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USDA Agricultural Projections to 2026

Interagency Agricultural Projections Committee

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Farm Service Agency
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



Long-term Projections on the Internet

USDA Agricultural Projections to 2026 is available in both pdf and Microsoft Word formats at:

www.usda.gov/oce/commodity/projections/

and also at:

<https://www.ers.usda.gov/publications/pub-details/?pubid=37818>

Data from the new USDA long-term projections are available electronically at:

<http://usda.mannlib.cornell.edu/MannUsda/viewDocumentInfo.do?documentID=1192>

Information on USDA's long-term projections process may be found at:

www.ers.usda.gov/topics/farm-economy/agricultural-baseline-projections/usdas-long-term-projections-process.aspx

USDA Agricultural Projections to 2026. 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-2017-1, 106 pp.

Abstract

This report provides projections for the agricultural sector to 2026. Projections cover agricultural commodities, agricultural trade, and aggregate indicators of the sector, such as farm income. The projections are based on specific assumptions about macroeconomic conditions, policy, weather, and international developments, with no domestic or external shocks to global agricultural markets. The Agricultural Act of 2014 is assumed to remain in effect through the projection period. The projections are one representative scenario for the agricultural sector for the next decade and reflect a composite of model results and judgment-based analyses. The projections in this report were prepared during October through December 2016.

Over the next several years, the agricultural sector continues to adjust to lower prices for most farm commodities. Although reduced energy prices have decreased energy-related agricultural production costs, lower crop prices result in declines in planted acreage. Lower feed costs provide economic incentives for expansion in the livestock sector. Longrun developments for global agriculture reflect steady world economic growth and continued global demand for biofuel feedstocks, factors that combine to support longer run increases in consumption, trade, and prices of agricultural products. Although a stronger valued U.S. dollar is expected to constrain growth in U.S. agricultural exports somewhat, the United States remains competitive in global agricultural markets and export values grow over the next 10 years. Net cash income and net farm income continue to fall from recent record highs before increasing over the latter part of the projection period.

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

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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 longrun scenario for the agricultural sector. These projections provide a starting point for discussion of alternative outcomes for the sector.

The projections in this report were prepared during October through December 2016, with the Agricultural Act of 2014 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, longrun scenario about what would be expected to happen under a 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 that would affect global agricultural supply and demand. Normal weather is assumed. Changes in any of these assumptions can significantly affect the projections, and actual conditions that emerge will alter the outcomes.

The report uses as a starting point the short-term projections from the November 2016 *World Agricultural Supply and Demand Estimates* report. The macroeconomic assumptions were completed in October 2016.

The projections analysis was conducted by interagency committees in USDA and reflects 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 Service Agency; 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.

USDA Contacts for Long-term Projections

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USDA Agricultural Projections to 2026

Interagency Agricultural Projections Committee

Introduction and Projections Overview

This report provides longrun projections for the agricultural sector to 2026. Major forces and uncertainties affecting future agricultural markets are discussed, such as prospects for long-term global economic growth and population trends. Projections cover production and consumption for agricultural commodities, global agricultural trade and U.S. exports, commodity prices, and aggregate indicators of the sector, such as farm income.

The projections are a conditional scenario based on specific assumptions about the macroeconomy, agricultural and trade policies, the weather, and international developments. Included in these assumptions are that there are no domestic or external shocks that would affect global agricultural markets, that there is normal weather with trend crop production yields, and that the provisions of the Agricultural Act of 2014 (Farm Act) remain in effect through the projection period. Thus, the projections are not intended to be a forecast of what the future will be but instead are a description of what would be expected to happen under these very specific assumptions and circumstances. As such, the projections provide a neutral reference scenario that can serve as a point of departure for discussion of alternative farm-sector outcomes that could result under different domestic or international conditions.

The projections in this report were prepared during October through December 2016 and reflect a composite of model results and judgment-based analyses. Short-term projections used as a starting point in this report are from the November 2016 *World Agricultural Supply and Demand Estimates* report. The macroeconomic assumptions were completed in October 2016.

Over the next several years, the agricultural sector will continue to adjust to lower prices for most farm commodities and reduced energy prices. Reduced prices for crude oil and natural gas have decreased agricultural production costs—costs for fertilizer and for fuel, lube, and electricity have fallen the most. Nonetheless, production response to lower crop prices in the near term will result in reduced planted acreage. In the livestock sector, lower feed costs will provide economic incentives for expansion.

Developments for global agriculture and U.S. trade reflect income growth in developing countries and a strong U.S. dollar in the near term, with steady world economic growth and continued global demand for biofuel feedstocks in the longer term. Those factors combine to support longer run increases in consumption, trade, and prices of agricultural products. Global trade competition will continue to be strong and the higher valued U.S. dollar will constrain growth in U.S. agricultural exports somewhat. Nonetheless, the United States remains competitive in global agricultural markets. U.S. export values grow over the next 10 years while net cash income and net farm income initially fall from recent record highs before increasing over the latter part of the projection period.

Key Assumptions and Implications

Major assumptions underlying the projections and selected implications include:

Macroeconomic Overview

- Global macroeconomic conditions reflect economic growth in developing countries to be significantly slower than in the 2000-2014 period, a relatively strong dollar, and near-term low oil prices, which are expected to rise in the longer term.

Economic Growth

- Global real economic growth is projected to average less than 3.0 percent annually over the next decade. The United States is expected to lead the developed countries, averaging just over 2.1 percent annual growth, while developed countries as a group are expected to experience an average of 1.8-percent annual growth, rates that, with the exception of 2015, are the highest since 2010. Meanwhile, growth in the developing countries begins to rise from 2016's low of 3.6 percent—averaging almost 4.5 percent annual growth.
- The strongest growth remains in developing countries. Although China's economy slows as it transitions to a more consumer-oriented economy, average annual growth still averages over 5.3 percent. India is expected to remain among the world's fastest growing economies, with average annual growth over 7.5 percent. Asia in general is expected to have strong economic growth—particularly in the Southeast Asian countries. Growth in Africa and the Middle East is also anticipated between 3.5 and 3.7 percent annual growth. Severe economic challenges in the near term mean that Latin American countries will face low growth over the next 10 years. As these issues get resolved, growth will start to rise in the latter years of the projection period but are still not expected to reach 3.0 percent.
- Developed countries are assumed to have relatively weak longrun real growth, especially in Japan and the European Union (EU). Japan's economy continues the slow growth the country has had since the 1990s, in part due to a shrinking working-age population. Growth in the EU will be constrained by structural rigidities, including inflexible labor laws and an expensive social security system.
- While the United States will be the growth leader of the developed world, stronger growth in developing economies will cause the U.S. share of global gross domestic product (GDP) to fall slowly but steadily over the next 10 years.
- Low oil prices and geopolitical conflicts, among other factors, pushed the Former Soviet Union (FSU) region into recession in 2015. Emerging from their recessions in 2017, the FSU region's growth prospects are expected to improve with annual growth rates exceeding 2.0 percent by 2018 and slowly growing to over 2.25 percent by the end of the period.
- Steady global economic growth supports longer term gains in world food demand, global agricultural trade, and U.S. agricultural exports. Economic growth in developing countries is especially important because food consumption and feed use are particularly responsive to income growth in those countries, with movement away from traditional staple foods and towards increasingly diversified diets.

Population

- Economic growth over the next decade contributes to the continued slowing of population gains around the world as birth rates decline. Growth in global population is projected to average less than 1 percent per year compared with an average annual rate of 1.2 percent in 2001-10.
- Population growth rates in most developing countries are projected to slow, although the average remains above the rest of the world. As a consequence, the share of world population accounted for by developing countries continues to rise, accounting for 83 percent in 2026.
- Population gains in developing countries along with economic growth and expansion of the middle class are particularly important for the projected growth in global food demand. Populations in developing countries, in contrast to those in more-developed countries, tend to be both younger and, with economic growth, experience more urbanization—factors that generally lead to the expansion and diversification of food consumption.

Value of the U.S. Dollar

- Following a 10-year depreciation from 2002 to 2011, the U.S. dollar continues to appreciate through 2018. Although the dollar is expected to slowly depreciate over the remainder of the projection period, it is assumed to remain stronger than any year since 2006.
- A stronger U.S. dollar will increase the relative price of U.S. exports, thereby constraining export growth. Although trade competition will continue to be strong, the United States is projected to remain competitive in global agricultural markets. While exports are projected to rise, which contributes to long-term increases in cash receipts for U.S. farmers, the United States is expected to lose some global market share due to increased global competition.

Energy Prices

- Crude oil prices fell sharply beginning in mid-2014 as global crude oil production exceeded consumption and led to growing oil surpluses. As global economic activity improves, crude oil prices are assumed to increase from their recent lows at rates higher than the general inflation rate. Nonetheless, the U.S. nominal refiner acquisition cost for crude oil imports rises to only about \$90 per barrel by the end of the projection period.
- Lower oil and natural gas prices have decreased agricultural production costs, with costs for fertilizer and for fuel, lube, and electricity falling the most.

U.S. Agricultural Policy

- The 2014 Farm Act is assumed to be in effect through the projection period.
- Acreage enrolled in the Conservation Reserve Program (CRP) is assumed at levels at or just below its legislated maximum of 24 million acres under the 2014 Farm Act.

- Recent reductions in crop prices lead to higher direct Government payments to farmers in 2015 through 2017, mostly reflecting payments under the Agriculture Risk Coverage (ARC) and Price Loss Coverage (PLC) programs of the 2014 Farm Act. Beyond 2017, direct Government payments are lower and below the average of 2001-10. Payments under the CRP, ARC, and PLC programs are the largest Government payments to the U.S. agricultural sector over the projection period.

U.S. Biofuels

- Biofuel projections were completed before the final renewable fuel standards for cellulosic biofuel, biomass-based diesel, advanced biofuel, and total renewable fuel for 2017 were announced by the U.S. Environmental Protection Agency (EPA) on December 12, 2016. Projections are based on EPA's proposed rule for these requirements from May 18, 2016.
- Ethanol production in the United States is projected to increase over the first couple years of the projection period, afterwards declining through the rest of the decade. Almost all U.S. production of ethanol uses corn as a feedstock. Even with the U.S. ethanol production decline, demand for corn to produce ethanol continues to have a strong presence in the sector. The share of U.S. corn expected to go to U.S. ethanol production falls over time.
- Projected declines in overall gasoline consumption in the United States and the 10-percent ethanol "blend wall" are assumed to constrain domestic ethanol production over the next decade. Most gasoline in the United States continues to be a 10-percent ethanol blend (E10). Infrastructural and other constraints severely limit growth in the higher blend segments, including the E15 (15-percent ethanol blend) and E85 (85-percent ethanol blend) markets. Moderate gains are projected for U.S. ethanol exports, but these are not large enough to offset declining ethanol use in the domestic market.
- The projections assume that a tax credit for blending biodiesel (previously, \$1 per gallon) is not available.
- The biomass-based diesel use volume requirement, as administered by the EPA, was increased to 1.28 billion gallons for 2013 and was increased by EPA to rise to 2 billion gallons by 2017. Projections assume this volume requirement to remain at the proposed-rule level throughout the remainder of the projection period. However, some production of biodiesel and renewable diesel above the biomass-based diesel volume requirement is assumed to meet a portion of the nonspecific advanced biofuel requirement.
- Soybean oil used to produce methyl esters (biodiesel) in the United States is projected to support the annual production of almost 900 million gallons of biodiesel annually by 2020/21 and later years. Other feedstocks used to produce biomass-based diesel include corn oil extracted from distillers' grains, other first-use vegetable oils, animal fats, and recycled vegetable oils.

International Policy

- Agricultural trade projections assume trade agreements, sanitary and phytosanitary restrictions, and domestic policies in place in October 2016.
- The long-term projections assume that the provisions of the North American Free Trade Agreement (NAFTA)—the trade and investment agreement that created a free-trade area encompassing the United States, Canada, and Mexico—remain in effect throughout the projection period. The projections also assume that Canada’s and Mexico’s domestic agricultural policies as of October 2016 remain in effect during that period. In actuality, fiscal constraints in Mexico have resulted in the amount budgeted for agricultural spending in 2017 being much smaller than the amount spent in 2016.
- China continues tariff rate quotas for wheat, rice, corn, cotton, and sugar that allow limited import volumes at low in-quota tariffs; domestic price support programs continue for wheat and rice.
- The projections for Japanese and Korean rice consumption and production reflect the policies to increase planting of feed-quality rice. Both Japanese and Korean rice imports are at minimum market access levels according to World Trade Organization (WTO) commitments.
- India’s macroeconomic policies are expected to sustain robust economic growth and to target moderate 4 percent annual inflation, implying a high priority to moderating food price inflation. It is assumed that the National Food Security Act that increases coverage of subsidized food grain distribution will be fully implemented and that recent trends in producer price supports and input subsidies will be maintained. Tariffs on some major food commodities, including vegetable oils, pulses, and wheat are expected to remain below WTO bound rates.
- Argentina’s projections reflect the potential effects of new policies implemented in December 2015 and additional policies through October 2016. These policies include reducing or removing export taxes on various agricultural commodities, eliminating the export permit system for grains and oilseeds, and lifting currency controls. These policy changes are expected to affect the agricultural sector in the country as well as global agricultural markets.
- The ban Russia imposed on agricultural imports from a number of countries (such as the United States, the EU, Australia, and Canada) is assumed to last through August 2017. However, the projections assume that Russia will continue to use policies to stimulate its domestic pork and poultry production and to limit its reliance on imports.

International Biofuels

- Global expansion of biofuel production is projected to continue during the next decade, although at a slower pace than over the last half decade. As a result, demand for biofuel feedstocks also continues to grow, but more slowly. The largest biofuel producers remain in the United States, Brazil, the EU, and China. Indonesia and Malaysia continue to

increase biodiesel production from palm oil, and the Philippines is expanding copra use for biodiesel.

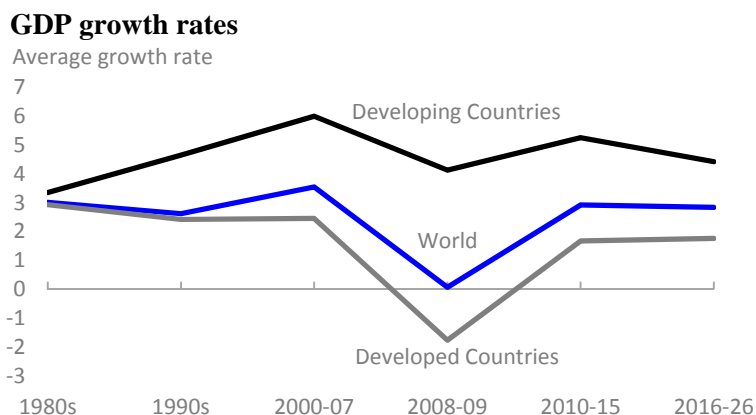
- Canada and the EU remain the world's largest importers of biofuels throughout the projection period. Argentina, Brazil, and the United States are the world's largest biofuel exporters, with Argentina specializing in soybean oil-based biodiesel, Brazil in sugarcane-based ethanol, and the United States in corn-based ethanol.

Prices

- Prices for most crops have fallen from the high levels of several years ago as U.S. and global production responded to the high prices. As adjustments to the resulting lower prices occur, the projections indicate that prices will stabilize and then rise moderately, reflecting long-term growth in global demand for agricultural products and continued biofuel feedstock demand. As a result, crop prices remain above pre-2007 levels.
- Reduced feed costs and stronger livestock prices over the past several years have improved livestock-sector net returns, providing economic incentives for expansion. While production trends upwards across all major livestock categories, nominal prices for beef cattle will be pressured through 2026 while hog and broiler prices trend upwards after an initial drop at the beginning of the projection period. Egg and milk prices are projected to increase through most of the next decade.
- Lower farm commodity prices resulted in reductions in U.S. export values in 2015 and 2016 and farm cash receipts in 2015 through 2017, with both then growing over the rest of the projection period. Although farm production expenses also increase after 2017, higher cash receipts mean net farm income generally increases over the rest of the projection period.

Macroeconomic Assumptions

The macroeconomic assumptions underlying USDA's long-term projections exhibit positive world growth over the next decade, extending and consolidating the recovery from the 2007-08 world financial crisis. Nonetheless, the projections include a near-term slowdown relative to the previous decade in many developing countries and slower growth relative to the historical trend in many developed countries. Real global GDP is projected to increase at an average annual rate of 2.9 percent over the projection period, below the long-term, pre-financial crisis (1980-2007) average of 3.3 percent, although similar to growth rates prevailing in the 1980s and 1990s.



While developed countries have largely recovered from the 2007-08 global financial crisis and the 2010-13 European debt crisis, their long term trend growth is expected to be lower than pre-crisis levels, generally reflecting slowing labor force and productivity growth. Demographic changes drive the bulk of the slowdown in labor force growth, although immigration mitigates this trend in some countries.

The United States is expected to be the growth leader among large developed countries over the next decade. While long-term trend growth is projected at 2.1 percent, below the longrun, pre-crisis (1980-2007) average of 3.0 percent, 2017 and 2018 look to be slightly above the long term trend. Labor markets and credit conditions have largely recovered from the financial crisis and are anticipated to maintain strength, which would support strong consumer demand and increased business investment. Inflation is also expected to rise to pre-crisis levels in the United States. Together, these conditions support higher interest rates over the projection period.



Economic growth in most developing country regions is projected to be significantly slower relative to 2000-2014. While Chinese economic growth is expected to remain strong throughout the projection period, adjustment to a more consumer-oriented economy will imply less rapid growth. Lingering economic challenges in several countries constrain Latin American growth, and low commodity prices and political violence depress growth in Africa and the Middle East. Nevertheless, growth of developing countries is still expected to continue outpacing that of developed countries. As a result, developing countries' share of global real GDP is projected to rise to 44 percent in 2026 from 38 percent in 2017. However, China, India, and Southeast Asian countries account for the bulk of this increase.

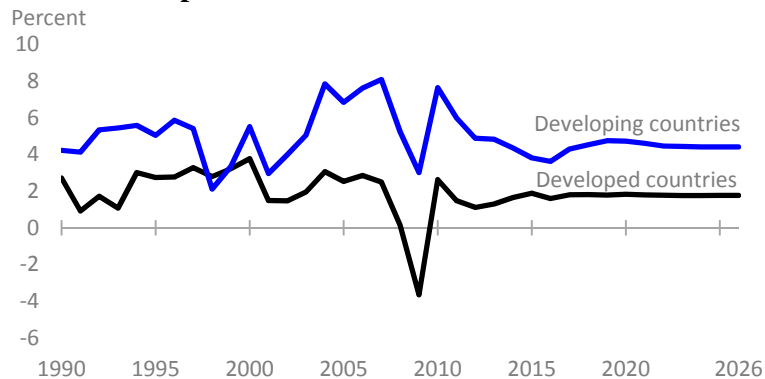
The U.S. dollar continued to strengthen against most currencies in 2016, although at a much slower rate than the dramatic increase in 2015. It is expected to remain relatively strong throughout the projection period. Oil prices are projected to rise slowly to around \$90 per barrel in nominal terms, although significant uncertainty, particularly on U.S. policy and global supply factors, underlies this assumption.

Agricultural Implications

While the combination of slowing economic growth rates and a stronger dollar is expected to be a drag on growth in U.S. agricultural exports over the projection period, global demand for food and agricultural products will continue to expand. The United States will remain among the most competitive exporters of agricultural products. Developing countries likely will continue to account for most of the gains in U.S. agricultural exports due to their economic and population growth, which will boost global demand as incomes rise. Improved economic conditions in developed country markets will provide some additional stimulus to global demand.

- A stronger dollar is expected to weigh on U.S. agricultural exports over the projection period as it increases the relative price of U.S. exports. The magnitude of the strong currency disadvantage will generally be more significant for bulk commodities. Product quality and trade efficiency will become more important sources of U.S. export competitiveness while the strong dollar persists.
- Although developing country growth prospects have dampened, incomes will continue to rise. In this process, diets become more diversified, and meat, dairy, and processed foods consumption increases. This shifts import demand toward animal feed and high-value food products.
- Low energy prices in early years of the projection period will continue to dampen costs of production for producers and processors in the United States and elsewhere. In contrast, the expected higher interest rate environment increases borrowing costs.

Real gross domestic product (GDP) growth: Developing countries are projected to grow at more than double the rate of developed countries



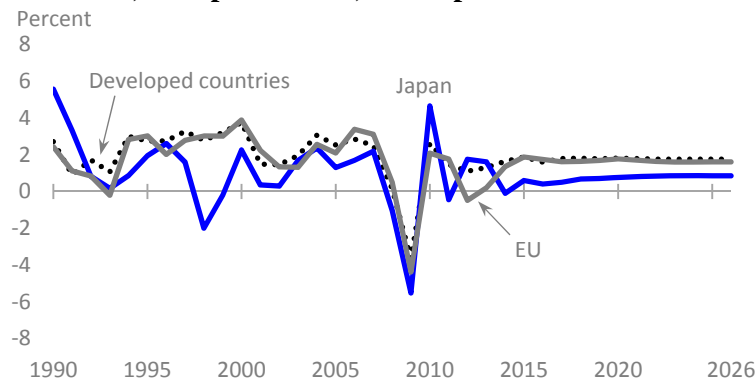
Economic growth in developing countries is projected to average 4.5 percent annually during the projection period. While this represents a slowdown compared to recent history, it remains more than twice the projected growth rate of developed countries. The strongest developing country growth is projected among Asian countries at 5.7 percent, followed by African countries at 3.7 percent and Latin American countries at 2.7 percent. The region encompassing the FSU is forecast to grow the slowest at an average of 2.0 percent.

- Despite a slowdown relative to recent years, continued strong GDP growth in developing Asia makes this region an increasingly important part of the global economy. Its share of world GDP is projected to rise from 23.1 to 28.4 percent over the projection period. In contrast to the slowdown elsewhere in developing Asia, Indian growth is projected to be stronger than in recent years, outpacing China with an average growth rate of 7.6 percent per year. This very strong growth is expected to be supported by continued economic reform.
- China’s economic growth is projected to slow from historical highs near 10 percent to an average of 5.4 percent per year over the next decade. Nevertheless, China is expected to account for almost 16 percent of the world economy in 2026, up from about 12 percent at the end of 2016. Slower growth is in part due to the process of structural changes as China moves to a more domestic consumer-oriented economy and as investment slows. High levels of debt and industrial overcapacity in the economy present challenges for a smooth transition.
- Latin America is projected to grow at an average of 2.7 percent a year. Brazil and Venezuela face particularly critical economic challenges. While Brazil is expected to emerge from 2 years of recession in 2017, near-term growth is expected to be very slow as political conditions complicate economic reforms. Without significant policy change, Venezuela is expected to remain in deep recession in the near term. In contrast, Argentina is expected to begin a strong recovery in 2017, although lingering economic challenges are expected to keep its growth below the developing country average. Projections for the Mexican economy assume strong growth of roughly 2.9 percent based on the assumptions that it benefits from a strengthening U.S. economy in the short run and key economic policy reforms in the long run.
- Economic growth in Sub-Saharan Africa, the poorest region in the world, is projected to average 3.6 percent per year. This growth rate, although well below the 6.0-percent average

during 2000-2007, is nevertheless higher than the long-term historical trend rate of roughly 3.0 percent. Two large Sub-Saharan African countries, South Africa and Nigeria, face significant growth slowdowns relative to the early 2000s due to political and economic challenges. Nevertheless, growth on the continent is generally expected to continue raising standards of living and mitigating increases in the poverty rate, although low per capita GDP levels imply significant poverty will persist.

- Like Sub-Saharan Africa, economic growth in the Middle East and North Africa is also expected to grow at an average near 3.6 percent over the projection period. As global oil suppliers, low commodity prices—particularly oil prices in the near term—are expected to weigh on growth for many countries in the region. Other countries in the region are experiencing political instability and violence that has brought economic activity in these countries to a virtual standstill.
- Growth prospects for the FSU region have been cut by more than half from recent history—down to 2.0 percent from a 4.5-percent average over 2000-2015. Russia and Ukraine are expected to emerge from recession in 2017 as commodity prices improve. Nevertheless, growth is expected to remain slow.

Growth in real gross domestic product (GDP) for developed countries, European Union, and Japan



Developed country growth is expected to be relatively anemic at an average rate of less than 2.0 percent annually over the projection period. The economies of the European Union (EU) and Japan are expected to experience particularly weak growth, although the EU does come within reach of the developed country average. Growth in the United States, Canada, and Australia is expected to be stronger, although still below pre-crisis long-term trends.

- U.S. economic growth is expected to be strong relative to the rest of the developed world throughout the projection period. U.S. economic fundamentals are healthy, although weakness in the international sector and a strong dollar will dampen export demand and economic growth, particularly in the near term. Long-term growth is projected to be slower than the historical average as labor force and productivity gains are expected to slow.
- Economic growth in the European Union is projected to average 1.6 percent per year over the next decade. The slowing growth in the near term reflects uncertainties related to the timing and nature of Great Britain’s withdrawal from the EU, although the effects of the so-

called Brexit are expected to be largely confined to the United Kingdom. Continued challenges within Eurozone economies and structural rigidities constrain the EU outlook. Growth in the former centrally planned EU member countries is projected to be higher at an annual average of 2.7 percent over the projection period.

- The projections assume the slow growth that Japan has experienced since the 1990s will continue throughout the projection period. Average growth is projected to be 0.8 percent per year over the next decade. A shrinking population constrains consumption while a slow-growing or shrinking workforce constrains aggregate production. Inflation is expected to remain quite low, but Japan is expected to avoid further deflation.
- Like the United States, Canada is expected to experience modest economic recovery in the near term before moving to a longrun growth path of 2.0 percent. Some strengthening of energy prices and a shift in investment to other sectors supports this growth.

Average annual population growth rates by decade show declines over time, with the exception of the Former Soviet Union



Source: U.S. Department of Commerce, U.S. Census Bureau, International Data Base at <http://www.census.gov/population/international/data/idb/informationGateway.php>

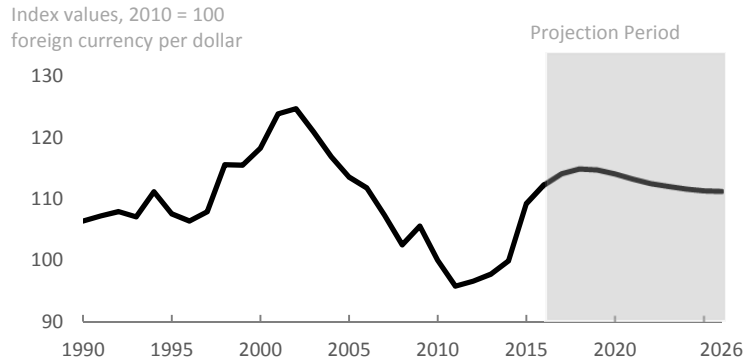
World population growth is projected to continue slowing over the next decade, rising just under 1.0 percent per year for the projection period compared to an annual rate of 1.4 percent over the decade 1991-2000 and 1.2 percent in 2001-10.

- Developed countries have very low projected population growth rates, at 0.3 percent over 2017-26. U.S. population growth is projected to exceed the developed country average at about 0.8 percent, in part reflecting the importance of immigration. Only small population increases are expected for the EU, averaging 0.14 percent over the next decade. Population in Japan is projected to continue falling at around 0.3 percent per year.
- Population growth rates in developing countries will likely be sharply lower than in previous decades but remain above those in the rest of the world at about 1.1 percent per year over the projection period. As a result, developing countries' share of global population is projected to increase to 83 percent by 2026, compared to 79 percent in 2000.
- Sub-Saharan Africa maintains the highest population growth rate at 2.4 percent per year. Although population growth has fallen compared to historical experience, the decline is

modest relative to the declines seen in Latin America and Asia. Notable declines in population growth include Brazil, where the population is expected to grow by 0.6 percent per year from 2017-26, compared to an average of 1.6 percent in 1991-2000. Similarly, Indonesia's population is expected to grow by 0.8 percent per year from 2017-26 compared to 1.7 percent in 1991-2000.

- China and India together accounted for 36 percent of the world's population in 2016. Population growth in both countries has declined significantly relative to 1991-2000. China's population is expected to grow at only 0.3 percent per year over the projection period, well below the global average and slower than the 1.0-percent average growth in 1991-2000. As such, China's share of the global population is projected to decline. Population growth in India is likewise expected to slow to 1.1 percent per year over 2017-26, compared to 1.9 percent per year over 1991-2000.
- Population growth in the FSU is expected to average less than 0.1 percent per year over the projection period. The Russian and Ukrainian populations are expected to shrink, with average growth rates of -0.2 and -0.4 percent, respectively. Continued emigration, low birth rates, and relatively high mortality rates all contribute to falling population in these two countries.
- Population growth in the Middle East is forecast to grow above the world average at 1.4 percent. Migration within and outside the region is expected to continue as long as violence and political instability persist in countries such as Syria, Iraq, and Yemen, among others.

U.S. agricultural real trade-weighted dollar



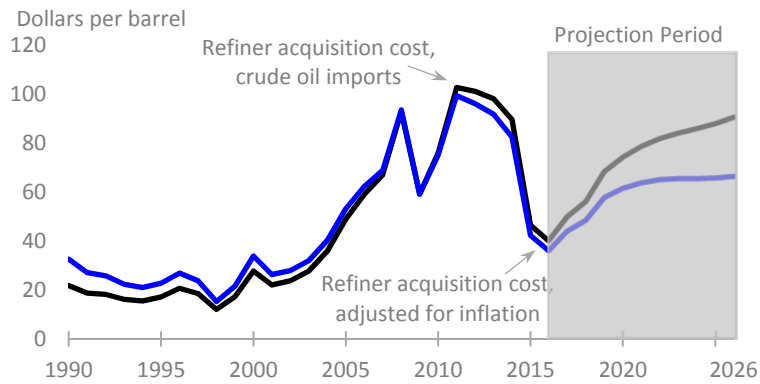
In 2016, the U.S. dollar maintained the value from its dramatic strengthening in 2014-15 and appreciated further against several currencies, although at a slower pace. The dollar is expected to stay near this relatively high value throughout the projection period, driven by the relative strength and safety of the U.S. economy. Although U.S. interest rates are likely to remain relatively low for some time before moving back toward historical averages, they are expected to rise sooner and faster than rates in other developed countries. This expected divergence in monetary policy will contribute to dollar strength in the near term. The agricultural trade-weighted real dollar index is expected to appreciate at a decreasing rate in the near term, with a slow depreciation beginning in 2019.

- The dollar continued to strengthen against many developed country currencies in 2016, but at a much slower rate than 2015. It rose an estimated 2.0 percent relative to the euro, 2.9

percent relative to the Canadian dollar, and 1.2 percent relative to the Australian dollar. The exception was a nearly 10-percent depreciation of the dollar relative to the Japanese yen, which gained value as a safe alternative to the dollar while uncertainty in the EU economy made the euro less attractive. The projections assume further dollar strengthening in the near term against most developed countries before it begins to slowly decline in value as external economic conditions improve and monetary policies normalize.

- The dollar also gained against developing country currencies in 2016. The real, or inflation-adjusted, dollar appreciated about 7.4 percent relative to Latin American currencies; 2.1 percent relative to Southeast Asian countries; 0.8 percent relative to Middle Eastern countries; and 5.6 percent relative to African countries. Like developed countries, the projections assume some further dollar strengthening against developing country currencies in the near term, with slow depreciation thereafter. Country- and region-specific economic conditions affect the expected magnitude and timing of these currency movements.
- Relatively large real dollar appreciation in Latin America is primarily a reflection of significant strengthening relative to the Mexican and Argentine pesos. The projections assume some further strengthening in 2017 with slow depreciation thereafter. In Mexico, dollar appreciation in 2016 was nearly as strong as 2015 as the weak external economic environment, including low oil prices, took a toll on the Mexican economy. In Argentina, the strong real appreciation was a result of major changes in macroeconomic policies to address structural economic issues. The dollar is expected to depreciate significantly in real terms beginning in 2017 as Argentina's economy gains strength. After a gain of nearly 30 percent in inflation-adjusted terms relative to the Brazilian real in 2015, the dollar strengthened just under 1 percent in 2016. The dollar is expected to continue to strengthen against the real in the near term as economic challenges in Brazil continue and U.S. interest rates rise.
- The dollar appreciated relative to the Chinese yuan in 2016 at an expected rate of 5.9 percent, based on information available as of October 2016. This substantial increase in the dollar value stands in contrast to a more-or-less steady weakening of the dollar relative to the yuan for the past 10 years. However, as the Chinese economy began to slow at the end of 2014, the yuan began to slowly depreciate. The pace of dollar strengthening increased in 2016 despite Chinese Government intervention to mitigate the decline in the yuan's value. The projections assume that the economic slowdown in China will mean that the yuan will continue depreciating at a measured pace over the next 3 years, followed by a period of relatively stable real exchange rates as adjustment takes hold.
- The dollar appreciated 6.4 percent in real terms against a trade-weighted basket of currencies in the FSU region. After very large increases in 2015, the dollar appreciated an expected 5.6 percent with respect to the Russian ruble in 2016 and 2.0 percent against the Ukraine hryvnia as these countries emerged from deep recessions and commodity prices plunged. These currencies are expected to slowly recover their losses against the dollar over the projection period.

U.S. crude oil prices



The projections reflect continued low crude oil prices in the near term, rising to about \$90 per barrel in nominal terms (roughly \$66 per barrel in 2009 dollars) by the end of the projection period.

- An oversupply of crude oil is expected to keep oil prices low in the near term. Low oil prices will lead to a reduction in exploration and development, ultimately putting upward pressure on prices. Many sources of uncertainty, both international and domestic, exist, including U.S. policy. The projections assume the Clean Power Plan as of October 2016 remains in force.
- Oil prices remained low in 2016 but generally rose throughout the year. The low price level, beginning with the 2014-15 drop, was partially a result of falling demand as economic growth remained tepid in developed countries and declined in developing countries. Price movements into 2016 and expectations for the future have also been shaped by supply-side instability. Conflict-driven disruptions in key producing countries, the re-entry of Iranian oil onto international markets, and the ability of OPEC members and other producers to coordinate production decisions have all generated significant additional uncertainty relative to previous years. Furthermore, as oil prices rise, the expansion of U.S. shale oil production becomes more attractive.

