes 15 member countries in Economic Community of West African States, ECOWAS. [2] European Union, Former Soviet Union, and Other Europe. Source: USDA, Interagency Agricultural Projection Committee, October 2020.

Global rice trade is projected to expand 3.7 percent in 2021/22 and then slow to an annual growth of 1.5 percent through 2030/31. Projected trade growth is driven by population and income growth and limited production gains in Sub-Saharan Africa. Over the long term, world rice trade as a share of consumption has increased, reaching 9.7 percent in 2016/17 and is projected to reach 10.0 percent by 2030/31.

- The Philippines, the EU, and Nigeria are projected to be the largest rice importers over most of the next decade. The Philippines is projected to be the largest rice-importing country with imports rising about 25 percent to 3.4 million tons from 2021/22–2030/31. Continued strong Philippine consumption and modest expansion in production are behind robust import growth.
- The EU is projected to remain the second-largest importer, increasing about 18 percent over the next decade and reaching 2.9 million tons by 2030/31. Asian aromatic varieties account for the bulk of the imports, partly fueled by immigration from Asia, Africa, and the Middle East, and preferential access provided through agreements with Southeast Asian countries.
- Sub-Saharan Africa is projected to remain the largest and fastest growing rice-importing region, with imports rising about 31 percent to 19.4 million tons by 2030/31, accounting for about 62 percent of total import expansion. The strong growth is due to population growth and rising per capita consumption. Nigeria's imports dropped in 2019/20, increasing only slightly in 2020/21, but are expected to rise more than 50 percent and exceed 2.0 million tons by 2030/31. Nigeria is projected to overtake China as the third-largest importer in 2026/27 as increasing production is slower than rising demand.
- Middle East region imports are projected to expand 14.5 percent over the next decade to 8.0 million tons, due primarily to population growth. Major individual importing countries are Saudi Arabia, Iraq, and Iran, with imports ranging from 1.4 million to 1.6 million tons a year by 2030/31.
- China's rice imports will decline to 1.4 million tons by 2030/31 as the government of China sells excess stockpiles into the domestic market. Indonesia—once a top importer—is projected to reduce imports by 21 percent to just 350,000 tons by 2030/31. Bangladesh's imports are projected to more than triple to 674,000 tons by 2030/31 but remain below levels typically imported in previous decades.

Figure 42. Global rice exports

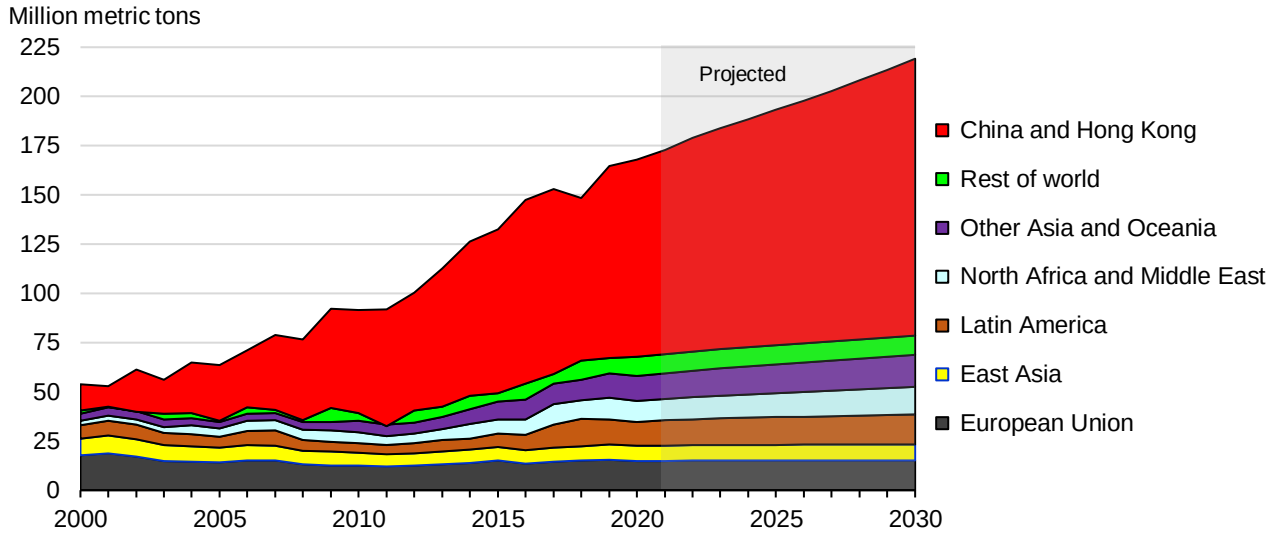


Source: USDA, Interagency Agricultural Projection Committee, October 2020.

Asia continues to supply most of the world's rice exports throughout the projection period. India and Thailand remain the world's largest rice-exporting countries, accounting for more than 45.0 percent of world rice exports and 46.0 percent of the growth in the coming decade.

- India is projected to remain the largest exporter during the projection period, with exports increasing by 8.6 percent and reaching a record 13.8 million tons by 2030/31. The country exports both non-aromatic milled rice and its premium basmati rice.
- In Thailand, rising yields and a gradual decline in consumption contribute to a 28.7 percent increase in exports to 10.3 million by 2030/31, still below the 2016/17 record of 11.6 million tons. Thailand's exports dropped sharply in 2019/20 due to drought and have yet to fully recover. Burma is projected is expand exports about 41 percent over the next decade, reaching 3.2 million tons. Burma is expected to find markets to offset reduced imports by China. Cambodia's exports are projected to increase by 22 percent, reaching 1.6 million tons by 2030/31.
- Vietnam's exports are expected to expand just 1.4 percent to 6.4 million tons by 2030/31, below the 2011/12 record of 7.7 million tons. Exports are limited by a gradual shift in area to less water-intensive crops, as well as increasing salinization and reduced river flows needed for irrigation. China's rice exports rebounded in recent years with a surge of low-priced sales to Turkey, West Africa, and Egypt. China's exports are expected to continue rising to a record 4.8 million tons by 2030/31. China's exports are driven by low prices and large reserves.
- Pakistan exported 3.5 million to 4.5 million tons of rice from 2009/10 to 2020/21, with no significant upward trend. Rising demand and limited production growth limit projected export growth to 3.3 percent through 2030/31, dropping Pakistan to the fifth-largest world exporter, behind China.
- The United States is projected to drop to the world's sixth-largest exporter after 2022/23, with exports expanding 4.0 percent from 2021/22 to 2030/31. Weak export growth is due to rising domestic use and slow production growth as global prices do not support expansion of rice area. U.S. world rice export market share declines from 6.8 percent to 6.1 percent by 2030/31.
- Exports from South America—primarily Argentina, Brazil, Guyana, Paraguay, and Uruguay—are projected to expand 8.5 percent over the next decade, accounting for 7.3 percent of global trade.
- Australia's exports are projected to partially recover from recent drought-reduced levels, rising 85.0 percent to 0.4 million tons by 2030/31.

Figure 43. Global soybean imports

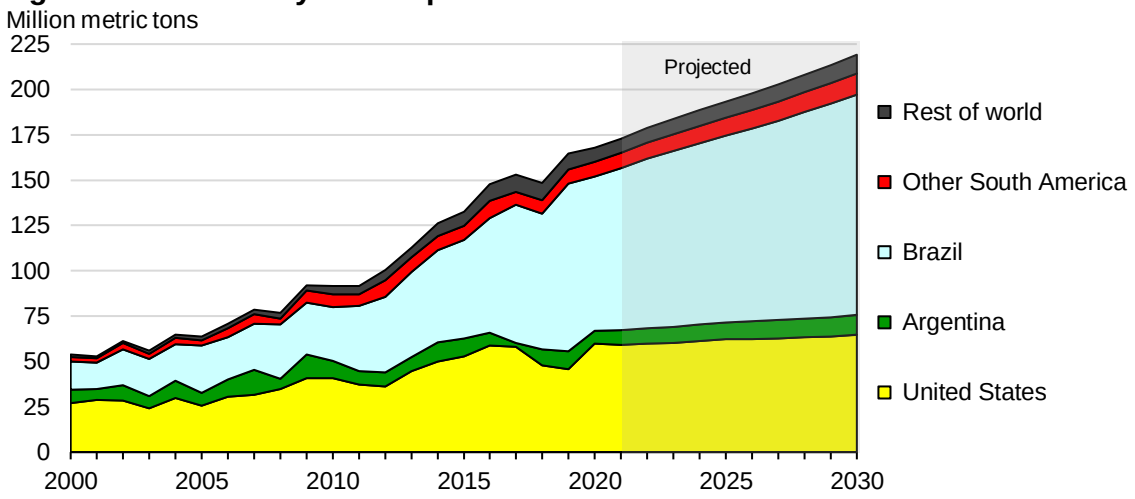


Source: USDA, Interagency Agricultural Projection Committee, October 2020.

Chinese demand will drive continued growth in soybean trade during the next 10 years, as world soybean imports climb 46.2 million tons (26.7 percent) to 219.2 million tons.

- China's soybean imports are expected to resume their strong growth after recovering from an African swine fever epidemic that curtailed soybean meal demand during 2019/20. Driven by growth in livestock numbers and vegetable oil consumption, China's soybean imports grow from 103.9 million tons to 140.5 million tons during 2020/21–2030/31.
- Other countries in East Asia (Japan, South Korea, and Taiwan) will add to the growth, with soybean imports projected to rise from 7.7 million tons in 2021/22 to 8.2 million by 2030/31. The region is projected to see a modest increase in livestock production that expands soymeal use.
- Indonesian soybean imports increase by about 24 percent to 3.6 million tons by 2030/31, with the increase exclusively used for food consumption in the form of tempeh and tofu. All the soybean meal Indonesia uses for feed purposes is imported. In contrast, Thailand crushers are expected to increase soybean imports by about 14 percent to 4.5 million tons by 2030/31 to meet increased feed demand. Expanding crushing capacity is expected to also raise Vietnam's soybean imports to 2.5 million tons by 2030/31, although import growth is initially dampened by lingering problems with African swine fever. Vietnam is also projected to increase imports of soybean meal.
- Since 2017/18, EU soybean imports have stabilized near 15 million tons as lower internal EU grain prices increase grain and rapeseed meal feeding. EU soybean imports are projected to remain near 15 million tons through the projection period.
- Many countries in North Africa and the Middle East region have minimal soybean production and meet growing feed demand through imports. Soybean imports are expected to increase more than 28 percent to about 14 million tons by 2030/31. Egypt is projected to increase soybean and soybean meal imports by 29.4 and 37.8 percent, respectively, due to expanding poultry production.
- Mexico's annual soybean imports are projected to increase 23.6 percent to 7.7 million tons by 2030/31, driven by growth in poultry and pork production, as well as demand for soybean oil.

Figure 44. Global soybean exports

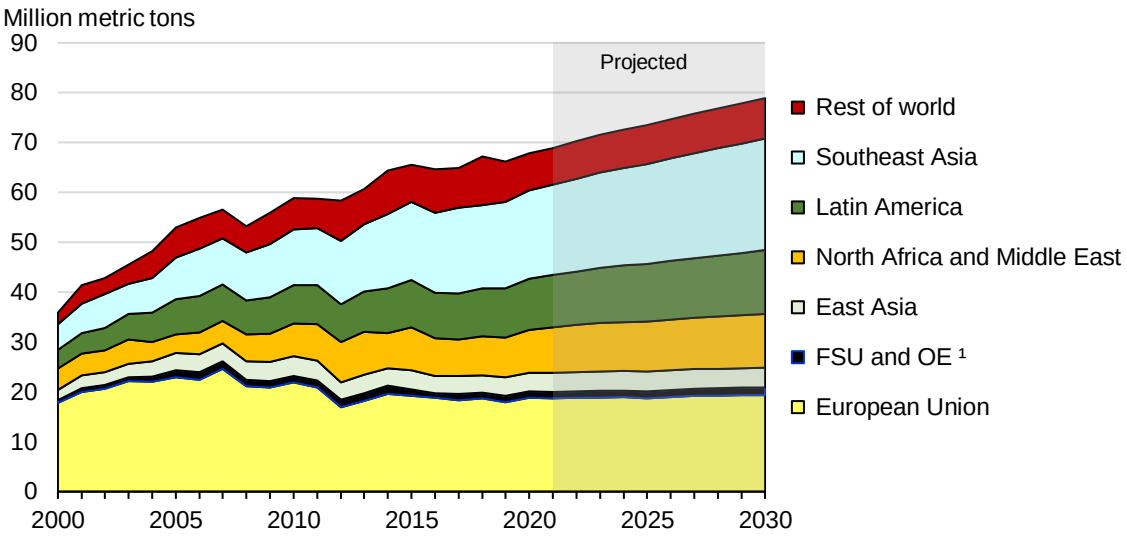


Source: USDA, Interagency Agricultural Projection Committee, October 2020.