Table 1. U.S. macroeconomic assumptions

Item	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Gross Domestic Product												
Nominal, billion dollars	17,947	18,509	19,313	20,153	21,008	21,899	22,829	23,798	24,808	25,861	26,932	28,047
Real, billion 2009 chain-weighted dollars	16,349	16,643	17,026	17,401	17,766	18,139	18,520	18,909	19,306	19,711	20,125	20,548
percent change	2.4	1.8	2.3	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Disposable personal income												
Nominal, billion dollars	13,403	13,953	14,581	15,215	15,861	16,536	17,238	17,971	18,735	19,531	20,342	21,186
percent change	3.8	4.1	4.5	4.4	4.3	4.3	4.3	4.3	4.3	4.3	4.2	4.2
Nominal per capita, dollars	41,663	43,020	44,605	46,186	47,780	49,433	51,148	52,928	54,776	56,694	58,630	60,641
percent change	3.0	3.3	3.7	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.4	3.4
Real, billion 2009 chain-weighted dollars	12,247	12,590	12,905	13,195	13,479	13,769	14,065	14,367	14,676	14,991	15,314	15,643
percent change	3.5	2.8	2.5	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
Real per capita, 2009 chained dollars	38,368	38,818	39,479	40,055	40,602	41,161	41,731	42,313	42,909	43,517	44,139	44,776
percent change	2.7	1.2	1.7	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Personal consumption expenditures												
Real, billion 2009 chain-weighted dollars	11,213	11,536	11,813	12,073	12,333	12,598	12,869	13,145	13,428	13,717	14,012	14,313
percent change	3.1	2.9	2.4	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
Inflation measures												
GDP chained price index, 2009=100	109.8	111.2	113.4	115.8	118.2	120.7	123.3	125.9	128.5	131.2	133.8	136.5
percent change	1.0	1.3	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.0	2.0
CPI-U, 1982-84=100	237.0	240.1	245.6	251.3	257.0	263.0	269.0	275.2	281.5	288.0	294.6	301.4
percent change	0.1	1.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
PPI, finished goods 1982=100	193.9	190.6	193.5	197.2	201.2	205.6	210.1	214.7	219.5	224.3	229.2	234.3
percent change	-3.2	-1.7	1.5	1.9	2.0	2.2	2.2	2.2	2.2	2.2	2.2	2.2
PPI, crude goods 1982=100	197.8	205.3	212.8	219.8	226.5	233.0	239.3	245.4	251.2	256.9	262.5	267.9
percent change	-20.6	3.8	3.6	3.3	3.1	2.9	2.7	2.5	2.4	2.3	2.2	2.1
Crude oil price, \$/barrel												
EIA refiner acquisition cost, imports	46.4	39.9	49.7	55.9	68.0	74.0	78.3	81.6	83.8	85.6	87.6	90.3
percent change	-48.2	-13.9	24.5	12.4	21.8	8.8	5.9	4.1	2.7	2.2	2.4	3.0
Real 2009 chain-weighted dollars	42.2	35.9	43.8	48.2	57.5	61.3	63.5	64.8	65.2	65.2	65.5	66.1
percent change	-48.7	-15.0	22.0	10.0	19.3	6.5	3.7	2.0	0.6	0.1	0.4	1.0
Labor compensation per hour nonfarm business, 2005=100												
percent change	114.5	118.7	123.4	128.1	132.8	137.6	142.3	147.1	152.0	157.0	162.0	167.3
percent change	3.0	3.7	3.9	3.8	3.7	3.6	3.5	3.4	3.3	3.3	3.2	3.2
Interest rates, percent												
3-month Treasury bills	0.06	0.29	0.7	1.4	2.2	2.7	2.8	2.8	3.0	3.0	3.0	3.0
Bank prime rate	3.26	3.54	3.7	3.9	4.5	5.3	5.8	6.0	6.0	6.0	6.0	6.0
10-year Treasury bonds	2.14	1.80	2.3	2.8	3.1	3.4	3.5	3.6	3.6	3.6	3.6	3.6
Labor and population												
Civilian unemployment rate, percent	5.3	4.8	4.7	4.6	4.6	4.7	4.7	4.8	4.8	4.8	4.8	4.8
Nonfarm payroll employees, millions	141.9	144.2	145.9	147.1	147.8	148.5	149.4	150.3	151.2	152.1	153.0	153.9
percent change	2.0	1.7	1.2	0.8	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6
Total population, millions	321.7	324.3	326.9	329.4	332.0	334.5	337.0	339.5	342.0	344.5	346.9	349.4
percent change	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.7	0.7	0.7	0.7	0.7

Domestic macroeconomic assumptions were completed in October 2016.

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.

Table 2. Global real GDP growth assumptions

Region/country	GDP, 2014	GDP share 2013-15	Per capita GDP, 2015	Percent change in real GDP							Average		
				2015	2016	2017	2018	2019	2020	1991-2000	2001-2010	2017-2026	
	<i>Bil. 2010 dollars</i>	<i>Percent</i>	<i>2010 dollars</i>										
World	72,574	100.0	10,359	2.4	2.3	2.7	2.9	2.9	3.0	2.8	2.8	2.9	
North America	18,053	24.8	51,742	2.3	1.8	2.3	2.2	2.1	2.1	3.4	1.7	2.1	
Canada	1,771	2.4	50,966	1.1	1.3	2.3	2.4	2.1	2.1	2.9	1.9	2.1	
United States	16,282	22.4	51,826	2.4	1.8	2.3	2.2	2.1	2.1	3.4	1.7	2.1	
Latin America	5,975	8.2	9,622	-0.6	-1.0	1.3	2.0	2.9	3.3	3.1	3.3	2.7	
Mexico	1,178	1.6	9,904	2.5	2.2	2.4	2.8	2.9	3.0	3.6	1.8	2.9	
Cuba		0.1	6,530	3.6	3.8	4.0	4.1	4.3	4.6	-1.1	5.3	4.7	
Caribbean & Central America	470	0.6	5,559	3.0	2.4	2.8	2.9	3.0	3.1	3.8	2.7	3.1	
South America	4,327	5.9	10,356	-1.9	-2.3	0.8	1.6	2.8	3.3	3.0	3.8	2.6	
Argentina	523	0.7	12,349	2.3	-1.0	2.3	3.0	3.2	3.3	4.7	4.1	2.8	
Brazil	2,404	3.3	11,354	-3.9	-3.3	0.4	1.2	2.8	3.6	2.6	3.7	2.5	
Other	1,400	1.9	8,578	0.0	-1.2	1.0	1.7	2.7	2.9	3.2	3.9	2.7	
Europe	18,547	25.6	34,842	1.8	1.7	1.6	1.7	1.7	1.8	2.2	1.5	1.7	
European Union	17,373	24.0	34,552	1.9	1.7	1.6	1.6	1.7	1.8	2.2	1.4	1.6	
Other Europe	1,175	1.6	39,830	1.3	1.1	1.5	1.9	1.9	2.0	1.9	1.9	1.9	
Former Soviet Union	2,249	3.1	7,676	-3.0	-0.8	1.0	2.0	2.0	2.0	-4.0	5.4	2.0	
Russia	1,677	2.3	11,337	-3.7	-1.5	0.5	1.5	1.5	1.5	-3.6	4.9	1.6	
Ukraine	134	0.2	2,719	-9.9	1.5	2.0	3.0	3.5	4.0	-7.7	4.6	3.7	
Other	438	0.6	4,582	1.9	1.2	2.6	3.5	3.5	3.1	-3.3	8.5	2.9	
Asia and Oceania	22,469	31.0	5,957	4.3	4.2	4.3	4.4	4.4	4.3	3.8	4.8	4.2	
East Asia	15,914	21.9	10,491	4.0	3.8	3.9	3.9	3.9	3.8	3.5	4.6	3.7	
China	8,236	11.3	6,436	6.9	6.5	6.2	5.9	5.8	5.5	10.5	10.5	5.4	
Hong Kong	257	0.4	36,943	2.5	0.7	2.1	2.8	2.9	2.9	4.0	4.1	2.7	
Japan	5,650	7.8	44,785	0.6	0.4	0.5	0.7	0.7	0.8	1.1	0.8	0.8	
South Korea	1,234	1.7	25,001	2.6	2.7	2.8	3.0	3.0	2.8	6.6	4.4	2.4	
Taiwan	483	0.7	21,664	0.6	1.1	2.0	2.9	3.3	3.0	6.7	4.2	2.4	
Southeast Asia	2,439	3.3	3,959	4.5	4.4	4.5	4.8	5.0	4.8	5.0	5.2	4.6	
Burma	125	0.0	1,012	7.0	6.9	7.0	6.9	6.8	6.8	6.9	8.1	6.7	
Cambodia	15	1.3	3,858	4.8	5.0	5.1	5.2	5.5	5.4	4.4	5.2	5.2	
Indonesia	943	0.4	10,813	5.0	4.1	4.0	5.0	5.3	5.0	7.2	4.6	4.7	
Malaysia	305	0.1	1,049	7.4	7.1	7.3	7.3	7.0	6.8	6.5	10.3	6.4	
Philippines	251	0.3	2,630	5.9	6.0	5.8	5.9	5.3	5.0	2.9	4.8	4.9	
Thailand	352	0.5	5,787	2.8	2.9	2.8	3.1	3.3	3.2	4.5	4.6	3.0	
Vietnam	145	0.2	1,638	6.7	5.9	6.3	6.6	6.4	6.3	7.6	6.6	6.2	
South Asia	2,660	3.7	1,682	7.2	7.1	7.2	7.4	7.6	7.5	5.3	7.0	7.3	
Bangladesh	147	0.2	1,006	6.6	6.8	6.7	6.6	6.5	6.4	4.7	5.6	6.3	
India	2,198	3.0	1,880	7.5	7.5	7.5	7.8	7.9	7.9	5.6	7.5	7.6	
Pakistan	208	0.3	1,075	5.5	4.7	5.0	5.5	5.5	5.5	4.0	4.2	5.4	
Oceania	1,456	2.1	42,421	2.6	2.9	2.7	2.9	2.7	2.6	3.3	3.0	2.6	
Australia	1,272	1.8	59,695	2.5	2.9	2.7	2.9	2.8	2.6	3.3	3.0	2.6	
New Zealand	161	0.2	37,168	3.0	2.7	2.7	2.7	2.5	2.4	3.1	2.5	2.4	
Middle East	3,083	4.3	10,415	2.4	2.5	3.1	3.6	3.7	3.7	4.0	4.4	3.5	
Iran	408	0.6	5,731	1.1	4.1	4.4	4.6	4.8	4.5	3.3	5.2	4.3	
Iraq	174	0.2	4,682	-2.0	2.6	2.8	4.0	4.3	4.4	9.1	5.0	4.5	
Saudi Arabia	649	0.9	24,191	3.4	1.7	2.7	3.2	3.4	3.8	2.8	5.1	3.7	
Turkey	871	1.2	11,399	3.9	3.3	3.4	3.6	3.5	3.3	3.7	4.0	3.2	
Other	982	1.4	12,033	1.8	1.7	2.5	3.2	3.6	3.4	5.4	4.0	3.1	
Africa	2,198	3.0	1,972	2.8	2.3	3.2	3.6	3.7	3.8	2.3	5.4	3.7	
North Africa	612	0.8	3,424	2.5	2.5	3.4	3.6	3.7	3.9	2.7	4.5	3.8	
Egypt	238	0.3	2,632	4.2	3.0	2.9	3.5	3.6	4.0	4.3	4.9	3.8	
Morocco	105	0.2	3,399	4.5	1.7	4.0	4.1	4.2	4.1	3.0	4.9	3.9	
Sub-Saharan Africa	1,586	2.1	1,694	2.9	2.2	3.1	3.6	3.7	3.7	2.1	5.8	3.6	
South Africa	411	0.6	7,755	1.3	0.3	1.5	2.4	2.5	2.5	1.8	3.5	2.2	
Nigeria		0.6	2,561	2.8	1.0	2.3	3.0	3.5	3.8	1.9	9.2	3.7	
West African Community	599	0.2	944	4.2	5.2	5.6	5.6	4.9	4.5	3.2	4.0	4.6	
Other Sub-Saharan Africa	576	0.8	1,044	3.9	3.8	4.3	4.4	4.3	4.2	2.3	6.2	4.2	

Source: Historical data from various sources; compiled in the International Macroeconomic Data Set, U.S. Department of Agriculture, Economic Research Service. International macroeconomic assumptions were based on information available in August 2016.

Table 3. Population growth assumptions

Region/country	Population in							Average		
	2016	2015	2016	2017	2018	2019	2020	1991-2000	2001-2010	2017-2026
	Millions							Percent change		
World ¹	7,251	1.1	1.1	1.1	1.0	1.0	1.0	1.4	1.2	1.0
North America	360	0.8	0.8	0.8	0.8	0.8	0.8	1.2	0.9	0.7
Canada	35	0.8	0.7	0.7	0.7	0.7	0.7	1.1	0.8	0.7
United States	324	0.8	0.8	0.8	0.8	0.8	0.8	1.2	0.9	0.7
Latin America	624	1.0	1.0	1.0	0.9	0.9	0.9	1.6	1.2	0.8
Mexico	123	1.2	1.2	1.1	1.1	1.1	1.0	1.7	1.3	1.0
Caribbean & Central America	75	1.3	1.3	1.2	1.1	1.1	1.1	1.9	1.4	1.1
South America	415	0.9	0.9	0.9	0.9	0.9	0.8	1.6	1.2	0.8
Argentina	44	1.0	0.9	0.9	0.9	0.9	0.9	1.2	1.0	0.8
Brazil	206	0.8	0.8	0.7	0.7	0.7	0.7	1.6	1.2	0.6
Other	165	1.1	1.1	1.1	1.1	1.0	1.0	1.8	1.4	1.0
Europe	545	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.1
European Union	515	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.1
Other Europe	30	0.3	0.3	0.3	0.3	0.3	0.3	0.0	0.2	0.2
Former Soviet Union	285	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.1
Russia	142	0.0	0.0	-0.1	-0.1	-0.1	-0.2	-0.1	-0.3	-0.2
Ukraine	44	-1.1	-0.5	-0.4	-0.2	0.0	-0.1	-0.5	-0.7	-0.4
Other	98	0.8	0.8	0.8	0.7	0.7	0.7	0.6	0.7	0.6
Asia and Oceania	3,974	0.9	0.9	0.8	0.8	0.8	0.8	1.5	1.1	0.7
East Asia	1,585	0.4	0.4	0.4	0.3	0.3	0.3	0.9	0.5	0.2
China	1,374	0.5	0.4	0.4	0.4	0.4	0.3	1.0	0.5	0.2
Hong Kong	7	0.4	0.4	0.3	0.3	0.3	0.2	1.6	0.5	0.2
Japan	127	-0.1	-0.2	-0.2	-0.2	-0.2	-0.3	0.3	0.1	-0.3
South Korea	51	0.6	0.6	0.5	0.5	0.4	0.4	0.9	0.5	0.3
Taiwan	23	0.2	0.2	0.2	0.2	0.1	0.1	0.9	0.4	0.1
Southeast Asia	641	1.1	1.0	1.0	1.0	1.0	0.9	1.8	1.4	0.9
Burma	16	1.6	1.6	1.5	1.5	1.5	1.4	2.8	1.6	1.3
Cambodia	258	0.9	0.9	0.9	0.8	0.8	0.8	1.7	1.3	0.8
Indonesia	31	1.5	1.4	1.4	1.4	1.3	1.3	2.6	2.0	1.3
Malaysia	57	1.0	1.0	1.0	1.0	1.0	0.9	1.6	1.2	0.9
Philippines	103	1.6	1.6	1.6	1.6	1.6	1.5	2.2	2.0	1.5
Thailand	68	0.3	0.3	0.3	0.3	0.3	0.3	1.2	0.6	0.2
Vietnam	95	1.0	1.0	0.9	0.9	0.9	0.8	1.6	1.2	0.8
South Asia	1,710	1.3	1.2	1.2	1.2	1.2	1.1	2.0	1.6	1.1
Bangladesh	156	1.0	1.0	1.0	1.0	1.0	1.0	2.0	1.3	1.0
India	1,267	1.2	1.2	1.2	1.2	1.1	1.1	1.8	1.5	1.1
Pakistan	202	1.5	1.5	1.5	1.4	1.4	1.4	2.5	1.9	1.4
Oceania	37	1.2	1.1	1.1	1.1	1.1	1.1	1.4	1.4	1.0
Australia	23	1.1	1.1	1.0	1.0	1.0	1.0	1.2	1.2	0.9
New Zealand	4	0.8	0.8	0.8	0.8	0.8	0.7	1.1	1.1	0.7
Middle East	315	1.4	1.5	1.5	1.6	1.5	1.5	2.1	1.8	1.4
Iran	83	1.2	1.2	1.2	1.1	1.1	1.0	1.7	1.1	1.0
Iraq	38	3.0	2.9	2.7	2.6	2.5	2.4	2.5	2.8	2.5
Saudi Arabia	28	1.5	1.5	1.5	1.4	1.4	1.4	2.9	1.9	1.4
Turkey	80	1.3	1.1	0.7	0.5	0.5	0.5	1.6	1.2	0.6
Other	85	1.0	1.7	2.2	2.5	2.4	2.4	3.0	2.8	1.9
Africa	1,149	2.4	2.4	2.4	2.3	2.3	2.3	2.5	2.5	2.2
North Africa	186	2.1	2.0	1.9	1.9	1.8	1.8	1.8	1.8	1.7
Egypt	95	2.6	2.6	2.5	2.4	2.4	2.3	1.7	2.2	2.2
Morocco	34	1.0	1.0	1.0	1.0	0.9	0.9	1.6	1.2	0.9
Sub-Saharan Africa	963	2.5	2.5	2.4	2.4	2.4	2.4	2.6	2.7	2.4
South Africa	54	1.3	1.2	1.0	1.0	1.0	1.0	1.6	1.3	0.9
West African Community	186	2.5	2.5	2.5	2.4	2.4	2.4	2.5	2.6	2.4
Other Sub-Saharan Africa	166	2.6	2.6	2.6	2.6	2.5	2.5	2.6	2.8	2.5

1/ Totals for the world include countries not otherwise listed in the table.

Source: U.S. Department of Commerce, U.S. Census Bureau, International database:
<http://www.census.gov/population/international/data/idb/informationGateway.php>.

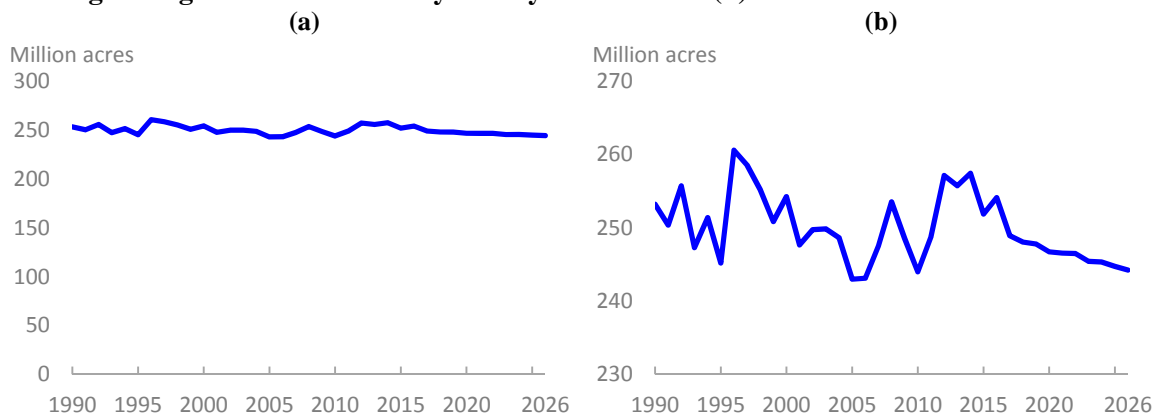
The population assumptions were completed in August 2016 based on the August 2016 Census update.

U.S. Crops

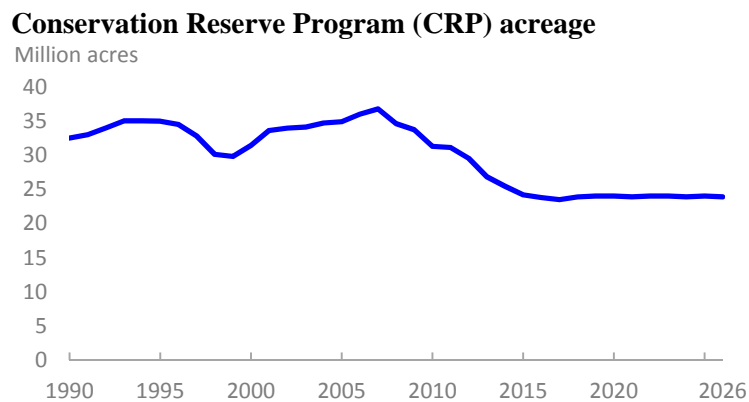
Through the 2016/17 marketing year, food and feed grains prices have continued to drop from the highs of recent years as U.S. and global supplies reached new heights. Marketing year 2017/18 projections suggest the end of the price declines and the beginning of modest increases that are expected to continue through 2026. Despite the expected price increases over the next 10 years, prices are projected to remain lower than those seen over the past decade, leading to lower returns and reduced plantings. Averaging 257 million acres during the peak in 2012-14, the planted acreage of the 8 major U.S. crops (corn, soybeans, wheat, upland cotton, sorghum, rice, barley, and oats) dropped to 252 million in 2015, rebounded slightly in 2016, and is projected to decline to just under 245 million acres by 2026, with the bulk of the decreased acreage coming from corn.

Despite crop prices falling, projected real prices are expected to remain above the average levels seen in the decade prior to 2007, in part due to global economic growth, which helps to bolster crop demand. Although planted acres drop, increasing yields keep total production relatively high and provide most of the gains in U.S. production.

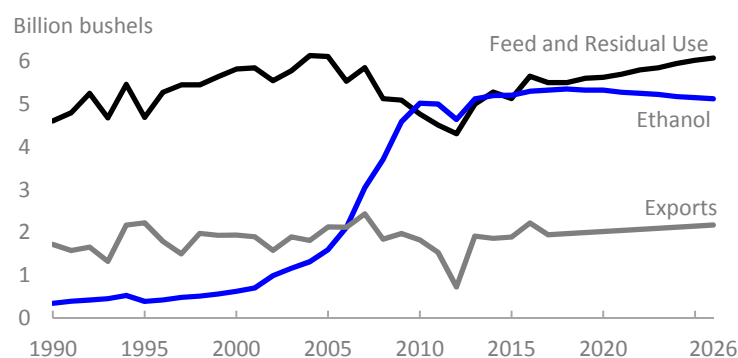
U.S. planted area for the eight major crops (corn, soybeans, wheat, upland cotton, sorghum, rice, barley, and oats) has remained relatively flat (a). However, closer inspection shows a trend of declining acreage and considerable year to year variation (b).



Farm programs of the 2014 Farm Act are assumed to extend through the projection period despite the likelihood of a new Farm Act coming into play. Acreage enrolled in the CRP is assumed to hold near the maximum levels legislated by Congress of 24 million acres.



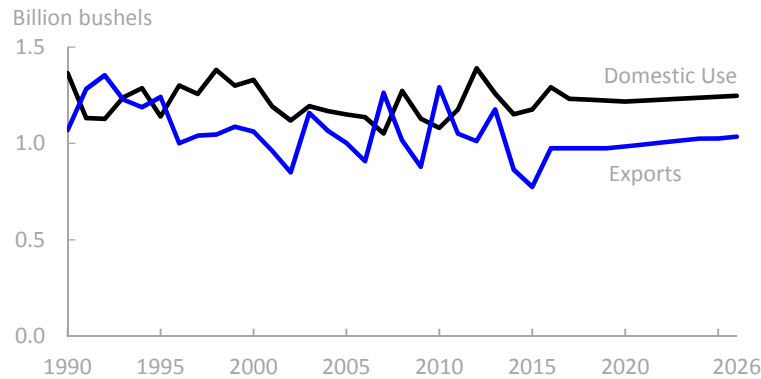
U.S. corn: Feed and residual use, ethanol, and exports



Demand for U.S. corn is projected to grow steadily over the next decade. Rising yields boost production and support the growing demand. Planted area, however, falls as real prices and returns fall over time, in part due to large stock buildups. Over the next 10 years, stocks decline slowly yet are projected to remain above 2015 levels.

- Ethanol production in the United States is based almost entirely on corn as a feedstock. A slight increase in corn-based ethanol production is projected through 2018/19 after which it declines to levels just below those in 2015. Falling domestic demand reflects a declining trend in U.S. gasoline consumption (primarily a 10-percent ethanol blend, E10) due to higher average mileage vehicles, changing vehicle use patterns, and infrastructure and other constraints on growth in E15 (15-percent blend), and E85 (flex-fuel) markets. Demand for corn to produce ethanol remains strong, with just over 5 billion bushels used annually. In ten years, corn used for ethanol production is projected to make up almost 35 percent of total use, compared to almost 42 percent at its peak in 2012/13.
- With the exception of a drop in production in 2017, corn production is expected to increase through the forecast period. Lower corn prices and increasing corn production suggest that more corn will be used for feed and residual use, helping to fuel increasing meat production. As ethanol production drops, production of distillers' grains—a co-product of dry mill ethanol production used as feed—will also drop, further supporting the use of corn for feed.
- Food and industrial use of corn (other than ethanol production) remains steady over the first half of the projection period and declines slowly in the second half. Use of corn for high fructose corn syrup (HFCS) remains relatively constant despite declining U.S. consumption. Increased exports, primarily to Mexico, offset lower domestic demand.
- The U.S. remains the world's largest corn exporter over the projection period. Rising incomes, particularly in developing economies, translate to increasing demand for meat, bolstering demand for U.S. corn as a feed grain. A projected strengthening U.S. dollar will constrain exports, however. Increasing competition, particularly from Brazil, Argentina, and Ukraine, results in a declining U.S. share of global corn trade over the projection period.

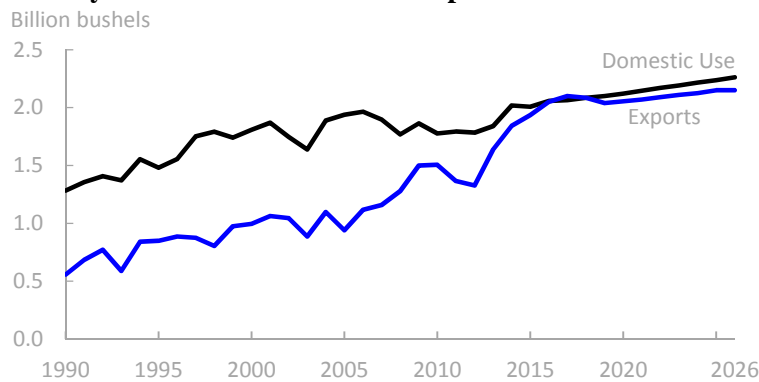
U.S. wheat: Domestic use and exports



U.S. farmers are projected to sow less wheat, with total plantings dropping below 50 million acres and remaining at that level over the next 10 years. U.S. domestic demand is expected to remain steady at just over 1.2 billion bushels, with minor gains in food use and a relatively stable demand for feed and seed use. Although U.S. exports are projected to rise slowly over the next decade, the U.S. share of global wheat trade is expected to decline from over 15 to less than 14 percent as the EU surpasses the U.S. as the world's largest wheat exporter. By the end of the projection period, it is expected that Russian exports will exceed those of the United States as well.

- Food use of wheat is projected to grow slowly and at a slightly slower rate than U.S. population increases, reflecting a mature market and long-term wheat food-use trends.
- Feed and residual use increased in 2016/17 and remained relatively high in 2017/18 due to greater wheat supplies. Over the projection period, wheat supplies are expected to tighten, and high corn stocks will cause corn prices to drop, which together are expected to discourage wheat feed use over the balance of the projection period.
- U.S. wheat imports are projected to remain flat in the near-term, followed by a modest and gradual increase. Comparatively low transportation costs between the United States and Canada and a stronger U.S. dollar encourage more U.S. wheat imports from Canada.
- U.S. wheat exports remain steady in the short-run followed by a period of slow volume growth. Strong competition from countries of the FSU, the EU, and Canada limit relative export growth in the longer-run, creating a slow decline in the U.S. share of world exports.

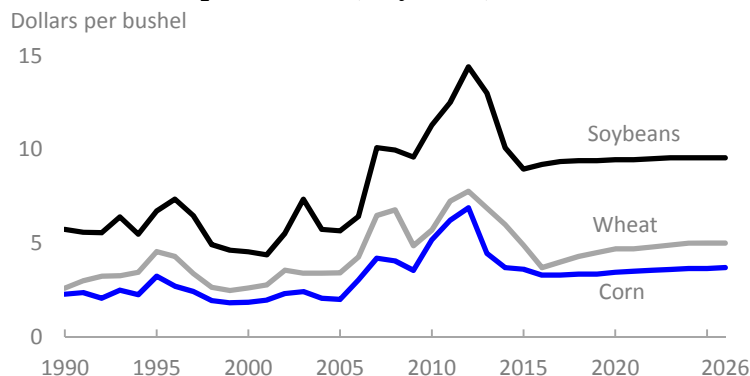
U.S. soybeans: Domestic use and exports



Slowly increasing prices and higher producer returns provide incentives to increase plantings, and producers are expected to plant roughly 85 million acres through the projection period. Rising domestic use and export demand support a continuation of a large soybean area.

- Increased demand for soybean meal and oil, and hence crush, are projected over the next decade. These gains reflect low expected feed prices, increasing livestock production, and steady demand by foreign importers.
- Strong global demand for soybeans—particularly in China—boosts U.S. soybean trade over the projection period. While soybean exports are projected to rise, competition from South America—primarily Brazil—will lead to a reduced U.S. share of global soybean trade.
- U.S. soybean meal use is projected to increase about 1 percent per year over the baseline period. Domestic soybean meal consumption, which accounts for roughly 75 percent of total disappearance, is projected to increase at just over 1 percent per year. Soybean meal exports are projected to remain flat as competition from South America, especially Argentina, limits opportunities for U.S. export growth.
- U.S. soybean oil use is also projected to rise about 1 percent per year over the projection period. Gains will be led by increased food and non-methyl-ester use, which accounts for about 65 percent of total use. Soybean oil exports are projected to rise only modestly with strong competition from Argentina, where global share of exports rises from 48 to 54 percent over the projection period.
- Soybean oil used to produce biodiesel (methyl esters) in the United States is projected to increase to almost 6.4 billion pounds by 2021/22 and later years, supporting the annual production of nearly 900 million gallons of biodiesel in the second half of the projection period. These projections reflect a growing biomass-based diesel use requirement under the Renewable Fuel Standard (RFS). The EPA’s final rule for 2017 biomass-based diesel was set at 2 billion gallons. Some additional demand for biodiesel and renewable diesel is also assumed to meet a portion of the RFS’s advanced biofuel requirement. Other feedstocks used to produce biomass-based diesel include corn oil from distillers’ grains, other first-use and recycled vegetable oils, and animal fats.

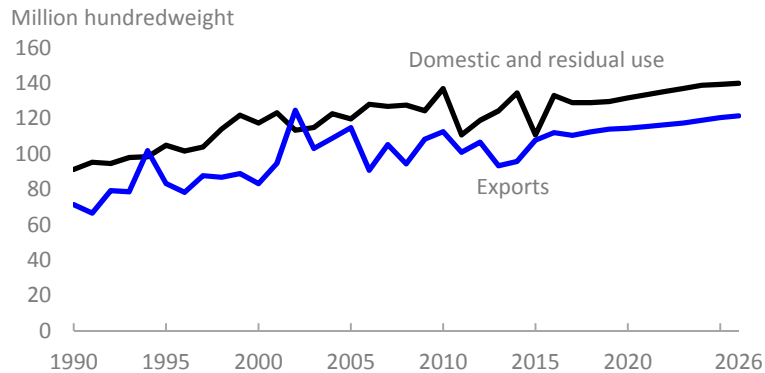
U.S. farm-level prices: Corn, soybeans, and wheat



High commodity prices in the latter half of the 2000s encouraged production and led to increased global supplies of corn, wheat, and soybeans, ultimately resulting in a significant drop in U.S. farm-level prices in 2013. Through 2016, prices continued to trend downward as global corn, wheat, and soybean supplies remained high. In 2017, nominal prices are projected to bottom out before beginning a slow recovery. Projected U.S. grain and soybean prices are supported by a reversion to trend yields from the high yields experienced in the last couple years, continued global growth in population and per capita income, along with a maintained biofuel demand. As a result, the nominal prices remain above pre-2007 levels.

- Nominal corn prices are projected to increase over the next decade as ending stocks are reduced due to growth in feed use and exports, along with continuing demand for corn for ethanol production.
- Nominal soybean prices are expected to increase marginally over the projection period, primarily due to increased demand for soybeans (primarily China) and soybean products (primarily domestic demand).
- Nominal wheat prices exhibit an upward trend as decreased plantings coupled with small increases in exports and food use reduce stocks while the drop in feed use limits the amount of wheat being priced at the lower valued feed use.

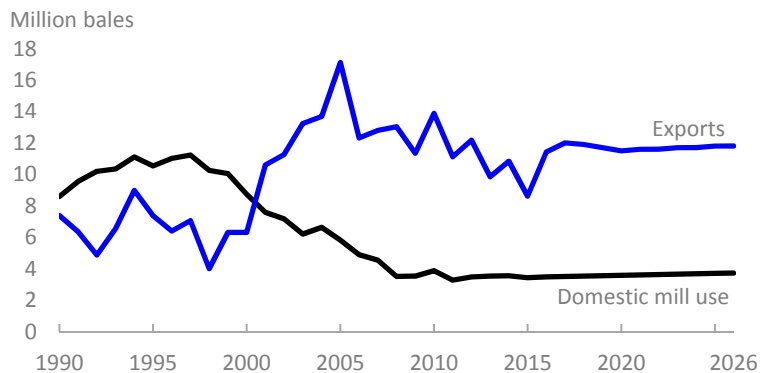
U.S. rice: Domestic and residual use and exports



Falling rice prices lead to decreased U.S. acreage planted to rice in the 2017/18 marketing year, with long grain accounting for most of the decline. Starting in 2018/19, slow increases in expected prices will induce gradual growth in planted acreage throughout the projection period. Long grain is expected to account for nearly all of the expected area increase.

- Domestic and residual use of rice is projected to account for roughly 60 percent of U.S. production over the next 10 years, increasing at a slightly faster rate than population growth. U.S. rice imports are expected to grow over the next decade at an average of slightly more than 2 percent per year. Asian aromatic varieties, classified as long-grain rice and coming almost exclusively from Thailand, India, and Pakistan, are expected to continue to account for the bulk of U.S. rice imports.
- U.S. exports are expected to grow over the next decade at an average of almost 1.1 percent per year. Exports to Latin America (predominately long-grain rough) are expected to account for most of the overall expansion of U.S. rice exports. Despite growth in exports, the U.S. global share drops slightly over the projection period due to the faster paced growth anticipated primarily from Vietnam and Thailand. Thailand is expected to surpass India to become the largest global rice exporter by the middle of the projection period.
- U.S. rice prices are expected to follow a compound annual growth rate of more than 1.6 percent per year over the projection period, with slower growth of less than 1 percent year over year in the beginning of the projection period followed by more than 2 percent growth year over year in the latter half. This growth reflects increasing domestic and residual use, increased global demand, and a declining U.S. stocks-to-use ratio.

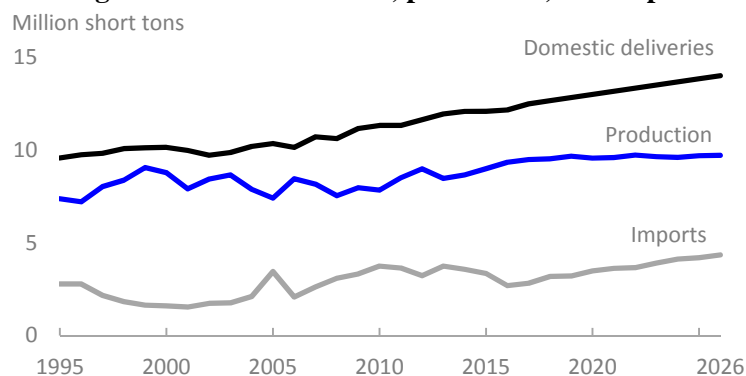
U.S. upland cotton: Domestic mill use and exports



Upland cotton plantings are projected to continue to increase from 2015's low before settling around 10 million acres through most of the projection period. Market year average prices are expected to range between 64 and 69 cents per pound. Domestic mill use is expected to slowly grow over the next decade while exports are projected to increase in 2017, followed by a decrease over the next few years, and eventually recovering by the end of the projection period.

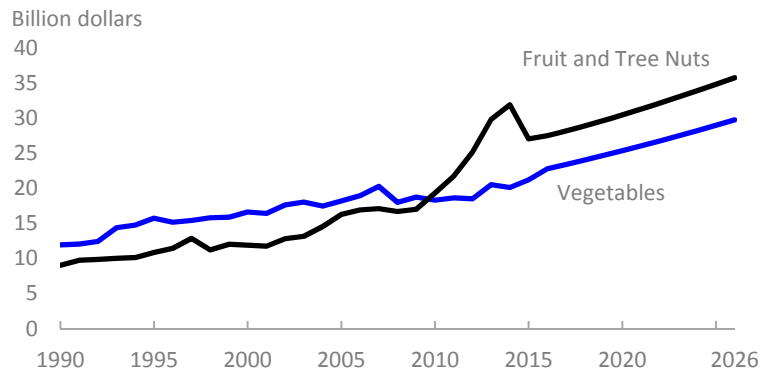
- U.S. mill use is projected to increase marginally over the next decade in response to rising demand for U.S. textile product exports, such as fabric and yarn. Despite the slight gains, mill use remains less than one-fourth of total U.S. disappearance of upland cotton over the projection period. Mill use accounted for more than half of total U.S. disappearance in the late 1990s but declined sharply in the subsequent decade due to rising textile imports and competition with synthetic fibers—primarily polyester.
- U.S. upland cotton exports are projected to increase in 2017, fall, and then trend higher again in the second half of the projection period. The United States is the largest exporter of cotton, and while the share of global exports fluctuates over the next decade, it is expected that the United States will end the decade roughly where it began—with a share of just over 26 percent of global exports. India and Brazil are the next two largest exporters, averaging a combined share of just under 28 percent of global exports over the projection period. During the first half of the projection period, Bangladesh and Vietnam import the largest amount of cotton. However, a projected increase in China's imports in 2019 places it at the top, and an expected annual growth rate of almost 13 percent will have approximately 30 percent of global cotton trade headed to China by 2026.

U.S. sugar: domestic deliveries, production, and imports



- U.S. sugar production is projected to increase steadily, averaging a growth rate of just under 0.4 percent per year over the next decade, to reach an expected level of roughly 9.7 million short tons by 2026. While both beet and cane sugar production are projected to increase, beet sugar will remain the larger of the two sugar-producing crops, with increased production driven primarily by higher yields. Cane sugar production is expected to increase in total volume and as a share of total sugar production based on improved returns encouraging expansion of the production base.
- Sugar deliveries for domestic use also increase steadily over the course of the projection period. Total deliveries in 2026 are more than 15 percent higher than 2016, driven by population growth. Deliveries for food and beverage use constitute the large majority of total use and growth throughout the projection period. There are no sugar loan forfeitures and no USDA-Commodity Credit Corporation purchases of sugar for ethanol projected as prices remain above the minimum price that avoid forfeiture.
- Total sugar imports are projected to increase as well to meet increased deliveries. While imports account for less than 20 percent of total supply in 2016, they rise to over 27 percent by 2026.
- Projected imports from Mexico through the projection period follow the terms of the agreements currently in place that restrict both the volumes and prices of sugar entering the United States. Imports from Mexico are projected to rise along with increased U.S. needs for sugar, until the latter years of the projection period where Mexican exportable supplies are constrained.
- Imports under quota programs remain relatively constant in the beginning portion of the projection period and then increase to account for lower imports from Mexico in the latter years.
- Sugar production in Mexico is expected to increase steadily due to improved yields. Relatively stagnant producer returns projected during the period result in a slight but steady decline in harvested area. Combined with deliveries for human consumption increasing at a higher rate than domestic production, exportable supplies are reduced, constraining exports to the United States in the latter portion of the projection period.
- U.S. consumption of HFCS is projected to steadily decline, accounting for a small proportion of total caloric sweetener consumption. U.S. production of HFCS remains relatively constant throughout the period due to increased exports, particularly to Mexico.

U.S. fruit, nut, and vegetable: Value of production



The total farm value of fruit, nuts, and vegetable production is projected to grow by roughly 2.7 percent annually over the next decade, reaching just over \$65.5 billion by calendar year 2026, up from almost \$52 billion in 2017. Fruits contribute nearly 40 percent of the total value, tree nuts about 16 percent, and vegetables roughly 45 percent.

- Over the next 10 years, U.S. fruit, nut, and vegetable production, measured by farm weight (in pounds of product), is projected to rise by an average of 0.6 percent per year. Expanded U.S. aggregate production is largely supported by gains in vegetables, which are projected to grow by an average of 0.7 percent per year to reach production of 141 billion pounds in 2026.
- The value of farm production of fruit and tree nuts is projected to grow at almost 2.7 percent annually, with citrus fruit and tree nuts each up 3 percent while noncitrus is expected to grow at 2.5 percent per year.
- Overall, fruit and nut production expands by roughly 0.5 percent per year, reaching over 61 billion pounds in 2026. Citrus production continues to decline slowly over the projection period, primarily due to loss of bearing acreage in Florida. These declines are projected to be offset by increases in noncitrus production. Tree nut output continues its strong growth over the projection period.
- Over the next 10 years, shares of vegetable production for fresh use and processing are expected to remain at current levels and respectively account for approximately three-fourths and one-quarter of total production. Cultivation of pulses, which had expanded greatly in the last couple years, is expected to continue to increase but at a much slower rate as other countries, particularly India, look to produce more and demand less from international markets, including the United States.

Table 4. Acreage for major field crops and Conservation Reserve Program (CRP) assumptions, long-term projections

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
	<i>Million acres</i>											
Planted acreage, eight major crops												
Corn	88.0	94.5	90.0	89.5	89.5	88.5	88.0	88.0	87.0	87.0	86.5	86.0
Sorghum	8.5	6.8	6.3	6.3	6.3	6.2	6.0	5.9	5.8	5.7	5.6	5.6
Barley	3.6	3.1	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Oats	3.1	2.8	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Wheat	55.0	50.2	48.5	49.0	49.5	49.5	49.5	49.5	49.5	49.5	49.5	49.5
Rice	2.6	3.2	2.7	2.8	2.8	2.8	2.8	2.9	2.9	2.9	2.9	2.9
Upland cotton	8.4	10.0	10.5	10.3	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Soybeans	82.7	83.7	85.5	85.0	84.5	84.5	85.0	85.0	85.0	85.0	85.0	85.0
Total	251.9	254.1	248.9	248.0	247.8	246.7	246.5	246.5	245.4	245.3	244.7	244.2
CRP acreage assumptions												
Total CRP	24.2	23.8	23.5	23.9	24.0	24.0	23.9	24.0	24.0	23.9	24.0	23.9
Total planted plus CRP	276.1	277.9	272.4	271.9	271.7	270.7	270.5	270.4	269.3	269.2	268.7	268.2
Harvested acreage, eight major crops												
Corn	80.7	86.8	82.3	81.8	81.8	80.8	80.3	80.3	79.3	79.3	78.8	78.3
Sorghum	7.9	6.0	5.4	5.4	5.4	5.3	5.1	5.1	5.0	4.9	4.8	4.8
Barley	3.2	2.6	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Oats	1.3	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Wheat	47.3	43.9	41.1	41.6	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
Rice	2.6	3.1	2.7	2.8	2.8	2.8	2.8	2.8	2.9	2.9	2.9	2.9
Upland cotton	7.9	9.5	9.5	9.0	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
Soybeans	81.7	83.0	84.6	84.1	83.6	83.6	84.1	84.1	84.1	84.1	84.1	84.1
Total	232.6	236.0	228.9	227.9	227.6	226.5	226.4	226.4	225.3	225.2	224.6	223.2

Table 5. U.S. corn long-term projections

Item	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
Area (million acres):												
Planted acres	88.0	94.5	90.0	89.5	89.5	88.5	88.0	88.0	87.0	87.0	86.5	86.0
Harvested acres	80.7	86.8	82.3	81.8	81.8	80.8	80.3	80.3	79.3	79.3	78.8	78.3
Yield:												
Bushels per harvested acre	168.4	175.3	170.8	172.8	174.8	176.8	178.8	180.8	182.8	184.8	186.8	188.8
Supply and use (million bushels):												
Beginning stocks	1,731	1,738	2,403	2,298	2,213	2,193	2,104	2,033	2,023	1,933	1,923	1,896
Production	13,601	15,226	14,060	14,135	14,300	14,285	14,360	14,520	14,495	14,655	14,719	14,784
Imports	67	50	50	50	50	50	50	50	50	50	50	50
Supply	15,400	17,013	16,513	16,483	16,563	16,528	16,514	16,603	16,568	16,638	16,692	16,730
Feed & residual	5,130	5,650	5,500	5,500	5,600	5,625	5,700	5,800	5,850	5,950	6,025	6,075
Food, seed, & industrial	6,635	6,735	6,765	6,795	6,770	6,775	6,730	6,705	6,685	6,640	6,620	6,595
Ethanol and by-products	5,206	5,300	5,325	5,350	5,325	5,325	5,275	5,250	5,225	5,175	5,150	5,125
Domestic use	11,764	12,385	12,265	12,295	12,370	12,400	12,430	12,505	12,535	12,590	12,645	12,670
Exports	1,898	2,225	1,950	1,975	2,000	2,025	2,050	2,075	2,100	2,125	2,150	2,175
Total use	13,662	14,610	14,215	14,270	14,370	14,425	14,480	14,580	14,635	14,715	14,795	14,845
Ending stocks	1,738	2,403	2,298	2,213	2,193	2,104	2,033	2,023	1,933	1,923	1,896	1,885
Stocks/use ratio, percent	12.7	16.5	16.2	15.5	15.3	14.6	14.0	13.9	13.2	13.1	12.8	12.7
Price (dollars per bushel):												
Farm price	3.61	3.30	3.30	3.35	3.35	3.45	3.50	3.55	3.60	3.65	3.65	3.70
Variable costs of production (dollars):												
Per acre	337	334	329	336	341	347	348	351	357	362	365	367
Returns over variable costs (dollars per acre):												
Net returns	271	244	234	242	245	263	278	290	301	313	316	331

Note: Marketing year beginning September 1 for corn.

Table 6. U.S. sorghum long-term projections

Item	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
Area (million acres):												
Planted acres	8.5	6.8	6.3	6.3	6.3	6.2	6.0	5.9	5.8	5.7	5.6	5.6
Harvested acres	7.9	6.0	5.4	5.4	5.4	5.3	5.1	5.1	5.0	4.9	4.8	4.8
Yield:												
Bushels/harvested acre	76.0	76.5	67.1	67.1	67.1	67.1	67.1	67.1	67.1	67.1	67.1	67.1
Supply and use (million bushels):												
Beginning stocks	18	37	40	37	34	36	36	38	40	40	39	41
Production	597	462	362	362	362	355	342	342	335	329	322	322
Imports	5	1	0	0	0	0	0	0	0	0	0	0
Supply	620	500	402	399	396	391	378	380	375	369	361	363
Feed & residual	103	90	75	85	90	95	90	95	90	90	85	90
Food, seed, & industrial	142	120	100	100	100	100	100	100	100	100	100	100
Domestic use	245	210	175	185	190	195	190	195	190	190	185	190
Exports	339	250	190	180	170	160	150	145	145	140	135	130
Total use	583	460	365	365	360	355	340	340	335	330	320	320
Ending stocks	37	40	37	34	36	36	38	40	40	39	41	43
Stocks/use ratio, percent	6.3	8.7	10.1	9.3	9.9	10.1	11.1	11.7	11.9	11.8	12.8	13.4
Price (dollars per bushel):												
Farm price	3.31	3.10	3.10	3.15	3.15	3.25	3.30	3.35	3.40	3.45	3.45	3.50
Variable costs of production (dollars):												
Per acre	137	135	134	137	139	142	143	144	147	149	151	152
Returns over variable costs (dollars per acre):												
Net returns	115	102	74	74	72	76	79	80	81	83	81	83

Note: Marketing year beginning September 1 for sorghum.

Table 7. U.S. barley long-term projections

Item	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
Area (million acres):												
Planted acres	3.6	3.1	2.9	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Harvested acres	3.2	2.6	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Yield:												
Bushels/harvested acre	69.1	77.9	72.7	73.4	74.1	74.8	75.5	76.2	76.8	77.5	78.2	78.9
Supply and use (million bushels):												
Beginning stocks	79	102	98	92	85	80	76	74	74	70	73	73
Production	218	199	182	176	178	179	181	183	184	186	188	189
Imports	19	20	20	20	20	20	20	20	20	20	20	20
Supply	315	321	300	288	283	279	277	277	278	276	281	282
Feed & residual	50	60	45	40	40	40	40	40	45	40	45	50
Food, seed, & industrial	153	153	153	153	153	153	153	153	153	153	153	153
Domestic use	202	213	198	193	193	193	193	193	198	193	198	203
Exports	11	10	10	10	10	10	10	10	10	10	10	10
Total use	213	223	208	203	203	203	203	203	208	203	208	213
Ending stocks	102	98	92	85	80	76	74	74	70	73	73	69
Stocks/use ratio, percent	47.9	44.1	44.4	42.1	39.6	37.6	36.6	36.6	33.8	36.1	35.3	32.6
Price (dollars per bushel):												
Farm price	5.52	4.85	4.85	4.95	4.95	5.05	5.10	5.15	5.10	5.20	5.20	5.25
Variable costs of production (dollars):												
Per acre	172	170	169	173	176	179	180	183	186	189	191	193
Returns over variable costs (dollars per acre):												
Net returns	209	208	184	191	191	199	205	210	206	215	216	221

Note: Marketing year beginning June 1 for barley.

Table 8. U.S. oats long-term projections

Item	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
Area (million acres):												
Planted acres	3.1	2.8	2.5	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Harvested acres	1.3	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Yield:												
Bushels/harvested acre	70.2	66.0	66.6	67.0	67.3	67.7	68.1	68.5	68.8	69.2	69.6	69.9
Supply and use (million bushels):												
Beginning stocks	54	57	47	42	36	31	26	25	25	25	24	24
Production	90	65	60	60	61	61	61	62	62	62	63	63
Imports	86	90	95	95	95	95	95	95	95	95	95	95
Supply	229	212	202	197	192	187	182	182	182	182	182	182
Feed & residual	93	85	80	80	80	80	75	75	75	75	75	75
Food, seed, & industrial	77	78	78	79	79	79	80	80	80	81	81	81
Domestic use	170	163	158	159	159	159	155	155	155	156	156	156
Exports	2	2	2	2	2	2	2	2	2	2	2	2
Total use	172	165	160	161	161	161	157	157	157	158	158	158
Ending stocks	57	47	42	36	31	26	25	25	25	24	24	24
Stocks/use ratio, percent	33.0	28.2	26.0	22.1	19.0	15.9	15.7	15.7	15.7	14.9	14.9	14.9
Price (dollars per bushel):												
Farm price	2.12	1.85	1.90	1.90	1.90	1.95	2.00	2.00	2.05	2.10	2.10	2.10
Variable costs of production (dollars):												
Per acre	106	105	103	106	108	110	111	112	114	116	118	119
Returns over variable costs (dollars per acre):												
Net returns	43	17	23	21	20	22	25	25	27	29	28	28

Note: Marketing year beginning June 1 for oats.

Table 9. U.S. wheat long-term projections

Item	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
Area (million acres):												
Planted acres	55.0	50.2	48.5	49.0	49.5	49.5	49.5	49.5	49.5	49.5	49.5	49.5
Harvested acres	47.3	43.9	41.1	41.6	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
Yield:												
Bushels/harvested acre	43.6	52.6	47.1	47.5	47.9	48.3	48.7	49.1	49.5	49.9	50.3	50.7
Supply and use (million bushels):												
Beginning stocks	752	976	1,143	993	892	832	784	742	707	679	658	654
Production	2,062	2,310	1,936	1,976	2,012	2,029	2,045	2,062	2,079	2,096	2,113	2,129
Imports	113	125	120	125	125	125	130	135	140	145	150	155
Supply	2,927	3,410	3,199	3,094	3,029	2,986	2,959	2,939	2,926	2,920	2,921	2,938
Food	957	963	965	970	975	980	985	990	995	1,000	1,005	1,010
Seed	67	69	66	67	67	67	67	67	67	67	67	67
Feed & residual	152	260	200	190	180	170	170	170	170	170	170	170
Domestic use	1,176	1,292	1,231	1,227	1,222	1,217	1,222	1,227	1,232	1,237	1,242	1,247
Exports	775	975	975	975	975	985	995	1,005	1,015	1,025	1,025	1,035
Total use	1,952	2,267	2,206	2,202	2,197	2,202	2,217	2,232	2,247	2,262	2,267	2,282
Ending stocks	976	1,143	993	892	832	784	742	707	679	658	654	656
Stocks/use ratio, percent	50.0	50.4	45.0	40.5	37.9	35.6	33.5	31.7	30.2	29.1	28.9	28.8
Price (dollars per bushel):												
Farm price	4.89	3.70	4.00	4.30	4.50	4.70	4.70	4.80	4.90	5.00	5.00	5.00
Variable costs of production (dollars):												
Per acre	117	116	115	118	119	122	123	124	126	128	130	131
Returns over variable costs (dollars per acre):												
Net returns	96	79	74	87	96	105	106	112	116	121	122	123

Note: Marketing year beginning June 1 for wheat.

Table 10. U.S. soybeans and products long-term projections

Item	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
Soybeans												
Area (million acres):												
Planted	82.7	83.7	85.5	85.0	84.5	84.5	85.0	85.0	85.0	85.0	85.0	85.0
Harvested	81.7	83.0	84.6	84.1	83.6	83.6	84.1	84.1	84.1	84.1	84.1	84.1
Yield: bushels per harvested acre	48.0	52.5	47.9	48.4	48.9	49.4	49.9	50.4	50.9	51.4	51.9	52.4
Supply (million bushels)												
Beginning stocks, September 1	191	197	480	396	326	306	291	300	309	317	330	338
Production	3,926	4,361	4,050	4,070	4,090	4,130	4,195	4,240	4,280	4,325	4,365	4,405
Imports	24	30	30	30	30	30	30	30	30	30	30	30
Total supply	4,140	4,588	4,560	4,496	4,446	4,466	4,516	4,570	4,619	4,672	4,725	4,773
Use (million bushels)												
Crush	1,886	1,930	1,935	1,955	1,970	1,990	2,015	2,040	2,060	2,085	2,105	2,130
Seed and residual	121	128	130	129	130	130	131	131	132	132	132	132
Exports	1,936	2,050	2,100	2,085	2,040	2,055	2,070	2,090	2,110	2,125	2,150	2,150
Total use	3,943	4,108	4,165	4,169	4,140	4,175	4,216	4,261	4,302	4,342	4,387	4,412
Ending stocks, August 31												
Total ending stocks	197	480	396	326	306	291	300	309	317	330	338	361
Stocks/use ratio, percent	5.0	11.7	9.5	7.8	7.4	7.0	7.1	7.2	7.4	7.6	7.7	8.2
Price (dollars per bushel)												
Soybean price, farm	8.95	9.20	9.35	9.40	9.40	9.45	9.45	9.50	9.55	9.55	9.55	9.55
Variable costs of production (dollars):												
Per acre	174	173	173	176	178	181	182	184	187	189	191	192
Returns over variable costs (dollars per acre):												
Net returns	256	310	275	279	282	286	289	295	300	302	305	308
Soybean oil (million pounds)												
Beginning stocks, October 1	1,855	1,718	1,658	1,753	1,798	1,738	1,703	1,728	1,838	1,948	2,098	2,223
Production	21,950	22,290	22,370	22,620	22,815	23,065	23,375	23,685	23,935	24,250	24,500	24,815
Imports	288	250	250	250	250	250	250	250	250	250	250	250
Total supply	24,093	24,258	24,278	24,623	24,863	25,053	25,328	25,663	26,023	26,448	26,848	27,288
Domestic disappearance												
Biodiesel ¹	5,675	5,950	6,100	6,200	6,250	6,300	6,350	6,350	6,350	6,350	6,350	6,350
Food, feed, and other industrial	14,460	14,500	14,575	14,700	14,875	15,050	15,225	15,400	15,575	15,750	15,925	16,100
Exports	2,240	2,150	1,850	1,925	2,000	2,000	2,025	2,075	2,150	2,250	2,350	2,450
Total use	22,375	22,600	22,525	22,825	23,125	23,350	23,600	23,825	24,075	24,350	24,625	24,900
Ending stocks, September 30	1,718	1,658	1,753	1,798	1,738	1,703	1,728	1,838	1,948	2,098	2,223	2,388
Soybean oil price (dollars per lb)	0.299	0.340	0.340	0.345	0.350	0.350	0.353	0.355	0.358	0.360	0.365	0.370
Soybean meal (thousand short tons)												
Beginning stocks, October 1	260	264	300	300	300	300	300	300	300	300	300	300
Production	44,672	45,811	46,000	46,400	46,800	47,300	47,850	48,400	48,950	49,500	50,050	50,600
Imports	403	325	300	300	300	300	300	300	300	300	300	300
Total supply	45,335	46,400	46,600	47,000	47,400	47,900	48,450	49,000	49,550	50,100	50,650	51,200
Domestic disappearance												
Exports	11,963	12,000	11,800	11,800	11,700	11,700	11,750	11,800	11,850	11,900	11,950	12,000
Total use	45,071	46,100	46,300	46,700	47,100	47,600	48,150	48,700	49,250	49,800	50,350	50,900
Ending stocks, September 30	264	300	300	300	300	300	300	300	300	300	300	300
Soybean meal price (dollars per ton)	324.56	325.00	335.00	336.50	337.00	341.00	341.50	345.00	347.50	348.50	349.00	349.00
Crushing yields (pounds per bushel)												
Soybean oil	11.64	11.55	11.56	11.57	11.58	11.59	11.60	11.61	11.62	11.63	11.64	11.65
Soybean meal	47.37	47.47	47.55	47.47	47.51	47.54	47.49	47.45	47.52	47.48	47.55	47.51
Crush margin (dollars per bushel)	2.19	2.45	2.54	2.58	2.66	2.71	2.75	2.82	2.86	2.91	2.99	3.05

Note: Marketing year beginning September 1 for soybeans; October 1 for soybean oil and soybean meal.

¹Reflects biodiesel made from methyl ester as reported by the U.S. Department of Energy, Energy Information Administration.

Table 11. U.S. rice long-term projections, total rice, rough basis

Item	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
Area (thousand acres):												
Planted	2,614	3,181	2,700	2,785	2,785	2,810	2,835	2,860	2,885	2,910	2,910	2,910
Harvested	2,575	3,133	2,678	2,764	2,764	2,789	2,814	2,839	2,864	2,889	2,889	2,889
Yield:												
Pounds per harvested acre	7,470	7,493	7,707	7,750	7,786	7,824	7,861	7,901	7,936	7,975	8,013	8,055
Supply and use (million hundredweight):												
Beginning stocks	48.5	46.5	59.7	50.6	47.9	44.6	42.3	40.6	39.9	40.0	40.4	40.5
Production	192.3	234.8	206.4	214.2	215.2	218.2	221.2	224.3	227.3	230.4	231.5	232.7
Imports	24.1	23.5	24.0	24.5	25.1	25.6	26.2	26.7	27.3	27.8	28.4	28.9
Total supply	265.0	304.7	290.1	289.4	288.2	288.5	289.6	291.7	294.5	298.2	300.3	302.1
Domestic use and residual	110.8	133.0	129.0	129.0	129.6	131.7	133.5	135.3	137.0	138.8	139.3	139.9
Exports	107.7	112.0	110.5	112.5	114.0	114.5	115.5	116.5	117.5	119.0	120.5	121.5
Total use	218.5	245.0	239.5	241.5	243.6	246.2	249.0	251.8	254.5	257.8	259.8	261.4
Ending stocks	46.5	59.7	50.6	47.9	44.6	42.3	40.6	39.9	40.0	40.4	40.5	40.7
Stocks/use ratio, percent	21.3	24.4	21.1	19.9	18.3	17.2	16.3	15.8	15.7	15.7	15.6	15.6
Price (dollars per hundredweight):												
Average farm price	12.10	10.60	10.70	10.80	10.90	11.20	11.40	11.70	11.90	12.10	12.30	12.60
Variable costs of production (dollars):												
Per acre	569	567	566	578	586	594	599	606	614	622	629	634
Returns over variable costs (dollars per acre):												
Net returns	335	228	259	259	263	282	297	319	330	343	357	381

Note: Marketing year beginning August 1 for rice.

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

Item	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
Area (thousand acres):												
Planted	1,874	2,449	2,000	2,075	2,075	2,100	2,125	2,150	2,175	2,200	2,200	2,200
Harvested	1,843	2,412	1,984	2,060	2,060	2,085	2,110	2,135	2,160	2,185	2,185	2,185
Yield:												
Pounds per harvested acre	7,218	7,301	7,500	7,538	7,575	7,613	7,651	7,689	7,728	7,766	7,805	7,844
Supply and use (million hundredweight):												
Beginning stocks	26.5	22.7	37.3	29.1	26.9	24.9	24.4	24.3	24.7	25.6	26.5	26.7
Production	133.0	176.1	148.8	155.3	156.0	158.7	161.4	164.2	166.9	169.7	170.5	171.4
Imports	20.9	20.5	21.0	21.5	22.0	22.5	23.0	23.5	24.0	24.5	25.0	25.5
Total supply	180.4	219.3	207.1	205.9	204.9	206.1	208.8	212.0	215.6	219.8	222.0	223.6
Domestic use & residual	81.1	103.0	100.0	99.5	100.0	101.7	103.5	105.3	107.0	108.8	109.3	109.9
Exports	76.5	79.0	78.0	79.5	80.0	80.0	81.0	82.0	83.0	84.5	86.0	87.0
Total use	157.7	182.0	178.0	179.0	180.0	181.7	184.5	187.3	190.0	193.3	195.3	196.9
Ending stocks	22.7	37.3	29.1	26.9	24.9	24.4	24.3	24.7	25.6	26.5	26.7	26.7
Stocks/use ratio, percent	14.4	20.5	16.3	15.0	13.8	13.4	13.2	13.2	13.5	13.7	13.7	13.6
Price (dollars per hundredweight):												
Average farm price	11.10	9.70	9.80	9.90	10.00	10.20	10.40	10.60	10.80	11.00	11.20	11.40

Note: Marketing year beginning August 1 for rice.

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

Item	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
Area (thousand acres):												
Planted	740	732	700	710	710	710	710	710	710	710	710	710
Harvested	732	721	694	704	704	704	704	704	704	704	704	704
Yield:												
Pounds per harvested acre	8,103	8,136	8,300	8,361	8,404	8,446	8,488	8,531	8,573	8,616	8,659	8,702
Supply and use (million hundredweight):												
Beginning stocks	20.2	20.9	19.6	18.7	18.1	16.8	15.0	13.5	12.3	11.5	11.0	10.9
Production	59.3	58.7	57.6	58.9	59.2	59.5	59.8	60.1	60.4	60.7	61.0	61.3
Imports	3.3	3.0	3.0	3.0	3.1	3.1	3.2	3.2	3.3	3.3	3.4	3.4
Total supply	81.8	82.6	80.2	80.6	80.4	79.5	78.0	76.8	76.0	75.5	75.4	75.6
Domestic use & residual	29.6	30.0	29.0	29.5	29.6	30.0	30.0	30.0	30.0	30.0	30.0	30.0
Exports	31.2	33.0	32.5	33.0	34.0	34.5	34.5	34.5	34.5	34.5	34.5	34.5
Total use	60.9	63.0	61.5	62.5	63.6	64.5	64.5	64.5	64.5	64.5	64.5	64.5
Ending stocks	20.9	19.6	18.7	18.1	16.8	15.0	13.5	12.3	11.5	11.0	10.9	11.1
Stocks/use ratio, percent	34.3	31.0	30.3	29.1	26.5	23.2	20.9	19.1	17.8	17.1	16.9	17.2
Price (dollars per hundredweight):												
Average farm price	15.30	13.40	13.40	13.60	13.70	14.20	14.60	15.10	15.60	15.80	16.00	16.30
California	18.30	15.00	15.00	15.10	15.20	15.80	16.20	16.80	17.30	17.50	17.80	18.10
Other States	11.20	9.70	10.00	10.40	10.50	10.90	11.20	11.60	11.90	12.10	12.30	12.50

Note: Marketing year beginning August 1 for rice; California marketing year beginning October 1.

Table 14. U.S. upland cotton long-term projections

Item	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
Area (million acres):												
Planted acres	8.4	10.0	10.5	10.3	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Harvested acres	7.9	9.5	9.5	9.0	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
Yield:												
Pounds per harvested acre	755	791	808	813	818	823	828	833	838	843	848	853
Supply and use (thousand bales):												
Beginning stocks	3,391	3,664	4,402	4,802	4,577	4,227	4,152	4,052	4,027	3,977	4,002	4,002
Production	12,455	15,600	15,900	15,200	14,900	15,000	15,100	15,200	15,300	15,400	15,500	15,500
Imports	30	10	5	5	5	5	5	5	5	5	5	5
Supply	15,876	19,269	20,307	20,015	19,495	19,255	19,285	19,295	19,375	19,435	19,565	19,570
Domestic use	3,425	3,475	3,500	3,525	3,550	3,575	3,600	3,625	3,650	3,675	3,700	3,725
Exports	8,619	11,425	12,000	11,900	11,700	11,500	11,600	11,600	11,700	11,700	11,800	11,800
Total use	12,044	14,900	15,500	15,425	15,250	15,075	15,200	15,225	15,350	15,375	15,500	15,525
Ending stocks	3,664	4,402	4,802	4,577	4,227	4,152	4,052	4,027	3,977	4,002	4,002	3,977
Stocks/use ratio, percent	30.4	29.5	31.0	29.7	27.7	27.5	26.7	26.4	25.9	26.0	25.8	25.6
Price (dollars per pound):												
Farm price	0.612	0.670	0.640	0.640	0.645	0.650	0.655	0.660	0.665	0.670	0.675	0.680
Variable costs of production (dollars):												
Per acre	512	512	516	528	535	542	548	554	562	570	577	583
Returns over variable costs (dollars per acre):												
Net returns ¹	64	132	131	125	130	133	138	142	145	148	151	156

Note: Marketing year beginning August 1 for upland cotton.

¹Includes revenue from cottonseed. In previous years, net returns were calculated using an assumed cottonseed to lint ratio. The current values use projections of cottonseed prices and yields, so are not directly comparable to prior years' values.

Table 15. U.S. sugar long-term projections

Item	Units	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
Sugarbeets													
Planted area	1,000 acres	1,160	1,162	1,210	1,176	1,165	1,121	1,108	1,109	1,072	1,046	1,044	1,028
Harvested area	1,000 acres	1,145	1,126	1,177	1,144	1,138	1,096	1,082	1,082	1,046	1,022	1,020	1,002
Yield	Tons/acre	30.9	32.5	30.5	31.0	31.6	32.1	32.7	33.2	33.8	34.3	34.9	35.4
Production	Mil. s. tons	35.4	36.6	35.9	35.5	36.0	35.2	35.4	36.0	35.3	35.1	35.6	35.5
Sugarcane													
Harvested area	1,000 acres	844	874	895	915	921	916	918	930	930	925	928	931
Yield	Tons/acre	36.5	36.7	35.5	35.5	35.9	36.0	35.9	35.8	35.8	35.9	35.9	35.8
Production	Mil. s. tons	30.8	32.1	31.8	32.5	33.0	33.0	33.0	33.3	33.3	33.2	33.3	33.4
Supply:													
Beginning stocks	1,000 s. tons	1,815	2,055	1,897	1,688	1,711	1,734	1,757	1,780	1,802	1,825	1,848	1,871
Production	1,000 s. tons	8,989	9,331	9,477	9,515	9,660	9,555	9,583	9,719	9,637	9,594	9,690	9,702
Beet sugar	1,000 s. tons	5,119	5,371	5,448	5,386	5,452	5,341	5,359	5,448	5,350	5,310	5,379	5,369
Cane sugar	1,000 s. tons	3,870	3,960	4,029	4,129	4,208	4,214	4,224	4,271	4,288	4,284	4,312	4,333
Total imports	1,000 s. tons	3,341	2,691	2,817	3,181	3,206	3,481	3,622	3,655	3,906	4,118	4,189	4,345
TRQ imports	1,000 s. tons	1,620	1,533	1,522	1,534	1,529	1,776	1,661	1,652	1,912	2,030	2,037	2,091
Imports from Mexico	1,000 s. tons	1,309	1,018	1,155	1,507	1,537	1,565	1,821	1,863	1,854	1,948	2,012	2,113
Other imports	1,000 s. tons	412	140	140	140	140	140	140	140	140	140	140	140
Total supply	1,000 s. tons	14,145	14,077	14,192	14,384	14,577	14,769	14,962	15,154	15,346	15,537	15,728	15,917
Use:													
Exports	1,000 s. tons	74	25	25	25	25	25	25	25	25	25	25	25
Domestic deliveries	1,000 s. tons	12,075	12,155	12,479	12,648	12,818	12,987	13,157	13,326	13,495	13,664	13,832	13,999
Total use	1,000 s. tons	12,090	12,180	12,504	12,673	12,843	13,012	13,182	13,351	13,520	13,689	13,857	14,024
Ending stocks	1,000 s. tons	2,055	1,897	1,688	1,711	1,734	1,757	1,780	1,802	1,825	1,848	1,871	1,893
Raw sugar price:													
New York (No. 16) ¹	Cents/lb.	28.28	28.98	24.63	22.25	25.68	31.07	27.31	25.20	28.22	28.46	31.43	35.06
Raw sugar loan rate	Cents/lb.	18.75	18.75	18.75	18.75	18.75	18.75	18.75	18.75	18.75	18.75	18.75	18.75
Beet sugar loan rate	Cents/lb.	24.09	24.09	24.09	24.09	24.09	24.09	24.09	24.09	24.09	24.09	24.09	24.09
Grower prices:													
Sugarbeets	Dollars/ton	43.50	38.15	37.28	42.63	40.69	45.44	51.95	47.44	45.24	49.08	49.41	53.64
Sugarcane	Dollars/ton	35.96	35.33	40.16	38.07	36.95	40.06	44.85	42.66	41.40	44.16	44.78	47.52

Note: Data shown are for an October-September year.

¹Price for July-September quarter.

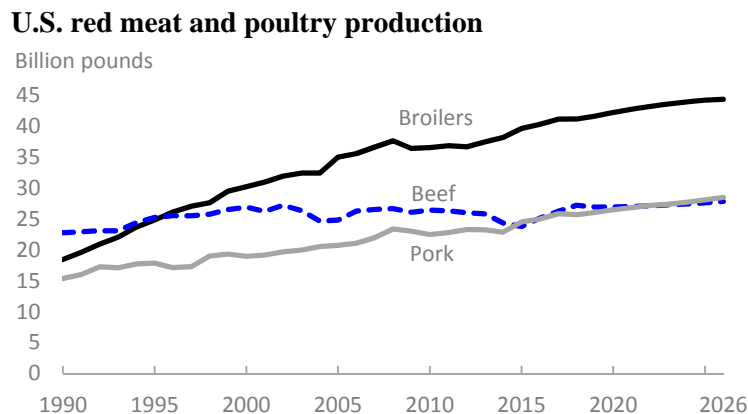
Table 16. Fruit, nuts, and vegetables long-term projections

Item	Unit	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Production, farm weight													
Fruit and nuts	Mil. lbs.	59,935	59,732	58,993	58,840	59,115	59,398	59,688	59,984	60,288	60,598	60,916	61,241
Citrus	Mil. lbs.	18,120	17,114	15,956	15,378	15,224	15,072	14,921	14,772	14,624	14,478	14,333	14,190
Noncitrus	Mil. lbs.	36,717	37,010	37,306	37,604	37,905	38,208	38,514	38,822	39,133	39,446	39,761	40,079
Tree nuts	Mil. lbs.	5,098	5,608	5,731	5,857	5,986	6,118	6,253	6,390	6,531	6,674	6,821	6,971
Vegetables ¹	Mil. lbs.	132,428	131,332	132,827	133,595	134,374	135,166	135,969	136,786	137,614	138,455	139,310	140,177
Fresh market	Mil. lbs.	40,004	40,559	40,600	40,640	40,681	40,721	40,762	40,803	40,844	40,885	40,925	40,966
Processing	Mil. lbs.	38,842	35,787	36,073	36,362	36,653	36,946	37,242	37,540	37,840	38,143	38,448	38,755
Potatoes	Mil. lbs.	44,121	43,956	44,828	44,962	45,097	45,233	45,368	45,504	45,641	45,778	45,915	46,053
Pulses	Mil. lbs.	5,432	6,817	7,001	7,190	7,384	7,584	7,788	7,999	8,215	8,436	8,664	8,898
Other	Mil. lbs.	4,029	4,213	4,325	4,440	4,559	4,682	4,809	4,940	5,075	5,214	5,357	5,505
Total fruit, nuts, vegetables	Mil. lbs.	192,363	191,064	191,820	192,434	193,490	194,565	195,657	196,770	197,902	199,053	200,226	201,418
Farm value													
Fruit and nuts	\$ Mil.	27,069	27,528	28,157	28,917	29,697	30,499	31,323	32,169	33,038	33,930	34,847	35,789
Citrus	\$ Mil.	3,354	3,342	3,327	3,425	3,527	3,631	3,738	3,849	3,963	4,080	4,201	4,325
Noncitrus	\$ Mil.	16,051	16,292	16,699	17,117	17,545	17,983	18,433	18,894	19,366	19,850	20,346	20,855
Tree nuts	\$ Mil.	7,664	7,894	8,131	8,375	8,626	8,885	9,151	9,426	9,709	10,000	10,300	10,609
Vegetables	\$ Mil.	21,218	22,803	23,422	24,056	24,708	25,378	26,064	26,769	27,493	28,235	28,997	29,781
Fresh market	\$ Mil.	11,899	13,539	13,921	14,312	14,715	15,127	15,551	15,985	16,431	16,889	17,359	17,843
Processing	\$ Mil.	2,282	2,090	2,149	2,210	2,272	2,336	2,402	2,470	2,539	2,611	2,684	2,760
Potatoes	\$ Mil.	3,866	3,851	3,959	4,070	4,185	4,302	4,423	4,548	4,675	4,807	4,942	5,081
Pulses	\$ Mil.	1,263	1,393	1,431	1,469	1,509	1,550	1,592	1,635	1,679	1,724	1,770	1,818
Other	\$ Mil.	1,908	1,930	1,962	1,995	2,028	2,062	2,097	2,132	2,168	2,204	2,242	2,279
Total fruit, nuts, vegetables	\$ Mil.	48,287	50,331	51,579	52,973	54,405	55,876	57,387	58,938	60,530	62,165	63,844	65,570

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

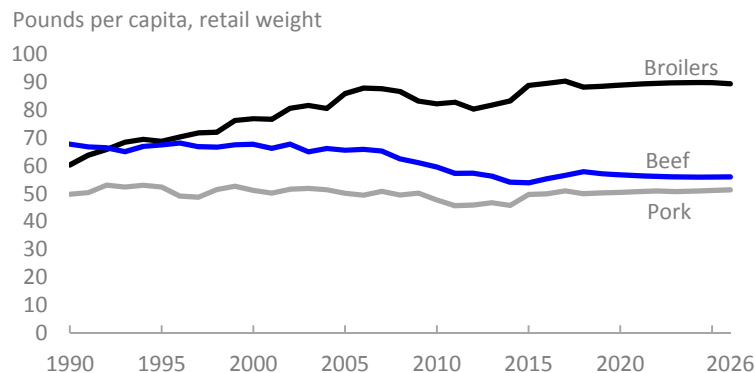
U.S. Livestock

The U.S. livestock sector is projected to grow over the next 10 years. Feed costs play a large role. While the cattle-feed-price ratio is expected to decline over the projection period, suggesting lower returns to production, broiler and hog feed price ratios trend upward. The demand for meats and dairy products in both domestic and international markets is expected to remain strong and, as a result, production of all three increases over the projection period. Milk production also increases over the next decade.