The three leading soybean exporters—the United States, Brazil, and Argentina—are projected to account for nearly 90 percent of world soybean trade by 2030/31.

- Brazil's soybean exports are projected to rise 32.4 million tons (36.2 percent) to 121.5 million tons by 2030/31, strengthening its position as the world's leading exporter. Soybeans remain more profitable to produce than other crops in most areas of Brazil. With increasing plantings in the Cerrado region and production extending into the Amazônia Legal region, the growth rate in area planted to soybeans is projected to be in excess of 2.5 percent per year during the coming decade.
- By 2018/19, Argentina had ended its policy of a higher export tax rate for soybeans than for soybean products, incentivizing domestic crushing of soybeans and exports of the products. In response to a weak peso and increasing world crush demand for soybeans, Argentina's soybean exports are projected to increase about 34.0 percent to 10.9 million tons by 2030/31, mostly to China. Nonetheless, most supplies continue to be processed domestically, and Argentina remains a distant third to Brazil and the United States as a soybean exporter.
- Other South American countries, principally Uruguay, Paraguay, and Bolivia, also are projected to expand their area planted to soybeans. Exports by these countries increase about 38 percent to 11.7 million tons by 2030/31, adding 3.2 million tons to world soybean exports.
- The U.S. share of global soybean exports is about 34 percent in 2021/22 and is projected to decrease to 29.5 percent by 2030/31. U.S. soybean exports are projected to increase from 59.2 million tons in 2021/22 to 64.6 million tons by 2030/31.
- Canada increases soybean exports from 3.9 million tons in 2021/22 to 5.5 million tons in 2030/31. Canada's soybean area has expanded beyond the traditional producing region of Southern Ontario to the prairies of Northeastern Manitoba. Improved varieties of soybeans with better yields have contributed to area expansion.
- Ukraine's depressed currency has strengthened domestic prices and encouraged soybean production. Ukraine's soybean exports are projected to grow from 2.4 million tons in 2021/22 to 3.0 million tons by 2030/31.

Figure 45. Global soybean meal imports



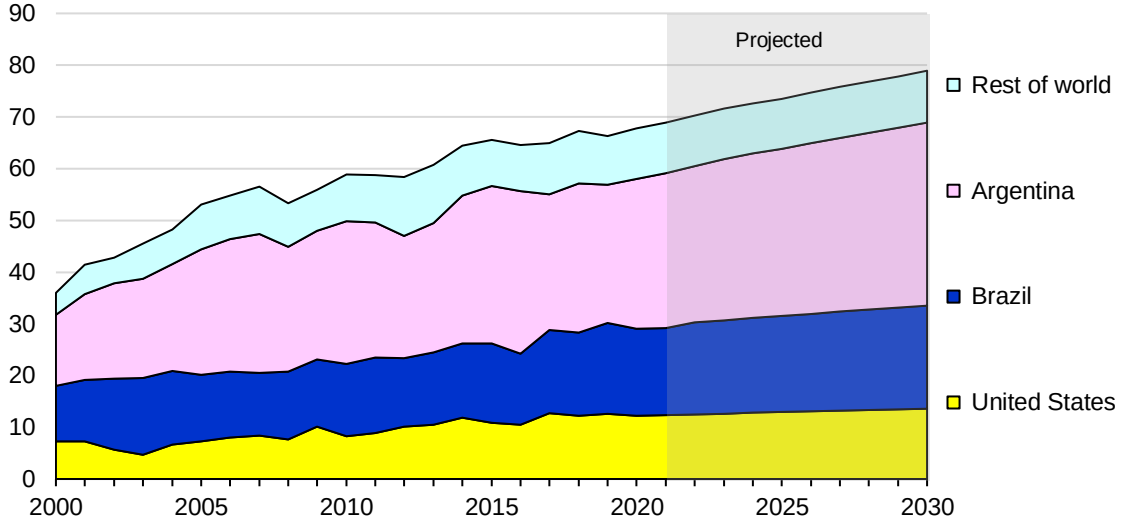
Notes: [1] Former Soviet Union and Other Europe. Source: USDA, Interagency Agricultural Projection Committee, October 2020.

World soybean meal trade is projected to climb 14.5 percent to 78.9 million tons by 2030/31, supported by broad-based growth in demand from expanding commercial livestock and poultry production and adoption of modern feed rations.

- The EU remains the world's largest soybean meal importer throughout the projection period, with imports increasing 3.7 percent to 19.4 million tons by 2030/31. An abundant supply of low-cost rapeseed meal is expected to be available as a result of EU biodiesel production. However, nutritional considerations limit the inclusion of rapeseed meal in some livestock rations, supporting the continued use of soybean meal.
- Southeast Asia, North Africa, the Middle East, and Latin America are projected to become larger importers of soybean meal due to the increasing demand for livestock feed together with limited capacity to expand domestic oilseed production. Increasing poultry consumption and production is a major driving force, along with the lack of soybean crushing facilities. Vietnam is a key example, contributing the largest projected gain in world soybean meal imports, expanding 16.4 percent from 5.5 million tons in 2021/22 to 7.2 million tons by 2030/31. Imports by Indonesia, the Philippines, Thailand, and Malaysia increase 2.7 million tons to 15.3 million tons by 2030/31. Southeast Asia accounts for 43.1 percent of the projected increase in world soybean meal trade.
- Imports to North Africa and the Middle East are projected to rise by 1.6 million tons. Iran, Egypt, Turkey, and Saudi Arabia are the largest importers in these regions, accounting for about 56 percent of imports in 2021/22.
- Annual soybean meal imports by South American countries increase by 18.6 percent over the projection period from 5.8 million tons in 2021/22 to 6.9 million tons by 2030/31. Colombia, Peru, Ecuador, and Chile are among the largest importers. Venezuelan imports have recently decreased by about 70 percent, from 1.1 million tons in 2014/15 to 350,000 tons by 2020/21.
- Mexico's growing demand for protein feed is expected to boost its annual soybean meal imports from 2.1 million to 2.8 million tons by 2030/31. Canada's annual soybean meal imports increase from 1.0 to 1.2 million tons by 2030/31.

Figure 46. Global soybean meal exports

Million metric tons

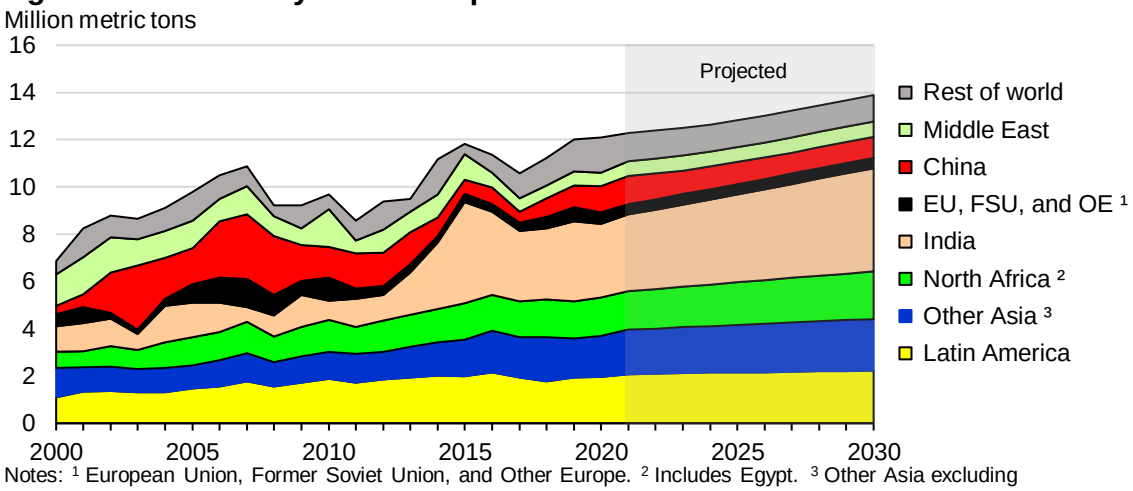


Source: USDA, Interagency Agricultural Projection Committee, October 2020.

Argentina, Brazil, and the United States remain the world's three largest exporters of soybean meal, with a combined share of world exports of about 87 percent in 2030/31. By 2030/31, Argentina and Brazil account for about 45 percent and 25 percent of the world market, respectively, while the U.S. market share slips marginally to about 17 percent.

- In 2019, Argentina eliminated export tax measures that incentivized exports of soybean products rather than soybeans and had encouraged the development of a large oilseed-crushing industry. However, Argentina's low soybean production costs and its competitive processing and shipping infrastructure are expected to sustain growth in soybean meal exports. Soybean meal exports are projected to grow by 5.4 million tons over the next decade, reaching 35.4 million tons by 2030/31.
- In Brazil, the rapid expansion of poultry and pork production is expected to boost domestic soybean meal demand and limit growth in soybean meal exports. Brazil's soybean crushing capacity is expected to expand at a slower rate due to strong competition from Argentina in the international soybean meal market and robust demand from China for its soybean supply. Nonetheless, projected exports increase about 19 percent to nearly 20 million tons by 2030/31, and Brazil's share of the world soybean meal market increases marginally from about 24 percent in 2021/22 to about 25 percent by 2030/31.
- U.S. soybean meal exports are projected to increase about 10 percent to 13.6 million tons by 2030/31, with the U.S. share of world exports declining from about 18 percent in 2021/22 to about 17 percent by 2030/31.
- India's soybean meal exports begin to decline gradually, reaching 1.7 million tons by 2030/31, as expanding domestic feed use for poultry, egg, and milk production continues to constrain exportable supplies of soybean meal.
- The EU continues to be a small but steady exporter of soybean meal to Russia and other Eastern European countries where livestock production is projected to grow significantly. Annual EU soybean meal exports hold steady at 300,000 tons through 2030/31.

Figure 47. Global soybean oil imports



Notes: [1] European Union, Former Soviet Union, and Other Europe. [2] Includes Egypt. [3] Other Asia excluding China and India. Source: USDA, Interagency Agricultural Projection Committee, October 2020.

World soybean oil imports are projected to climb about 13 percent over the projection period, reaching 13.9 million tons by 2030/31, bolstered by rising food and industrial use. Growth in world soybean oil trade is, however, expected to continue to be constrained by competition with palm oil, the leading vegetable oil traded internationally.

- Although palm oil continues to account for the largest share of India's vegetable oil imports, India is also the world's largest importer of soybean oil. India's soybean oil imports are projected to grow about 34 percent to 4.4 million tons in 2030/31. Strong anticipated growth in per capita incomes is expected to continue to drive up demand for edible oils, while low yields and limited area expansion potential limit growth in oilseed production. Price competition with palm oil will remain a key factor in soybean oil market share. Both Bangladesh and Pakistan are also projected to expand imports of soybean oil imports over the projection period to combined total of 1.1 million tons by 2030/31, despite gains in domestic production.

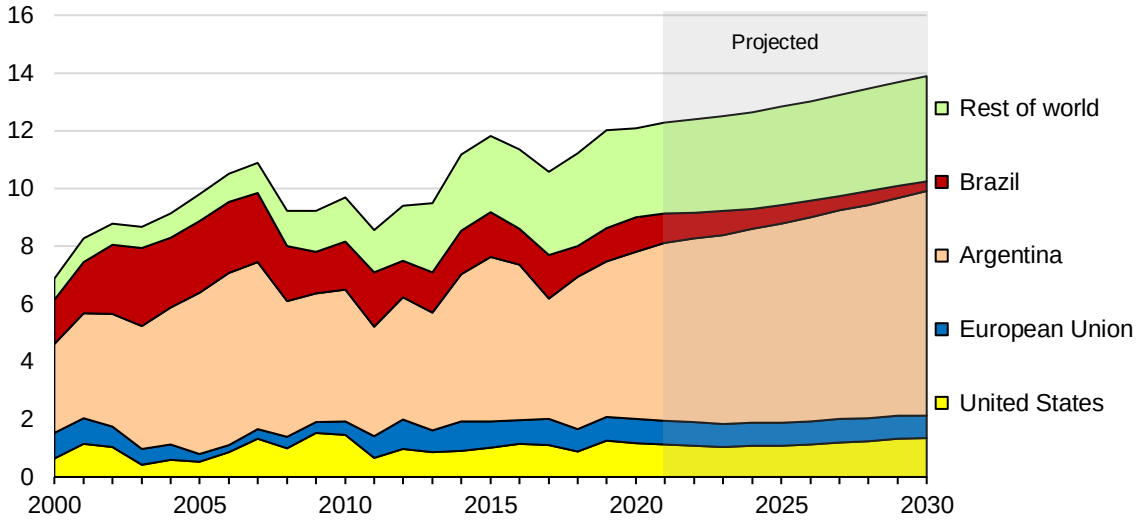
- China's soybean oil imports are projected to peak at 1.2 million tons by 2021/22 and fall to 880,000 tons by 2030/31. The Southeast Asia region is projected to have steady imports near 280,000 tons over the projection. Malaysia, the Philippines, Indonesia, and Vietnam account for most of the soybean oil imports within Southeast Asia by 2030/31, at 107,000, 89,000, 17,000 and 45,000 tons, respectively. Vietnam has expanded soybean crushing capacity, leading to slower growth in soybean oil imports.