- Beef production is expected to increase early in the forecast period as the herd expansion of 2015 and 2016 results in an increased availability of slaughter cattle. However, the downward trend in the cattle-feed-price ratio reduces production growth over the 2018-26 period. Increased slaughter weights support production gains. Overall, production levels are expected to rise at 1 percent per year, increasing from 25 billion pounds in 2016 to almost 28 billion by 2026.
- Higher hog-feed-price ratios relative to the previous 10 years create greater incentives to increase farrowings and continue the upward trend in pork production, with pork production expected to grow the fastest of the three major meats at 1.3 percent per year. As with beef, increased slaughter weights contribute to the increase in pork production. Pork and beef production begin at almost the same level of production in 2016. By 2026, pork is expected to slightly edge beef production with 28.5 billion pounds of production.
- Over the next decade, broiler and turkey producers are expected to enjoy higher average poultry-feed-price ratios than the previous ten year average, suggesting greater returns to producers and increased production. However, production growth is expected to be slower than in the previous 10-year period, with slower gains in domestic disappearance per capita and strong export competition. While poultry production is expected to continue to increase, growth of slightly less than 1 percent per year will be slower than either beef or pork production. Higher numbers of birds and higher average slaughter weights will both contribute to production growth.

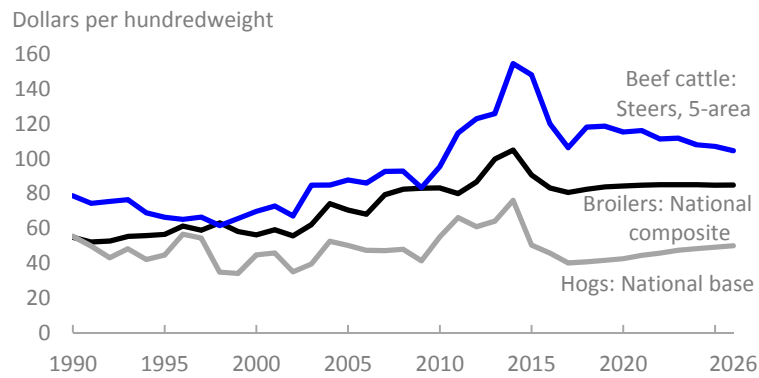
U.S. per capita meat disappearance



Per capita disappearance of red meat (beef and pork) and poultry (broilers and turkey) is projected to rise from roughly 211 pounds per person in 2016 to 214 pounds by 2026. This represents a rebound from the recent low of 199 pounds per person in 2014, a level not seen since 1991.

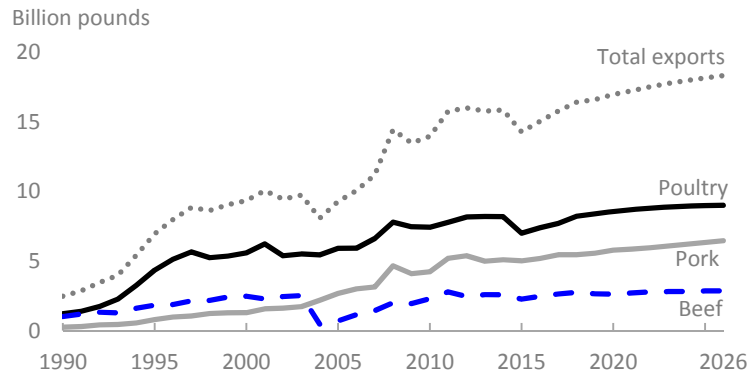
- Per capita beef disappearance is expected to increase in the early years of the projection period, followed by a downward trend in the later years. On average, per capita disappearance averages just over 56 pounds for much of the forecast, up from 55.4 pounds per capita in 2016.
- Production of pork in 2016 and 2017 increased as producers responded to strong returns in 2014 and 2015. Increased per capita pork disappearance reflected the relatively large increase in production. However, growth in per capita disappearance is expected to slow as production slows and exports increase. Population growth will drive the bulk of the increased domestic demand.
- Several years into the projection period, disappearance per capita for both broilers and turkeys stabilize at a higher level than for the previous 10 years. Population growth and rising exports contribute to the growing demand.

U.S. Livestock prices, nominal



- Nominal beef cattle prices drop over the projection period as production slowly increases.
- Nominal broiler and hog prices increase over the next decade as population growth and export demand increases.

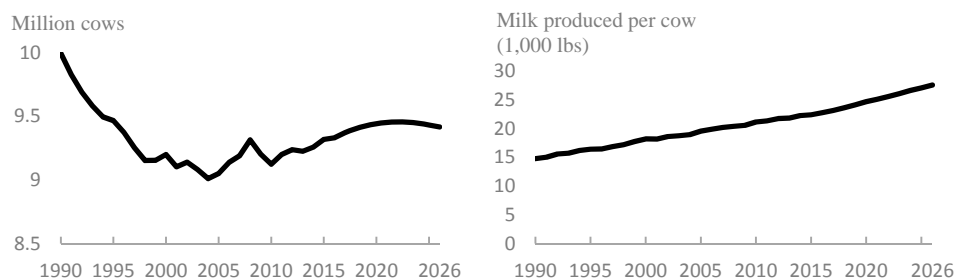
U.S. meat exports



U.S. red meat and poultry exports are projected to rise over the next 10 years as steady global economic growth, particularly in emerging and developing economies, supports foreign demand.

- U.S. beef exports are expected to grow slowly over the next 10 years. The United States maintains its place as the fourth largest exporter of beef in the world, behind Australia, India, and Brazil. The U.S. share of global exports among the top 11 major exporting regions of the world holds relatively steady, averaging just over 12 percent. The United States is projected to remain the largest importer of beef in the world.
- U.S. pork exports are projected to grow faster than beef exports. Production efficiency gains in the hog sector continue to enhance the sector's international competitiveness. The United States will maintain its position as second largest exporter of pork, behind the EU, while exporting close to twice that of the third largest exporter, Canada. Over the next decade, the EU is expected to increase its market share, growing from almost 35 percent of the global export market to over 38 percent, while the U.S. and Canadian shares drop slightly.
- U.S. poultry exports (including broilers, turkey, and mature chickens) are expected to grow faster in the first part of the projection period due to an ongoing recovery from avian influenza. The United States is expected to retain its position as second largest exporter of poultry after Brazil while the EU remains a distant third, exporting roughly one-third of U.S. levels.

U.S. dairy herd and milk production per cow



Milk production is expected to rise at a compound annual growth rate of 2.2 percent per year over the next 10 years. Strong domestic and global demand for dairy products combined with more favorable milk-feed price ratios provide incentives for producers to expand milk cow numbers. Furthermore, the milk industry continues its efficiency gains as the amount of milk produced per cow is expected to remain on the long-term upward trend.

- After a long downward trend, milk cows reached a low point of 9.0 million head in 2004. Since then, cow numbers have fluctuated but trended slightly upward, reaching 9.3 million head in 2015. Milk cow numbers are expected to increase to nearly 9.5 million head by 2022 due to rising milk prices and relatively low feed prices. Gains in milk per cow contribute to a slight reduction in milk cow numbers in the following years, declining to about 9.4 million head by 2026.
- Through 2026, output per cow is projected to grow at an average annual rate of 1.9 percent, faster than the 1.4 percent annual growth rate from 2005 to 2015. Relatively low projected feed prices, advances in technology, genetic developments, and increased economies of scale due to consolidation drive this increased output.
- Domestic demand grows at a strong pace, with commercial use of dairy products rising faster than the growth in U.S. population over the next decade. Demand for cheese is expected to rise due to greater consumption of prepared foods and increased away-from-home eating. Butter demand is also expected to grow, in part due to changing consumer perceptions about health implications of consuming milk fat. A decline in per capita consumption of fluid milk products is expected to continue.
- Commercial exports of U.S. dairy products are projected to grow over the next 10 years, led by the exports of goods with high skim-solids content, such as nonfat dry milk and whey products. By 2026, dairy exports are expected to reach 4.9 percent of milk production on a milk-fat milk-equivalent basis and 21.0 percent on a skim-solids milk-equivalent basis.
- After a fall in prices from 2015 to 2016, nominal farm-level milk prices are expected to increase over the projection period largely due to increases in demand, both domestic and global. After 2016, prices for dairy products generally rise faster over the first few years and grow more slowly in the second half of the projection period.

Table 17. Per capita meat consumption, retail weight

Item	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
	<i>Pounds</i>											
Beef	53.9	55.4	56.6	57.9	57.1	56.8	56.4	56.1	56.1	56.0	56.0	56.0
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	49.7	49.9	51.0	50.0	50.3	50.4	50.7	51.0	50.7	50.9	51.1	51.4
Lamb and mutton	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Total red meat	104.8	106.6	108.8	109.0	108.5	108.4	108.2	108.2	107.9	108.0	108.2	108.4
Broilers	88.9	89.6	90.4	88.3	88.5	89.0	89.4	89.6	89.8	89.8	89.8	89.5
Other chicken	1.2	1.2	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Turkeys	16.0	16.8	17.0	17.0	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1
Total poultry	106.0	107.7	108.7	106.7	107.0	107.5	107.9	108.2	108.3	108.4	108.4	108.0
Red meat & poultry	210.8	214.3	217.5	215.7	215.5	215.8	216.1	216.3	216.2	216.3	216.5	216.5

Table 18. Beef long-term projections

Item	Units	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Beginning stocks	Mil. lbs.	591	683	700	600	560	560	560	560	560	560	560	560
Commercial production	Mil. lbs.	23,698	25,055	26,160	27,143	26,853	26,844	26,919	27,025	27,206	27,332	27,532	27,742
Change from previous year	Percent	-2.3	5.7	4.4	3.8	-1.1	0.0	0.3	0.4	0.7	0.5	0.7	0.8
Farm production	Mil. lbs.	62	64	64	64	64	64	64	64	64	64	64	64
Total production	Mil. lbs.	23,760	25,119	26,224	27,207	26,917	26,908	26,983	27,089	27,270	27,396	27,596	27,806
Imports	Mil. lbs.	3,371	3,011	2,680	2,748	2,820	2,854	2,870	2,896	2,935	2,973	2,990	2,994
Total supply	Mil. lbs.	27,722	28,813	29,604	30,555	30,297	30,322	30,413	30,545	30,765	30,929	31,146	31,360
Exports	Mil. lbs.	2,265	2,459	2,630	2,747	2,639	2,621	2,699	2,776	2,805	2,819	2,846	2,857
Ending stocks	Mil. lbs.	683	700	600	560	560	560	560	560	560	560	560	560
Total consumption	Mil. lbs.	24,774	25,654	26,374	27,248	27,098	27,141	27,154	27,209	27,400	27,550	27,740	27,943
Per capita, retail weight	Pounds	53.9	55.4	56.6	57.9	57.1	56.8	56.4	56.1	56.1	56.0	56.0	56.0
Change from previous year	Percent	-0.4	2.8	2.1	2.3	-1.3	-0.6	-0.7	-0.5	0.0	-0.2	0.0	0.0
Prices:													
Beef cattle, farm	\$/cwt	147.92	119.47	105.87	117.57	118.15	114.88	115.69	110.80	111.32	107.53	106.63	104.16
Calves, farm	\$/cwt	263.00	171.85	165.24	172.03	169.23	156.15	152.81	145.33	145.10	141.66	140.56	138.81
Steers, 5-area	\$/cwt	148.12	119.94	106.25	117.99	118.57	115.28	116.10	111.19	111.71	107.90	107.00	104.52
Feeder steers, Oklahoma City	\$/cwt	202.92	144.25	139.00	144.71	142.36	131.36	128.54	122.25	122.06	119.16	118.24	116.77
Feed price ratio:													
Beef cattle-corn	Ratio	40.0	33.1	32.1	35.6	35.3	34.3	33.5	31.7	31.4	29.9	29.2	28.5
Cattle inventory	1,000 head	89,143	91,988	93,300	93,700	94,200	94,600	94,900	95,100	95,200	95,300	95,400	95,450
Beef cow inventory	1,000 head	29,302	30,331	30,944	30,616	31,121	31,328	31,785	31,668	31,650	31,428	31,364	31,246
Total cow inventory	1,000 head	38,609	39,646	40,300	40,000	40,532	40,755	41,222	41,108	41,086	40,856	40,779	40,645

Note: Cwt = hundredweight.

Table 19. Pork long-term projections

Item	Units	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Beginning stocks	Mil. lbs.	559	590	625	635	635	635	640	645	650	660	670	680
Commercial production	Mil. lbs.	24,501	24,946	25,800	25,653	26,009	26,447	26,788	27,156	27,330	27,685	28,055	28,443
Change from previous year	Percent	7.3	1.8	3.4	-0.6	1.4	1.7	1.3	1.4	0.6	1.3	1.3	1.4
Farm production	Mil. lbs.	16	16	16	16	16	16	16	16	16	16	16	16
Total production	Mil. lbs.	24,517	24,961	25,816	25,669	26,025	26,463	26,804	27,172	27,346	27,701	28,071	28,459
Imports	Mil. lbs.	1,116	1,106	1,095	1,000	1,040	1,058	1,072	1,086	1,093	1,107	1,122	1,138
Total supply	Mil. lbs.	26,192	26,657	27,536	27,304	27,700	28,156	28,516	28,903	29,089	29,468	29,863	30,277
Exports	Mil. lbs.	5,009	5,179	5,440	5,445	5,566	5,778	5,843	5,946	6,082	6,200	6,330	6,458
Ending stocks	Mil. lbs.	590	625	635	635	635	640	645	650	660	670	680	690
Total consumption	Mil. lbs.	20,593	20,853	21,461	21,224	21,499	21,738	22,028	22,307	22,347	22,598	22,853	23,129
Per capita, retail weight	Pounds	49.7	49.9	51.0	50.0	50.3	50.4	50.7	51.0	50.7	50.9	51.1	51.4
Change from previous year	Percent	8.5	0.5	2.2	-2.0	0.5	0.3	0.6	0.5	-0.6	0.4	0.4	0.5
Prices:													
Hogs, farm	\$/cwt	53.53	49.10	43.60	42.67	43.57	44.63	46.60	47.91	49.73	50.67	51.56	52.41
National base, live equivalent	\$/cwt	50.23	45.65	40.00	40.64	41.50	42.50	44.38	45.63	47.36	48.26	49.11	49.91
Feed price ratio:													
Hog-corn	Ratio	14.5	13.6	13.2	12.9	13.0	13.3	13.5	13.7	14.0	14.1	14.1	14.4
Hog inventory,													
December 1, previous year	1,000 head	67,776	68,919	69,925	69,900	70,429	71,080	71,586	72,132	72,390	72,918	73,467	74,043

Note: Cwt = hundredweight.

Table 20. Young chicken long-term projections

Item	Units	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Beginning stocks	Mil. lbs.	680	832	760	715	715	715	715	715	715	715	715	715
Federally inspected slaughter	Mil. lbs.	40,048	40,725	41,550	41,567	42,053	42,643	43,180	43,645	44,032	44,374	44,663	44,796
Change from previous year	Percent	3.8	1.7	2.0	0.0	1.2	1.4	1.3	1.1	0.9	0.8	0.7	0.3
Production	Mil. lbs.	39,620	40,289	41,105	41,123	41,603	42,187	42,718	43,178	43,560	43,899	44,185	44,317
Total supply	Mil. lbs.	40,430	41,249	41,997	41,971	42,452	43,037	43,569	44,030	44,413	44,753	45,040	45,173
Change from previous year	Percent	3.8	2.0	1.8	-0.1	1.1	1.4	1.2	1.1	0.9	0.8	0.6	0.3
Exports	Mil. lbs.	6,321	6,666	6,925	7,402	7,530	7,678	7,796	7,880	7,950	8,012	8,042	8,066
Ending stocks	Mil. lbs.	832	760	715	715	715	715	715	715	715	715	715	715
Consumption	Mil. lbs.	33,277	33,823	34,357	33,854	34,207	34,644	35,058	35,435	35,748	36,026	36,283	36,392
Per capita, retail weight	Pounds	88.9	89.6	90.4	88.3	88.5	89.0	89.4	89.6	89.8	89.8	89.8	89.5
Change from previous year	Percent	6.7	0.9	0.9	-2.4	0.3	0.5	0.4	0.3	0.2	0.1	0.0	-0.4
Prices:													
Broilers, farm	Cents/lb.	52.9	47.9	46.4	49.3	50.2	50.5	50.8	50.9	51.0	51.0	50.8	50.8
Broilers, National composite	Cents/lb.	90.5	83.1	80.5	82.4	83.7	84.2	84.6	84.9	84.9	84.9	84.7	84.7
Feed price ratio:													
Broiler-feed ¹	Ratio	4.9	4.8	4.7	4.9	5.0	5.0	5.0	5.0	4.9	4.9	4.9	4.9

¹Broiler feed price based on 58 percent corn price and 42 percent soybean price, as used by USDA, National Agricultural Statistics Service.

Table 21. Turkey long-term projections

Item	Units	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Beginning stocks	Mil. lbs.	193	201	240	250	250	250	250	250	250	250	250	250
Production	Mil. lbs.	5,627	6,020	6,135	6,266	6,374	6,442	6,495	6,558	6,602	6,655	6,703	6,751
Total supply	Mil. lbs.	5,865	6,270	6,415	6,552	6,660	6,728	6,781	6,844	6,888	6,941	6,989	7,037
Change from previous year	Percent	-2.6	6.9	2.3	2.1	1.6	1.0	0.8	0.9	0.6	0.8	0.7	0.7
Exports	Mil. lbs.	529	575	630	689	733	757	766	787	792	799	804	810
Ending stocks	Mil. lbs.	201	240	250	250	250	250	250	250	250	250	250	250
Consumption	Mil. lbs.	5,135	5,455	5,535	5,613	5,677	5,721	5,765	5,807	5,846	5,892	5,935	5,977
Per capita	Pounds	16.0	16.8	17.0	17.0	17.1	17.1	17.1	17.1	17.1	17.1	17.1	17.1
Change from previous year	Percent	0.9	5.4	0.8	0.4	0.4	0.0	0.0	0.0	-0.1	0.1	0.0	0.0
Prices:													
Turkey, farm	Cents/lb.	81.1	83.8	82.0	78.5	78.0	76.0	75.1	75.1	75.4	75.8	76.2	76.6
Hen turkeys, National	Cents/lb.	116.2	118.0	115.5	110.6	109.8	107.1	105.8	105.7	106.3	106.8	107.4	107.9
Feed price ratio:													
Turkey-feed ¹	Ratio	8.0	9.1	9.5	9.0	8.7	8.4	8.2	8.1	8.1	8.0	8.0	8.0

¹Turkey 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.

Table 22. Egg long-term projections

Item	Units	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Beginning stocks	Mil. doz.	23	31	27	27	20	20	20	20	20	20	20	20
Production	Mil. doz.	7,975	8,373	8,540	8,711	8,885	9,018	9,136	9,236	9,338	9,441	9,544	9,640
Change from previous year	Percent	-5.4	5.0	2.0	2.0	2.0	1.5	1.3	1.1	1.1	1.1	1.1	1.0
Imports	Mil. doz.	124	102	60	45	45	45	45	45	45	45	45	45
Total supply	Mil. doz.	8,122	8,506	8,627	8,783	8,950	9,083	9,201	9,301	9,403	9,506	9,609	9,705
Change from previous year	Percent	-4.3	4.7	1.4	1.8	1.9	1.5	1.3	1.1	1.1	1.1	1.1	1.0
Hatching use	Mil. doz.	996	1,007	1,040	1,045	1,051	1,061	1,071	1,080	1,087	1,094	1,099	1,102
Exports	Mil. doz.	314	275	295	314	320	325	328	331	334	337	340	343
Ending stocks	Mil. doz.	31	27	27	20	20	20	20	20	20	20	20	20
Consumption	Mil. doz.	6,782	7,197	7,265	7,404	7,559	7,677	7,782	7,871	7,962	8,055	8,151	8,240
Per capita	Number	253.0	266.5	267.2	269.7	273.2	275.4	277.1	278.2	279.3	280.6	281.9	283.0
Change from previous year	Percent	-5.3	5.3	0.3	0.9	1.3	0.8	0.6	0.4	0.4	0.4	0.5	0.4
Prices:													
Eggs, farm	Cents/doz.	164.5	74.2	81.1	83.7	81.0	81.9	83.7	84.6	85.5	85.5	85.5	86.4
New York, Grade A large	Cents/doz.	181.8	84.0	91.8	93.0	90.0	91.0	93.0	94.0	95.0	95.0	95.0	96.0
Feed price ratio:													
Egg-feed ¹	Ratio	18.0	8.7	9.8	10.1	9.6	9.7	9.8	9.8	9.8	9.7	9.6	9.7

¹/ Egg feed price based on 75 percent corn price and 25 percent soybean price, as used by USDA, National Agricultural Statistics Service.

Table 23. Dairy long-term projections

Item	Units	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Milk production and marketings:													
Number of cows	Thousand	9,317	9,330	9,370	9,400	9,425	9,440	9,450	9,455	9,450	9,445	9,430	9,415
Milk per cow	Pounds	22,394	22,765	23,160	23,625	24,130	24,675	25,095	25,570	26,065	26,635	27,065	27,585
Milk production	Bil. lbs.	208.6	212.5	217.0	222.1	227.4	232.9	237.1	241.8	246.3	251.6	255.2	259.7
Farm use	Bil. 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	Bil. lbs.	207.7	211.5	216.0	221.1	226.4	231.9	236.1	240.8	245.3	250.6	254.2	258.7
Supply and use, milkfat basis:													
Beginning commercial stocks	Bil. lbs.	11.2	13.3	13.4	12.8	12.8	13.2	13.6	13.9	14.3	14.7	15.1	15.5
Marketings	Bil. lbs.	207.7	211.5	216.0	221.1	226.4	231.9	236.1	240.8	245.3	250.6	254.2	258.7
Imports	Bil. lbs.	5.7	7.2	7.1	6.8	6.5	6.1	5.7	5.3	4.9	4.5	4.2	3.8
Commercial supply	Bil. lbs.	224.6	232.0	236.4	240.7	245.7	251.2	255.4	260.0	264.5	269.8	273.5	278.0
Domestic commercial use	Bil. lbs.	202.5	209.9	214.7	218.4	222.6	227.2	230.7	234.4	238.2	242.5	245.6	249.5
Commercial exports	Bil. lbs.	8.8	8.7	8.9	9.5	9.9	10.4	10.8	11.3	11.6	12.2	12.4	12.7
Ending commercial stocks	Bil. lbs.	13.3	13.4	12.8	12.8	13.2	13.6	13.9	14.3	14.7	15.1	15.5	15.8
Supply and use, skim solids basis:													
Beginning commercial stocks	Bil. lbs.	13.1	13.9	13.5	13.2	13.2	13.5	13.8	14.2	14.5	14.9	15.3	15.8
Marketings	Bil. lbs.	207.7	211.5	216.0	221.1	226.4	231.9	236.1	240.8	245.3	250.6	254.2	258.7
Imports	Bil. lbs.	6.0	6.6	6.4	6.2	6.1	5.9	5.8	5.7	5.7	5.6	5.5	5.5
Commercial supply	Bil. lbs.	226.7	231.9	235.8	240.5	245.7	251.3	255.7	260.7	265.5	271.1	275.0	280.0
Domestic commercial use	Bil. lbs.	175.5	180.0	182.9	184.2	186.9	190.5	192.9	196.3	199.4	203.3	205.7	209.2
Commercial exports	Bil. lbs.	37.3	38.4	39.7	43.1	45.3	47.0	48.6	49.9	51.2	52.5	53.5	54.6
Ending commercial stocks	Bil. lbs.	13.9	13.5	13.2	13.2	13.5	13.8	14.2	14.5	14.9	15.3	15.8	16.2
Prices:													
All milk	\$/cwt	17.12	16.05	16.75	17.60	17.90	18.30	18.45	18.70	18.95	19.20	19.35	19.65
Cheese	\$/lb.	1.65	1.60	1.66	1.73	1.77	1.81	1.81	1.82	1.84	1.86	1.85	1.86
Butter	\$/lb.	2.07	2.05	1.87	1.94	1.92	1.92	1.94	1.94	1.98	1.97	2.02	2.07
Nonfat dry milk	\$/lb.	0.90	0.83	0.97	1.08	1.11	1.15	1.19	1.22	1.25	1.29	1.32	1.35
Dry whey	\$/lb.	0.38	0.28	0.37	0.40	0.41	0.41	0.43	0.44	0.45	0.45	0.47	0.48

Note: Cwt = hundredweight.

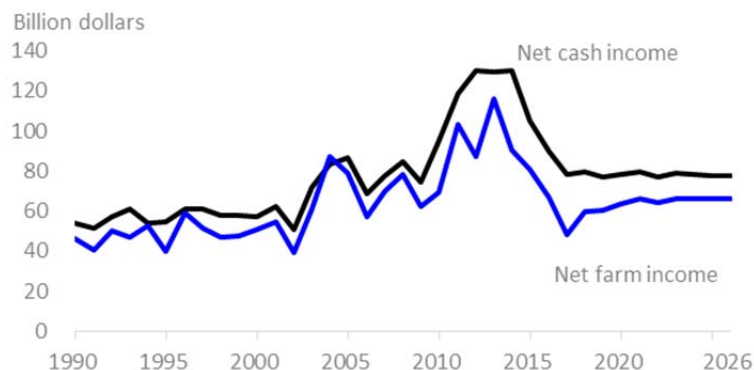
Totals may not add due to rounding.

U.S. Farm Income

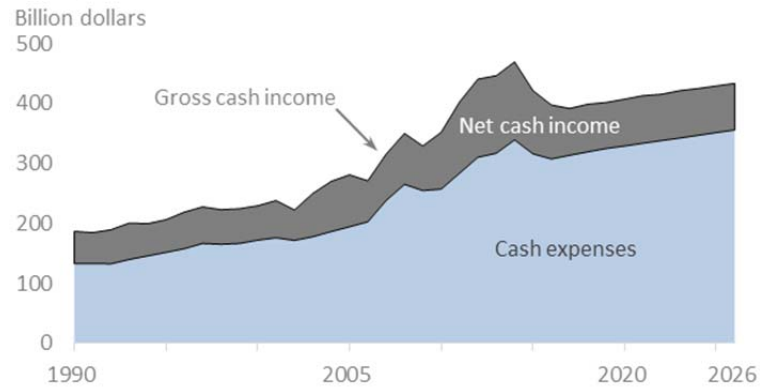
Net cash income and net farm income initially continue to fall from recent record highs. Net cash income declines through 2019 before generally remaining steady over the latter part of the projection period. Net farm income declines in 2017 then increases back to 2016 levels in later years.

- Farm cash receipts drop in 2017, primarily due to lower expected beef, pork, and poultry prices. Cash receipts then grow over the rest of the projection period as steady domestic and international economic growth support longer term demand for U.S. agricultural products.
- Total direct Government payments are projected to increase from \$12.9 billion in 2016 to \$13.6 billion in 2017 and then fall to a low of \$7.5 billion in 2019 as commodity prices begin to rise. Government payments are projected to increase again in 2020 and remain fairly steady over the remainder of the projection period.
- Total farm production expenses and cash expenses fell in 2015 and 2016 as declines in feed costs and energy-related input prices combined with reduced acreage to lower expenses for farm-origin and manufactured inputs. Nominal farm production expenses are projected to increase after 2017 and through the remainder of the projection period as crude oil prices, interest rates, and inflation all are expected to rise.

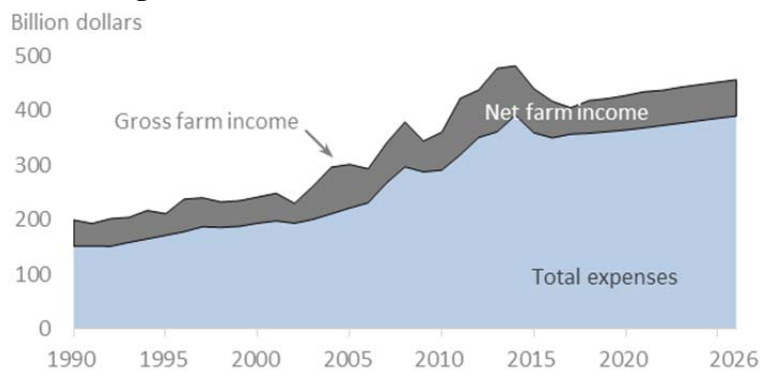
U.S. farm income indicators



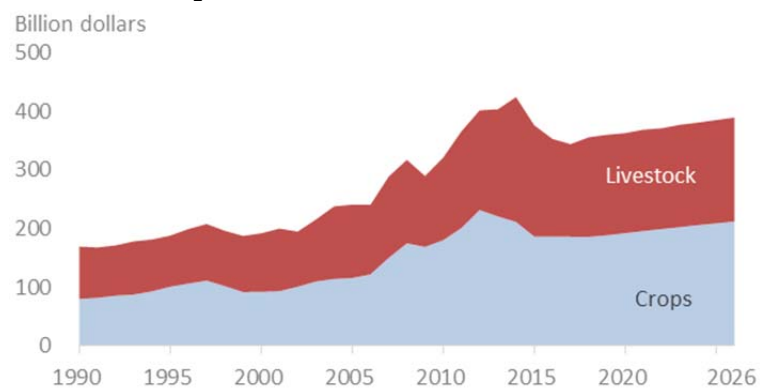
U.S. gross cash income

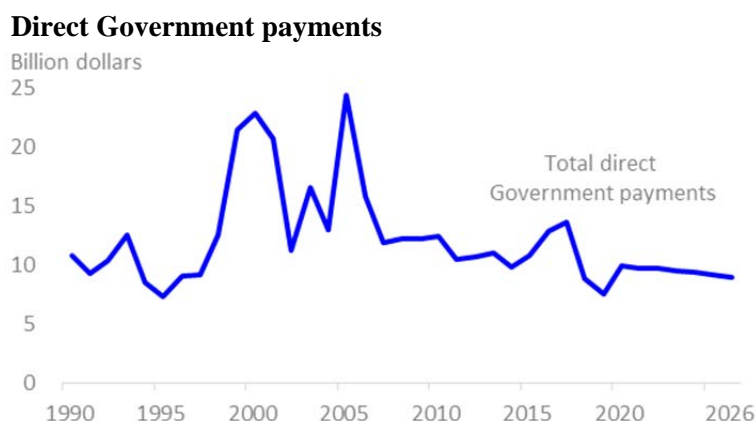


U.S. total gross income



U.S. cash receipts

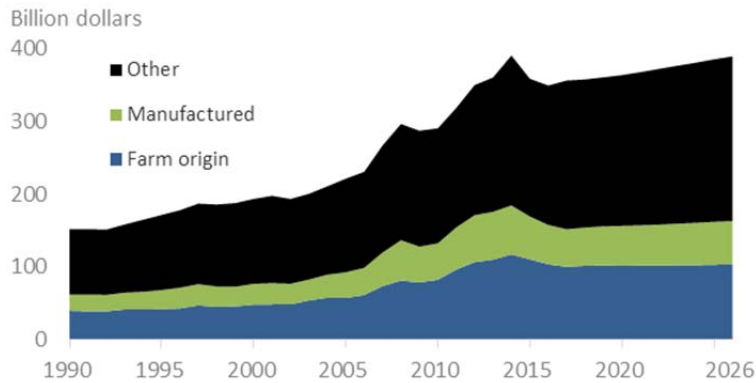




Direct Government payments to farmers grow in 2016, mostly due to ARC and PLC payments under the 2014 Farm Act. After falling to \$7.5 billion in 2019, direct Government payments rise again in 2020 largely due to an expected shift in the use of Federal programs. Government payments are expected to fall from 2020 to just under \$9 billion by 2026, averaging less than \$10 billion per year over 2020-26 compared to an annual average of more than \$15 billion in 2001-10. The CRP, ARC, and PLC provide the largest direct Government payments to the agricultural sector over the projection period

- Acreage enrolled in the CRP is assumed to be at or slightly less than its legislative maximum of 24 million acres under the 2014 Farm Act. As crop prices begin to rise again, average rental rates for land in the CRP will also increase. CRP payments are therefore projected to gradually increase from about \$1.8 billion in 2015 to \$2.4 billion in 2026.
- Payments under the ARC and PLC programs decline after 2016 from about \$9.6 billion to just under \$2.3 billion in 2019, reflecting reductions in crop prices from relatively high levels of recent years. While these payments fall as crop prices rise, they jump to nearly \$3.2 billion in 2020 as some producers are assumed to shift to PLC. (The initial producer election of ARC or PLC under the Agricultural Act of 2014 covers 2014-18 crops. For projections beyond those years, another enrollment election is assumed to be available for 2019-26 crops.) The ARC and PLC payments continue to fall over the remainder of the projection period to \$2.4 billion while overall direct Government payments drop to just under \$9 billion from the high of \$13.6 billion in 2017, again reflecting rising crop prices.

U.S. farm production expenses



- Total farm production expenses continue to fall through 2017 as declining agricultural commodity prices reduced farm-origin costs (e.g., feed, seed, livestock purchases) while lower planted acreage and crude oil prices reduced manufactured input expenses (e.g., fuel, fertilizer, pesticides). Production expenses rise after 2017, although total increases are less rapid than the overall rate of inflation through 2026. While expenses for farm-origin inputs, other manufactured inputs, and aggregate expenses for other nonfarm-origin inputs grow slower than the general inflation rate, interest expenses and fuel and oil costs rise faster than the general inflation rate during these years.
- Interest costs rise faster than the general inflation rate over the projection period, reflecting rising farm debt levels as well as increasing interest rates due largely to tightening monetary policy.
- Production expenses for fuel and oil also rise faster than the general inflation rate after 2017 due to expected increases in crude oil prices. Projected declining planted acreage combined with anticipated higher domestic nitrogen fertilizer production capacity and relatively low natural gas prices serve to lower fertilizer expenses in the near term, with these costs rising more slowly than the general rate of inflation later in the projection period.