- Income and population growth in North Africa, the Middle East, and Latin America contribute to gains in soybean oil demand and imports. The combined imports of Egypt and Iran are projected to be steady near 508,000 tons over the projection, while imports by the Other North Africa region are projected to increase about 26 percent to 1.9 million tons by 2030/31.

- South American soybean oil imports are projected to remain steady at 1.4 million tons, with Peru, Colombia, and Venezuela the largest importers. Central America and Caribbean region imports are also projected to be steady near 605,000 tons. Mexico's annual imports also remain constant near 216,000 tons in 2030/31, as consumption gains are met mostly by domestic soybean crushers.

Figure 48. Global soybean oil exports

Million metric tons

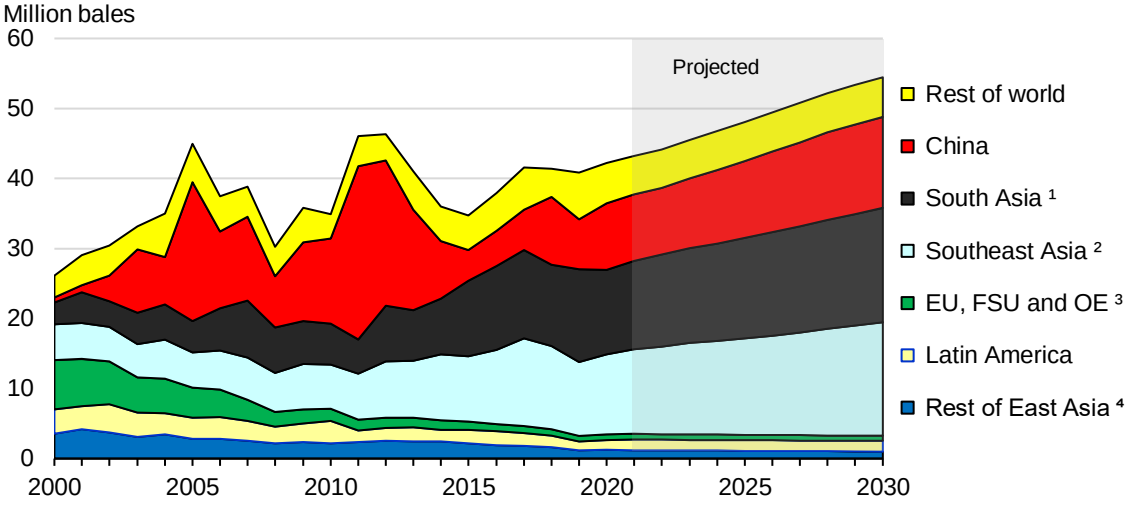


Source: USDA, Interagency Agricultural Projection Committee, October 2020.

Argentina, the United States, the EU, and Brazil are the world's four leading soybean oil exporters. Their combined shipments are projected to account for about 74 percent of world soybean oil exports during the coming decade. Argentina, the United States and the EU are projected to account for 56, 10, and 6 percent of world soybean oil exports, respectively, by 2030/31.

- Soybean oil exports from Argentina are projected to climb to 7.8 million tons by 2030/31, a 25.8- percent increase from 2021/22. Argentina's strength as a soybean oil exporter reflects its large crushing capacity and its small domestic market for soybean oil. Gains in Argentine soybean production due to extensive double-cropping, further adjustments in crop-pasture rotations, and expansion onto marginal lands in the northwestern part of the country facilitate increased soybean crushing. Although Argentina's soybean oil exports rise, this growth is slowed as more soybean oil is used to produce biodiesel.
- U.S. soybean oil exports rise over the projection period and reach 1.3 million tons in 2030/31. The United States is expected to be the world's second-largest soybean oil exporter as Brazilian exports decline. By 2030/31 the United States has 9.6 percent of global trade share. Brazil's soybean oil exports in 2021/22 are 1.0 million tons and decrease to 340,000 tons by 2030/31. Over the coming decade, Brazil is expected to use more soybean oil for domestic biodiesel production.
- EU soybean oil exports are stable near 0.8 million tons over the projection period, but have a decreasing share of global trade, from 6.6 percent to 5.7 percent by 2030/31. The FSU region slightly increases soybean oil exports to 1.1 million tons over the projection period.
- Soybean oil exports by South American countries other than Argentina and Brazil are projected to increase from 1.1 million tons to 1.2 million metric tons by 2030/31. Paraguay and Bolivia are the largest soybean oil exporters in South America after Argentina and Brazil.

Figure 49. Global cotton imports

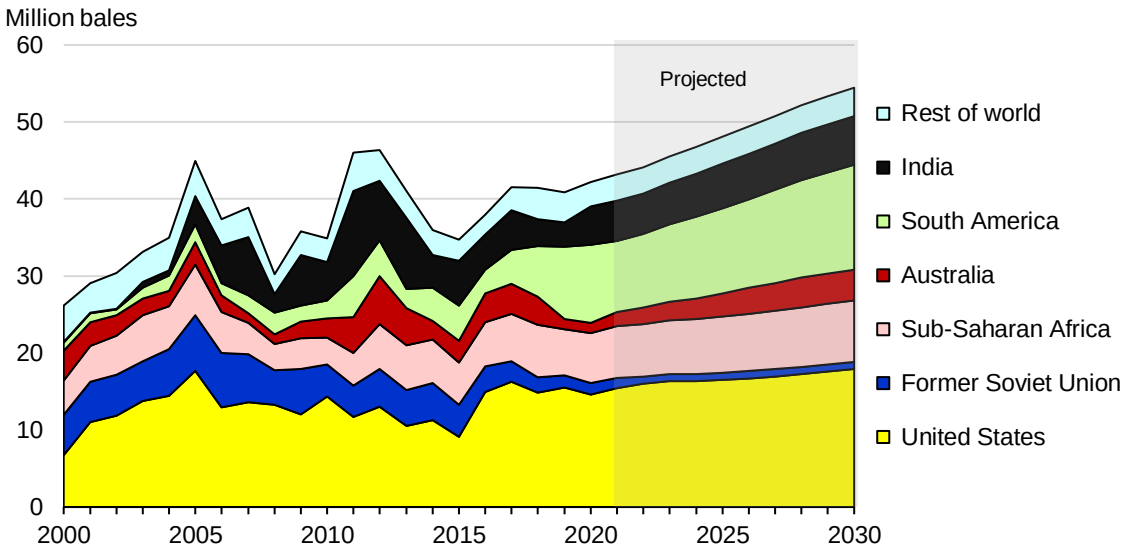


Notes: [1] Bangladesh, India, and Pakistan. [2] Malaysia, Indonesia, Philippines, Thailand, and Vietnam. [3] European Union, Former Soviet Union, and Other Europe. [4] Excludes China. Source: USDA, Interagency Agricultural Projection Committee, October 2020.

Projected world cotton trade surpasses the 46.4-million-bale record set in 2012/13 early in the projection period and reaches 54.5 million bales in 2030/31. Imports by countries in Southeast and South Asia and China contribute most of the growth.

- China's cotton imports will grow in order to meet textile demand and replenish stocks. Imports are projected to expand 3.5 percent per year, leading to a 3.5 million-bale increase in imports to 13.0 million bales annually in 2030/31.
- Bangladesh continues as the second-largest global importer, with imports rising by 42.5 percent to 11.0 million bales by 2030/31. Bangladesh, a low-cost producer of cotton yarn, fabric, and garments, will account for 20.2 percent of global imports by 2030/31 and about 30 percent of the projected increase in global imports over the projection period.
- Southeast Asia cotton imports are projected to increase nearly 34 percent to 16.2 million bales by 2030/31. Vietnam is expected to remain the third-largest global importer as its textile industry grows rapidly and imports reach 10.9 million bales by 2030/31. Vietnam's cotton imports increased over four-fold over the past 10 years and are projected to account for about 30 percent of the projected increase in world imports during the projection period. Indonesia is expected to be the sixth-largest cotton importer in 2030/31, with imports rising 19.4 percent to 3.7 million bales in 2030/31.
- Turkey and Pakistan are expected to be the fourth- and fifth-largest cotton importers by 2030/31. Both Turkey and Pakistan have stable imports over the projection period, averaging 4.0 and 3.9 million bales, respectively.
- Mexico and FSU imports are steady at 700,000 bales and 200,000 bales, respectively. Thailand, the EU, South Korea, Taiwan, and Japan all slightly decrease imports throughout the projection period, with a combined decrease of 260,000 bales by 2030/31.

Figure 50. Global cotton exports

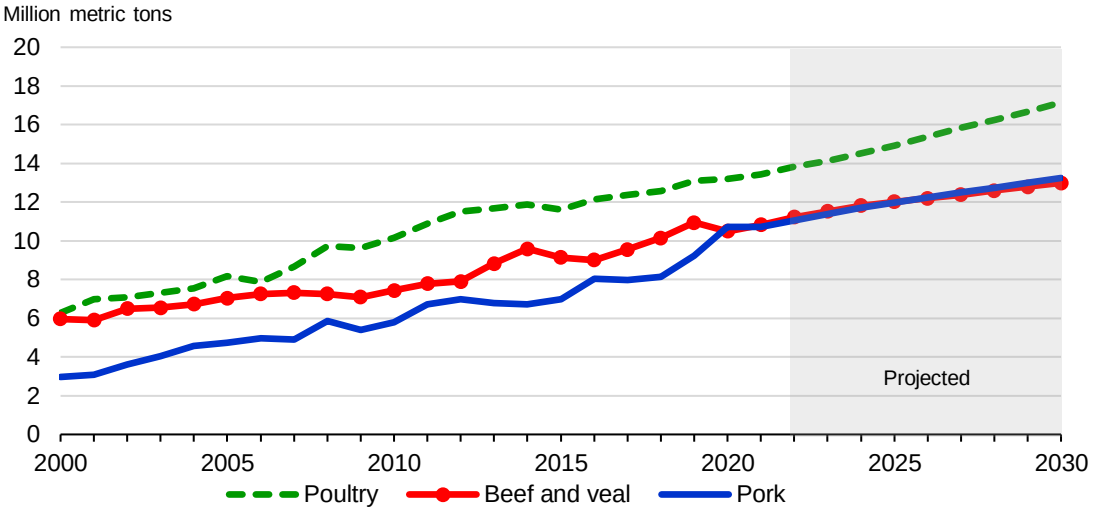


Source: USDA, Interagency Agricultural Projection Committee, October 2020.

Raw cotton production is expected to continue moving to countries with favorable resource endowments and advancing production technologies. Expansion is projected from traditional producers with large amounts of land suitable for cotton production, including Brazil, Sub-Saharan Africa, and India. The United States, Brazil, India, and West Africa remain the largest exporters.

- The U.S. share of world cotton production has declined from the early 2000s with the spread of new technology around the world, but U.S. share is still projected to average more than 15 percent throughout the projection period. The United States remains the world's leading cotton exporter, increasing exports a total of 16.2 percent to 17.9 million bales (upland and extra-long staple [ELS] cotton) during the 2021/22–2030/31 projection period. However, the U.S. share of world trade is expected to decline from 35.7 percent in 2021/22 to 32.9 percent by 2030/31.
- Area planted to cotton in Brazil is projected to increase, with continuing yield growth as well. Brazil's annual cotton exports are projected to increase by 4.4 million bales by 2030/31, corresponding to a 4.6 percent annual growth rate, the largest projected increase among the world's major exporters. Brazil became the world's second-ranking cotton exporter in 2018/19, surpassing India, and remains second through the projection period.
- Increased cotton area in India has helped offset yields hampered by bollworm pesticide resistance and weather issues in recent years, leading to projected increases in production and exportable supplies. India's cotton exports increase by 2.1 percent annually, reaching 6.3 million bales in 2030/31, making India the world's third-largest cotton exporter behind the United States and Brazil throughout the projections.
- Exports from the 15 countries of ECOWAS are projected to sustain 2.4 percent annual growth in the next decade. Improvements in technical and financial infrastructure will boost production and exports. Sub-Saharan Africa is expected to add 1.3 million bales to trade and account for about 15 percent of world trade over the projection period.
- Government policies in the major cotton-producing countries in Central Asia are promoting investment in textile industries and contributing to exports of textile products rather than exports of raw cotton. FSU exports, entirely from Central Asia, are projected to decrease 4.4 percent annually, with only 900,000 bales exported by 2030/31, far below the recent export peak of 7.3 million bales in 2005/06.

Figure 51. Global meat exports

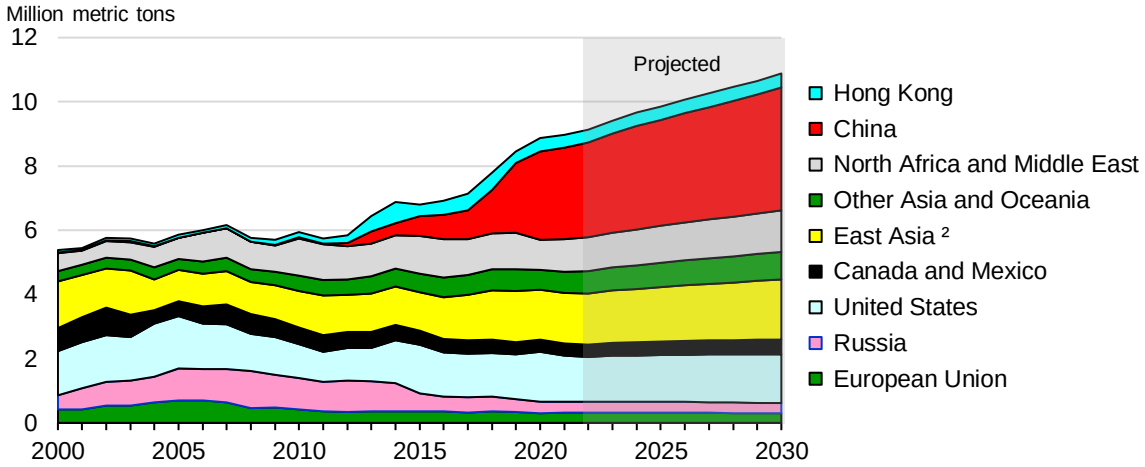


Notes: [1] Major exporters, not world total (see beef, pork and poultry trade tables).
Source: USDA, Interagency Agricultural Projection Committee, October 2020.

Consistent with the recent historical pattern, global expansion of meat trade during 2022–2030 is projected to be led by poultry, followed by pork and beef. Poultry exports by major exporters are projected to expand about 24 percent, supported by strong and broad-based consumer demand in developing country markets. Pork exports are expected to grow 19.7 percent, led by demand in Asian developing countries, while beef shipments are projected to grow 15.8 percent, based largely on demand in higher income developing countries in Asia and the Middle East.

- Brazil is the largest exporter of poultry meat, followed by the United States, the EU, and Thailand. Brazil is projected to account for about 51 percent of global export growth, with exports rising 41.2 percent to 5.8 million tons by 2030. U.S. exports are expected to increase about 14 percent to 4.2 million tons over projection period, while EU exports rise about 12 percent to 3.0 million tons. Thailand's projected poultry exports, aided by proximity to growing markets, are expected to climb 34.7 percent to 1.3 million tons by 2030.
- The outbreak of African swine fever in China and several other Asian countries that reduced local pork supplies and boosted global pork trade is expected to be largely resolved and has a diminishing impact on the export outlook. The EU—the largest exporter—is projected to account for nearly half of the growth in global pork exports, with shipments rising 27.5 percent to nearly 5.0 million tons by 2030. U.S. pork exports expand by 5.4 percent to 3.5 million tons by 2030, while Brazilian exports are expected to grow 33.3 percent to 1.8 million tons, and Canada's shipments grow 16.5 percent to 1.7 million tons. The U.S. share among major pork exporters is projected decline from about 30 percent in 2022 to 26.7 percent in 2030.
- Brazil, the world's largest beef exporter, is projected to account for more than half of the projected growth in sales by major exporters, with shipments rising 35.7 percent to 3.8 million tons between 2022 and 2030. Growth in Brazil's beef exports is supported by expanded access to existing markets.
- Indian beef exports through 2030 are expected to increase 7.5 percent to 1.4 million tons, aided by rising demand from developing countries for India's lower-priced carabeef (from buffalos). Australian beef exports are expected to grow 7.0 percent to 1.4 million tons, with recent drought-related contraction and the gradual rebuilding of its cattle herd limiting growth in export supplies.
- U.S. beef exports are projected to rise 6.7 percent to 1.5 million tons by 2030, placing the United States in a tie with India and Australia as the second-largest world beef exporter.

Figure 52. Global beef imports

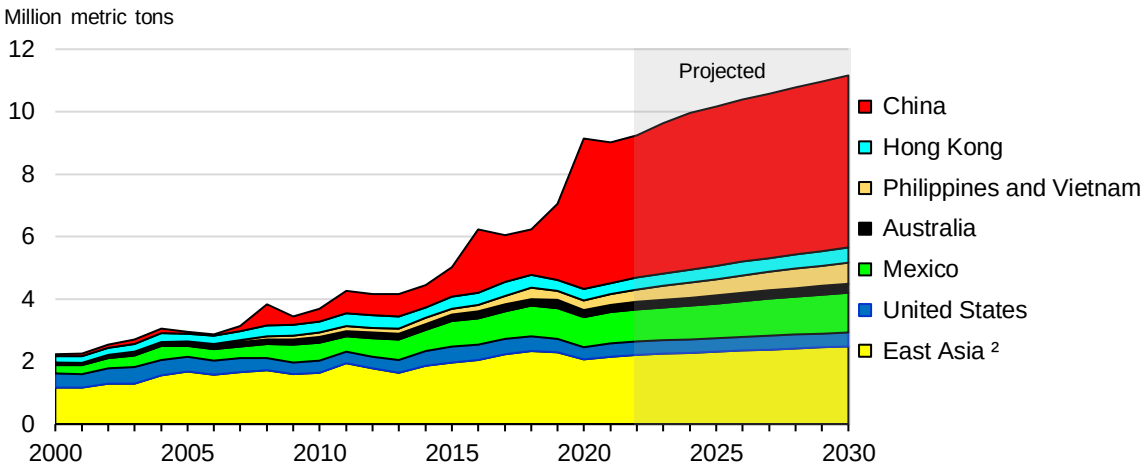


Notes: [1] Selected importers, not world total. [2] Japan, South Korea, and Taiwan.
Source: USDA, Interagency Agricultural Projection Committee, October 2020.

Between 2022 and 2030, major beef-importing countries are projected to increase imports by 1.9 million tons, reaching 12.1 million tons in 2030. Demand by lower- and middle-income countries will fuel much of the increase, primarily for lower-value grass-fed beef. Imports of grain-fed beef, mainly by higher-income countries, are projected to rise slowly.

- Beef imports by China and Hong Kong combined account for the largest share of world trade and are projected to increase 27.3 percent to 4.3 million tons between 2022 and 2030, as demand outpaces domestic production growth. Lingering shortages and higher prices for pork following the outbreak of African swine fever also support beef demand in the early part of the projection period.
- U.S. beef imports of primarily grass-fed, lean beef for use in ground beef and processed products gradually rise throughout the projection period. Imports are expected to increase 10.2 percent over the projection period to 1.5 million tons in 2030, as the United States remains the world's second-largest beef importer.
- Japan and South Korea are the world's third- and fourth- largest beef importers. Japan's beef imports are expected increase slightly to 873,000 tons by 2030, while South Korea is projected to be one of the world's fastest growing markets, with imports rising 39.1 percent to 760,000 tons by 2030.
- The Middle East and North Africa region (including Egypt), is projected to increase beef imports from 1.1 million tons in 2022 to 1.3 million by 2030, driven by population and income growth.
- Mexico is projected to be the fastest growing world beef importer, with imports expanding 44.2 percent to 241,000 tons over the projection period. Mexican imports consist largely of higher-valued, grain-fed beef from the United States.
- The Philippines, Indonesia, and Malaysia combined are projected, from 2022 to 2030, to increase beef imports by about 22 percent to 600,000 tons by 2030, as strong growth in per capita incomes continues to strengthen demand. Other Asia and Oceania (excluding Southeast and East Asia) increases imports by 27.8 percent to 256,000 tons by 2030.
- Russian beef imports are projected to decline about 8 percent to 315,000 tons by 2030 due to weak demand and policies supporting domestic beef production.

Figure 53. Global pork imports

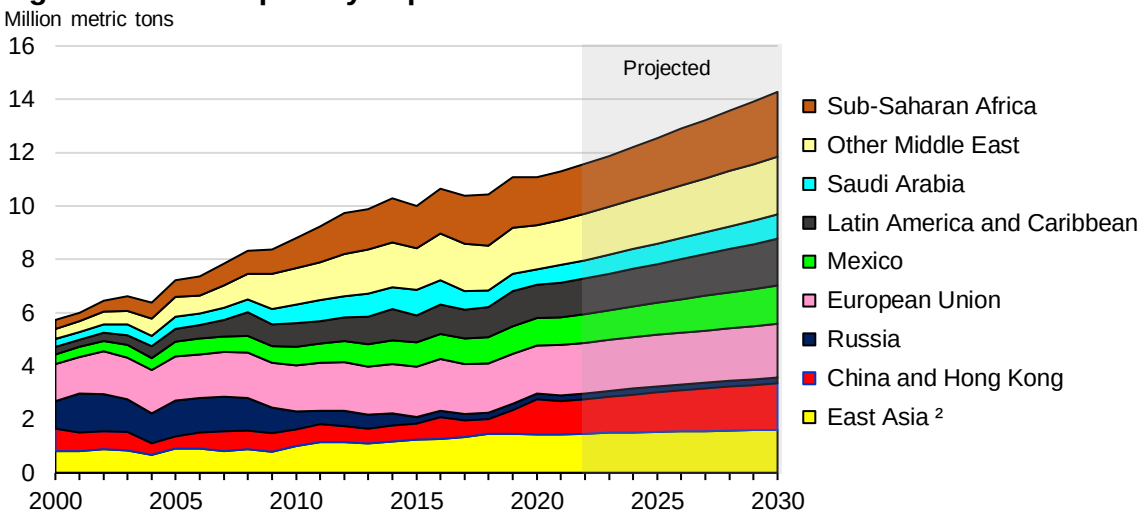


Notes: [1] Selected importers, not world total. [2] Japan, South Korea, and Taiwan.
Source: USDA, Interagency Agricultural Projection Committee, October 2020.

Pork imports by major importers is projected to increase 21.8 percent between 2022 and 2030, supported by a projected annual growth rate of 2.2 percent in pork consumption, the fastest among the major meat commodities. Imports by major pork-importing countries are projected to continue to rise, increasing by 2.3 million tons (21.8 percent) from 2022 to 2030. China/Hong Kong, Mexico, the Philippines, and South Korea exhibit the largest increase in import demand over the projection period, accounting for 69.7 percent of the total projected increase in world pork imports by 2030.

- China became the top pork importer following a 2018–19 African swine fever epidemic that sharply curtailed domestic supplies and doubled pork prices in the country. That trend is expected to continue despite signs of a rebound in swine numbers during 2020. Growth in consumption may outpace the recovery of output as farms encounter high feed costs and expenses for biosecurity and manure-handling expenses.
- Japan is projected to remain the second-largest pork importer, with imports expected to increase 7.3 percent over the projection period and reach 1.6 million tons by 2030. Rising imports are the result of the outlook for nearly flat domestic production and slight growth in consumption.
- Mexico is the world's third-largest pork importer. Projected imports climb 24.4 percent to 1.3 million tons by 2030, driven primarily by growth in income, urbanization, and population. Mexico accounts for 10.7 percent of the increase in pork imports among major importers.
- Pork imports by South Korea and the Philippines have strengthened due to the impacts of African Swine fever on domestic production. South Korean imports, also supported by demand for selected cuts, are expected to increase, with imports rising 22.2 percent to 778,000 tons over the projection period. The Philippines, with projected import growth of 74.4 percent is expected to be the fastest growing global importer, with imports reaching 405,000 tons by 2030.
- Russia's pork imports continued to decline in 2020 due to policies focused on raising domestic production and reducing import dependence. Russia's pork imports are projected to increase from 16,000 tons in 2022 to 20,000 tons in 2030.
- Increasing incomes drive demand for imported pork in Central America and the Caribbean. Projected imports rise 38.8 percent from 2022 to 2030, reaching 372,000 tons in 2030.

Figure 54. Global poultry imports



Notes: 1 Selected importers, not world total. ² Japan, South Korea, and Taiwan.
Source: USDA, Interagency Agricultural Projection Committee, October 2020.

Annual poultry meat imports by the major importing countries are projected to increase by 3.3 million tons (24.1 percent) during 2022-30, reaching 16.9 million tons by 2030. Broad-based growth is expected across emerging markets in Asia, Latin America, North and Sub-Saharan Africa, and the Middle East. Little-to-slow import growth is projected for Russia, Ukraine, EU, Taiwan, and Canada.