Table 24. Farm receipts, expenses, and income, long-term projections

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
	<i>Billion dollars</i>											
Cash income statement												
Cash receipts:	376.3	352.9	344.0	355.8	359.9	362.8	368.7	371.0	377.0	380.7	385.1	389.3
Crops	186.5	186.5	186.2	186.0	188.8	192.2	196.0	199.2	202.5	206.0	209.1	212.1
Livestock	189.8	166.4	157.8	169.7	171.2	170.6	172.7	171.8	174.5	174.7	176.0	177.2
Direct government payments	10.8	12.9	13.6	8.8	7.5	10.0	9.8	9.7	9.5	9.4	9.1	8.9
Farm-related income	34.4	31.8	34.0	34.1	34.3	34.4	34.5	34.6	34.7	34.8	35.0	35.1
Gross cash income	421.4	397.5	391.7	398.7	401.7	407.2	412.9	415.3	421.3	424.9	429.2	433.3
Cash expenses	315.9	307.4	313.4	319.3	325.0	329.1	333.6	338.0	342.3	346.9	351.4	355.8
Net cash income	105.5	90.1	78.3	79.4	76.7	78.1	79.4	77.3	79.1	78.0	77.8	77.5
Farm income statement												
Gross cash income	421.4	397.5	391.7	398.7	401.7	407.2	412.9	415.3	421.3	424.9	429.2	433.3
Non-money income	17.8	18.7	17.6	18.2	18.7	19.3	20.0	20.4	20.7	21.1	21.5	21.8
Value of inventory change	0.5	0.3	-4.6	0.9	1.1	0.8	1.0	1.0	0.5	1.0	0.7	0.7
Gross farm income	439.7	416.5	404.7	417.9	421.5	427.2	433.9	436.7	442.6	447.0	451.4	455.9
Total expenses	358.8	349.6	356.4	358.0	360.9	363.9	367.9	372.4	376.7	381.0	385.5	389.6
Net farm income	80.9	66.9	48.3	59.9	60.6	63.3	66.0	64.3	65.9	66.0	65.9	66.2

The projections were completed in December 2016. History for 2015 and short-term forecasts for 2016 are from USDA-Economic Research Service, November 30, 2016.

Agricultural Trade

Global agricultural trade is projected to grow through 2026/27, at a slightly slower pace than during the previous decade. Growth in trade reflects strong global demand for most commodities, driven by increasing and changing global food demand. Growth in global agricultural production is due to expanding area, especially in Brazil, and increasing productivity through higher yields and new technologies. Agricultural production is projected to increase more rapidly than world population, enabling an increase in per capita use of most agricultural products. Together, these trends result in modest increases in the nominal prices of agricultural commodities throughout the projection period, but in real (inflation-adjusted) terms, global prices fall slightly.

Low- and middle-income countries are the main sources of growing food and feed demand and are projected to account for most of the increase in world consumption and imports of basic agricultural commodities over the coming decade. Developing countries account for more than four-fifths of the projected increase in global demand for meat, grains, and oilseeds and virtually all of the growth in cotton consumption. Demand for agricultural products in developing countries increases faster than production, leading to growing import demand.

In addition to rising household incomes and relatively stable real commodity prices, several longer term demographic and economic trends are driving higher world demand for these commodities. An important factor is world population growth, with an annual rate of about 1 percent over the next decade. The populations of low- and middle-income countries are increasing the fastest. Moreover, these same countries are experiencing rising per capita incomes, further urbanization, upgraded infrastructures, better access to modern food markets, and changing diets and preferences. Large numbers of once-poor consumers are spending their higher incomes on more varied and higher value foods. Urbanization and modern food retailers expose these same consumers to new types of food, and improved infrastructure and food retail chains make it possible for more food options to reach more consumers. Taken together, these factors stimulate world demand for grains, oilseeds, and livestock products.

World economic growth is projected to increase over the next decade, with an average annual GDP growth rate of 2.9 percent, but slower than the growth observed from 2000-2015. Real GDP in developed economies is projected to grow at 1.8 percent annually through 2026/27, while the faster growing emerging economies are projected to grow at a rate of about 4.5 percent annually. The fastest projected growing economies are in Asia, with India, Vietnam and Cambodia growing at annual rates of 7.6 percent, 6.2 percent, and 5.2 percent, respectively. China's projected economic growth rate is 5.4 percent. The world population is 7.3 billion in 2016; and

General International Assumptions

Trade projections to 2026 are based on economic relationships and assumptions concerning trends in area, yields, and consumption. The development and use of technology and changes in consumer preferences are assumed to continue evolving based on their past performance and the consensus judgment of USDA analysts regarding future developments. The projections also reflect the effects of trade agreements, sanitary and phytosanitary restrictions, and domestic policies in place or authorized by November 2016. International macroeconomic assumptions used in the projections were completed in October 2016.

with a projected annual growth rate of 1.0 percent, roughly 758 million people will be added over the next decade. Population growth is fastest in Africa, with projected annual growth rates of 2.4 percent for Sub-Saharan Africa and 2.2 percent for North Africa. The population of the largest countries—China and India—will continue to grow, but population growth has a larger impact on India, which adds 146 million people by 2026/27, while China adds 28 million people.

Growing global consumption drives trade

Growing global demand for agricultural commodities, especially by low-income countries, leads to increasing world imports over the projection period. Expanding trade is expected for all of the agricultural commodities studied with the exception of sorghum. The food grains—wheat and rice—exhibit relatively strong demand in lower- to middle- income countries. Wheat, among the world's most traded commodities, is projected to show an increase in trade by almost 15 percent over the 10-year projection period, reaching 197.5 million metric tons by 2026/27. Developing countries throughout the world exhibit the strongest growth in wheat imports, due to rising incomes and populations. Both India and China are self-sufficient in wheat production and contribute little to increasing global trade throughout the projection period.

Rice trade is projected to increase by 14 percent, increasing to almost 48 million metric tons by 2026/27. Projected rice imports grow the fastest in West Africa, the rest of Sub-Saharan Africa, and the Middle East; these three regions account for 76 percent of the increase in world rice imports through 2026/27. China is the world's largest rice importer, but its rice imports decline throughout the projection period. Over the past 3 years, India was the largest rice-exporting country, followed by Thailand and Vietnam.

Global soybean trade is projected to increase by 25 percent during the projection period, adding 36 million metric tons and reaching almost 180 million metric tons by 2026/27. China's soybean imports account for 85 percent of this projected increase. Soybean oil trade increases by 27 percent over the projection period, adding 3.2 million metric tons to trade. India is the largest soybean oil importer and accounts for 35 percent of this projected increase in imports. Trade in palm and coconut oil expands by over 24 percent to 70.8 million metric tons by 2026/27. Malaysia and Indonesia account for almost 90 percent of world exports of these products.

Global corn trade increases by almost 18 percent over the projection period, adding over 25 million metric tons to trade with exports of 168 million metric tons by 2026/27. Mexico, Egypt, Iran, China and Vietnam account for a little over 62 percent of this increased import demand. Only one commodity exhibits a decrease in world trade over the projection period—sorghum—as China is projected to decrease sorghum imports. Projected global sorghum trade decreases by almost 22 percent to 5.3 million metric tons by 2026/27. World sorghum trade was largest in 2014/15, at 12.2 million metric tons, due to increased imports by China, which accounted for 83 percent of world sorghum imports at the time. Barley trade expands over the projection period by about 7 percent, driven mostly by increasing feed demand in the Middle East and North Africa. Barley trade is projected to increase to 28 million metric tons by 2026/25, which still falls short of the record of 30 million metric tons established in 2015/16.

Poultry trade expands the most among livestock products. Poultry exports by the major poultry exporting countries increase by almost 24 percent, reaching more than 14.0 million metric tons by 2026/27 and adding nearly 3.0 million metric tons over the projection period. Beef exports by the

major beef-exporting countries expand by 18 percent, reaching almost 11.0 million metric tons and adding 1.7 million metric tons to trade by 2026. Major pork exporters expand trade by 11 percent, reaching more than 9 million metric tons by 2026.

Cotton trade increases throughout the projection period and by 2026/27 reaches 47.4 million bales, surpassing the record of 46.3 billion bales set in 2012/13. After China draws down surplus stocks early in the projection period, the country's cotton imports are projected to recover by the end of the projection period. Bangladesh, Vietnam, and Turkey are the next largest cotton-importing countries and are also projected to increase imports.

Global wheat and rice consumption

Wheat is a staple food in many countries and has been used to produce bread or noodles for several centuries, but certain types of wheat products are fairly new to many countries, such as cookies, packaged noodle-based meals, and various desserts. Over the projection period, wheat consumption increases by 61 million metric tons or over 8 percent above current consumption levels. Five countries account for over half of this increase: China (23 percent), India (23 percent), and Egypt, Pakistan, and Indonesia (which account for a combined 12 percent). The increased wheat consumption is driven by uses as a staple food, various wheat-based non-staple foods, for livestock feed, and increasing populations. India and China have little impact on wheat trade as production increases match the increase in consumption, due to increasing yields and slightly higher area. However, in both countries Government policies affect producer planting decisions and may lead to increased area.

The countries and regions with the greatest increase in wheat imports are those with strong growth in consumption. Many of these regions are unable to produce wheat or expand production. This includes the Middle East, North Africa, Sub-Saharan Africa (especially West Africa), Southeast Asia, and Bangladesh. These regions combined account for more than 90 percent of the projected increase in world wheat import demand.

World rice consumption increases by 39 million tons over the projection period. Two countries account for about 51 percent of this increase: India (31 percent) and China (20 percent). Bangladesh, Nigeria, and the Philippines are the next three countries with the largest increase in rice consumption, contributing a combined 11-percent increase in world rice consumption, or about 4.24 million tons. Per capita rice consumption in India, China, and the Philippines is relatively flat or slightly declining over the projection period; the increase in consumption is mostly driven by increasing populations for these countries. The Philippines has the fastest population growth rate in Asia. Over the past decade, the Philippines' population grew at 2.0 percent per year, and it is projected to grow by 1.5 percent per year during the projection period, increasing by almost 17 million people. In East and Southeast Asia, feed use of rice remains important. The regions with the fastest growth in rice consumption are Sub-Sharan Africa (especially West Africa), North Africa, and the Middle East, with an increase of 32 percent, 20 percent, and 17 percent, respectively, over the projection period. These regions contribute 30 percent to the increase in world rice consumption over the projection period but account for about three-fourths of the world's increase in rice imports. Over the projection period, the West Africa Economic Community (ECOWAS, 15 countries in West Africa) accounts for the greatest increase (41 percent) in world rice imports, and Nigeria accounts for the largest increase for any country at 9.3 percent.

Global meat consumption

Consumption of poultry meat, the lowest priced of the three major types of meat, increases at the fastest rate—2.1 percent annually. Global beef and pork consumption both grow at an annual rate near 1.0 percent. These growth rates are lower than those experienced during the previous decade due to slightly slower income growth in the projection.

Over the projection period, global meat (beef, pork, and poultry) consumption increases by 13 percent, reaching 336 million tons by 2026/27, an increase of 39.3 million tons. Developing countries account for over 80 percent of this increased consumption; however, this share drops to 56 percent when excluding China. The major regions with growing aggregate meat consumption are Asia, South America, North Africa, Middle East, and Sub-Saharan Africa. The five countries accounting for the largest share of increased meat consumption over the projection period are China (26.0 percent), Brazil (8.9 percent), India (8.7 percent), the United States (8.5 percent), and Mexico (3.2 percent). The regions with the fastest growing consumption rate over the projection period include Sub-Saharan Africa (especially West Africa), North Africa, Southeast Asia and the Middle East.

Per capita meat consumption is quite low in the lower-income countries, which helps to account for their faster consumption growth rates. High-income countries consume up to 10-15 times the quantity of meat on an annual per capita basis than many low-income countries, and even up to 25 times more than the lowest income countries in the world. Global per capita meat consumption remains low compared with levels in higher income countries—an indication of the potential for continued growth in world meat consumption. In the first projection year (2017/18), global per capita meat consumption includes 9.6 kilograms of beef, 16.1 kilograms of pork, and 15.3 kilograms of poultry. Corresponding levels among higher income countries are in the range of 20-25 kilograms for beef, 35-45 kilogram for poultry, and 20-40 kilograms for pork.

Meat consumption is projected to grow through 2026/27 at an annual rate of 2.6 percent for Sub-Saharan Africa, 2.3 percent for North Africa, 2.2 percent for Southeast Asia, and 2.1 percent for the Middle East. Over the projection period, these four regions combined increase meat consumption by 8 million tons, which is 20.3 percent of the global growth in meat demand. Meat imports by these four regions increase by 2.7 million tons, accounting for about 34.0 percent of their increased meat consumption. The rest comes from increased domestic production. These four regions account for almost 52.0 percent of increased global meat imports through 2026/27.

China, India, Brazil, and the United States account for a little more than half (52 percent) of the increased global meat consumption by 2026/27, with a combined increase of 20.4 million tons. The large populations of these countries and their growing populations significantly contribute to large increases in global meat consumption. However, increasing meat consumption does not necessarily lead to increasing meat imports. In these four countries, increased consumption is mostly matched by increased domestic production. In Brazil, the United States, and India, meat production grows faster than consumption, which allows these three countries to increase their meat exports.

Increasing feed demand and trade

A large portion of international trade in basic agricultural commodities is driven by increasing meat consumption and feed demand resulting from the production of livestock. Global meat consumption continues to rise throughout the projection period. Corn is one of the key agricultural commodities used to feed livestock. Some countries are not well suited to grow corn or are unable to expand corn production to meet increasing domestic demand for feed. The regions with the fastest growth in corn imports over the projection period include Sub-Saharan Africa, North Africa, and the Middle East, with annual growth rates of 4.3 percent, 3.0 percent, and 2.5 percent, respectively. The increase in corn imports for these three regions is a combined 11.7 million tons, which accounts for about 46 percent of the world increase in corn imports over the projection period. Southeast Asia's corn imports are increasing due to its fast growing meat sectors, mostly poultry and pork. Over the projection period, Southeast Asia's annual corn demand increases by 3.8 million tons, accounting for 15 percent of increased world trade. South America is also expanding meat production, leading to increased corn imports of 2.9 million tons by 2026/27. Together the four regions discussed—Africa, Middle East, South East Asia, and South America—account for almost 73 percent of the world's increase in corn imports over the projection period.

Biofuel

Global expansion of biofuel production is projected to continue during the next decade, although at a slower pace than over the last half decade. As a result, demand for biofuel feedstocks also continues to grow, but more slowly. The largest biofuel producers remain in the United States, Brazil, the EU, and China. Indonesia and Malaysia continue to increase biodiesel production from palm oil, and the Philippines is expanding copra use for biodiesel.

Following the United States, which imports more biodiesel and renewable diesel than ethanol, Canada and the EU remain the world's largest importers of biofuels throughout the projection period. Bioethanol accounts for two-thirds of Canada's biofuel imports currently, but that share is expected to fall since biodiesel and renewable diesel have more expansion potential. The United States supplies nearly all of Canada's ethanol and most of its biodiesel imports. The EU's imports of ethanol are expected to stagnate, but biodiesel has some room for expansion at least through 2020.

Argentina, Brazil, and the United States are the world's largest biofuel exporters, with Argentina specializing in soybean oil-based biodiesel, Brazil in sugarcane-based ethanol, and the United States in corn-based ethanol. Exports from Argentina and Brazil grow steadily in the projection period but are constrained as both countries increase their domestic use of biofuels and the expansion of sales to the United States and the EU remain limited.

Argentina's Changing Policies

Argentina is the world's largest soybean meal and oil exporter and the third-largest soybean exporter. Argentina's differential export tax system and export permit system on agricultural products contribute to the country's global dominance of the soybean meal and oil export markets. As of 2015/16, Argentina accounted for over 46 percent of world soybean meal exports and 48 percent of world soybean oil exports.

From 2002 to 2015, Argentina applied taxes on its agricultural exports as a means to generate revenue for the Government. Argentina's soybean meal and oil export taxes (32 percent) were lower than the soybean tax (35 percent), providing relative economic incentives to export more of the country's soybean derivatives. This stimulated the construction of large oilseed-crushing facilities and, consequently, more soybean meal and oil exports. In 2008, Argentina's Government raised export taxes on major agricultural exports and required export permits, essentially limiting export quantities for other major agricultural products such as corn, wheat, and beef. By contrast, soybeans and their derivatives faced fewer obstacles to sell abroad (after deducting export taxes), and there were abundant opportunities to expand soybean area through double cropping and adjusting crop pasture rotations on marginal lands in the northwest part of the country. Thus, Argentina's soybean area rapidly expanded and reached 19.5 million hectares (ha) by 2015/16 (1 ha = 2.47 acres). The area harvested for wheat declined from 6.2 million ha in 2002/03 to 3.9 million ha in 2015/16, while the area harvested for corn increased from 2.4 million ha to 3.5 million ha, and soybean area expanded from 12.6 million ha to 19.5 million ha.

The 2017/18 to 2026/27 projections reflect the potential effects of new policies implemented by Argentina's new Government and the new President, Mauricio Macri. In late 2015, export taxes on many agricultural products such as wheat and corn were removed, and there was a promise that export taxes on soybeans, meal, and oil would be reduced and eliminated over time. In March 2017, 10 Northern provinces, with minimal to no current soybean production, can get a 5-percent export tax rebate. Other policy changes include eliminating Argentina's export permit system and lifting its currency controls.

These policy changes are expected to affect Argentina's domestic agricultural sector as well as global agricultural markets. Without the added cost of export taxes, Argentina's corn and wheat farmers could generate more income. Planting decisions may be affected by this change as farmers may choose to plant crops based on market prices rather than policies such as export taxes or permits. Lifting the currency controls devalued the Argentine peso, which encouraged farmers to sell crops previously held in storage as they waited for better prices to sell them.

However, the current projections to 2026/27 indicate that Argentina will remain the world's largest exporter of soybean derivatives. Soybean meal exports are projected to increase from 34 million tons in 2017/18 to almost 43 million tons by 2026/27. Soybean oil projected exports increase by 25 percent reaching 7.3 million tons by 2026/27. Corn area is projected to expand significantly in 2016/17 and then increase slightly throughout the projection period to 2026/27. Corn exports are projected to increase from 26.8 million tons in 2017/18 to 30 million tons by 2026/27, mostly driven by yield increases after 2017/18. Wheat exports are projected to increase from 9.2 million tons in 2017/18 to almost 12.9 million tons by 2026/27, with increasing wheat area driving most of this export growth throughout the projection period.

China Policy Overhaul Creates Uncertainty

During 2015-16, Chinese officials adopted new strategies for domestic support for agriculture, stepped up initiatives to encourage up-scaling of farming operations, and adopted measures to control the environmental impacts of agriculture. These strategies may constrain domestic production for many commodities in the coming years, but a gradual release of large grain and cotton inventories and changes in domestic prices could also affect China's demand for imported commodities.

In 2016, officials reported replacing a corn price support policy with a payment to corn producers, a so-called strategy of "separating subsidy from price." The effectiveness of this new policy in decoupling producer's decision from the Government policies is uncertain at this time. Bulging stockpiles and yawning gaps between domestic and international prices motivated Chinese authorities to allow prices to fall by as much as 30 percent over the last several years for cotton, soybean, rapeseed, and now corn prices. The impact of these policy changes on production decisions, commodity use, and incentives to import commodities is still not entirely clear. Support prices remain in place for wheat and rice, maintaining strong incentives to produce these crops even though China has large surpluses of both.

Despite the reduced interference in domestic prices, uncertainty clouds the long-term commodity supply and demand outlook for China. The removal of the corn support price could encourage a modest shift in area from corn to competing crops in coming years. A 5-year structural adjustment plan also aims to shift land from corn to soybeans, spring wheat, and fodder crops in marginal corn-production regions. With excess supply of grains, China has programs to shift land from grain production to forest and grass and to cut production in areas contaminated with heavy metals and shrinking underground aquifers.

China's slowing economy, food safety and animal disease concerns, and high prices have slowed the pace of growth in demand for livestock products. Environmental regulations and high production costs are constraining production growth. High domestic meat prices have prompted China to rely on imports to satisfy part of its demand for animal protein.

Despite a slowdown in consumption of many commodities, China's soybean imports are projected to be a record 86 million metric tons during 2016/17 as falling international prices stimulated Chinese consumption. Soybean imports are projected to rise to 121 million tons during 2026/27. Imports of corn and cotton are expected to increase throughout the projection period to 6.1 million tons and 14.4 million bales by 2026/27, respectively.

China is also stepping up efforts to scale up farming operations by promoting trading of land-use rights, expanding farm credit, upgrading fields and supporting road and irrigation networks, improving custom farming and advisory services to farmers, and upgrading domestic research and development capacity. On the domestic policy front, China is experimenting with various approaches to subsidizing farmers and use of insurance and futures markets to manage production and market risks. All of these programs are experimental, and their long-term impact on China's agricultural supply and demand is uncertain.

India Projected To Remain Net Exporter of Major Farm Commodities

India, the world's second most populous country and tenth largest economy, is projected to remain a net exporter of most of the commodities included in USDA's agricultural projections. India is historically a net agricultural exporter, with sales of a broad range of field and specialty crops and animal products reaching \$37 billion in 2013/14. Agricultural imports are also expanding, with India now the world's largest single country importer of both pulses and edible oils. India's total agricultural imports are growing at about 16 percent annually since 2000, reaching \$14.8 billion in 2013/14.

Macroeconomic outlook remains stable and robust. India is expected to be the fastest growing major economy in the world during the 2017-26 projection period. Growth in real GDP is expected to average 7.6 percent per year, with slowing population growth pushing gains in per capita income above rates achieved since 2000 (fig. 1). With the average household spending about half of its income on food, rising consumer demand will provide an impetus for growth in farm output. However, food price stability is an important policy goal and, in the event that farm output does not respond to rising demand, inflationary pressures may lead to more imports and lower exports than currently projected. As indicated by India's stable and modestly appreciating exchange rate, India's macroeconomic policies are expected to continue to provide a supportive environment for economic and trade growth.

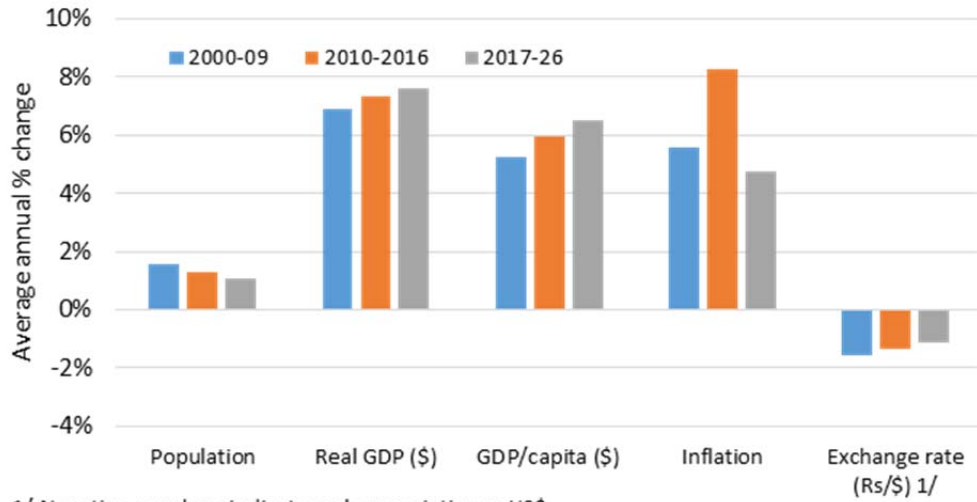
Rising incomes driving diet diversification. Rising incomes are leading to significant changes in the pattern of Indian consumer food demand (fig. 2). Food demand for cereals—primarily wheat and rice—is slowing and now growing more slowly than population. Higher incomes, along with urbanization, are strengthening demand for more diverse diets, including more fruit, vegetables, edible oils, pulses, and animal products. The pattern of growth in food demand in India is, however, somewhat unique because religious and cultural values limit growth in demand for most meats. While poultry meat and fish have relatively wide consumer acceptance, other meats are not broadly consumed, and the likelihood is that meat consumption will remain relatively low even as incomes rise. These factors are unique to India and expected to limit India's domestic and import demand for both meats and livestock feeds compared with most other countries with similar levels of income.

Low productivity limits farm output but signals unmet potential. India's yields for most major crops are substantially below world averages, a situation that suggests both current constraints on adopting and implementing available technology and potential for future yields to respond to market demands. Wheat is the only major crop where yields are near the world average, but even this suggests unmet potential since, unlike most wheat in the rest of the world, nearly all Indian wheat is irrigated. For the projections, it is assumed that future yields respond as they have tended to in the past. Yields for wheat and rice, the primary beneficiaries of Government research and price support, have tended to respond to price incentives, although with some lag. Oilseed (including soybean) yields, as well as pulse yields have tended not to respond to demand, reflecting both the quality of the land on which they are grown and the lack of new technology. Cotton yields improved significantly with the adoption of hybrid Bt varieties beginning in the early 2000s, but gains have slowed now that adoption is widespread. Corn yields now appear to be responding to rising feed demand and cultivation of more hybrid varieties but remain vulnerable to poor rainfall.

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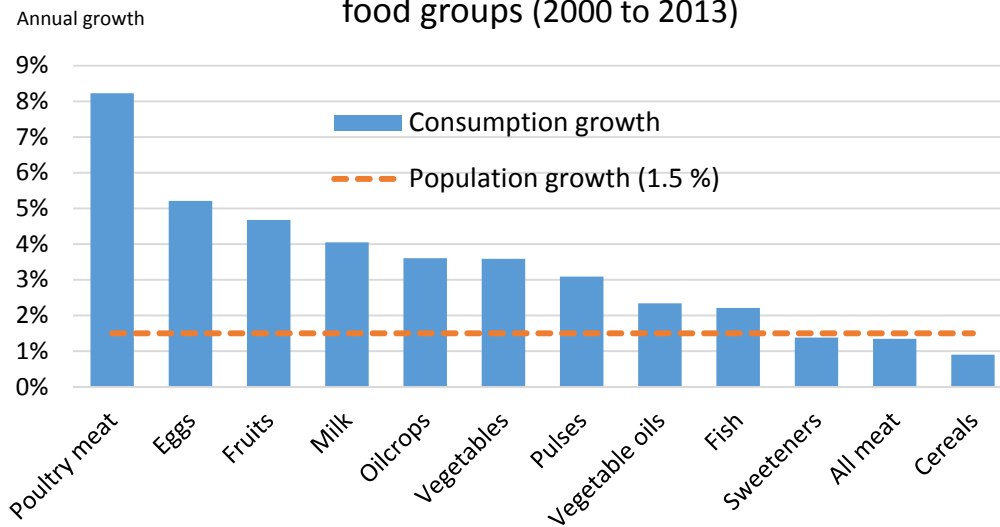
India Projected To Remain Net Exporter of Major Farm Commodities -- Continued

Figure 1. India: Macroeconomic trends and projections



1/ Negative numbers indicate real appreciation vs US\$.
 Source: USDA/ERS International Macroeconomic data base.

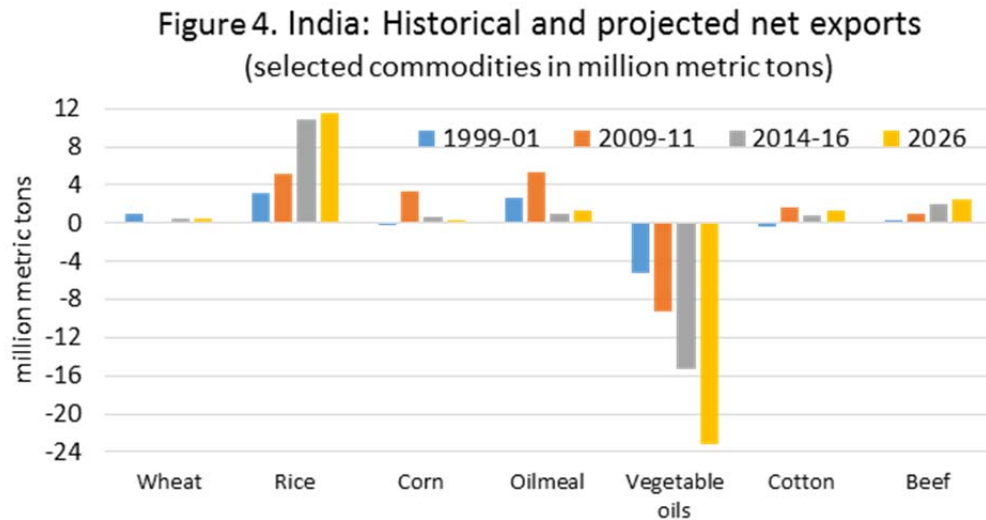
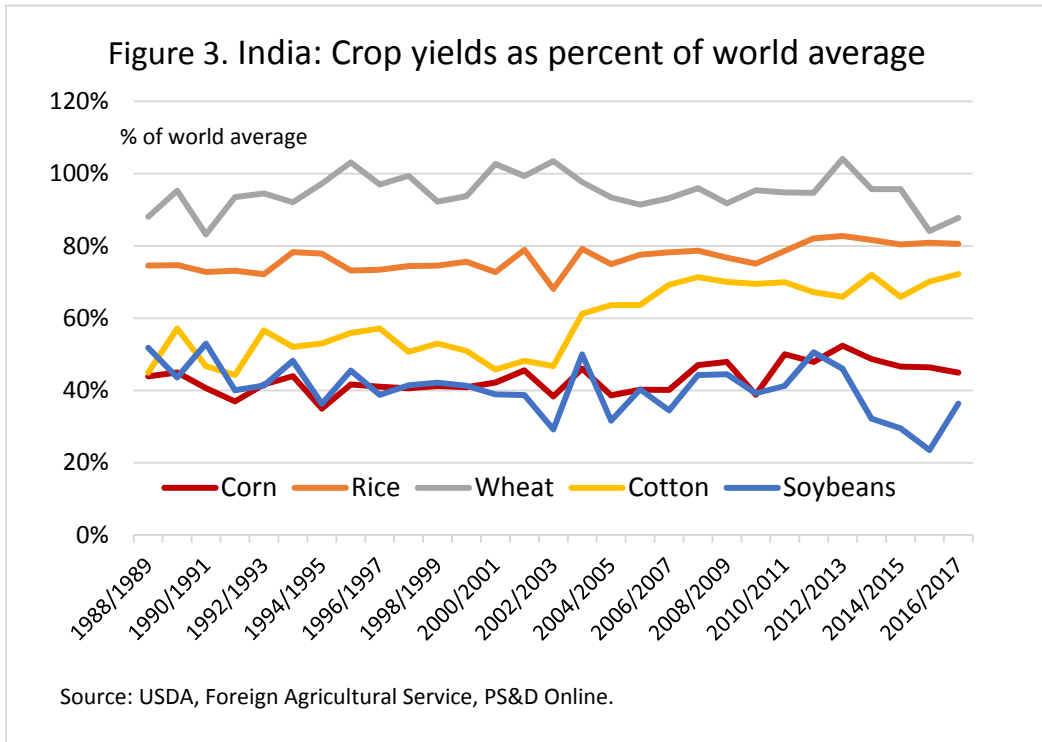
Figure 2. India: Annual consumption growth by food groups (2000 to 2013)



Source: Food and Agriculture Organization of the UN, FAOSTAT database.

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India Projected To Remain Net Exporter of Major Farm Commodities -- Continued



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India's Projection Highlights (Figure 4)

Wheat: India's wheat balance tends to be cyclical, with periods of good harvests and rising stocks followed by periods when smaller increases in price supports and, in some cases, poor weather, lead to reduced harvests and declining stocks. Stocks are currently declining after consecutive poor harvests, leading to stronger domestic prices and the removal of import tariffs to facilitate private wheat imports. Over the long term, the sector is projected to return to balance, reflecting average conditions since 2000.

Rice: India has consistently produced large exportable surpluses of rice since 2011. Typically a highly competitive supplier of both medium-grain and long-grain aromatic varieties to Asian, African, and Middle Eastern markets, India is projected to remain a top world supplier. Recent approvals for some Indian mills to ship rice to China may improve Indian export prospects.

Corn: Adoption of hybrid corn enabled significant exports of feed corn during 2005-14, despite strong expansion of feed demand by India's integrated poultry sector. While consecutive drought-affected harvests have curbed exports and led to domestic feed shortages, the assumption of normal weather during the projection period allows the sector to meet domestic demand. Projected exports are maintained at lower levels because of strong growth in domestic feed demand.

Oil meal: India has traditionally exported a variety of oil meals, with soymeal accounting for the largest share. Exportable surpluses of soymeal have declined as domestic feed demand, primarily for poultry, has consistently outstripped growth in soybean production. Drought-reduced harvests further decrease exports during 2014 and 2015. The projections call for a continued gradual decline in exportable surpluses of meals, particularly the soymeal favored by the poultry sector.

Vegetable oil. Domestic edible oil demand has been outstripping domestic production since the 1990s, with annual imports averaging 15.3 million tons now accounting for more than 70 percent of consumption. The high 45-80 percent tariffs of the 1990s have given way to lower tariffs as policies have tended to favor food price stability rather than support for oil processors. Edible oil imports, which consist primarily of palm oil, along with smaller amounts of soybean and sunflower oil, are projected to reach nearly 22 million tons by 2026.

Cotton. Since 2000, India's cotton and textile sectors have benefitted from the end of the Multifiber Arrangement, which restricted India's ability to export textiles to developed country markets, as well as the rapid adoption of hybrid Bt cotton varieties that led to improved yields. China was significantly more successful in capitalizing on the improved export environment, but India was able to expand cotton production and exports of cotton and products, with China becoming an important market for cotton and cotton yarn. During the projection period, however, it is expected that India's export prospects for both cotton and yarn will weaken, as China works off its large domestic cotton surplus, particularly during the first half of the period. India's yield growth is also expected to slow because hybrid Bt varieties have already been adopted on most cotton land.

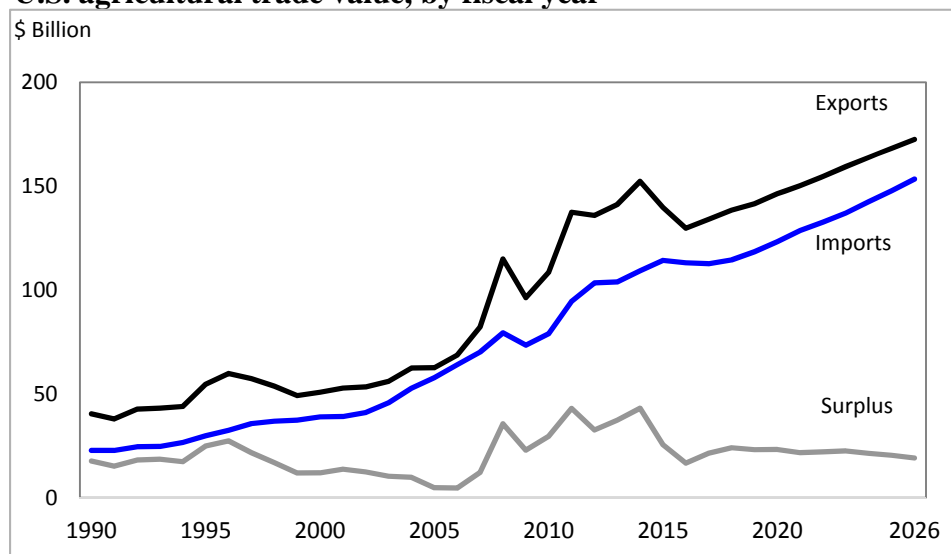
Beef. India beef exports—exclusively carabeef produced from India's large water buffalo herd—have expanded rapidly since 2000, with India becoming the world's largest beef exporter, after Brazil, in 2015. India has the largest water buffalo herd in the world, which is underexploited for domestic meat consumption because of domestic religious and cultural preferences. The other key factor is the ready market for India's relatively low-cost and low-quality carabeef among middle-income developing country consumers in Asian and Middle Eastern markets. While market demand and India's large herd may not support continuation of the high rate of export growth observed since 2010, exports are projected to continue to expand from an annual average of 1.9 million tons during 2014-16 to about 2.5 million tons by 2026.

U.S. Agricultural Trade Projections

The value of U.S. agricultural exports is expected to grow every year for the next 10 fiscal years, after falling in the 2 most recent years from the record high in 2014. Sustained growth in agricultural exports reflects strengthening agricultural demand and steady global economic growth, while domestic economic growth and steadily growing demand for a diverse set of agricultural goods drives increases in the value of imports.

- Crop prices are expected to rise in the current fiscal year and continue throughout the projection period. While beef prices drop, broiler, hog, and dairy prices all increase over the next decade. The result is a slow and steady increase in the value of U.S. agricultural exports. Economies around the world continue to grow, with developing countries maintaining a higher growth rate than developed countries. This growth helps drive the increase in exports. While the U.S. dollar continued to strengthen in 2016 and is expected to remain relatively strong throughout the projection period, serving to reduce export demand, U.S. export values are expected to surpass the 2014 record level in the second half of the decade.
- The top U.S. export commodities to the world are bulk items such as soybeans, corn and wheat. However, exports of high-value products, including horticultural and animal products, will continue to grow as a share of total exports, up to over 70 percent by 2026.

U.S. agricultural trade value, by fiscal year



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U.S. Agricultural Trade Projections -- Continued

- Growing consumer incomes coupled with a demand for a wide variety of food drives increases in U.S. agricultural imports over the projection period. Throughout the next 10 years, the value of imports rise, surpassing \$153 billion by fiscal year 2026, up from almost \$113 billion in 2017. Over half of the growth in agricultural imports can be attributed to horticultural products. The United States primarily imports high-value products for which demand tends to respond less to changes in the value of the dollar.
- The 2016 fiscal year ended with a U.S. trade surplus of \$16.6 billion, which is expected to be the lowest of any year through 2026. In the short term, the trade balance is expected to increase but then trend downward as the growth of agricultural imports starts to slightly outpace agricultural exports in the longer term.

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

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
<i>Billion dollars</i>												
Agricultural exports (value):												
Livestock, poultry, and dairy	29.2	25.6	26.5	28.5	29.6	30.9	32.2	33.5	34.7	35.8	36.9	37.9
Livestock products	18.2	16.4	16.5	17.0	17.2	17.7	18.3	18.9	19.5	19.9	20.4	20.8
Dairy products	5.6	4.6	5.3	6.2	6.8	7.3	7.8	8.2	8.5	8.9	9.2	9.5
Poultry products	5.5	4.5	4.7	5.3	5.6	5.9	6.2	6.5	6.7	7.0	7.3	7.6
Grains and feeds	31.7	29.6	29.6	30.7	31.6	32.9	33.7	34.8	35.9	37.0	37.7	38.7
Coarse grains	11.1	10.8	10.7	10.9	11.0	11.4	11.7	12.0	12.3	12.5	12.7	12.9
Feeds and fodder	8.1	7.5	7.4	7.7	8.0	8.3	8.6	8.9	9.2	9.5	9.9	10.3
Oilseeds and products	31.7	29.5	31.0	31.0	30.5	30.9	31.1	31.6	32.0	32.3	32.7	32.8
Soybeans and products	27.6	25.4	26.7	26.7	26.3	26.6	26.8	27.2	27.6	27.8	28.2	28.3
Horticultural products	34.1	33.0	34.0	35.2	36.5	37.9	39.2	40.7	42.2	43.7	45.3	46.9
Cotton	4.1	3.4	4.4	4.4	4.3	4.3	4.4	4.4	4.5	4.5	4.6	4.6
Sugar and tropical products	6.1	6.0	6.0	6.0	6.4	6.9	6.8	6.9	7.3	7.6	8.0	8.4
Other exports ¹	2.8	2.7	2.6	2.6	2.7	2.7	2.8	2.8	2.9	2.9	3.0	3.1
Total agricultural exports	139.7	129.7	134.0	138.4	141.5	146.4	150.2	154.7	159.5	163.8	168.1	172.5
Major bulk products ²	46.0	42.8	45.0	45.6	45.5	46.5	47.1	48.0	49.0	49.7	50.2	50.7
High-value product exports ³	93.7	87.0	89.0	92.8	96.0	99.8	103.1	106.6	110.5	114.1	117.9	121.8
High-value product share	67.1%	67.0%	66.4%	67.0%	67.8%	68.2%	68.6%	68.9%	69.3%	69.6%	70.1%	70.6%
<i>Million metric tons</i>												
Agricultural exports (volume):												
Bulk commodity exports	134.6	149.7	142.7	142.8	142.0	143.0	144.1	145.4	146.9	148.1	149.4	150.2
<i>Billion dollars</i>												
Agricultural imports (value):												
Livestock and dairy products	19.5	16.6	15.6	14.8	15.0	15.5	15.8	16.2	16.6	17.0	17.3	17.7
Livestock and meats	15.2	12.4	11.2	10.3	10.4	10.9	11.2	11.4	11.7	12.0	12.4	12.6
Dairy products	3.5	3.4	3.5	3.6	3.6	3.7	3.7	3.8	3.9	3.9	4.0	4.0
Grains and feeds	10.9	10.9	10.8	10.9	11.4	11.9	12.4	12.9	13.4	14.0	14.6	15.2
Grain products	6.9	7.3	7.2	7.5	7.8	8.1	8.5	8.8	9.2	9.6	10.0	10.4
Oilseeds and products	8.8	8.5	8.3	8.2	8.4	8.6	8.8	8.9	9.1	9.2	9.3	9.4
Vegetable oils	5.4	5.4	5.4	5.3	5.5	5.7	5.8	5.9	6.0	6.1	6.2	6.2
Horticultural products	49.8	53.1	53.3	55.5	57.7	60.0	62.5	65.0	67.6	70.4	73.2	76.2
Sugar and tropical products	23.5	22.2	22.8	23.2	24.0	25.3	27.1	27.6	28.2	29.9	31.1	32.7
Sugar and related products	4.9	4.6	4.7	4.4	4.5	5.0	6.1	5.8	5.6	6.4	6.7	7.4
Cocoa, coffee, and products	11.1	10.8	11.3	11.7	12.2	12.6	13.1	13.6	14.1	14.6	15.1	15.7
Other imports ⁴	1.7	1.8	1.8	1.8	1.9	1.9	2.0	2.0	2.1	2.1	2.2	2.2
Total agricultural imports	114.2	113.1	112.5	114.5	118.4	123.2	128.6	132.6	137.0	142.5	147.8	153.4
Net agricultural trade balance	25.5	16.6	21.5	24.0	23.1	23.2	21.6	22.0	22.5	21.3	20.4	19.1

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

U.S. trade value projections were completed in December 2016. For updates of the nearby year forecasts, see USDA's *Outlook for U.S. Agricultural Trade* report, published in February, May, August, and November.

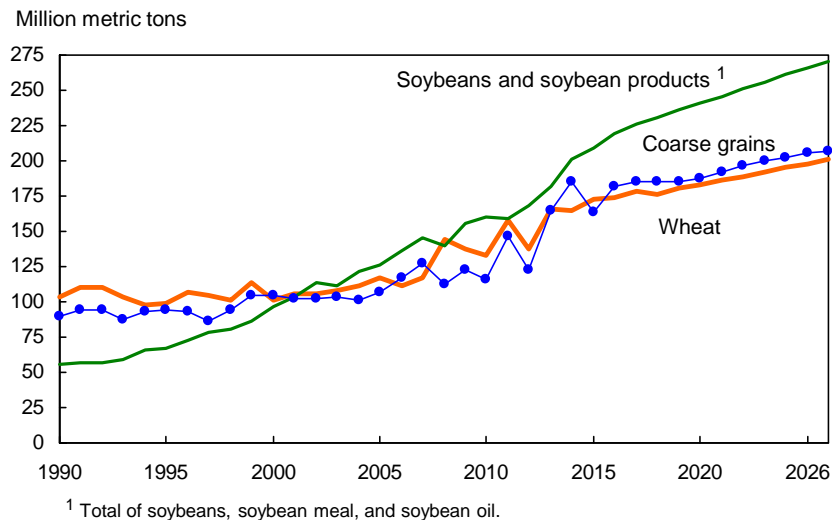
¹Includes planting seeds, unmanufactured tobacco, and cotton linters.

²Includes bulk grains, soybeans, cotton, and tobacco.

³The 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.

⁴Includes planting seeds, unmanufactured tobacco, and cotton.

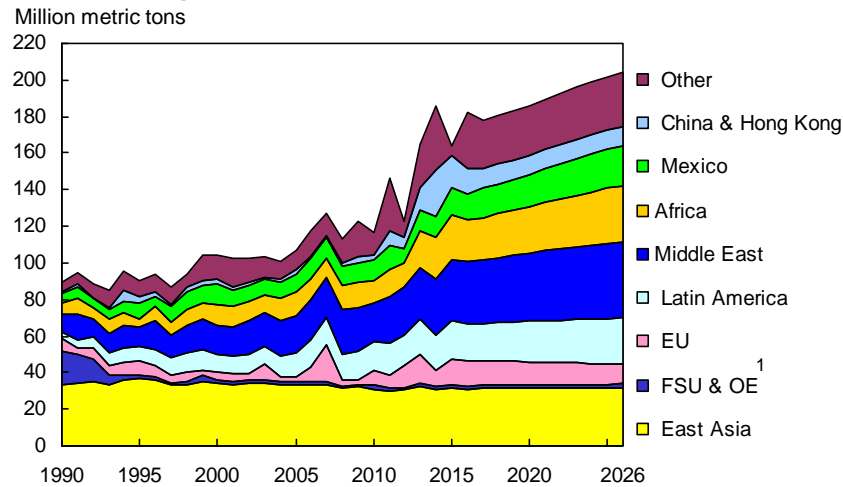
Global trade: Wheat, coarse grains, and soybeans and soybean products



Global trade in soybeans and soybean products has risen rapidly since the early 1990s and surpassed global trade in wheat and in total coarse grains (corn, barley, sorghum, rye, oats, millet, and mixed grains). Continued strong growth in global demand for vegetable oil and protein meal, particularly in China, the EU, and other Asian countries, is expected to maintain soybean and soybean-products trade well above both wheat and coarse grain trade throughout the next decade.

- Population growth and urbanization are significant factors driving overall growth in demand for agricultural products, even though population growth is slowing. Additionally, growth in global income outpaces population growth, further boosting and changing agricultural demand. World consumption of oilseeds is projected to rise 18 percent over the next decade, compared with 13 percent for meat, 8 percent for coarse grains, 8 percent for wheat, and 8 percent for rice. On a per capita basis, world food use of rice and wheat decreases slightly over the projection period.
- Increasing demand for grains, oilseeds, and other crops provides incentives to expand global area under cultivation and intensify crop production, even though lower prices constrain expansion. Globally, the total area planted to grains, oilseeds, and cotton is projected to expand by 4.5 percent from 2017 to 2026, which is from 983 million to 1.023 billion hectares (ha) (additional 40 million ha), but consumption increases by 10 percent over the projection period. Well over half of the projected growth in global production of grains, oilseeds, and cotton (1.2 percent per year to 2026/27) is obtained from rising yields.
- Area expands more rapidly in countries with a reserve of available land and policies that allow farmers to respond to prices. The largest projected increases in planted area are in the regions of South America, Sub-Saharan Africa, the Former Soviet Union (FSU), and Southeast Asia. Large expansions are projected for Brazil and Argentina, including uncultivated land brought into soybean production in response to increased world demand for protein meal and vegetable oils. In Southeast Asia, Indonesia accounts for the greatest increase in new area as palm oil area is projected to increase. In many other countries, area expansion is slower; in some countries, area cultivated contracts.

Global coarse grain imports



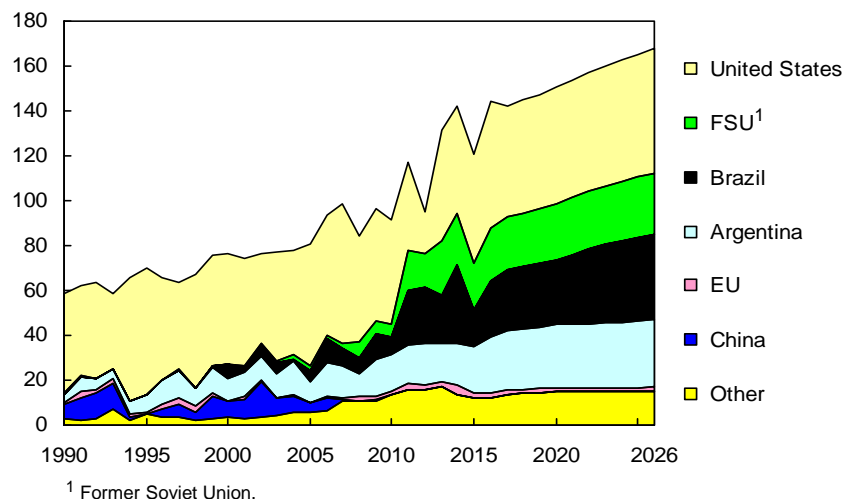
¹ Former Soviet Union and Other Europe; prior to 1999, includes Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia.

World coarse grain trade is projected to increase by 26.2 million tons (15 percent) between 2017/18 and 2026/27. Expansion of livestock production in feed-deficit countries continues to be the main driver of growth in coarse grain imports. Key growth markets are Africa, Middle East, Latin America (less Argentina and Brazil), and Southeast Asia. Corn is expected to gain a larger share (82 percent) of the world coarse grain trade by 2026/27, while barley's share is expected to decrease slightly to 14 percent.

- China's coarse grain imports have declined by almost half from high levels reached in 2014/15, due to lower sorghum and barley imports. Corn imports are projected to be 3.4 million tons in 2017/18 and expected to rise to 6.1 million tons by 2026/27, as China's feed demand grows and newly-announced initiatives curb corn production in erodible and drought-prone regions. China's removal of high support prices for corn and disposal of record-high inventories leads to declining sorghum and barley imports over the projection period.
- Together, Africa and the Middle East account for about 57 percent of the growth in world coarse grain imports through 2026/27, as rising incomes and populations foster strong demand growth for livestock products and limited arable land and water constrain domestic grain production. By 2026/27, this combined region will import 36 percent of world coarse grains imports. Saudi Arabia, Iran, and Egypt are projected to account for 20 percent of world coarse grain imports by 2026/27.
- Imports by Mexico account for 22 percent of the increase in global coarse grain trade during the coming decade. This reflects increased meat consumption and domestic production. Mexico's sorghum imports decreased in 2013/14 and 2014/15 due to high sorghum prices relative to corn, but began to rebound in 2015/16 and are projected to reach 1.6 million tons by 2026/27. Mexico's corn imports increased in 2015/16 to 13.8 million tons and are projected to rise from 14.7 million tons in 2017/18 to 19.7 million tons by 2026/27.
- South and Southeast Asian and Oceania coarse grain imports rise 27 percent to 19.7 million tons by 2026/27 in response to increased demand from livestock producers. These three regions account for 16 percent of the growth in world corn imports. Indonesia, Vietnam, and Malaysia, are among the fastest growing corn importing countries in this region. Recently, Indonesia has taken action to limit imports for corn and feed wheat. Japan and South Korea are the first and fifth largest coarse grain importers. These two countries and Taiwan face environmental constraints to expanding livestock production, which limit potential growth in their coarse grain imports.

Global corn exports

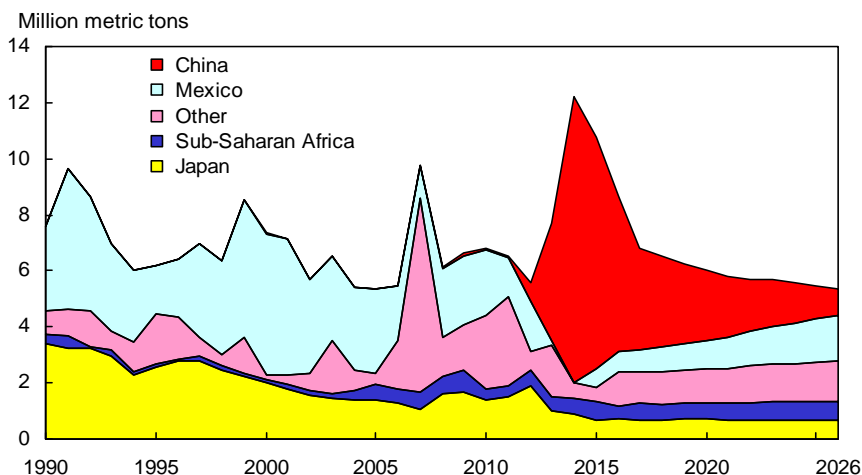
Million metric tons



U.S. corn exports are expected to increase by 5.7 million tons over the projection period and reach 55.2 million tons in 2026/27. With the competition from exporters, the U.S. share of world corn exports declines (from 34.8 to 33.0 percent) over the projection period; the past 6-year average is 33.8 percent, well below the 59-percent share for the 2001/02 to 2010/11 period.

- Annual corn exports by the countries of the FSU, mostly Ukraine, rise by 4.3 million tons (18 percent) and reach 27.6 million tons in 2026/27. The region's favorable resource endowments, increasing economic openness, wider use of hybrid seed, and greater investment in the agriculture sector all stimulate corn production. Although feed use of corn in the FSU countries rises in the projections, this region remains the world's fourth-largest corn exporter, after the United States, Brazil and Argentina.
- Argentina is the third-largest corn exporter. Argentina's corn production is projected to increase dramatically, reflecting a large increase in area in 2016/17 and continued yield growth throughout the projection period. Corn area expansion is motivated by the termination of export controls (mainly taxes). Exports increase from 26.8 million tons in 2017/18 to 30.0 million tons by 2026/27, and increase of 12 percent over the projection period.
- Brazil's annual corn exports have more than tripled over the past decade and averaged 24.5 million tons in the past 5-years. Production of second-crop corn following soybeans, much of which takes place in the Center West, continues with expansion onto new cropland. This growing region is in a poor location for domestic demand, such that production of the second-corn crop tends to be exported; also, the crop is harvested when the port capacity is not limited and occupied by soybean shipments. Exports increase during the later years of the projection period reflecting greater corn area and yields, improved export infrastructure and moderately increasing world prices. Exports rise by 40 percent to 37.9 million tons by 2026/27.
- EU exports grow marginally and reach 1.9 million tons by the end of the projection period. EU corn imports are projected to decline by 2.4 million tons to 10.3 million tons by 2026/27.
- Corn exports from the Other Europe region, mostly from Serbia to the EU, increase by 7 percent over the projection period and reach 3.1 million tons by 2026/27. South Africa and Other Africa corn exports are flat at 1.6 and 1.5 million tons, respectively throughout the projection period to 2026/27.

Global sorghum imports

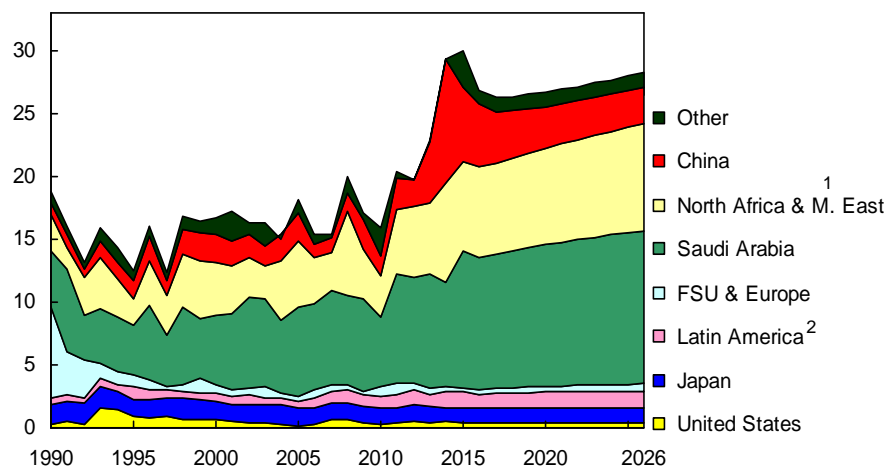


World sorghum trade trends downward from around 6.8 million tons in 2017/18 to 5.3 million tons by 2026/27. World sorghum trade is expected to decrease by 22 percent during the coming decade as China's recent surge in imports recedes. U.S. sorghum exports to China spiked in recent years as feed mills in China sought cheaper substitutes for expensive domestic corn. China's imports are expected to fall in coming years as policies are revised to reduce price distortions. Mexico becomes the largest sorghum importer by 2025/26. Mexico and Japan account for 43 percent of global imports by 2026/27.

- U.S. sorghum exports surged in 2013/14 through 2015/16 due to China's emergence as the leading importer, but exports are projected to decrease in 2017/18 to 4.8 million tons as China's demand falls. Projected U.S. exports decrease from 4.8 million tons in 2017/18 to 3.3 million tons by 2026/27. The U.S. sorghum export trade share declines from 71 percent to 62 percent by 2026/27.
- China's sorghum imports significantly jumped in the past 3 years, but are projected to decrease from 5.5 million tons in 2016/17 to 3.6 million tons in 2017/18 and fall further to 0.9 million tons by 2026/27. Falling corn prices in China will reduce demand for sorghum and barley imports.
- Mexico's sorghum imports increase over the projection period, after decreasing significantly over the past couple years when alternative feed grains, especially corn, were more affordable. China's surging demand pushed sorghum prices up relative to corn prices and induced Mexico to shift imports from sorghum to corn. However, Mexico is expected to increase imports, as China's imports recede and the relative price of sorghum declines. Mexico's sorghum imports are projected to rise to 0.8 million tons in 2017/18 and reach 1.6 million tons by 2026/27.
- Japan is the world's third-largest sorghum importer and is projected to be stable at 700,000 tons over the next decade.
- The U.S. is the world's largest sorghum exporter. Australia is the world's second largest sorghum exporter through the projection period. Australia's sorghum exports are projected to increase slightly from 1.0 million tons in 2017/18 to 1.1 million tons by 2026/27.
- Argentina is expected to be the world's third-largest sorghum exporter during the coming decade. Argentina's exports are projected to be stable near 550,000 tons per year. The primary markets for Argentine sorghum exports are Japan, Chile, Saudi Arabia, and Colombia.

Global barley imports

Million metric tons

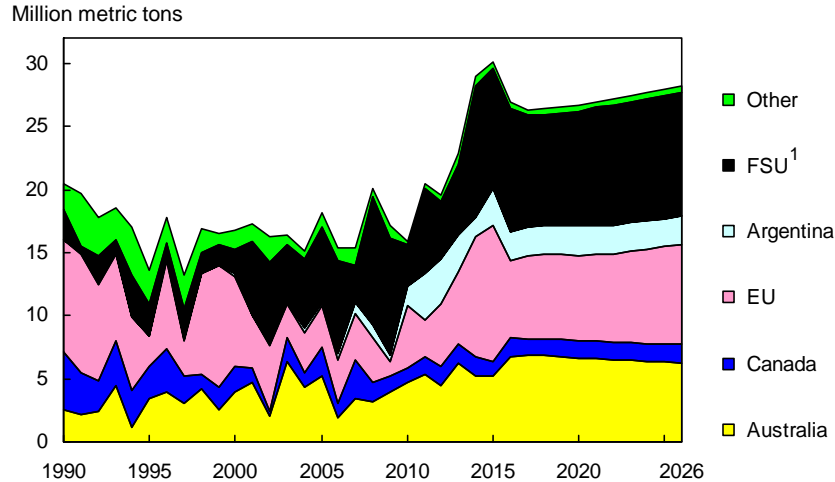


¹ Excludes Saudi Arabia ² Includes Mexico.

Global barley trade is projected to expand from 26.3 million tons to 28.2 million tons by 2026/27. Demand for feed barley increased sharply in 2013/14 and especially 2014/15, due to China's strong demand. China's feed barley demand began to fall in 2015/16 and gradually decline throughout the projection period. Feed barley imports by North Africa, Latin America, and the Middle East are expected to rise over the next decade. Total barley imports increase by 19 percent for North Africa, 12 percent for Latin America, and 15 percent for the Middle East by 2026/27.

- Saudi Arabia remains the world's leading importer of barley—imports increase from 10.7 million tons in 2017/18 to 12.2 million tons by 2026/27, increasing the share of world barley imports from 40 to 43 percent. Saudi Arabia uses imported barley primarily as feed for sheep, goats, and camels. Iran barley imports are almost flat over the projection period, but Turkey increases barley imports by 25 percent by 2026/27 to 259,000 tons. Other countries in the Middle East are projected to increase barley imports from 2.2 million tons in 2017/18 to 2.9 million tons by 2026/27. Jordan and Kuwait are the third and fourth largest importers. North Africa's largest importers are Algeria, Libya, Morocco, and Tunisia in 2016/17.
- China's demand for feed barley surged in 2013/14 and 2014/15 as domestic corn prices were supported well above levels for world feed grains. As policy changes attempt to reduce large domestic corn stocks and lower domestic corn prices, China is expected to reduce feed barley imports. As a result, China's barley imports are projected to decline from 4.1 million tons in 2017/18 to 2.9 million tons by 2026/27, a decrease of 30 percent over the projection period. World demand for malting barley is boosted by strong growth in beer demand in some developing countries, most notably China. China's domestic production of malting barley grows relatively little, so rising brewery demand is met by imports. China remains the world's largest importer of malting barley. Australia and Canada are the main suppliers.

Global barley exports



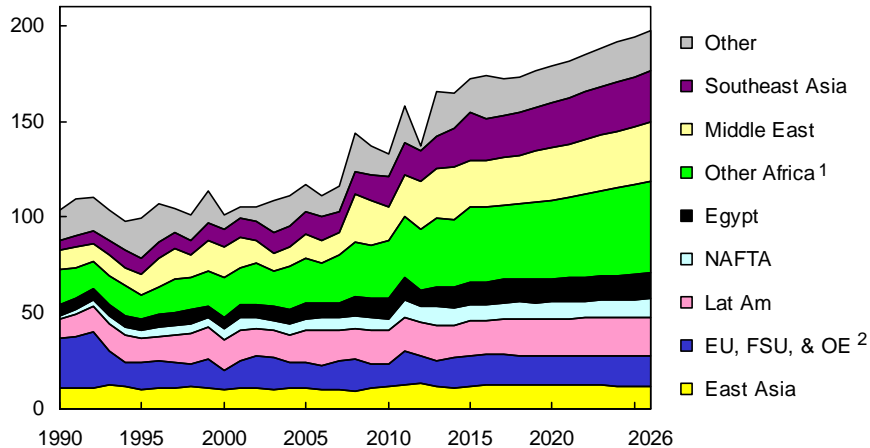
¹ Former Soviet Union and Other Europe; prior to 1999, includes Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia.

The EU and Australia are the largest barley exporters during the projection period, followed by Russia, Ukraine, and Argentina. Argentina, Ukraine and Australia barley exports decrease slightly. Australia's world export share decreases from 26 to 22 percent. By 2026/27, the world export share increases from 25 to 29 percent for the EU and from 16 to 19 percent for Russia.

- EU's barley exports for 2017/18 are projected at 6.5 million tons and are expected to increase to 8 million tons by 2026/27, in part due to increased barley demand from the Middle East and the EU's logistical comparative advantage for this region.
- Australia's barley exports are expected to decrease slightly during the coming decade to 6.2 million tons by 2026/27. The EU surpasses Australia as the world's largest barley exporter in 2020/21.
- Argentina's barley exports are projected to be relatively flat at 2.2 to 2.3 million tons throughout the projection period. Barley area expansion came to a halt after the Government eliminated wheat export taxes. Wheat is expanding into areas where other winter crops are planted, often double-cropped with soybeans. The main purchasers of Argentina's feed barley are Saudi Arabia, United Arab Emirates, other Middle East countries, and North African countries. Most of Argentina's malting barley exports are to Brazil and neighboring countries.
- Barley exports by the FSU countries are projected to increase from 8.8 million tons in 2017/18 to 9.8 million tons during the coming decade. Russia's barley exports are projected at 5.5 million tons and Ukraine's at 3.3 million tons by the end of the projection period. Kazakhstan is also expected to increase its exports, especially to Iran.
- 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. However, Canada's total barley area continues to decline, as canola production increases in response to growing demand and higher profitability.

Global wheat imports

Million metric tons



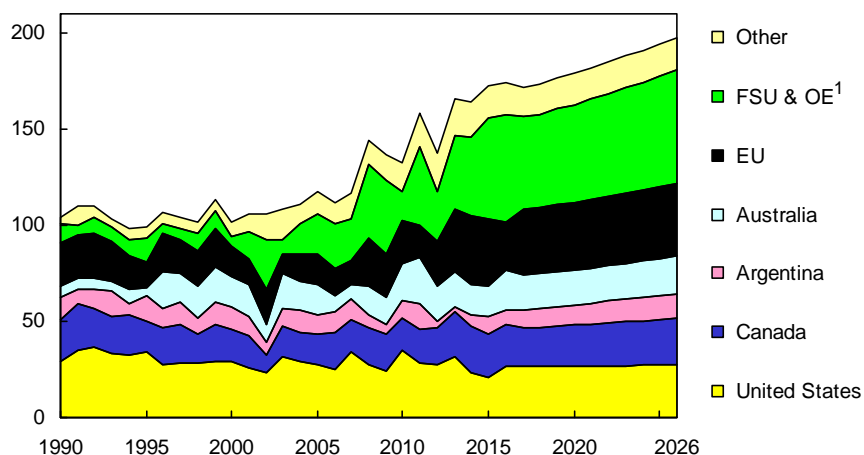
¹ Africa, excluding Egypt. ² European Union, former Soviet Union, and Other Europe. Includes intra-FSU trade.

World wheat trade (including flour) is projected to expand by nearly 25.6 million tons (15 percent) between 2017/18 and 2026/27, reaching 197.5 million tons. Growth in wheat imports is concentrated in developing countries where income, urbanization and population gains drive increases in demand. The largest growth markets include North Africa, Sub-Saharan Africa countries, the 15 countries of the Economic Community of West African States, the Middle East, Indonesia, some FSU countries, and Iraq.

- Almost no change in per capita wheat consumption is expected in many developing countries, but imports are projected to expand modestly due to population growth, limitations to expand domestic wheat production, and increasing wheat feed demand. As incomes rise in Indonesia, Vietnam, and other Asian countries, demand for instant noodles and bakery products increase.
- Egypt and Indonesia remain the world's leading wheat importers, with annual imports climbing to 13.4 million tons and 11 million tons, respectively, by 2026/27. Indonesian imports grow rapidly due to increased consumption of non-traditional instant noodles and feed demand. Indonesia's recent restrictions on feed wheat imports are partially reflected in the projection. Brazil and Bangladesh are the third and fourth largest wheat importing countries in our projections, increasing to 7.1 million and 6.4 million tons by 2026/27. These four countries add 5.5 million tons to imports over the projection period accounting for 22 percent of global increasing imports. The Philippines, Thailand, Vietnam and Malaysia collectively add 2.6 million tons to imports by 2026/27, which is driven by rising incomes, populations, greater diversified consumption and wheat feed demand.
- Countries in Africa (including Egypt) and the Middle East increase their wheat imports by 9.9 million and 6.4 million tons, respectively, by 2026/27, accounting for 63 percent of the total increase in world wheat trade. Saudi Arabia is progressing toward a planned phase-out of wheat production due to water scarcity. Saudi Arabia's annual imports are projected to increase to 4.5 million tons by 2026/27.
- China has a surplus of wheat, but is short of wheat suitable for use in bakery and specialty products. China's wheat imports are stable at 3.4 million tons annually. Imports by Japan, South Korea, and Taiwan remain stable, totaling about 12.1 million tons per year. Historically, India has cycled between being a wheat importer in some years and an exporter in other years. From 2012/13 through 2014/15, surplus Government stocks led India to export significant amounts of wheat, but the depletion of stocks because of consecutive poor crops led to initiation of imports in 2015/16. India is projected to be a marginal net wheat exporter over the projection period, exporting an annual 400,000 tons while importing about 100,000 tons.

Global wheat exports

Million metric tons



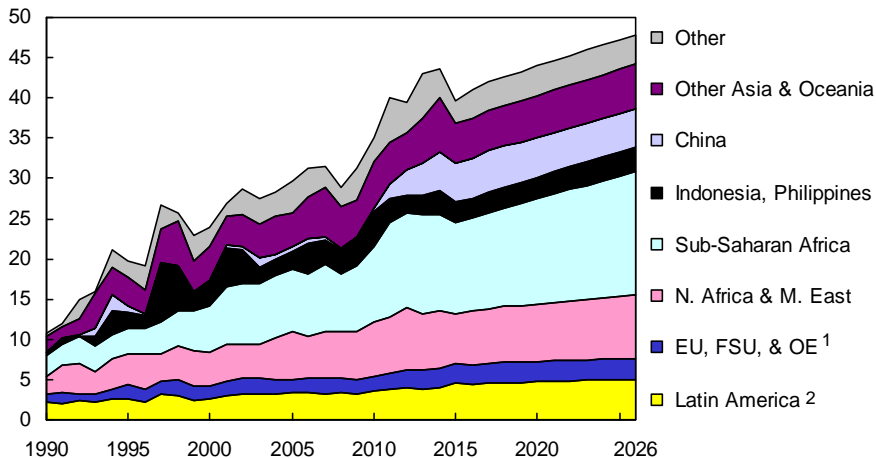
¹ Former Soviet Union and Other Europe; prior to 1999, includes Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia.

Similar to the past decade, the five largest wheat exporters (the EU, United States, Russia, Canada, and Australia) are projected to account for 70 percent of world trade in 2026/27. The FSU region exhibits the fastest growth in world export share, rising from 12 percent in the late 1990s and early 2000s to 23 percent over the past decade and then to a projected 29 percent by 2026/27.

- U.S. wheat exports are projected to gradually rise from 26.5 million tons to 27.5 million tons during the coming decade. The U.S. share of world exports gradually decrease from 15.4 percent in 2017/18 to 13.9 by the end of the projection period in 2026/27.
- Wheat exports from Russia, Ukraine, and Kazakhstan have been strong during the past 5 years and are projected to climb from 47 million tons in 2017/18 to 57.2 million tons by 2026/27, accounting for 40 percent of the projected increase in world wheat trade. Although not explicitly reflected in the projections, year-to-year volatility in FSU wheat production and trade is likely because of the impact of the region's highly variable weather.
- Canada's wheat exports grow from 20.5 million tons in 2017/18 to 24.2 million tons in 2026/27. Slower growth in domestic food demand supports higher wheat exports. Canadian wheat production increases mainly due to yield growth, as area only grows marginally.
- Argentina's wheat area grows substantially, as the new Government policies have abolished export taxes that were limiting returns for wheat. Wheat area is projected to expand, especially in areas where it can be double-cropped after soybeans. Recent export levels have rebounded from the low levels of 2012/13 and 2013/14, and are expected to continue to rise throughout the projection period, from 9.2 million tons in 2017/18 to 12.9 million tons in 2026/27, which reaches the previous higher levels of 12.9 million tons in 2011/12.
- The EU's market share is projected to decrease slightly from 20 to 19 percent throughout the projection period. EU wheat exports are projected to reach 38.1 million tons by 2026/27 (1.2 percent annual growth rate) as less wheat is fed to livestock domestically due to relatively low feed grain prices.

Global rice imports

Million metric tons



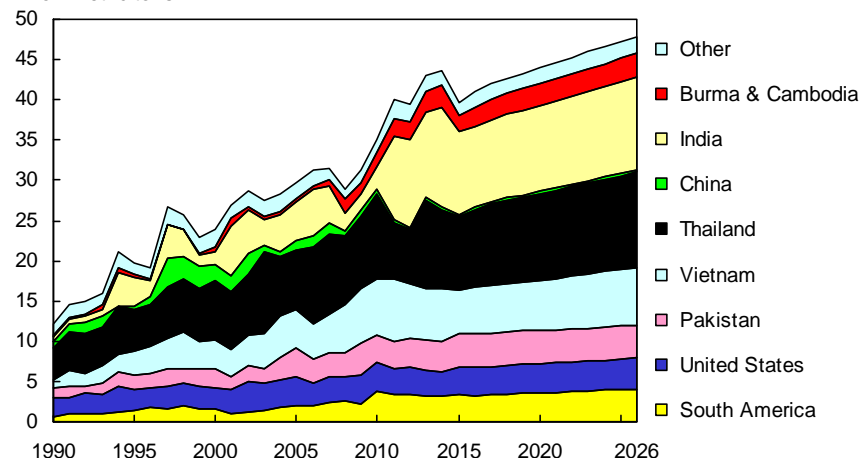
¹ European Union, former Soviet Union, and Other Europe. ² Includes Mexico.