- Poultry meat imports in Africa and the Middle East regions are projected to grow by 33.3 percent and 23.5 percent, respectively, from 2022 through 2030. By 2030, these regions together increase their poultry meat imports by 1.2 million tons. Projected gains are the result of income-driven diet diversification, low prices for poultry relative to other meats, and production limitations in a number of countries.
- Rising incomes also lead to increased poultry import demand by Mexico, Central America, and the Caribbean, where imported poultry products remain less expensive than beef or pork. Mexico's poultry production grows through the projection period, but at a slower rate than consumption, resulting in annual imports rising by about 33.2 percent to 1.4 million tons between 2022 and 2030. Poultry imports by the Central American and Caribbean region rise 31.4 percent to 1.1 million tons by 2030.
- Russia's imports increase modestly, growing just 1.6 percent to 219,000 tons over the projection period, as policies continue to support domestic production and limit imports.
- China is expected to become a larger net poultry importer as rising consumption outpaces growth in domestic production. China's poultry imports are projected to increase 38.8 percent, reaching 1.3 million tons by 2030. With China's poultry exports projected to increase just 10.5 percent to 458,000 tons by 2030, net imports increase nearly 60.0 percent by 332,000 tons over the projection period.
- Higher-valued, fully cooked poultry products tend to be imported by higher income countries in Asia and Europe. Fully cooked products are projected to account for most poultry exports from Thailand. Thailand's poultry meat exports to the EU, Japan, and South Korea are expected to rise as a result of the reopening of those markets to importing uncooked chicken from Thailand. Thai poultry exports are projected to increase by 34.7 percent from 2022 to 2030, reaching 1.3 million tons.

Table 27. Coarse grains trade long-term projections

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
						Imports, million metric tons						
Importers												
Former Soviet Union[1]	1.1	0.9	1.0	1.0	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.3
Other Europe	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
European Union[2]	19.7	24.3	25.1	25.8	26.1	26.5	26.7	26.9	26.9	26.9	26.9	26.9
Egypt	10.8	11.1	11.6	11.9	12.4	12.8	13.2	13.6	14.0	14.4	14.8	15.2
Iran	10.8	11.6	12.6	13.4	13.9	14.2	14.7	15.0	15.3	15.7	16.0	16.4
Saudi Arabia	12.0	12.2	12.5	12.9	13.2	13.5	13.9	14.2	14.5	14.8	15.1	15.5
Turkey	3.6	3.1	3.2	3.3	3.4	3.5	3.5	3.6	3.6	3.7	3.7	3.8
Other Middle East	7.0	8.0	8.6	8.9	9.0	9.2	9.3	9.4	9.5	9.6	9.6	9.7
Morocco	4.1	5.1	4.3	4.4	4.4	4.5	4.5	4.5	4.6	4.6	4.6	4.7
Other North Africa	8.7	8.8	9.0	9.3	9.6	9.9	10.2	10.5	10.8	11.0	11.3	11.5
West Africa (ECOWAS)[3]	0.9	0.8	0.9	1.0	1.0	1.0	1.1	1.1	1.2	1.2	1.3	1.3
Sub-Saharan Africa[4]	3.5	3.3	3.4	3.5	3.5	3.6	3.6	3.7	3.7	3.8	3.8	3.9
South Africa	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Japan	17.7	17.6	17.7	17.8	17.9	17.9	17.9	17.9	17.9	17.8	17.8	17.8
South Korea	11.7	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9
Taiwan	4.3	4.4	4.5	4.5	4.5	4.6	4.6	4.6	4.6	4.6	4.6	4.6
China	16.4	18.8	21.7	22.0	22.1	22.4	22.5	22.7	22.9	23.0	23.1	23.3
Indonesia	0.9	0.9	0.9	0.9	1.0	1.1	1.2	1.2	1.1	1.1	1.1	1.1
Malaysia	3.9	4.1	4.2	4.3	4.3	4.4	4.5	4.6	4.6	4.7	4.8	4.9
Philippines	0.4	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7
Thailand	1.6	1.2	1.1	1.1	1.3	1.4	1.5	1.6	1.6	1.6	1.7	1.7
Vietnam	11.0	12.0	12.6	13.1	13.7	14.3	14.9	15.4	16.0	16.6	17.2	17.7
Bangladesh	1.4	1.4	1.5	1.5	1.6	1.6	1.7	1.7	1.8	1.8	1.9	1.9
India	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Other Asia and Oceania	1.7	2.0	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.8	2.9	3.0
Canada	2.1	1.8	1.9	2.0	2.2	2.2	2.2	2.2	2.2	2.3	2.3	2.3
Mexico	18.0	18.8	19.5	20.2	20.9	21.6	22.4	23.1	23.8	24.6	25.3	26.1
Central America and Caribbean	7.2	7.9	8.2	8.4	8.6	8.9	9.1	9.3	9.6	9.8	10.0	10.3
Brazil	1.9	2.2	2.2	2.2	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Other South America	15.3	15.9	16.7	17.5	18.3	19.0	19.7	20.4	21.1	21.8	22.5	23.2
Other foreign[5]	5.1	8.7	7.3	6.0	5.1	5.0	5.3	6.2	6.9	8.0	9.1	10.2
United States	3.1	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Total imports	207.4	223.3	230.8	236.0	240.7	245.9	251.2	256.7	261.8	267.2	272.7	278.3
						Exports, million metric tons						
Exporters												
European Union[2]	13.4	8.8	9.5	9.6	9.8	9.9	10.1	10.2	10.3	10.4	10.5	10.7
Other Europe	3.1	3.6	3.6	3.7	3.7	3.7	3.7	3.7	3.7	3.8	3.9	3.9
Russia	8.8	9.5	9.7	9.7	9.6	9.5	9.4	9.3	9.3	9.2	9.1	9.1
Ukraine	34.4	34.6	37.0	37.5	38.0	38.8	39.8	41.0	41.7	42.7	43.8	44.9
Other Former Soviet Union[6]	2.1	2.0	1.9	2.0	1.9	2.0	2.0	1.9	2.0	2.0	2.0	2.0
Canada	5.1	5.7	6.0	6.0	6.1	6.2	6.3	6.4	6.4	6.5	6.6	6.7
Argentina	41.0	37.0	37.0	37.5	37.7	38.2	38.7	39.2	39.7	40.2	40.8	41.3
Brazil	34.0	39.0	41.3	43.3	45.5	47.7	49.8	51.9	54.0	56.2	58.2	60.2
Other South America	2.2	2.7	2.7	2.7	2.7	2.7	2.8	2.9	2.9	3.0	3.1	3.1
Australia	3.5	5.4	6.3	6.8	7.0	7.2	7.4	7.5	7.6	7.7	7.8	8.0
Other Asia and Oceania	4.6	3.8	3.9	3.9	3.9	3.9	4.0	4.0	4.0	4.1	4.1	4.1
South Africa	2.5	2.3	2.2	2.3	2.3	2.3	2.3	2.4	2.4	2.5	2.5	2.5
Other Africa[7]	0.9	1.2	1.1	1.0	1.0	1.0	1.0	0.9	0.9	0.9	0.9	0.9
Other foreign	1.6	1.8	1.5	1.5	1.6	1.6	1.7	1.7	1.7	1.8	1.8	1.9
United States	50.5	65.8	67.2	68.5	69.7	71.1	72.4	73.7	75.0	76.2	77.6	78.9
Total exports	207.4	223.3	230.8	236.0	240.7	245.9	251.2	256.7	261.8	267.2	272.7	278.3
							Percent					
U.S. trade share	24.3	29.5	29.1	29.0	29.0	28.9	28.8	28.7	28.6	28.5	28.5	28.3

[1]Former Soviet Union-12, includes intra-Former Soviet Union trade. [2]Excludes intra-European Union trade.
[3]Economic Community of Western African States, 15 member countries (ECOWAS). [4]Excludes ECOWAS and South Africa.
[5]Includes unaccounted, which can be negative. [6]Covers Former Soviet Union-12 except for Russia and Ukraine. Includes intra-Former Soviet Union trade. [7]Includes all African countries, including Egypt, except South Africa.
Source: USDA, Interagency Agricultural Projections Committee, October 2020.

Table 28. Corn trade long-term projections

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
						Imports, million metric tons						
Importers												
European Union[1]	19.0	24.0	24.6	25.3	25.6	26.0	26.2	26.4	26.4	26.4	26.4	26.4
Former Soviet Union[2]	0.6	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Egypt	10.6	11.0	11.5	11.8	12.2	12.6	13.1	13.5	13.9	14.3	14.6	15.1
Morocco	3.0	3.5	3.6	3.7	3.7	3.8	3.8	3.8	3.9	3.9	3.9	4.0
Other North Africa	7.0	7.1	7.4	7.7	7.9	8.2	8.4	8.7	9.0	9.2	9.5	9.7
Iran	8.0	9.0	9.9	10.4	10.8	10.9	11.3	11.5	11.7	11.9	12.2	12.4
Saudi Arabia	4.5	4.7	4.9	5.1	5.3	5.5	5.7	5.9	6.1	6.3	6.5	6.6
Turkey	2.7	2.7	2.7	2.8	2.8	2.9	2.9	3.0	3.0	3.0	3.1	3.1
Other Middle East	5.3	5.8	6.1	6.2	6.4	6.5	6.6	6.6	6.7	6.7	6.8	6.8
Japan	16.0	16.0	16.1	16.2	16.3	16.3	16.3	16.3	16.3	16.2	16.2	16.2
South Korea	11.6	11.8	11.9	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.6	12.7
Taiwan	4.2	4.3	4.4	4.4	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
China	7.0	7.0	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
Indonesia	0.9	0.9	0.9	0.9	1.0	1.1	1.2	1.2	1.1	1.1	1.1	1.1
Malaysia	3.9	4.1	4.2	4.3	4.3	4.4	4.5	4.6	4.6	4.7	4.8	4.9
Philippines	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6
Thailand	1.6	1.2	1.1	1.1	1.3	1.4	1.5	1.6	1.6	1.6	1.7	1.7
Vietnam	11.0	12.0	12.6	13.1	13.7	14.3	14.9	15.4	16.0	16.6	17.2	17.7
Other Asia and Oceania	1.2	1.2	1.2	1.2	1.2	1.3	1.4	1.4	1.5	1.5	1.6	1.6
Canada	2.1	1.7	1.8	1.9	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2
Mexico	17.0	18.3	19.0	19.8	20.5	21.1	21.9	22.7	23.4	24.1	24.9	25.7
Central America and Caribbean	7.3	7.9	8.2	8.4	8.6	8.9	9.1	9.3	9.6	9.8	10.0	10.3
Brazil	1.2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Other South America	14.6	15.2	16.1	16.8	17.6	18.3	19.0	19.7	20.4	21.1	21.8	22.4
South Africa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
West Africa (ECOWAS)[3]	0.8	0.8	0.9	0.9	1.0	1.0	1.1	1.1	1.2	1.2	1.2	1.3
Sub-Saharan Africa[4]	2.7	2.6	2.6	2.7	2.7	2.8	2.8	2.8	2.8	2.9	2.9	2.9
Other foreign[5]	5.4	8.6	7.1	6.0	5.2	5.1	5.5	6.5	7.3	8.5	9.6	10.8
United States	1.1	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Total imports	170.6	184.5	189.0	193.2	197.3	201.7	206.4	211.4	216.1	221.0	225.8	230.8
						Exports, million metric tons						
Exporters												
European Union[1]	4.8	2.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Argentina	38.0	34.0	33.6	34.1	34.3	34.7	35.1	35.6	36.0	36.5	37.0	37.5
Brazil	34.0	39.0	41.3	43.3	45.4	47.7	49.8	51.9	54.0	56.2	58.2	60.2
Other South America	2.1	2.5	2.5	2.5	2.5	2.5	2.6	2.7	2.8	2.8	2.9	2.9
South Africa	2.5	2.3	2.2	2.3	2.3	2.3	2.3	2.4	2.4	2.5	2.5	2.5
Other Africa	0.7	0.9	0.8	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Other Europe	3.0	3.5	3.5	3.6	3.7	3.6	3.6	3.6	3.7	3.7	3.8	3.9
Ukraine	29.2	30.5	32.9	33.2	33.7	34.4	35.3	36.4	37.1	37.9	38.9	40.0
Former Soviet Union[2]	4.8	4.4	4.3	4.4	4.2	4.0	3.9	3.8	3.7	3.6	3.5	3.5
Other foreign	6.3	5.8	5.8	5.8	5.8	5.9	5.9	6.0	6.0	6.1	6.2	6.2
United States	45.2	59.1	59.1	60.3	61.6	62.9	64.1	65.4	66.7	67.9	69.2	70.5
Total exports	170.6	184.5	189.0	193.2	197.3	201.7	206.4	211.4	216.1	221.0	225.8	230.8
							Percent					
U.S. trade share	26.5	32.0	31.2	31.2	31.2	31.2	31.1	30.94	30.86	30.75	30.65	30.53

[1]Excludes intra-European Union trade.

[2]Covers Former Soviet Union-12, except for Ukraine. Includes intra-Former Soviet Union trade.

[3]Economic Community of Western African States, 15 member countries (ECOWAS).

[4]Excludes South Africa and ECOWAS

[5]Includes unaccounted, which can be negative.