Global rice trade is projected to grow at an annual rate of 1.5 percent from 2017/18 to 2026/27, and reach a record 47.9 million tons by the end of the projection period. This is an increase of almost 27 percent from the average over the previous decade. The main factors driving this expansion in trade are steady growth in demand—largely due to population and income growth in developing countries, mostly in Sub-Saharan Africa—and the inability of several key importing countries in Sub-Saharan Africa to boost production significantly. Since the early 1990s, world trade as a share of world consumption has risen from 3.5 percent to 8.5 percent. This upward trend is expected to continue, with the trade share of global consumption projected to exceed 9.0 percent by 2026/27.

- China remains the largest rice-importing country throughout the projection period. Over the coming decade, China's imports are projected to trend slowly downward from 5.2 million tons in 2017/18, but remain historically large at 4.8 million tons by 2026/27. In Africa and the Middle East, strong demand growth is driven by rapidly expanding income and population, while production growth is limited. In North Africa and the Middle East, production is primarily limited by climate. In Sub-Saharan Africa, production growth is constrained by infrastructure deficiencies and resource limitations. Altogether, the Africa and Middle East region accounts for almost 78 percent of the increase in world rice trade during the projections. Nigeria is the world's second-largest rice-importing country, with imports reaching 2.66 million tons by 2026/27.
- After China and Nigeria, the next largest importers are the EU, Saudi Arabia, Indonesia, the Philippines, Iran, Iraq, and South Africa, with imports ranging from 1.19 to 1.84 million tons a year by 2026/27. Historically Indonesia and the Philippines have been the largest rice importers. Despite increasing production, rising consumption boosts the Philippine's imports to 1.45 million tons by 2026/27. Indonesia's imports increase to 1.5 million tons by 2026/27 due to stagnant production. In both countries, imports rise 18 percent over the next decade.
- Saudi Arabia imports 1.74 million tons by 2026/27, while South Africa and Malaysia import 1.19 and 1.15 million tons, respectively. Saudi Arabia and South Africa—which do not grow rice—are expected to show strong consumption growth over the next decade, while Malaysia's production, consumption, and trade vary very little. Bangladesh's imports rise rapidly from 160,000 tons in 2017/18 to 527,000 tons in 2027/28, due to strong population growth and limited land for expanding area planted to rice. Japan, South Korea, and Taiwan maintain minimum market access import levels as mandated under the WTO Uruguay Round on Agriculture. In Canada and the United States, immigration continues to support slightly higher per capita consumption and modest import growth, with aromatics continuing to account for the bulk of U.S. imports.

Global rice exports

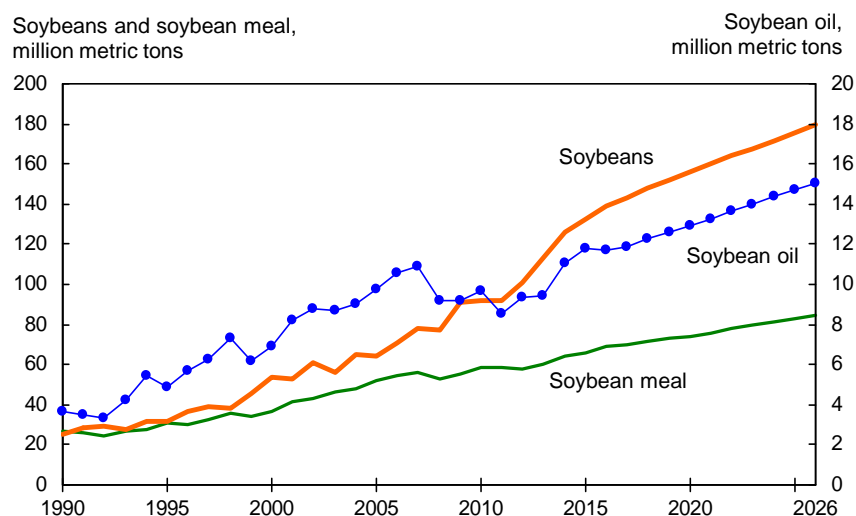
Million metric tons



Asia continues to supply most of the world's rice exports throughout the projection period. Thailand, India, and Vietnam are the world's largest rice-exporting countries, accounting for 63 percent of world rice exports and about 71 percent of the growth in world exports in the coming decade.

- In Thailand, increasing production and a drawdown of large stocks enable exports to rise 1.7 million tons to 11.8 million by 2026/27. Some of Thailand's rice stocks will be used for feed and industrial use. Vietnam's exports expand 1.2 million tons, rising from 6.0 million tons to almost 7.2 million tons over the projection period. In both Vietnam and Thailand, per capita food consumption declines as rising incomes support shifts from rice toward a more diversified diet with increasing meat consumption, especially poultry. Burma and Cambodia are projected to increase rice production over the next decade, with rice exports of 1.75 million and 1.2 million tons, respectively, by 2026/27.
- India's rice exports have historically been volatile due to Government trade policies and world market conditions. In September 2011, the Indian Government eased a partial export ban on non-basmati rice and exports jumped, making India the leading rice exporter for the past six years. India is projected to remain the second-largest exporter during the projection period, with exports increasing by 1.3 million tons and reaching 11.5 million tons by 2026/27.
- Pakistan has exported between 3 and 4 million tons of rice in recent years. Pakistan's rising consumption and weak production growth result in flat rice exports through the projection period, ranging from 4.03 to 4.16 million tons. Pakistan's share of world rice exports declines over the decade, but it remains the world's fourth-largest rice exporter.
- The United States is the world's fifth-largest rice exporter. Modest expansion in U.S. rice exports is projected, about 1.1 percent per year, due to a slight increase in area, improving yields, and slow growth in domestic use. The U.S. share of world rice exports is projected at about 8.2 percent during the coming decade. The United States exports both long-grain and medium- and short-grain rice.
- Exports from South America—primarily Argentina, Brazil, Guyana, Paraguay, and Uruguay—are projected to expand over the next decade, accounting for almost 8.4 percent of global trade.
- Australia's rice area is expected to recover from recent drought-reduced levels, facilitating a slight expansion in rice exports each year of the baseline. Exports reach a projected 520,000 tons by 2026/27, still below the 1998/99 record. Egypt's rice exports are steady throughout the projection period at 300,000 tons, as domestic demand grows faster than production. Australia and Egypt export medium- and short-grain rice.

Global exports: Soybeans, soybean meal, and soybean oil

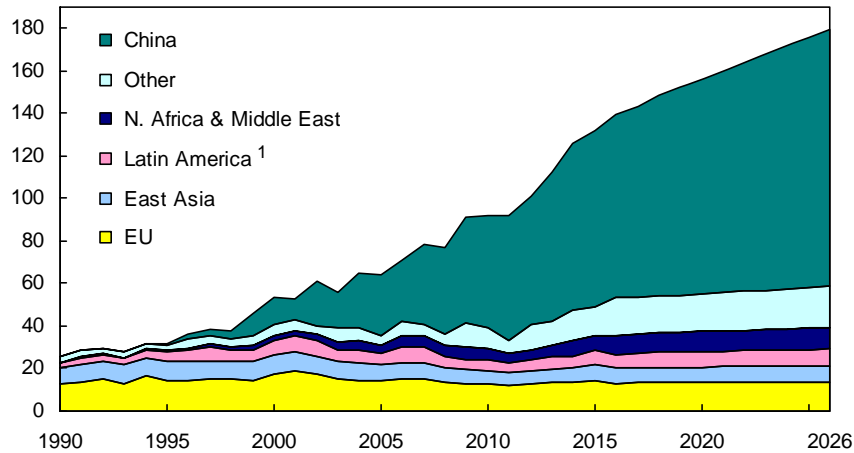


Increasing incomes and growing populations in developing countries, along with urbanization and development of modern food markets and outlets, are projected to boost demand for vegetable oils for food consumption and for protein meals used in livestock production. Global vegetable oil use for biodiesel production also is projected to increase, although at a slower pace than in recent years.

- China remains the predominant importer of soybeans, which are crushed domestically in order to meet robust domestic demand for both vegetable oil and oilseed meals for feed. China will also remain a significant importer of vegetable oils. India and China are the leading importers of palm oil from Indonesia and Malaysia. Indonesia will expand palm area for oil exports to meet demand for palm oil used in food and numerous consumer products by those countries.
- Many countries with increasing feed demand and limited opportunities to expand oilseed production have invested in crushing capacity. China is the most prominent example, but countries in North Africa, the Middle East, and Southeast Asia are seeing similar developments. As a result, import demand for oilseeds has grown rapidly, and this growth is projected to continue. During the next decade, global soybean trade is projected to increase by 25 percent, soybean meal trade by 20 percent, and soybean oil trade by 27 percent.
- Argentina, Brazil, and the United States maintain about 87 percent of the world's aggregate exports of soybeans, soybean meal, and soybean oil throughout the projection period.
- Brazil's share of world exports of soybeans and soybean products climbs from 34 percent to 40 percent, as production expands faster than in any other soybean-exporting country.
- In Argentina, escalating production costs for grains and policy uncertainties are expected to cause farmers to keep more land in soybean production. Argentina's share of world exports of soybeans and soybean products (mostly products) is steady at 22 percent.
- The U.S. share of global exports of soybeans and soybean products is projected to decline from 31 to 25 percent by 2026/27.
- The EU is expected to continue expanding its biodiesel production but at a slower pace than in recent years as policy emphasizes increased use of nonfood feedstocks over edible oils. Production of rapeseed oil, the EU's primary biodiesel feedstock, increases along with rapeseed production. The EU's projected imports of soybean meal and soybean oil are constant.

Global soybean imports

Million metric tons

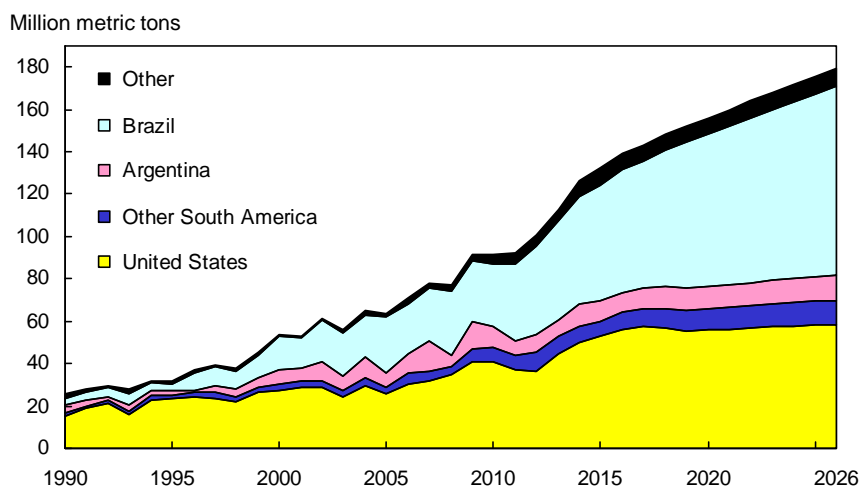


¹ Includes Mexico.

World soybean trade is projected to rise rapidly during the next 10 years, climbing 36 million tons (25 percent) to 179 million tons. China increases soybean imports by 31 million tons by 2026/27.

- China's soybean imports have risen sharply since the late 1990's and in 2016/17 account for about 62 percent of world soybean trade. China's imports are projected to increase from 90 million tons in 2017/18 to 121 million tons in 2026/27, accounting for 85 percent of the increase in trade. The projections assume that China will continue to meet rising demand for vegetable oils and protein in feed by importing soybeans, while supporting domestic production of food and feed grains. China continues to add oilseed-crushing capacity that will further contribute to strong gains in soybean imports. Imports will be moderated to some extent by an expansion of domestic output arising from policies that curtail corn production.
- EU soybean imports have been stable near 13 million tons over the past decade due to decreases in internal EU grain prices and increases in grain and rapeseed meal feeding. EU soybean imports are projected to increase to 13.9 million tons by 2026/27.
- Imports of soybeans by East Asia (Japan, South Korea, and Taiwan) have been reduced by a continuing shift from importing feedstuffs for domestic meat production to importing meat and other livestock products. The projected soybean imports are steady, importing 7.2 million tons each year and slowly rising livestock production leads to modest increases in soybean imports.
- In Indonesia, soybeans are used for food consumption in the form of tempeh and tofu. Indonesia has no crushing industry for soybeans and imports all of the soybean meal that the country uses. Indonesian soybean imports increase by 21.3 percent to 3 million tons by 2026/27. Thailand increases soybean imports by 0.7 million tons by 2026/27 for increasing feed demand. Vietnam soybean imports remain stable at 1.9 million tons due to lack of growth in crushing capacity and soybean meal imports increase throughout the projection period.
- Egypt is projected to increase soybean and soybean meal imports in an effort to improve feed efficiency and expand poultry production. Many countries in North Africa and the Middle East region have minimal soybean production, so they increase imports to fill their growing feed and food needs from 8.9 million tons in 2017/18 to 10.4 million tons by 2026/27.
- Mexico's soybean imports are projected to increase 20 percent to 5.2 million tons by 2026/27. These imports will support the production of soybean meal for the growing poultry and hog industries and soybean oil for domestic food consumption.

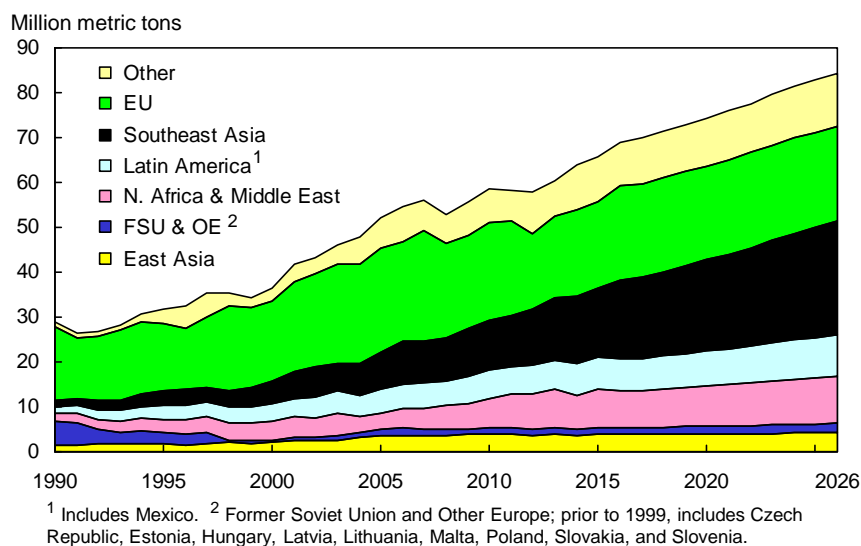
Global soybean exports



The three leading soybean exporters—the United States, Brazil, and Argentina—are projected to account for about 89 percent of world soybean trade over the next decade.

- Brazil’s soybean exports are projected to rise 28.4 million tons (47 percent) to 89 million tons during the projection period (2017/18 to 2026/27), enabling the country to strengthen its position as the world’s leading soybean 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 “Amazon Legal” region, the growth rate in area planted to soybeans is projected to average 1.8 percent per year during the coming decade.
- Argentina’s export tax rates are higher for soybeans than for soybean products, a policy that favors domestic crushing of soybeans and exporting the resulting products. In response to increasing world demand for soybeans for crushing, Argentina’s soybean exports are projected to grow 3 percent annually, rising about 31 percent to more than 12.1 million tons by 2026/27. Most of Argentina’s soybean exports go to China. Nonetheless, Argentina remains a distant third to Brazil and the United States as a soybean exporter as most of the country’s crop is processed domestically.
- Other South American countries, principally Uruguay, Paraguay, and Bolivia, also are projected to expand their area planted to soybeans. Exports by these countries increase 27 percent to 11.3 million tons by 2026/27, adding 2.4 million tons to world soybean exports.
- The U.S. share of global soybean exports is about 40 percent in 2017/18 and projected to decrease to 33 percent by 2026/27. U.S. soybean exports are projected to increase slightly from 57.2 million tons in 2017/18 to 58.5 million tons by 2026/27.
- Canada increases soybean exports from 4.1 million tons in 2017/18 to 4.7 million tons in 2026/27. Canada’s soybean area has expanded beyond the traditional producing region of Southern Ontario to the prairies of Northeast Manitoba. Improved varieties of soybeans with better yields have contributed to this expansion in area. Ukraine soybean exports rise over the projection period in response to international oilseed prices. Projected soybean exports increase from 2.2 million tons in 2017/18 to 3.0 million tons by 2026/27.

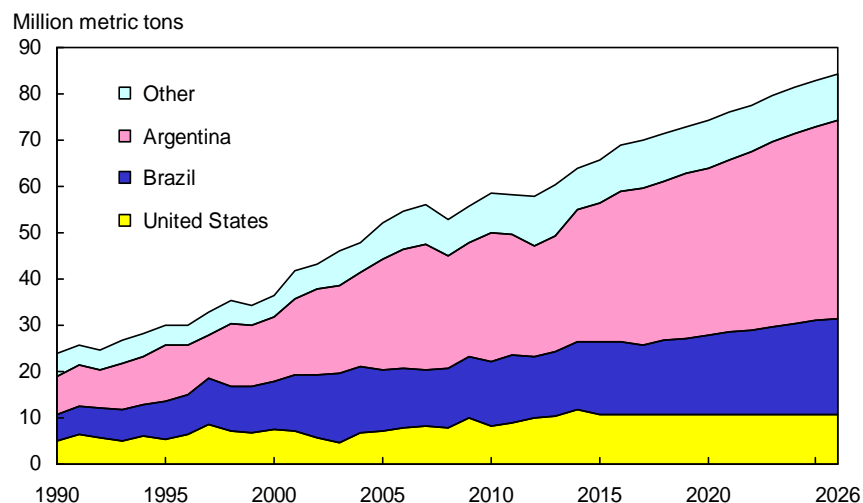
Global soybean meal imports



World soybean meal trade is projected to climb by 14.3 million tons (20.4 percent) to 84.2 million tons by 2026/27. In a number of countries, soybean meal imports are boosted by continued growth in livestock production and movement toward modern feed rations. Additionally, many countries have limited capability to increase domestic oilseed production.

- The EU remains the world's largest soybean meal importer throughout the projection period and remains stable near 21 million tons per year. Although abundant supplies of low-cost rapeseed meal are expected to be available as a result of EU biodiesel production, nutritional considerations limit the inclusion of rapeseed meal in livestock rations.
- The regions of Southeast Asia, Latin America, North Africa, and the Middle East become larger importers of soybean meal due to increasing demand for livestock feed. Increasing poultry consumption and production is a major driving force, along with the lack of crushing facilities. Vietnam and Indonesia contribute the largest gain in world imports (37 percent), with a combined increase from 10.3 million tons in 2017/18 to 15.6 million tons by 2026/27. Thailand, the Philippines, and Malaysia increase to 9.7 million tons by 2026/27, adding 2 million tons to imports. Southeast Asia accounts for 51 percent of the projected increase in world soybean meal trade.
- Annual imports by countries in North Africa and the Middle East are projected to rise by 3.3 million tons, accounting for 23 percent of the increase in world trade. Iran, Algeria, Egypt, and Saudi Arabia are the largest importers for these two combined regions. In 2017/18 these four countries accounted for about 51 percent of the regions imports.
- Soybean meal imports in South American countries increase by 30.2 percent over the projection period from 4.8 million tons in 2017/18 to 6.3 million tons by 2026/27. Some of the largest importers include Colombia, Peru, Ecuador, Venezuela, and Chile.
- Mexico's growing demand for protein feed is expected to boost its annual soybean meal imports from 2.6 million to 3.1 million tons by 2026/27. Canada's soybean meal imports are stable, increasing slightly to 1.0 million tons by 2026/27.

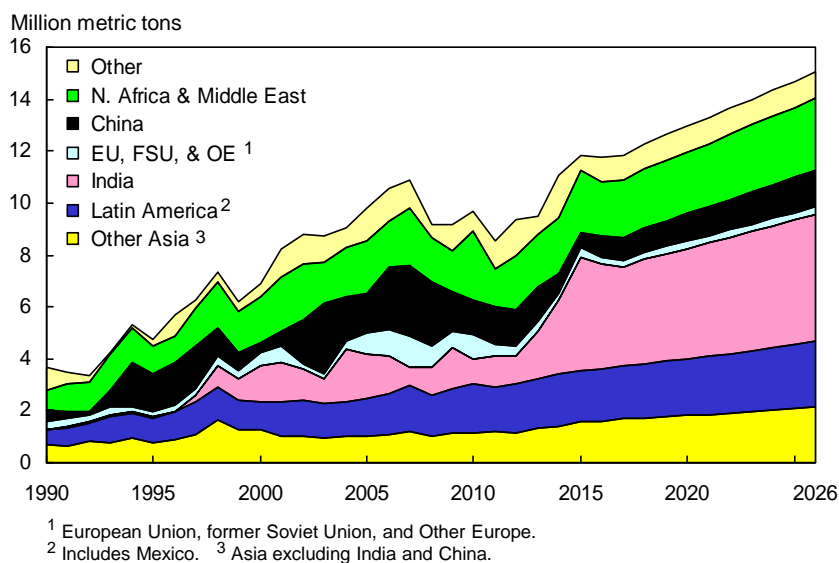
Global soybean meal exports



Argentina, Brazil, and the United States remain the three largest exporters of soybean meal. Together, their share of world exports rises from 85 to 88 percent over the next 10 years. Argentina, Brazil, and United States account for 51, 25, and 13 percent, respectively, of the world market share of soybean meal exports by 2026/27. The U.S. share is decreasing slightly.

- Argentina has lower export taxes on soybean products than on soybeans, a policy that encouraged the development of a large oilseed-crushing capacity. With Argentina's low costs of production for soybeans and its export incentives for soybean products, the country's soybean meal exports are projected to continue their strong growth at 2.5 percent per year. Argentina's annual soybean meal exports are projected to rise by almost 8.6 million tons over the next decade, reaching 42.7 million tons by 2026/27.
- In Brazil, the rapid expansion of poultry and pork production boosts domestic soybean meal consumption and limits increases in soybean meal exports. Nonetheless, exports of soybean meal increase by 5.8 million tons (39 percent) over the projected decade. 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. Brazil's share of world soybean meal exports increases from 21.3 to 24.5 percent by 2026/27.
- U.S. soybean meal exports are projected to increase slightly to 10.9 million tons by 2026/27. The U.S. share of world soybean meal exports declines from 15.3 percent in 2017/18 to slightly more than 12.9 percent by 2026/27.
- India's soybean meal exports are projected to decline as domestic use strengthens and export competition from South America intensifies. Exports are seen rebounding to 1.4 million tons by 2018/19, but decline to less than 1.1 million tons in 2026/27 as use for poultry, egg, and milk production grow more rapidly than India's domestic soybean meal production.
- The EU continues to be a small but steady exporter of soybean meal to Russia and other Eastern European countries where livestock production is expected to increase significantly. The EU's annual soybean meal exports hold steady at 350,000 tons through 2026/27.

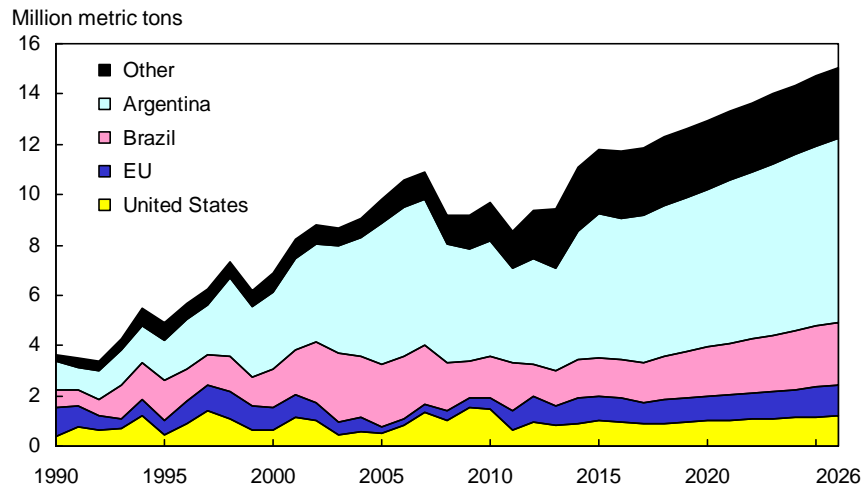
Global soybean oil imports



World soybean oil imports are projected to climb by 3.2 million tons (27 percent) to 15.1 million tons over the projection period, bolstered by rising food and industrial use. Growth in world soybean oil trade is 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 surpassed China in 2013/14 to become the world's largest soybean oil importing country. India's soybean oil imports climb 30 percent to 4.9 million tons in 2026/27. Factors contributing to the continued growth of India's soybean oil imports include burgeoning demand for vegetable oils and limited area for expanding oilseed production. Low yields, associated with variable rainfall and low input use, also inhibit growth of oilseed production. Both Bangladesh and Pakistan increase imports over the projection period from a combined 0.9 million tons to 1.1 million tons.
- A rapid increase in China's soybean imports for crushing in recent years caused soybean oil imports to decline to about 586,000 tons in 2015/16, and are projected to rebound to 893,000 tons by 2017/18 and continue to rise to 1.4 million tons by 2026/27. Imports by the Southeast Asia region increase from 0.3 million tons to 0.4 million tons by 2026/27. By 2026/27, Vietnam and Malaysia account for most of the soybean oil imports within Southeast Asia at 206,000 and 135,000 tons respectively.
- 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 increase from 0.8 million tons in 2017/18 to 1.1 million tons by 2026/27. The Other North Africa and South America region each import 1.3 million tons in 2017/18 and each region increases to 1.6 million tons by 2026/27. Algeria, Morocco, and Egypt are the largest soybean oil importers in North Africa. In South America the largest importers are Peru, Colombia, and Venezuela. The Central America and Caribbean region increases imports from 0.5 million tons to 0.6 million tons by 2026/27. Mexico imports are steady at about 0.3 million tons throughout the projection period.

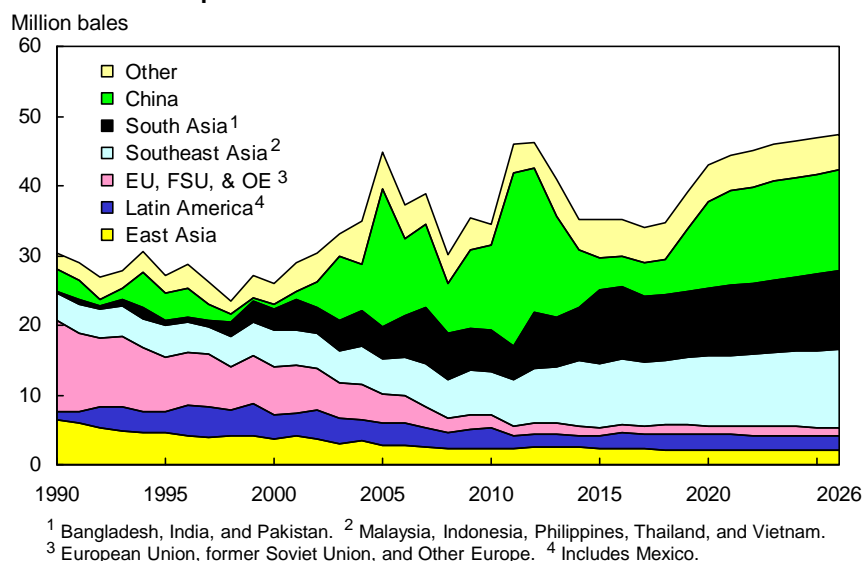
Global soybean oil exports



Argentina, Brazil, United States, and the EU are the top four ranking soybean oil exporters. Their combined shipments are projected to account for 80 percent of world soybean oil exports during the coming decade. Argentina, Brazil, and the United States are projected to account for 49, 17, and 8 percent of world soybean oil exports by 2026/27, respectively.

- Soybean oil exports from Argentina are projected to climb to 7.3 million tons by 2026/27, a 25 percent increase from 2017/18. Argentina's strength as a soybean oil exporter reflects the country's large crushing capacity, its small domestic market for soybean oil, and an export tax structure that favors exports of soybean products rather than soybeans. Gains in Argentine soybean production due to extensive double-cropping, further adjustments in crop-pasture rotations, and expansion onto marginal lands in the northwest 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.
- Brazil's soybean oil exports increase in 2017/18 to 1.6 million tons while continued expansion of soybean production into new areas of cultivation is expected to enable the country to increase soybean oil exports to 2.5 million tons by 2026/27. Over the coming decade, the country is expected to use more soybean oil for biodiesel production.
- U.S. soybean oil exports rise steadily in the projection period and reach 1.2 million tons in 2026/27. The United States is expected to remain the world's third-largest soybean oil exporter, with 8.1 percent of global trade.
- The EU increases soybean oil exports from 0.9 million tons in 2017/18 to 1.2 million tons by 2026/27, accounting for 8 percent of global trade. The FSU region maintains stable soybean oil exports at 0.6 million tons over the projection period.
- Soybean oil exports are stable in the Other South America countries, with exports at 1.2 million tons throughout the projection period. The largest soybean oil exporters in South America after Argentina and Brazil are Paraguay and Bolivia.

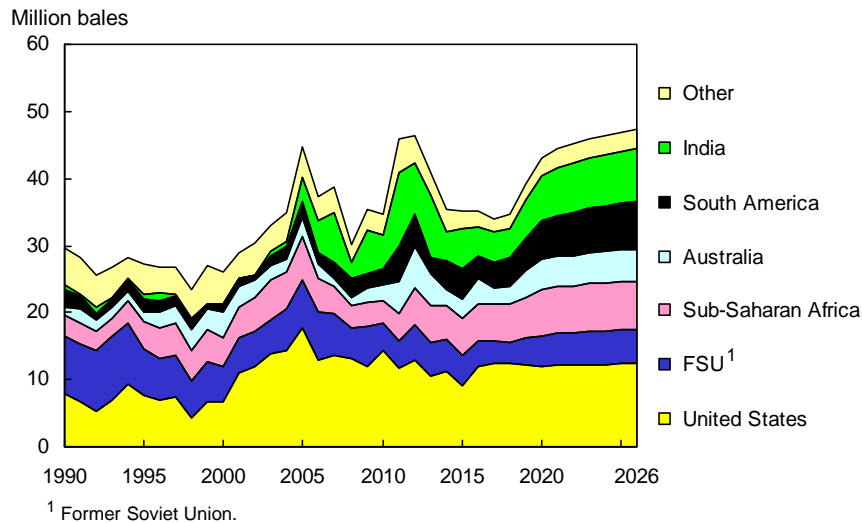
Global cotton imports



World cotton trade is projected to increase at a 3.8 percent annual growth rate between 2017/18 and 2026/27 as it recovers from a sharp decline during the period 2013/14 to 2017/18 that reflected reduced imports by China. World cotton trade rises after China disposes of large reserve stocks and increases imports. Projected world cotton trade surpasses the 46.4-million-bale record set in 2012/13, reaching 47.4 million bales in 2026/27

- China's cotton imports are expected to increase throughout the next decade with stronger growth in the second half of the projection period. After a sharp decline in recent years, China's cotton imports are expected to resume growth in 2019/20, with an average annual increase of 13 percent over the projection period. China increases imports by about 9.6 million bales with imports at 14.4 million bales in 2026/27.
- In 2014, China modified its cotton support program and began drawing down large cotton stocks. By allowing domestic cotton prices to fall, China is expected to recover part of the share of world cotton consumption it lost between 2009 and 2013. Some textile production shifted from China to other countries during those years. India, Bangladesh, Pakistan, and Vietnam have been major beneficiaries of this shift. Bangladesh became the world's largest cotton importer in 2015/16, but is projected to be surpassed by China in 2019/20. Bangladesh remains the second-largest importer through 2026/27 as its textile industry grows rapidly.
- Vietnam, Turkey, Indonesia and Pakistan are expected to be the third-, fourth-, fifth- and sixth-largest cotton importers throughout the projection period. Vietnam's cotton imports increased more than five-fold over the past decade and are projected to account for 15 percent of the world's increased imports to 2026/27. Vietnam's textile sector and cotton imports are expected to grow 3.9 percent annually in the coming decade. Turkey's share of world consumption has weakened recently, and imports are expected to remain flat through the projection period.
- Indonesia's cotton imports increase but do not surpass Turkey. Indonesia remains the fifth largest cotton importer throughout the projection period, with imports projected to grow at an annual average rate of 1.1 percent, increasing to 3 million bales. Pakistan's cotton imports are projected to slightly decrease by 2026/27. Pakistan's new *Bacillus thuringiensis* (*Bt*) cotton varieties specific to Pakistan's cotton-growing conditions stimulate additional production.
- Imports by Mexico, Thailand, Japan, South Korea, and Taiwan all decrease slightly throughout the projection period, with a combined decrease in imports of 0.62 million bales by 2026/27.

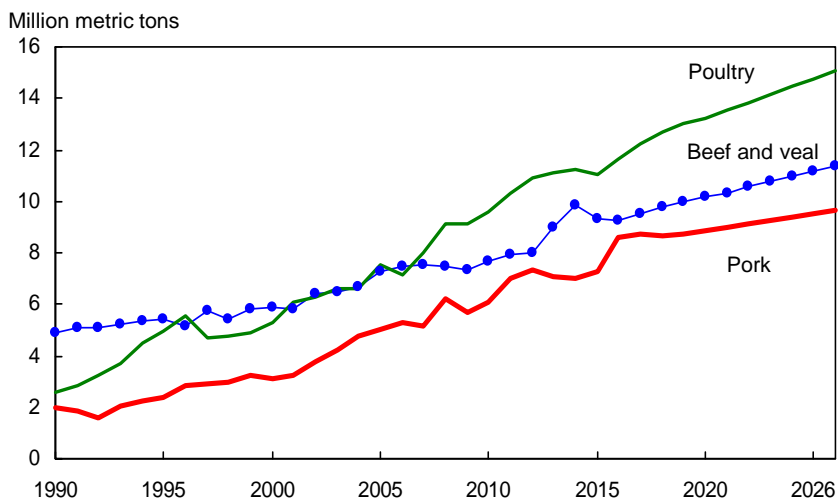
Global cotton exports



Raw cotton production is expected to continue moving to countries with favorable resource endowments and advancing production technologies. Expanded cotton output is projected for traditional producers with large amounts of land suitable for cotton production, including Brazil, Sub-Saharan Africa, and India.

- The U.S. share of world cotton production has fallen sharply with the spread of new technology around the world—the U.S. share is expected to continue falling. Nonetheless, even with production lower than historical levels, the United States remains the world’s leading cotton exporter, decreasing marginally (0.1 percent annually) to 12.4 million bales by 2026/27. However, the U.S. share of world cotton trade falls to 26 percent by 2026/27, compared with 41.6 percent in 2010/11.
- India’s cotton exports grow by 6.9 percent annually, reaching 8 million bales in 2026/27. Improved yields in India, in part due to the adoption of *Bt* cotton, have raised India’s production and exports. Projected yield growth in India reflects continuing improvement in cultivation practices. With a 6.7-million-bale increase in its output by 2026/27, India is expected to be the world’s second-largest cotton exporter behind the United States.
- Area planted to cotton in Brazil is projected to expand with continuing yield growth. Brazil’s cotton exports are projected to increase by 3.1 million bales by 2026/27, corresponding to a 7-percent annual growth rate, the largest projected growth rate among the world’s exporters. Brazil remains the world’s third-ranking cotton exporter throughout the projection period.
- Exports from the 15 countries of the Economic Community of West African States are projected to experience sustained growth in the next decade. Improvements in technical and financial infrastructure will help boost production and exports. Exports from the other countries in Sub-Saharan Africa also are projected to increase. In total, Sub-Saharan Africa is expected to add 1.81 million bales to trade and account for 15 to 16 percent of world trade over the projection period.
- Government policies in the major cotton-producing countries in the Central Asian FSU countries are promoting investment in textile industries and contributing to exports of textile products rather than exports of raw cotton. Lower grain prices will provide incentives to shift some land back to cotton in these countries, leading to a gradual increase in their cotton exports. Exports grow by 4.9 percent annually to 5 million bales by 2026/27, which is far below the peak exports of 7.3 million bales in 2005/06.