Source: USDA, Interagency Agricultural Projections Committee, October 2020.

Table 29. Sorghum trade long-term projections

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
						Imports, million metric tons						
Importers												
Japan	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Mexico	0.6	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
South America	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Sub-Saharan Africa[1]	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.0
China	3.9	6.1	7.1	7.3	7.3	7.3	7.4	7.4	7.5	7.5	7.6	7.7
Other[2]	0.4	0.6	0.9	0.8	0.7	0.7	0.7	0.6	0.6	0.5	0.5	0.5
Total imports	6.2	8.0	9.5	9.5	9.4	9.6	9.5	9.6	9.6	9.6	9.7	9.7
						Exports, million metric tons						
Exporters												
Argentina	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Australia	0.0	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Africa	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Other foreign	0.3	0.2	0.3	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3
United States	5.2	6.6	8.0	8.0	8.0	8.1	8.1	8.1	8.1	8.1	8.3	8.3
Total exports	6.2	8.0	9.5	9.5	9.4	9.6	9.5	9.6	9.6	9.6	9.7	9.7
							Percent					
U.S. trade share	83.4	82.1	84.6	84.7	84.9	85.1	85.1	85.0	85.0	85.0	85.2	85.0

[1]Includes South Africa.

[2]Includes unaccounted.

Source: USDA, Interagency Agricultural Projections Committee, October 2020.

Table 30. Barley trade long-term projections

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
						Imports, million metric tons						
Importers												
Former Soviet Union[1]	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.7
Europe	0.7	0.2	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Japan	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.2	1.1	1.1	1.1	1.1
China	5.3	5.3	7.0	7.1	7.3	7.4	7.6	7.6	7.8	7.8	7.9	8.0
Brazil	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Latin America[2]	0.8	0.8	0.7	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Saudi Arabia	7.5	7.5	7.6	7.8	7.9	8.0	8.1	8.3	8.4	8.5	8.7	8.8
Iran	2.8	2.6	2.7	2.9	3.1	3.3	3.4	3.5	3.6	3.7	3.9	4.0
Turkey	0.9	0.4	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7
Other Middle East	1.7	2.1	2.5	2.6	2.6	2.6	2.7	2.7	2.8	2.8	2.8	2.8
Morocco	1.1	1.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Other North Africa[3]	1.7	1.7	1.6	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8
Other foreign[4]	2.4	2.7	2.4	2.5	2.5	2.6	2.7	2.7	2.7	2.8	2.8	2.9
United States	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Total imports	27.4	27.3	28.8	29.6	30.2	30.8	31.4	31.9	32.4	32.7	33.3	33.8
						Exports, million metric tons						
Exporters												
European Union[5]	8.1	6.0	6.2	6.3	6.5	6.6	6.8	6.9	7.0	7.1	7.2	7.4
Argentina	2.5	2.5	2.8	2.9	3.0	3.0	3.1	3.1	3.2	3.2	3.3	3.4
Australia	3.2	4.4	5.3	5.8	6.0	6.2	6.4	6.5	6.6	6.7	6.8	7.0
Canada	2.3	2.7	3.0	3.0	3.1	3.2	3.2	3.3	3.4	3.5	3.5	3.6
Russia	4.5	5.4	5.6	5.6	5.6	5.7	5.7	5.7	5.7	5.7	5.7	5.7
Ukraine	5.0	4.0	4.0	4.1	4.1	4.2	4.3	4.4	4.5	4.5	4.6	4.7
Other Former Soviet Union[6]	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.6	1.7
Turkey	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Other foreign	0.2	0.6	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
United States	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total exports	27.4	27.3	28.8	29.6	30.2	30.8	31.4	31.9	32.4	32.7	33.3	33.8
							Percent					
U.S. trade share	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3

[1]Covers Former Soviet Union-12. Includes intra-Former Soviet Union trade.
[2]Includes Mexico.
[3]Excludes Morocco.
[4]Includes unaccounted.
[5]Excludes intra-European Union trade.
[6]Former Soviet Union-12 except for Russia and Ukraine. Includes intra-Former Soviet Union trade.
Source: USDA, Interagency Agricultural Projections Committee, October 2020.

Table 31 . Wheat trade long-term projections

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
						Imports, million metric tons						
Importers												
Iran	1.2	1.5	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Iraq	2.1	2.6	2.9	3.1	3.2	3.3	3.4	3.5	3.7	3.8	3.9	4.1
Turkey	10.7	7.0	7.9	8.1	8.2	8.2	8.2	8.2	8.3	8.3	8.4	8.4
Saudi Arabia	3.6	3.2	3.2	3.3	3.4	3.4	3.5	3.5	3.6	3.7	3.8	3.9
Other Middle East	11.6	11.8	12.2	12.6	12.9	13.3	13.5	13.7	13.9	14.1	14.3	14.5
Morocco	4.6	6.5	6.3	6.0	5.9	5.9	5.8	5.7	5.6	5.6	5.5	5.4
Egypt	12.8	13.0	13.6	14.1	14.4	14.7	14.9	15.2	15.4	15.7	16.0	16.2
Other North Africa	10.3	10.4	11.1	11.2	11.3	11.3	11.4	11.4	11.4	11.4	11.5	11.5
Nigeria	5.2	5.1	5.3	5.5	5.6	5.7	5.8	6.0	6.1	6.2	6.3	6.5
Other West Africa (ECOWAS)[1]	4.5	4.7	5.0	5.3	5.6	5.8	6.0	6.1	6.3	6.5	6.6	6.8
South Africa	2.2	1.9	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.3
Other Sub-Saharan Africa[2]	14.5	14.3	15.1	15.5	15.9	16.4	16.7	17.1	17.4	17.8	18.3	18.7
Mexico	5.1	5.3	5.3	5.4	5.4	5.5	5.6	5.6	5.7	5.7	5.8	5.8
Central America and Caribbean	4.1	4.3	4.4	4.4	4.5	4.5	4.6	4.6	4.7	4.7	4.8	4.8
Brazil	7.2	6.7	7.1	7.2	7.4	7.5	7.5	7.5	7.6	7.6	7.6	7.6
Other South America	8.5	8.6	8.7	8.8	9.1	9.3	9.5	9.6	9.8	10.0	10.1	10.2
European Union[3]	4.8	5.5	5.6	5.6	5.5	5.5	5.5	5.5	5.4	5.4	5.4	5.4
Other Europe	2.0	1.9	1.9	1.9	1.9	2.0	2.0	1.9	1.9	1.9	1.9	1.9
Former Soviet Union[4]	8.1	8.0	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1	8.1
China	5.4	7.5	6.0	6.0	6.1	6.1	6.2	6.3	6.4	6.4	6.6	6.7
Hong Kong	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Japan	5.7	5.6	5.5	5.4	5.4	5.4	5.4	5.4	5.3	5.3	5.3	5.3
South Korea	3.9	3.7	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
Taiwan	1.3	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
India	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pakistan	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bangladesh	6.8	6.6	6.7	6.9	7.0	7.1	7.3	7.4	7.5	7.6	7.8	7.9
Philippines	7.0	7.0	7.3	7.4	7.6	7.7	7.8	8.0	8.1	8.2	8.3	8.4
Indonesia	10.5	10.8	10.9	11.0	11.2	11.4	11.5	11.7	11.9	12.1	12.3	12.5
Malaysia	1.7	1.9	1.9	1.9	1.9	1.9	2.0	2.0	2.0	2.1	2.1	2.1
Thailand	3.5	3.1	3.0	3.0	3.1	3.1	3.1	3.1	3.1	3.2	3.2	3.2
Vietnam	3.2	3.6	3.6	3.8	3.9	4.0	4.2	4.4	4.5	4.7	4.9	5.0
Other Asia and Oceania	7.7	7.0	7.0	7.0	7.2	7.3	7.3	7.4	7.5	7.6	7.7	7.7
Other foreign[5]	8.4	4.1	4.3	3.7	2.9	2.8	2.7	2.5	2.4	2.1	2.0	2.0
United States	2.9	3.4	3.3	3.4	3.4	3.4	3.5	3.5	3.5	3.5	3.5	3.5
Total imports	191.5	189.9	192.7	195.3	197.7	200.3	202.8	204.9	207.2	209.4	211.8	214.2
						Exports, million metric tons						
Exporters												
European Union[3]	38.4	25.5	31.0	32.1	33.1	34.1	35.1	36.0	37.0	38.0	39.0	40.0
Canada	24.6	25.0	25.0	25.2	25.4	25.6	25.9	26.1	26.4	26.6	26.8	27.1
Australia	9.5	19.0	17.7	18.0	18.2	18.5	18.7	18.9	19.1	19.3	19.5	19.8
Argentina	13.5	13.0	13.7	14.0	14.2	14.4	14.6	14.7	14.9	15.1	15.3	15.5
Russia	34.5	39.0	38.0	38.1	38.3	38.5	38.6	38.8	39.0	39.1	39.3	39.4
Ukraine	21.0	17.5	15.9	16.5	17.1	17.8	18.4	18.8	19.2	19.6	20.1	20.6
Other Former Soviet Union[6]	7.5	7.0	8.3	8.1	7.9	7.7	7.6	7.4	7.3	7.1	7.0	6.9
Other Europe	0.7	1.1	1.1	1.2	1.2	1.2	1.3	1.3	1.4	1.4	1.5	1.5
India	0.5	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
China	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.2
Turkey	6.1	6.6	6.7	6.7	6.8	6.9	6.9	7.0	7.1	7.2	7.2	7.3
Other foreign	7.9	7.7	7.6	7.6	7.7	7.8	7.9	8.0	8.1	8.1	8.2	8.3
United States	26.3	26.5	25.9	25.9	25.9	25.9	25.9	25.9	25.9	25.9	25.9	25.9
Total exports	191.5	189.9	192.7	195.3	197.7	200.3	202.8	204.9	207.2	209.4	211.8	214.2
							Percent					
U.S. trade share	13.7	14.0	13.4	13.2	13.1	12.9	12.8	12.6	12.5	12.3	12.2	12.1

[1]Economic Community of Western African States (ECOWAS) except Nigeria, 14 remaining member countries.
[2]Excludes South Africa, Nigeria, and other West Africa. [3]Excludes intra-European Union trade.
[4]Former Soviet Union-12. Includes intra-Former Soviet Union trade. [5]Includes unaccounted, which can be negative.
[6]Former Soviet Union-12 except for Russia and Ukraine. Includes intra-Former Soviet Union trade.
Source: USDA, Interagency Agricultural Projections Committee, October 2020.

Table 32. Rice trade long-term projections

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
						Imports, million metric tons						
Importers												
Canada	0.43	0.43	0.44	0.44	0.45	0.45	0.46	0.46	0.47	0.47	0.47	0.48
Mexico	0.83	0.80	0.80	0.80	0.81	0.81	0.82	0.83	0.84	0.84	0.85	0.86
Central America and Caribbean	1.89	1.90	1.94	1.95	1.95	1.96	1.96	1.96	1.95	1.94	1.94	1.94
Brazil	0.85	0.80	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Other South America	1.33	1.35	1.52	1.56	1.60	1.63	1.64	1.63	1.61	1.59	1.56	1.53
European Union[1]	2.30	2.35	2.43	2.49	2.55	2.60	2.64	2.69	2.73	2.78	2.82	2.87
Former Soviet Union[2]	0.51	0.53	0.54	0.55	0.56	0.55	0.54	0.54	0.53	0.52	0.52	0.51
Other Europe	0.12	0.12	0.12	0.12	0.13	0.13	0.13	0.13	0.13	0.14	0.14	0.14
Bangladesh	0.03	0.10	0.22	0.28	0.33	0.39	0.43	0.47	0.51	0.58	0.63	0.67
China	2.40	2.20	2.10	2.04	1.93	1.80	1.72	1.65	1.58	1.53	1.49	1.44
Japan	0.69	0.69	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
South Korea	0.48	0.45	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41
Indonesia	0.55	0.50	0.44	0.39	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35
Malaysia	1.10	1.10	1.10	1.11	1.12	1.12	1.13	1.13	1.14	1.14	1.14	1.15
Philippines	2.45	2.60	2.73	2.89	2.97	3.05	3.12	3.19	3.25	3.32	3.37	3.42
Other Asia and Oceania	3.10	3.10	3.13	3.19	3.22	3.25	3.29	3.32	3.34	3.37	3.41	3.45
Iraq	1.10	1.15	1.20	1.23	1.26	1.29	1.32	1.35	1.38	1.41	1.44	1.47
Iran	1.00	1.20	1.35	1.39	1.39	1.41	1.42	1.42	1.42	1.43	1.44	1.45
Saudi Arabia	1.35	1.35	1.39	1.41	1.44	1.47	1.50	1.53	1.55	1.57	1.60	1.62
Other Middle East	2.96	3.17	3.16	3.26	3.34	3.41	3.48	3.54	3.60	3.66	3.73	3.80
North Africa	0.58	0.59	0.64	0.66	0.67	0.68	0.69	0.70	0.71	0.72	0.73	0.74
Nigeria	1.00	1.20	1.36	1.45	1.52	1.59	1.67	1.75	1.82	1.89	1.97	2.05
Other West Africa (ECOWAS)[3]	6.94	7.35	7.66	7.91	8.14	8.38	8.65	8.86	9.07	9.30	9.53	9.76
Other Sub-Saharan Africa[4]	4.41	4.61	4.81	5.00	5.20	5.38	5.56	5.74	5.92	6.10	6.28	6.46
South Africa	0.96	1.05	1.04	1.04	1.05	1.06	1.07	1.09	1.10	1.11	1.12	1.13
Other foreign[5]	1.79	2.47	2.56	2.57	2.54	2.53	2.50	2.51	2.58	2.55	2.52	2.51
United States	1.18	1.18	1.25	1.29	1.32	1.35	1.38	1.41	1.43	1.45	1.48	1.50
Total imports	42.30	44.32	45.94	47.02	47.80	48.62	49.45	50.21	50.98	51.75	52.51	53.29
						Exports, million metric tons						
Exporters												
Australia	0.05	0.15	0.20	0.23	0.24	0.27	0.29	0.31	0.32	0.34	0.36	0.38
Argentina	0.33	0.28	0.29	0.30	0.30	0.31	0.32	0.32	0.33	0.34	0.34	0.34
Other South America	3.43	3.16	3.16	3.19	3.22	3.27	3.30	3.36	3.36	3.38	3.39	3.40
European Union[1]	0.30	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32
China	2.60	2.90	3.08	3.24	3.44	3.64	3.84	4.00	4.19	4.40	4.60	4.80
India	12.00	12.50	12.70	12.80	12.92	13.06	13.18	13.29	13.39	13.51	13.61	13.79
Pakistan	4.00	4.10	4.15	4.22	4.25	4.28	4.30	4.33	4.36	4.38	4.39	4.39
Thailand	5.50	7.00	8.00	8.53	8.77	9.00	9.29	9.45	9.67	9.88	10.10	10.30
Vietnam	6.60	6.30	6.31	6.32	6.33	6.34	6.35	6.36	6.37	6.38	6.39	6.40
Burma	2.30	2.20	2.29	2.36	2.46	2.57	2.66	2.81	2.92	3.02	3.12	3.22
Cambodia	1.20	1.30	1.35	1.38	1.40	1.43	1.45	1.49	1.53	1.58	1.61	1.64
Egypt	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Other foreign	0.98	0.95	0.96	0.97	0.98	0.99	1.00	1.00	1.02	1.03	1.04	1.05
United States	2.99	3.14	3.11	3.14	3.14	3.14	3.14	3.16	3.19	3.19	3.22	3.24
Total exports	42.30	44.32	45.94	47.02	47.80	48.62	49.45	50.21	50.98	51.75	52.51	53.29
							Percent					
U.S. trade share	7.1	7.1	6.8	6.7	6.6	6.5	6.4	6.3	6.3	6.2	6.1	6.1

[1]Excludes intra-European Union trade.
[2]Former Soviet Union-12. Includes intra-Former Soviet Union trade.
[3]Economic Community of Western African States (ECOWAS) except Nigeria, 14 remaining member countries.
[4]Excludes South Africa, Nigeria, and other West Africa.
[5]Includes unaccounted.
Source: USDA, Interagency Agricultural Projections Committee, October 2020.

Table 33. Soybean trade long-term projections

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
						Imports, million metric tons						
Importers												
European Union[1]	15.6	14.9	14.9	15.1	15.1	15.1	15.1	15.0	15.0	15.0	15.0	15.0
Former Soviet Union [2]	2.6	2.5	2.7	2.7	2.7	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Mexico	6.0	6.1	6.2	6.4	6.6	6.8	6.9	7.1	7.2	7.4	7.5	7.7
Argentina	4.7	4.0	4.5	4.6	4.6	4.7	4.7	4.8	4.8	4.9	5.0	5.0
Other South America[3]	1.7	1.6	1.7	1.7	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9
Central America, Caribbean	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6
Egypt	4.5	4.2	4.2	4.4	4.5	4.7	4.8	4.9	5.1	5.2	5.4	5.5
Iran	1.8	2.0	2.1	2.1	2.2	2.2	2.3	2.4	2.4	2.5	2.6	2.6
Saudi Arabia	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Turkey	3.0	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8
Other Middle East	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Africa	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.9
Pakistan	2.3	2.4	2.6	2.8	2.9	3.0	3.2	3.3	3.5	3.6	3.7	3.9
China	97.4	100.0	103.9	108.5	112.1	115.8	119.4	123.2	127.1	131.4	135.9	140.5
Japan	3.4	3.4	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
South Korea	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1.4	1.4	1.4	1.4
Taiwan	2.9	2.9	3.0	3.0	3.1	3.1	3.2	3.2	3.2	3.2	3.3	3.3
Malaysia	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Indonesia	2.6	2.8	2.9	3.0	3.1	3.2	3.2	3.3	3.4	3.5	3.5	3.6
Vietnam	1.9	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.4	2.4	2.5	2.5
Thailand	3.8	3.9	4.0	4.1	4.1	4.2	4.3	4.3	4.4	4.4	4.5	4.5
Other	6.1	8.0	7.6	7.6	7.7	7.7	7.7	7.7	7.8	7.8	7.8	7.8
Total imports	164.6	167.9	172.9	178.9	183.8	188.5	193.2	197.9	202.8	208.2	213.5	219.2
						Exports, million metric tons						
Exporters												
Argentina	10.0	7.0	8.1	8.5	8.8	9.2	9.3	9.6	10.1	10.4	10.6	10.9
Brazil	92.5	85.0	89.2	93.7	97.3	99.8	102.8	106.5	110.0	113.7	117.7	121.5
Other South America[4]	7.8	8.3	8.5	8.8	9.2	9.5	9.9	10.2	10.6	11.0	11.3	11.7
Ukraine	2.8	2.2	2.4	2.5	2.5	2.6	2.6	2.7	2.8	2.9	3.0	3.0
Canada	3.9	3.9	3.9	3.9	4.1	4.3	4.5	4.7	4.9	5.1	5.3	5.5
Other foreign	2.0	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8
United States	45.6	59.9	59.2	59.7	60.1	61.4	62.3	62.5	62.7	63.4	63.8	64.6
Total exports	164.6	167.9	172.9	178.9	183.8	188.5	193.2	197.9	202.8	208.2	213.5	219.2
							Percent					
U.S. trade share	27.7	35.7	34.2	33.4	32.7	32.6	32.3	31.6	30.9	30.5	29.9	29.5

[1]Excludes intra-European Union trade.
[2]Former Soviet Union-12. Includes intra-Former Soviet Union trade.
[3]South America, excludes Argentina.
[4]South America, excludes Argentina and Brazil.
Source: USDA, Interagency Agricultural Projections Committee, October 2020.

Table 34. Soybean meal trade long-term projections

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
						Imports, million metric tons						
Importers												
European Union[1]	17.9	18.9	18.7	18.8	18.9	18.9	18.7	19.0	19.2	19.2	19.3	19.4
Russia	0.3	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4
Other Former Soviet Union[2]	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Other Europe	0.4	0.5	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Canada	1.1	1.1	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.2
Japan	1.7	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.8
South Korea	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Indonesia	4.9	5.0	5.0	5.1	5.2	5.3	5.3	5.4	5.5	5.6	5.8	5.9
Malaysia	1.4	1.4	1.4	1.5	1.5	1.5	1.6	1.6	1.6	1.7	1.7	1.7
Philippines	3.0	3.1	3.2	3.4	3.5	3.6	3.7	3.8	3.8	3.9	4.0	4.0
Thailand	2.9	2.8	2.9	3.0	3.1	3.2	3.2	3.3	3.4	3.5	3.6	3.6
Vietnam	5.3	5.4	5.5	5.7	5.9	6.1	6.2	6.4	6.6	6.8	7.0	7.2
Other Asia and Oceania	2.0	2.0	2.1	2.2	2.3	2.4	2.4	2.5	2.5	2.6	2.6	2.7
Mexico	1.9	2.0	2.1	2.1	2.2	2.3	2.4	2.4	2.5	2.6	2.7	2.8
Central America, Caribbean	2.5	2.6	2.6	2.7	2.8	2.8	2.9	2.9	3.0	3.0	3.1	3.2
South America	5.5	5.7	5.8	5.9	6.1	6.2	6.3	6.4	6.5	6.7	6.7	6.9
Egypt	0.2	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Iran	2.6	2.6	2.7	2.8	2.8	2.9	3.0	3.0	3.1	3.1	3.2	3.3
Saudi Arabia	0.8	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.1
Turkey	0.7	0.9	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2
Other Middle East[3]	1.4	1.5	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.8	1.8
Other North Africa[4]	2.4	2.3	2.5	2.6	2.7	2.7	2.8	2.8	2.8	2.8	2.9	2.9
Other	5.1	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
Total imports	66.3	67.8	68.9	70.3	71.6	72.6	73.5	74.7	75.8	76.8	77.82	78.92
						Exports, million metric tons						
Exporters												
Argentina	26.7	29.0	30.0	30.2	31.2	31.9	32.2	33.0	33.6	34.2	34.8	35.4
Brazil	17.5	16.8	16.8	17.7	18.0	18.3	18.6	18.9	19.1	19.4	19.7	19.9
Other South America	4.2	4.2	4.1	4.1	4.1	4.1	4.1	4.2	4.2	4.2	4.2	4.2
China	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
India	1.0	2.1	1.9	1.9	1.8	1.7	1.7	1.7	1.7	1.7	1.7	1.7
European Union[1]	0.4	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Other foreign	2.8	2.2	2.4	2.5	2.5	2.6	2.6	2.6	2.7	2.7	2.7	2.8
United States	12.6	12.2	12.4	12.5	12.7	12.8	12.9	13.1	13.2	13.3	13.5	13.6
Total exports	66.3	67.8	68.9	70.3	71.6	72.6	73.5	74.7	75.8	76.8	77.8	78.9
							Percent					
U.S. trade share	19.0	18.1	18.0	17.8	17.7	17.6	17.6	17.5	17.4	17.4	17.3	17.2

[1]Excludes intra-European Union trade.
[2]Covers Former Soviet Union-12 minus Russia. Includes intra-Former Soviet Union trade.
[3]Middle East excluding Saudi Arabia, Iran, and Turkey.
[4]North Africa excluding Egypt.
Source: USDA, Interagency Agricultural Projections Committee, October 2020.

Table 35. Soybean oil trade long-term projections

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
						Imports, million metric tons						
Importers												
China	0.9	1.1	1.2	1.1	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9
India	3.4	3.1	3.2	3.3	3.5	3.6	3.7	3.8	4.0	4.1	4.2	4.4
Bangladesh	0.7	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Pakistan	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
South East Asia	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Other Asia and Oceania	0.7	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Mexico	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Central America, Caribbean	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
South America	1.2	1.3	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Iran	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Egypt	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Other North Africa[1]	1.4	1.5	1.5	1.5	1.6	1.6	1.7	1.7	1.7	1.8	1.8	1.9
European Union[2]	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Other	1.7	1.8	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Total imports	12.0	12.1	12.3	12.4	12.5	12.6	12.8	13.0	13.2	13.5	13.7	13.9
						Exports, million metric tons						
Exporters												
Argentina	5.4	5.8	6.2	6.4	6.5	6.7	6.9	7.1	7.3	7.4	7.5	7.8
Brazil	1.2	1.2	1.0	0.9	0.8	0.7	0.6	0.6	0.5	0.5	0.4	0.3
Other South America	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2
European Union[2]	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Former Soviet Union -12	1.0	0.9	0.9	0.9	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1
Other foreign	1.3	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.3	1.3
United States	1.3	1.2	1.1	1.1	1.0	1.1	1.1	1.1	1.2	1.2	1.3	1.3
Total exports	12.0	12.1	12.3	12.4	12.5	12.6	12.8	13.0	13.2	13.5	13.7	13.9
							Percent					
U.S. trade share	10.57	9.76	9.23	8.79	8.34	8.62	8.49	8.71	9.09	9.27	9.62	9.63

[1]Excludes Egypt.
[2]Excludes intra-European Union trade.
Source: USDA, Interagency Agricultural Projections Committee, October 2020.

Table 36. All Cotton Trade Baseline Projections—bales

	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
						Imports, million bales						
Importers												
European Union[1]	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.6
Former Soviet Union[2]	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Mexico	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Japan	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
South Korea	0.6	0.6	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5
China	7.1	9.5	9.5	9.5	10.0	10.5	11.0	11.5	12.0	12.5	12.8	13.0
Indonesia	2.5	2.9	3.1	3.1	3.2	3.2	3.3	3.4	3.4	3.5	3.6	3.7
Vietnam	6.5	6.8	7.4	7.8	8.3	8.5	8.8	9.2	9.6	10.1	10.5	10.9
Thailand	0.7	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8
Pakistan	4.0	3.8	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
India	2.3	1.0	1.0	1.1	1.1	1.1	1.1	1.2	1.2	1.3	1.3	1.4
Bangladesh	7.0	7.3	7.7	8.2	8.5	8.9	9.3	9.7	10.0	10.3	10.7	11.0
Taiwan	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3
Other Asia and Oceania	1.0	1.1	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Turkey	4.6	4.3	3.9	3.9	3.9	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Other	2.6	2.1	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
Total imports	40.9	42.2	43.2	44.1	45.5	46.8	48.1	49.4	50.8	52.2	53.3	54.5
						Exports, million bales						
Exporters												
Former Soviet Union[2]	1.6	1.5	1.4	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Australia	1.4	1.3	1.8	2.1	2.4	2.7	3.0	3.4	3.6	3.9	3.9	4.0
Argentina	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Brazil	8.9	9.7	8.7	9.1	9.6	10.1	10.6	11.0	11.6	12.2	12.6	13.1
Other Latin America	0.7	0.2	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Pakistan	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2
India	3.2	5.0	5.3	5.3	5.3	5.6	5.7	5.9	6.0	6.1	6.2	6.3
Egypt	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
West Africa (ECOWAS)[3]	4.0	4.3	4.5	4.5	4.6	4.8	4.9	5.1	5.2	5.3	5.4	5.5
Other Sub-Saharan Africa[4]	2.0	2.2	2.3	2.3	2.3	2.3	2.4	2.4	2.4	2.4	2.5	2.5
Other foreign	3.0	2.7	2.6	2.6	2.6	2.6	2.6	2.7	2.7	2.7	2.7	2.7
United States	15.5	14.6	15.4	16.0	16.4	16.4	16.5	16.7	17.0	17.3	17.6	17.9
Total exports	40.9	42.2	43.2	44.1	45.5	46.8	48.1	49.4	50.8	52.2	53.3	54.5
							Percent					
U.S. trade share	38.0	34.6	35.7	36.3	36.0	35.0	34.4	33.8	33.4	33.1	33.0	32.9

[1]Excludes intra-European Union trade.

[2]Covers Former Soviet Union-12. Includes intra-Former Soviet Union trade.

[3]Economic Community of West African States, 15 countries (ECOWAS)

[4]Includes South Africa.

Source: USDA, Interagency Agricultural Projections Committee, October 2020.

Table 37. Beef trade long-term projections

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
					Imports, thousand metric tons, carcass weight							
Importers												
Japan	853	850	860	858	863	867	871	872	871	870	870	873
South Korea	550	530	535	547	580	595	625	647	679	705	734	760
Taiwan	181	170	180	186	194	200	205	210	215	221	225	230
Indonesia	98	102	106	109	115	118	122	128	132	137	141	146
Malaysia	197	160	180	189	195	199	203	208	212	215	218	221
Philippines	185	175	180	194	200	204	208	213	219	222	228	234
China	2,177	2,750	2,850	2,941	3,080	3,221	3,300	3,411	3,499	3,600	3,698	3,824
Hong Kong	356	430	400	408	411	415	420	424	429	433	436	441
Other Asia and Oceania	192	175	190	200	206	213	220	227	234	241	247	256
European Union[1]	341	300	330	327	324	321	318	315	313	310	307	304
Other Europe	108	103	109	111	111	113	114	116	118	121	121	123
Russia	401	360	340	342	344	345	339	338	328	324	319	315
Saudi Arabia	137	125	135	140	141	145	149	153	157	162	165	168
Other Middle East[2]	595	477	534	548	569	589	603	620	639	654	677	696
Egypt	340	275	300	314	317	323	331	339	348	357	364	372
Other Africa[3]	137	111	127	120	118	118	116	116	115	116	114	115
Other Latin America[4]	928	899	935	942	954	966	980	993	1,006	1,020	1,032	1,045
Mexico	189	140	155	167	180	193	203	212	220	228	233	241
Canada	204	240	220	220	220	220	220	220	220	220	220	220
United States	1,387	1,563	1,422	1,383	1,421	1,436	1,455	1,472	1,487	1,501	1,513	1,523
Major importers	9,556	9,935	10,088	10,245	10,543	10,801	11,005	11,233	11,439	11,653	11,863	12,106
					Exports, thousand metric tons, carcass weight							
Exporters												
Australia	1,738	1,425	1,360	1,350	1,360	1,416	1,431	1,440	1,437	1,443	1,444	1,445
New Zealand	623	610	615	629	637	645	649	656	665	669	676	681
Former Soviet Union[5]	253	296	279	286	295	301	310	317	325	333	341	349
India	1,494	1,050	1,200	1,340	1,346	1,350	1,359	1,388	1,400	1,413	1,426	1,441
Other Asia	193	190	197	202	205	207	210	213	215	218	220	222
European Union[1]	330	350	350	354	354	354	352	351	348	347	346	345
Argentina	763	810	770	837	873	892	915	930	950	970	990	1,010
Brazil	2,314	2,550	2,670	2,790	2,993	3,165	3,260	3,333	3,436	3,555	3,668	3,787
Other Latin America[6]	1,030	1,039	1,086	1,108	1,124	1,138	1,153	1,168	1,181	1,196	1,211	1,225
Mexico	315	360	380	409	424	434	445	454	461	467	475	483
Canada	525	500	520	516	517	506	508	505	505	506	508	509
United States	1,373	1,314	1,397	1,403	1,396	1,411	1,430	1,446	1,461	1,475	1,486	1,497
Major exporters	10,951	10,494	10,824	11,226	11,525	11,819	12,021	12,199	12,385	12,591	12,791	12,994

[1]Excludes intra-European Union trade.
[2]Excludes Saudi Arabia trade.
[3]Excludes Egypt trade.
[4]Excludes Mexico Trade.
[5]Former Soviet Union-12. Includes intra-Former Soviet Union trade.
[6]Excludes Argentina and Brazil Trade.
Source: USDA, Interagency Agricultural Projections Committee, October 2020.

Table 38. Pork trade long-term projections

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
					Imports, thousand metric tons, carcass weight							
Importers												
Japan	1,493	1,425	1,445	1,483	1,495	1,504	1,519	1,533	1,549	1,565	1,575	1,591
China	2,451	4,800	4,500	4,544	4,823	5,024	5,110	5,193	5,269	5,351	5,429	5,509
Hong Kong	331	380	360	379	393	408	421	435	446	458	468	478
South Korea	694	570	615	637	652	671	687	709	724	741	761	778
Philippines	222	150	200	232	252	278	299	326	345	365	385	405
Vietnam	73	160	150	174	198	213	225	236	248	258	268	277
Australia	269	220	230	236	242	248	254	260	267	272	278	284
Other Asia and Oceania	368	333	366	379	388	394	402	408	415	421	429	436
Russia	107	10	10	16	16	17	17	18	18	19	19	20
Other Former Soviet Union[1]	177	185	196	205	206	210	216	221	227	232	236	241
Other South America[2]	406	348	380	405	429	448	474	500	529	552	577	602
Mexico	985	960	995	1,021	1,054	1,080	1,109	1,151	1,183	1,214	1,240	1,270
Central America, Caribbean	237	238	255	268	281	294	307	320	333	346	359	372
Canada	242	270	270	276	281	286	291	295	300	304	307	310
United States	429	395	429	431	433	435	437	439	442	444	446	448
Major importers	8,484	10,444	10,401	10,686	11,142	11,511	11,765	12,045	12,292	12,542	12,778	13,021
					Exports, thousand metric tons, carcass weight							
Exporters												
Brazil	861	1,200	1,250	1,355	1,411	1,487	1,542	1,607	1,657	1,712	1,761	1,806
Other South America[2]	234	309	330	341	351	364	377	389	401	414	427	440
Canada	1,284	1,500	1,470	1,490	1,530	1,569	1,597	1,640	1,663	1,692	1,720	1,736
Mexico	234	310	325	339	350	365	377	389	399	410	421	431
European Union[3]	3,548	3,850	3,750	3,905	4,080	4,246	4,369	4,485	4,606	4,729	4,839	4,977
Former Soviet Union[4]	81	121	141	156	167	172	177	181	186	190	195	200
China	135	100	125	125	123	124	125	125	125	125	125	124
United States	2,867	3,333	3,334	3,351	3,367	3,384	3,401	3,427	3,452	3,478	3,504	3,531
Major exporters	9,244	10,723	10,725	11,062	11,380	11,711	11,964	12,243	12,489	12,750	12,992	13,245

[1]Former Soviet Union excluding Russia. Includes intra-Former Soviet Union trade.
[2]Excludes Argentina and Brazil.
[3]Excludes intra-European Union trade.
[4]Former Soviet Union-12. Includes intra-Former Soviet Union trade.
Source: USDA, Interagency Agricultural Projections Committee, October 2020.

Table 39. Poultry trade long-term projections 1/

	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
					Imports, thousand metric tons, ready to cook							
Importers												
Russia	225	221	212	215	218	218	216	215	216	218	215	219
Ukraine	134	119.00	109	107	107	108	109	110	111	111	112	113
Other Former Soviet Union[2]	448	475	488	499	512	524	536	549	561	573	585	598
European Union[3]	1,873	1,793	1,878	1,895	1,904	1,921	1,938	1,954	1,961	1,978	1,992	2,007
Canada	175	188	193	194	197	200	201	203	205	208	210	212
Mexico	1,033	1,039	1,044	1,074	1,112	1,163	1,204	1,251	1,297	1,341	1,385	1,430
Central America, Caribbean	799	754	802	805	815	830	860	903	932	976	1,017	1,058
South America	521	494	496	533	557	582	596	610	631	650	674	698
Japan	1,077	1,061	1,056	1,078	1,106	1,120	1,128	1,140	1,149	1,161	1,164	1,172
South Korea	178	165	170	175	179	185	189	192	195	200	202	206
Taiwan	212	215	215	215	215	215	216	219	222	227	231	235
Hong Kong	298	309	319	329	341	351	361	371	380	388	396	404
China	593	997	935	968	1,016	1,067	1,121	1,165	1,212	1,254	1,298	1,344
Vietnam	136	206	207	209	216	224	232	241	249	259	267	276
Philippines	369	378	378	385	405	425	461	487	513	537	562	586
Other Asia and Oceania	480	507	534	558	576	604	631	655	675	695	716	737
Saudi Arabia	648	590	666	685	707	732	759	789	821	852	881	913
Iraq	494	476	501	521	537	549	560	572	583	597	608	620
Other Middle East	1,173	1,106	1,108	1,148	1,180	1,214	1,243	1,270	1,296	1,322	1,347	1,373
Egypt	61	60	70	77	83	94	104	120	133	147	160	176
Other North Africa	96	103	109	116	117	120	123	125	127	130	132	135
West Africa (ECOWAS)[4]	565	537	575	591	592	599	604	615	618	624	625	629
South Africa	515	420	355	343	353	392	418	445	470	495	521	550
Other Sub-Saharan Africa	814	839	896	926	960	987	1,027	1,069	1,107	1,155	1,197	1,246
Major importers	12,917	13,052	13,316	13,644	14,006	14,422	14,836	15,271	15,665	16,099	16,498	16,936
					Exports, thousand metric tons, ready to cook							
Exporters												
European Union[3]	2,690	2,593	2,628	2,692	2,715	2,774	2,803	2,843	2,879	2,920	2,971	3,016
Russia	173	216	222	233	241	247	253	261	268	276	282	290
Ukraine	406	420	430	448	456	471	485	498	512	527	544	557
Other Former Soviet Union[2]	191	221	221	229	235	240	244	249	254	258	262	266
Brazil	3,892	3,940	4,020	4,088	4,209	4,406	4,609	4,876	5,102	5,319	5,500	5,771
Argentina	155	155	165	169	169	172	176	179	183	185	189	192
Other South America	179	196	202	212	224	232	244	257	266	279	290	302
Canada	149	156	156	156	155	154	153	153	153	152	152	151
China	428	375	410	414	419	424	429	434	438	443	450	458
Thailand	883	892	922	973	1,002	1,041	1,079	1,121	1,175	1,217	1,266	1,311
Turkey	417	466	481	496	507	519	531	543	559	572	586	600
United States	3,549	3,574	3,590	3,716	3,785	3,853	3,918	3,982	4,045	4,108	4,170	4,233
Major exporters	13,112	13,204	13,447	13,826	14,116	14,532	14,925	15,395	15,834	16,256	16,663	17,148

[1]Broilers and turkeys only.
[2]Other Former Soviet Union -12 excluding Russia and Ukraine. Includes intra-Former Soviet Union trade.
[3]Excludes intra-European Union trade.
[4]Economic Community of West African States, 15 member countries (ECOWAS).
Source: USDA, Interagency Agricultural Projections Committee, October 2020.