Global Meat exports ¹

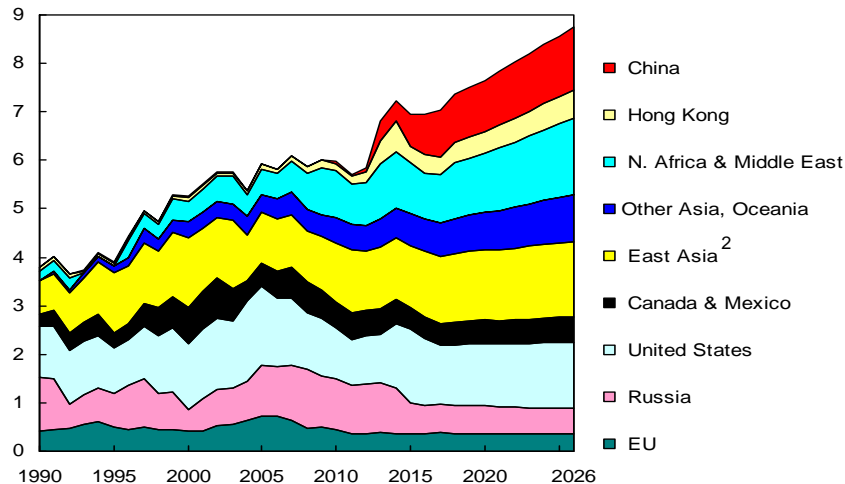


Growth in global meat consumption is projected to continue and drives increasing exports by many countries. Poultry consumption rises fastest, with a projected annual growth rate of 1.9 percent, while beef and pork each grow at close to 1.0 percent. Meat shipments by the major exporting countries rise by 1.9 percent per year, an increase of 4.9 million tons by 2026. Over the projection period, poultry exports rise by 2.7 million tons (2.4 percent annually), beef exports rise by 1.7 million tons (2 percent annually), and pork exports rise by 0.9 million tons (1.2 percent annually).

- Brazil is the largest exporter of poultry products followed by the United States, the EU, and Thailand. Brazil exports increase by 33 percent, reaching 6 million tons by 2026. Brazil account for a little over half the global increase in poultry exports. The United States increases exports by 17 percent over the projection period to a little over 4 million tons by 2026. The third-largest exporter, EU, remains relatively stable near 1.4 million tons from 2017 through 2026. Thailand's projected poultry exports increase by over 40 percent and reach almost 1 million tons by 2026.
- The EU, the United States, Canada, and Brazil are the world's largest pork exporters. EU pork exports increase by 243,000 tons over the projection period, reaching 3.5 million tons by 2026. U.S. pork exports expand by over 19 percent over the projection period, increasing from 2.4 million tons in 2017 to 2.9 million tons by 2026. Canada's pork exports reach 1.4 million tons by 2026, adding 125,000 tons over the projection period.
- India and Brazil now vie for the position as the world's largest annual beef exporter, following a decade and a half of rapid export growth. Brazil is projected to export 1.95 million tons of beef in 2017 and increase by 695,000 tons by 2026, reaching 2.65 million tons. Indian beef exports increase from 1.9 million tons in 2017 to 2.5 million ton by 2026. Developing countries' demand for India's lower priced beef is projected to continue rising rapidly. Australia is the world's third-largest beef exporter and historically has been among the top ranked countries in this category. Australia's beef herd will move into the rebuilding phase in the projection period under the assumption of normal weather. Australia's beef exports are projected to gradually increase to 1.57 million ton by 2026, adding 247,000 tons to world exports. The United States remains the fourth-largest exporter of beef throughout the projection period, providing mainly higher valued cuts to a number of countries. U.S. beef exports increase by 103,000 tons over the projection period, reaching 1.3 million tons by 2026.

Global Beef imports ¹

Million metric tons



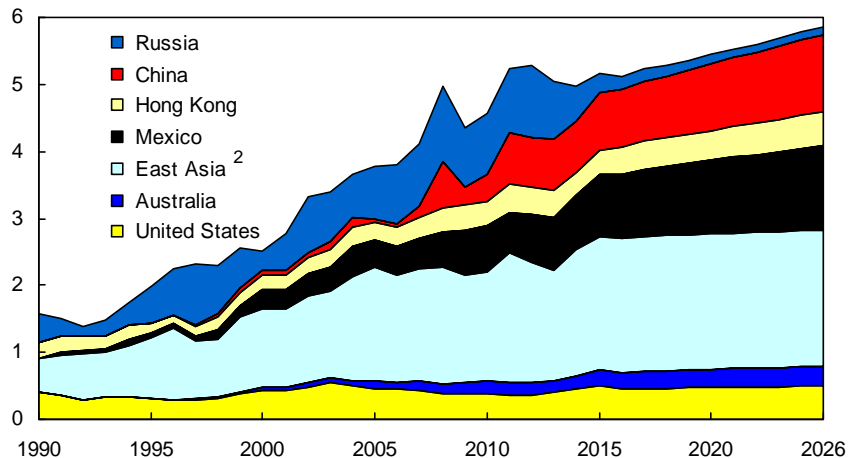
¹ Selected importers, not world total. ² Japan, Korea, & Taiwan.

Between 2017 and 2026, imports by the major beef-importing countries are projected to increase by 1.7 million tons, reaching 9.0 million tons in 2026. Increased imports by lower and middle income countries will fuel much of the increase. Imports of grain-fed beef, mainly by higher income countries, are projected to slowly rise.

- Russian beef imports are projected to decrease from 585,000 tons in 2017 to 511,000 tons by 2026. Russian beef imports fall over the projection period due to declining consumption and policies supporting domestic beef production.
- The combined beef imports by China and Hong Kong are projected to increase almost 42 percent in the coming decade to almost 1.9 million tons by 2026 due to rising demand for beef which outpaces production growth. This increase accounts for the largest growth in imports among major beef-importing countries.
- Imports of grain-fed beef, mainly by higher-income countries, are projected to slowly rise. U.S. beef exports increases by almost 103,000 tons from 1.2 million tons in 2017 to 1.3 million tons by 2026. The United States is the largest exporter of grain fed beef in the world.
- U.S. beef imports, primarily grass-fed, lean beef for use in ground beef and processed products, rise gradually during the projection period. The United States is projected to remain the world's largest beef importer, with beef imports up by 11.7 percent over the next decade.
- The Middle East and North Africa region, with fast population and income growth, is projected to increase beef imports from 1.2 million tons in 2017 to over 1.7 million by 2026, at an average annual growth rate of 4.1 percent.
- Growth in Mexican beef imports picked up in 2016 and is projected to increase throughout the projection period. Much of Mexico's imports consist of higher valued, grain-fed beef from the United States. Mexico's beef imports will increase by 3.6 percent annually to about 262,000 tons by 2026.
- Countries of Southeast Asia maintain strong income growth, leading to a 36-percent increase in their beef imports from 2017 to 2026, adding 206,000 tons to global import demand.

Global Pork imports ¹

Million metric tons



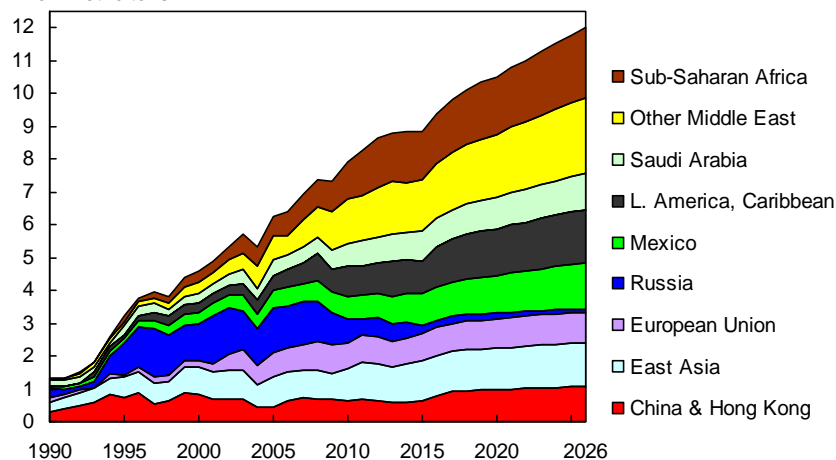
¹ Selected importers, not world total. ² Japan, Korea, & Taiwan.

Imports by major pork importing countries are projected to continue to rise, increasing by slightly over 728,000 tons (9.2 percent) from 2017 to 2026. Mexico, the Philippines, China, and Hong Kong exhibit the strongest growth in pork imports over the projection period.

- China's annual pork imports have risen sharply since 2009 and are projected to modestly increase by about 5 percent from 2017 to 2026 to more than 2.4 million tons. China became the world's largest pork importer in 2016 and is projected to continue as the world's largest throughout the projection period. China and Hong Kong combined increase pork imports by about 165,000 tons over the decade.
- Japan is projected to be the second largest pork importer throughout the next decade. Pork imports increase modestly by 9,900 tons over the projection period and reach 1.33 million tons by 2026. Japan's imports increase by less than 1 percent from 2017 through 2026, due to a combination of both an aging and declining population and few expected changes in protein consumption patterns.
- Mexico is the world's third-largest pork importer, with imports climbing from 1.05 million tons in 2017 to 1.27 million tons by 2026. Income and population growth are the primary drivers of Mexico's rising pork demand. Mexico accounts for 30 percent of the projected increase in world pork imports among major importers.
- Following the country's ban on imports from some countries, Russia's pork imports are projected to fall 57 percent from 2017 to 2026. This decline partly reflects policies to stimulate domestic meat production and reduce reliance on imports.
- South Korea increases pork imports to satisfy demand for selected cuts, with imports rising by over 17 percent over the projection period to reach 740,000 tons, adding 110,000 tons to annual pork imports. The Philippines is projected to increase pork imports from 250,000 tons in 2017/18 to 430,000 tons by 2026/27, adding 180,000 tons to imports.
- Increasing income and population growth drive strong demand for imported pork in Central America and the Caribbean. Imports rise at an annual rate of 3.3 percent over the coming decade reaching 269,000 tons and increasing annual pork imports by 68,000 tons by 2026.

Global Poultry imports ¹

Million metric tons



¹ Selected importers, not world total.

Annual poultry meat imports by the major importing countries are projected to increase by 2.6 million tons (24 percent), reaching just over 13.3 million tons by 2026. Particularly strong rates of import growth are projected for much of the world, most notably Mexico, Saudi Arabia, the Middle East region, and Sub-Saharan Africa. However, Russian poultry imports decline, and Japan, Canada, and the EU have slow import growth.

- Poultry meat imports by the regions of Africa and the Middle East are projected to grow by 38 percent and 27 percent, respectively, over the coming decade. By 2026, these regions together increase their poultry meat imports by more than 1.3 million tons. Projected gains in income and population boost demand, while ongoing animal-disease issues in a number of countries are expected to limit production growth, thus leading to increased imports.
- Higher projected incomes in Mexico, Central America, and the Caribbean support their growing poultry meat demand and imports. Imported poultry products remain less expensive than beef or pork, further stimulating demand. Mexico's poultry production continues to grow through the projection period, but at a slower rate than consumption, resulting in imports rising by about 355,000 tons (35 percent). Poultry imports by the Central America Caribbean region rise by 200,000 tons (29 percent).
- Russia's substantial decline in poultry imports since 2014—the result of an import ban imposed on some countries—is projected to continue as imports fall steadily over the projection period to 97,000 tons (a 56-percent decrease from 2017). The projections assume that Russian policies will stimulate domestic production and thereby limit imports. Slower income growth will further inhibit growth in poultry per capita consumption.
- China's rising consumption of poultry meat is met primarily by domestic production, with imports accounting for only about 2 percent of consumption. China's poultry imports increase by 15 percent, reaching 675,000 tons by 2026. China became a net importer in 2016 and is projected to remain a net importer through 2026. Fully cooked products are projected to account for most poultry exports from China and Thailand. Due to higher costs these products tend to be marketed to higher income countries in Asia, Europe, and the Middle East. Thailand's poultry meat exports to the EU, Japan, and South Korea are expected to rise because of the reopening of those markets to importing uncooked chicken from Thailand. Thai poultry exports increase to 995,000 tons by 2026.

Table 26. Coarse grains trade long-term projections

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
<i>Imports, million metric tons</i>												
Importers												
Former Soviet Union ¹	0.5	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.9	0.9	0.9
Other Europe	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.0
European Union ²	13.9	14.1	13.3	13.0	12.9	12.6	12.3	12.0	11.7	11.5	11.2	10.9
Egypt	8.7	8.9	9.1	9.4	9.7	10.0	10.4	10.8	11.2	11.7	12.1	12.5
Iran	8.3	8.1	9.1	9.7	10.2	10.7	10.9	11.2	11.4	11.6	11.9	12.0
Saudi Arabia	14.6	14.2	14.2	14.6	15.0	15.3	15.6	15.8	16.0	16.3	16.5	16.7
Turkey	0.8	1.8	1.7	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7
Other Middle East	6.3	6.5	6.7	6.7	6.8	6.9	7.1	7.2	7.3	7.4	7.5	7.6
Morocco	2.9	3.1	2.9	3.0	3.0	3.1	3.1	3.2	3.3	3.3	3.4	3.4
Other North Africa	8.5	8.5	8.4	8.5	8.8	9.0	9.3	9.6	9.8	10.1	10.3	10.5
West Africa (ECOWAS) ³	0.7	0.6	0.6	0.7	0.7	0.7	0.8	0.8	0.8	0.9	0.9	1.0
Sub-Saharan Africa ⁴	3.5	4.1	4.4	4.6	4.8	5.0	5.2	5.5	5.7	5.9	6.2	6.4
South Africa	3.2	0.7	0.7	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7
Japan	17.1	16.9	16.9	16.8	16.8	16.7	16.7	16.7	16.6	16.6	16.6	16.6
South Korea	10.2	9.9	10.1	10.3	10.4	10.5	10.6	10.6	10.7	10.8	10.8	10.8
Taiwan	4.6	4.3	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
China	17.5	13.7	11.4	10.9	10.4	10.3	10.3	10.2	10.3	10.4	10.3	10.3
Indonesia	1.8	2.0	2.3	2.4	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.0
Malaysia	4.1	3.6	3.9	4.0	4.1	4.1	4.2	4.3	4.4	4.5	4.5	4.6
Philippines	0.7	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.0
Thailand	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.8	0.8	0.9	0.9	0.9
Vietnam	8.0	6.5	7.1	7.2	7.4	7.6	7.9	8.1	8.4	8.7	8.9	9.1
Other Asia & Oceania	1.1	0.8	0.7	0.7	0.7	0.7	0.8	0.9	0.9	1.0	1.0	1.1
Canada	1.5	1.6	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.7	1.6	1.6
Mexico	14.7	14.8	15.8	16.4	16.9	17.6	18.5	19.2	19.9	20.5	21.1	21.6
Central America & Caribbean	6.5	6.3	6.7	6.8	6.8	6.9	7.2	7.4	7.5	7.6	7.8	7.9
Brazil	2.8	1.1	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Other South America	12.1	12.7	13.1	13.3	13.7	14.2	14.6	15.0	15.4	15.7	16.1	16.4
Other foreign ⁵	-16.7	10.5	4.3	4.3	4.3	4.3	4.3	4.3	4.4	4.4	4.4	4.4
United States	4.6	4.2	4.3	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
Total trade	164.0	182.5	178.1	180.5	183.0	185.9	189.4	192.8	196.1	199.0	201.9	204.3
<i>Exports, million metric tons</i>												
Exporters												
European Union ²	13.0	8.3	8.5	8.7	8.8	8.9	9.0	9.1	9.3	9.6	9.8	10.1
Other Europe	1.7	2.3	3.0	3.0	3.1	3.1	3.1	3.2	3.2	3.2	3.3	3.3
Russia	8.7	8.8	8.4	8.5	8.7	8.9	9.2	9.4	9.5	9.6	9.7	9.8
Ukraine	21.1	23.2	22.7	23.2	23.7	24.0	24.6	24.6	25.0	25.5	25.9	26.3
Other Former Soviet Union ⁶	1.0	1.2	1.2	1.3	1.3	1.4	1.5	1.5	1.5	1.5	1.6	1.6
Canada	4.6	3.9	4.2	4.3	4.4	4.6	4.7	4.8	4.9	5.0	5.1	5.3
Argentina	24.1	28.1	29.7	29.8	30.4	31.0	31.2	31.4	31.8	32.0	32.5	32.8
Brazil	16.5	25.5	27.0	27.9	28.3	29.3	31.0	33.3	34.8	36.1	37.2	38.0
Other South America	2.6	2.5	2.6	2.6	2.7	2.8	2.8	2.9	3.0	3.0	3.1	3.1
Australia	6.5	8.0	8.2	8.2	8.1	8.1	8.0	8.0	7.9	7.8	7.8	7.7
Other Asia and Oceania	3.0	3.3	3.5	3.7	3.8	3.9	3.9	3.8	3.6	3.5	3.3	3.2
South Africa	0.8	1.5	1.6	1.6	1.6	1.7	1.6	1.6	1.6	1.6	1.6	1.6
Other Africa ⁷	1.9	1.7	1.6	1.6	1.6	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Other foreign	1.4	1.2	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
United States	57.1	63.1	54.6	55.0	55.4	55.8	56.2	56.7	57.3	57.8	58.3	58.8
<i>Percent</i>												
U.S. trade share	34.8	34.6	30.7	30.5	30.3	30.0	29.6	29.4	29.2	29.0	28.9	28.8

¹FSU-12. Includes intra-FSU trade.²Excludes intra-EU trade.³Economic Community of Western African States, 15 member countries (ECOWAS).⁴Excludes ECOWAS and South Africa.⁵Includes unaccounted, which can be negative.⁶Covers FSU-12 except for Russia and Ukraine. Includes intra-FSU trade.⁷Includes all African countries except South Africa.

The projections were completed in November 2016.

Table 27. Corn trade long-term projections

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
	<i>Imports, million metric tons</i>											
Importers												
European Union ¹	13.4	13.5	12.7	12.5	12.4	12.1	11.7	11.5	11.2	10.9	10.6	10.3
Former Soviet Union ²	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Egypt	8.6	8.8	9.0	9.2	9.6	9.9	10.3	10.6	11.1	11.6	12.0	12.3
Morocco	2.1	2.3	2.4	2.5	2.5	2.6	2.6	2.7	2.8	2.8	2.9	2.9
Other North Africa	6.0	6.2	6.3	6.4	6.6	6.7	6.9	7.1	7.3	7.5	7.7	7.9
Iran	6.6	6.5	7.1	7.6	8.1	8.5	8.8	9.1	9.3	9.5	9.7	9.9
Saudi Arabia	3.6	3.7	3.6	3.7	3.9	4.0	4.1	4.2	4.3	4.3	4.4	4.5
Turkey	0.7	1.5	1.5	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.5	1.4
Other Middle East	4.1	4.1	4.2	4.2	4.2	4.3	4.3	4.3	4.4	4.4	4.4	4.5
Japan	15.2	15.0	15.0	15.0	14.9	14.9	14.8	14.8	14.8	14.8	14.8	14.8
South Korea	10.1	9.8	10.1	10.2	10.3	10.4	10.5	10.5	10.6	10.7	10.7	10.7
Taiwan	4.5	4.2	4.3	4.3	4.2	4.3	4.3	4.3	4.3	4.3	4.3	4.3
China	3.2	3.0	3.4	3.6	3.8	4.2	4.6	5.0	5.3	5.6	5.9	6.1
Indonesia	1.8	2.0	2.3	2.4	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.0
Malaysia	4.1	3.6	3.9	4.0	4.1	4.1	4.2	4.3	4.4	4.5	4.5	4.6
Philippines	0.7	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Thailand	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.8	0.8	0.9	0.9	0.9
Vietnam	8.0	6.5	7.1	7.2	7.4	7.6	7.9	8.1	8.4	8.7	8.9	9.1
Other Asia & Oceania	0.8	0.6	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.9
Canada	1.3	1.5	1.7	1.7	1.8	1.7	1.7	1.7	1.7	1.6	1.5	1.5
Mexico	13.8	13.8	14.7	15.2	15.6	16.3	17.2	17.7	18.2	18.8	19.2	19.7
Other Central America & Caribbean	6.4	6.3	6.7	6.7	6.7	6.9	7.1	7.3	7.5	7.6	7.7	7.8
Brazil	2.3	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Other South America	11.2	11.9	12.2	12.4	12.7	13.1	13.5	13.9	14.2	14.5	14.8	15.1
South Africa	3.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6
West Africa (ECOWAS) ³	0.7	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.8	0.8	0.9	0.9
Sub-Saharan Africa ⁴	3.0	3.6	3.8	4.0	4.2	4.4	4.6	4.9	5.1	5.3	5.5	5.7
Other foreign ⁵	-17.4	11.0	4.9	5.0	5.0	4.9	4.9	4.9	5.0	5.0	5.0	5.0
United States	1.7	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
Total trade	120.4	144.2	142.2	144.8	147.4	150.4	153.8	157.0	160.0	162.7	165.3	167.6
	<i>Exports, million metric tons</i>											
Exporters												
European Union ¹	1.8	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.8	1.8	1.8	1.9
Argentina	20.5	25.0	26.8	27.0	27.6	28.1	28.4	28.6	29.0	29.3	29.7	30.0
Brazil	16.5	25.5	27.0	27.8	28.3	29.2	31.0	33.2	34.7	36.1	37.2	37.9
Other South America	2.5	2.4	2.4	2.5	2.5	2.6	2.7	2.7	2.8	2.8	2.9	2.9
South Africa	0.8	1.5	1.6	1.6	1.5	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Other Africa	1.7	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Other Europe	1.6	2.2	2.9	2.9	3.0	3.0	3.0	3.0	3.1	3.1	3.1	3.1
Ukraine	16.5	18.0	18.7	19.4	20.0	20.4	21.0	21.1	21.5	22.0	22.4	22.9
Former Soviet Union ²	4.5	5.1	4.6	4.5	4.6	4.6	4.7	4.7	4.7	4.7	4.7	4.7
Other foreign	5.8	4.9	5.4	5.7	5.9	6.1	6.1	6.0	6.0	5.9	5.8	5.8
United States	48.2	56.5	49.5	50.2	50.8	51.4	52.1	52.7	53.3	54.0	54.6	55.2
	<i>Percent</i>											
U.S. trade share	40.0	39.2	34.8	34.6	34.5	34.2	33.9	33.6	33.3	33.2	33.0	33.0

¹Excludes intra-EU trade.²FSU-11, excludes Ukraine. Includes intra-FSU trade.³Economic Community of Western African States, 15 member countries (ECOWAS).⁴Excludes South Africa and ECOWAS⁵Includes unaccounted, which can be negative.

The projections were completed in November 2016.

Table 28. Sorghum trade long-term projections

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
	<i>Imports, million metric tons</i>											
Importers												
Japan	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
Mexico	0.6	0.7	0.8	0.9	1.0	1.0	1.1	1.2	1.3	1.4	1.5	1.6
South America	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5
Sub-Saharan Africa ¹	0.7	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7
China	8.3	5.5	3.6	3.2	2.8	2.5	2.2	1.8	1.7	1.4	1.2	0.9
Other ²	0.3	1.0	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9
Total trade	10.8	8.6	6.8	6.5	6.2	6.0	5.8	5.7	5.7	5.6	5.5	5.3
	<i>Exports, million metric tons</i>											
Exporters												
Argentina	0.7	0.9	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Australia	1.0	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.1
Other foreign	0.5	0.5	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5
United States	8.6	6.4	4.8	4.6	4.3	4.1	3.8	3.7	3.7	3.6	3.4	3.3
	<i>Percent</i>											
U.S. trade share	79.8	73.6	70.8	69.9	69.1	67.4	65.8	64.9	64.9	63.9	62.8	61.9

¹Includes South Africa.²Includes unaccounted.

The projections were completed in November 2016.

Table 29. Barley trade long-term projections

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
	<i>Imports, million metric tons</i>											
Importers												
Former Soviet Union ¹	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4
Europe	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Japan	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
China	5.9	5.0	4.1	3.8	3.5	3.3	3.2	3.0	3.0	2.9	2.9	2.9
Brazil	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5
Latin America ²	0.8	0.7	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.9
Saudi Arabia	11.0	10.5	10.7	10.9	11.0	11.3	11.5	11.6	11.8	11.9	12.0	12.2
Iran	1.7	1.6	2.1	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Turkey	0.1	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3
Other Middle East	1.9	2.2	2.2	2.3	2.4	2.4	2.5	2.6	2.7	2.7	2.8	2.9
Morocco	0.8	0.8	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Other North Africa	2.5	2.3	2.1	2.1	2.2	2.3	2.4	2.4	2.5	2.5	2.6	2.6
Other foreign ³	2.8	0.7	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.0
United States	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Total trade	30.0	26.8	26.3	26.3	26.5	26.7	27.0	27.1	27.4	27.7	28.0	28.2
	<i>Exports, million metric tons</i>											
Exporters												
European Union ⁴	10.8	6.2	6.5	6.7	6.7	6.8	6.9	7.0	7.2	7.4	7.7	8.0
Argentina	2.9	2.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.2
Australia	5.2	6.7	6.9	6.9	6.7	6.7	6.6	6.5	6.4	6.4	6.3	6.2
Canada	1.2	1.5	1.3	1.3	1.4	1.3	1.4	1.4	1.4	1.4	1.5	1.5
Russia	4.2	4.0	4.2	4.3	4.5	4.6	4.9	5.0	5.2	5.3	5.4	5.5
Ukraine	4.4	5.0	3.9	3.7	3.6	3.6	3.5	3.5	3.4	3.4	3.4	3.3
Other Former Soviet Union ⁵	0.9	0.8	0.8	0.8	0.8	0.9	1.0	1.0	1.0	1.0	1.0	1.1
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	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
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
	<i>Percent</i>											
U.S. trade share	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8

¹FSU-12. Includes intra-FSU trade.²Includes Mexico.³Includes unaccounted.⁴Excludes intra-EU trade.⁵FSU-12 except Russia and Ukraine. Includes intra-FSU trade.

The projections were completed in November 2016.

Table 30. Wheat trade long-term projections

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
<i>Imports, million metric tons</i>												
Importers												
Iran	3.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Iraq	2.2	2.3	2.8	2.9	3.1	3.3	3.5	3.7	3.9	4.1	4.4	4.6
Turkey	4.4	5.0	4.7	4.8	4.9	5.0	5.0	5.1	5.1	5.2	5.2	5.3
Saudi Arabia	2.9	3.5	3.7	3.7	3.9	4.0	4.1	4.1	4.2	4.3	4.4	4.5
Other Middle East	11.6	13.0	13.0	13.2	13.6	13.9	14.2	14.5	14.8	15.1	15.4	15.8
Morocco	4.4	5.0	4.0	4.1	4.2	4.2	4.2	4.3	4.3	4.4	4.4	4.4
Egypt	11.9	11.8	11.9	12.0	12.2	12.3	12.4	12.5	12.6	12.9	13.1	13.4
Other North Africa	11.4	11.3	11.6	11.6	11.6	11.8	11.9	12.1	12.3	12.5	12.6	12.8
Nigeria	4.4	4.4	4.4	4.5	4.7	4.8	5.0	5.2	5.4	5.6	5.8	6.0
Other West Africa (ECOWAS) ¹	3.8	3.7	3.8	3.9	4.0	4.1	4.3	4.5	4.7	4.8	5.0	5.2
South Africa	2.4	1.7	2.2	2.1	2.2	2.2	2.2	2.3	2.3	2.4	2.4	2.5
Other Sub-Saharan Africa ²	12.7	12.6	12.9	13.0	13.5	13.9	14.3	14.8	15.2	15.7	16.2	16.7
Mexico	4.8	4.6	4.8	4.8	4.8	4.8	4.8	4.8	4.9	4.9	5.0	5.0
Cuba	0.8	0.9	0.9	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Central America & Caribbean	3.1	3.3	3.3	3.2	3.3	3.3	3.4	3.4	3.4	3.4	3.5	3.5
Brazil	6.8	6.2	6.8	6.9	6.9	6.9	7.0	7.1	7.0	7.0	7.1	7.1
Other South America	7.4	7.8	8.1	8.1	8.1	8.2	8.2	8.2	8.3	8.4	8.5	8.5
European Union ³	6.9	6.5	5.9	5.5	5.3	5.1	5.0	4.9	4.8	4.7	4.5	4.3
Other Europe	1.8	1.8	1.8	1.7	1.7	1.7	1.6	1.6	1.6	1.5	1.5	1.5
Former Soviet Union ⁴	7.4	7.5	8.1	8.5	8.5	8.8	9.0	9.3	9.4	9.5	9.7	10.0
China	3.5	3.5	3.2	3.3	3.4	3.3	3.4	3.3	3.3	3.3	3.4	3.4
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	5.8	5.8	5.8	5.8	5.8	5.8	5.7	5.7	5.7	5.7	5.7
South Korea	4.4	5.0	5.1	5.0	5.0	5.0	4.9	4.9	4.9	4.8	4.8	4.7
Taiwan	1.5	1.5	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.6
India	0.5	3.0	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Pakistan	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bangladesh	4.7	4.7	4.8	4.9	5.2	5.4	5.6	5.8	5.9	6.1	6.2	6.4
Philippines	4.9	5.0	5.0	5.1	5.2	5.3	5.4	5.5	5.6	5.7	5.8	5.9
Indonesia	10.1	8.5	8.8	9.0	9.3	9.5	9.8	10.0	10.3	10.5	10.8	11.0
Malaysia	1.7	1.7	1.7	1.7	1.8	1.8	1.8	1.9	1.9	1.9	2.0	2.0
Thailand	4.8	3.6	3.5	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.3	4.4
Vietnam	3.1	3.0	3.0	3.1	3.2	3.2	3.3	3.3	3.4	3.5	3.5	3.6
Other Asia & Oceania	6.4	6.4	6.5	6.5	6.7	6.9	7.0	7.1	7.3	7.4	7.6	7.7
Other foreign ⁵	2.7	4.8	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
United States	3.1	3.4	3.3	3.4	3.4	3.4	3.5	3.7	3.8	3.9	4.1	4.2
Total trade	172.2	174.2	172.0	173.3	176.3	178.8	181.8	185.1	188.2	191.2	194.4	197.5
<i>Exports, million metric tons</i>												
Exporters												
European Union ³	34.7	25.0	34.1	34.2	34.7	34.9	35.4	36.1	36.7	37.1	37.6	38.1
Canada	22.1	21.5	20.5	20.4	20.9	21.3	21.6	22.2	22.7	23.2	23.7	24.2
Australia	16.1	20.5	18.0	18.0	18.2	18.3	18.5	18.6	18.7	18.9	19.0	19.3
Argentina	9.1	8.0	9.2	9.7	10.2	10.6	11.0	11.3	11.6	12.1	12.5	12.9
Russia	25.5	30.0	24.8	25.0	25.6	26.1	26.6	27.1	27.6	28.1	28.6	29.1
Ukraine	17.4	15.5	13.0	13.2	13.7	14.2	14.8	15.6	16.2	16.9	17.6	18.3
Other Former Soviet Union ⁶	8.5	9.1	9.2	9.3	9.3	9.4	9.5	9.6	9.6	9.7	9.8	9.8
Other Europe	1.0	1.4	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
India	1.1	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
China	0.7	0.8	0.8	0.9	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Turkey	5.5	5.6	4.5	4.7	4.8	5.0	5.1	5.3	5.4	5.5	5.6	5.6
Other foreign	9.2	9.9	9.7	9.7	9.8	9.9	9.9	10.0	10.0	10.1	10.2	10.2
United States	21.1	26.5	26.5	26.5	26.5	26.7	26.8	26.9	27.1	27.2	27.4	27.5
<i>Percent</i>												
U.S. trade share	12.3	15.2	15.4	15.3	15.0	14.9	14.7	14.6	14.4	14.2	14.1	13.9

¹Economic Community of Western African States (ECOWAS) except Nigeria, 14 remaining member countries.

²Excludes South Africa, Nigeria, and other West Africa.

³Excludes intra-EU trade.

⁴FSU-12. Includes intra-FSU trade.

⁵Includes unaccounted, which can be negative.

⁶FSU-12 except for Russia and Ukraine. Includes intra-FSU trade.

The projections were completed in November 2016.

Table 31. Rice trade long-term projections

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
<i>Imports, million metric tons</i>												
Importers												
Canada	0.35	0.37	0.37	0.37	0.38	0.38	0.39	0.39	0.39	0.40	0.40	0.40
Mexico	0.68	0.75	0.76	0.76	0.77	0.78	0.79	0.79	0.80	0.80	0.81	0.81
Cuba	0.52	0.52	0.53	0.53	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
Central America/Caribbean	1.39	1.27	1.28	1.30	1.32	1.35	1.38	1.40	1.42	1.45	1.47	1.50
Brazil	0.80	0.65	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Other South America	1.12	1.13	1.30	1.32	1.34	1.36	1.39	1.41	1.43	1.43	1.46	1.47
European Union ¹	1.80	1.80	1.80	1.80	1.80	1.80	1.81	1.82	1.83	1.83	1.84	1.84
Former Soviet Union ²	0.49	0.50	0.52	0.54	0.54	0.54	0.54	0.54	0.55	0.55	0.55	0.55
Other Europe	0.14	0.14	0.14	0.15	0.15	0.15	0.16	0.16	0.16	0.17	0.17	0.17
Bangladesh	0.22	0.10	0.16	0.22	0.28	0.33	0.37	0.40	0.44	0.47	0.50	0.53
China	4.80	5.00	5.20	5.15	5.00	4.92	4.89	4.89	4.88	4.87	4.83	4.80
Japan	0.70	0.70	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
South Korea	0.34	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.41
Indonesia	1.10	1.25	1.27	1.30	1.32	1.35	1.38	1.40	1.43	1.45	1.47	1.50
Malaysia	1.02	1.05	1.06	1.07	1.08	1.09	1.10	1.11	1.12	1.13	1.14	1.15
Philippines	1.60	1.20	1.23	1.25	1.28	1.30	1.33	1.35	1.38	1.40	1.43	1.45
Other Asia & Oceania	2.72	2.66	2.69	2.72	2.72	2.72	2.72	2.74	2.75	2.75	2.77	2.77
Iraq	0.90	1.05	1.11	1.13	1.14	1.15	1.16	1.17	1.18	1.19	1.20	1.21
Iran	1.10	1.05	1.09	1.15	1.18	1.22	1.23	1.25	1.26	1.27	1.29	1.30
Saudi Arabia	1.55	1.55	1.57	1.59	1.61	1.63	1.64	1.66	1.68	1.70	1.72	1.74
Other N. Africa & M. East	2.71	3.20	3.02	3.09	3.14	3.22	3.29	3.35	3.42	3.48	3.55	3.61
Nigeria	2.10	2.00	2.11	2.16	2.23	2.28	2.34	2.41	2.47	2.53	2.59	2.66
Other West Africa (ECOWAS) ³	5.42	5.49	5.70	5.87	6.14	6.36	6.58	6.74	6.93	7.12	7.35	7.55
Other Sub-Saharan Africa ⁴	2.75	2.96	3.06	3.15	3.26	3.36	3.45	3.56	3.66	3.79	3.89	3.99
South Africa	0.95	1.00	1.02	1.05	1.07	1.09	1.11	1.12	1.14	1.16	1.18	1.19
Other foreign ⁵	1.67	2.46	2.43	2.44	2.44	2.44	2.43	2.43	2.44	2.43	2.44	2.44
United States	0.77	0.75	0.76	0.78	0.80	0.81	0.83	0.85	0.87	0.88	0.90	0.92
Total imports	39.72	40.99	41.98	42.68	43.31	43.96	44.62	45.28	45.95	46.60	47.26	47.89
<i>Exports, million metric tons</i>												
Exporters												
Australia	0.15	0.35	0.38	0.40	0.41	0.43	0.44	0.46	0.48	0.50	0.51	0.52
Argentina	0.56	0.55	0.51	0.52	0.54	0.55	0.56	0.57	0.58	0.58	0.59	0.60
Other South America	2.74	2.71	2.80	2.92	2.97	3.03	3.09	3.16	3.24	3.30	3.35	3.42
European Union ¹	0.27	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
China	0.27	0.30	0.29	0.28	0.28	0.30	0.30	0.30	0.30	0.30	0.30	0.30
India	10.21	10.00	10.16	10.34	10.55	10.71	10.85	10.97	11.11	11.23	11.38	11.49
Pakistan	4.20	4.20	4.12	4.16	4.14	4.07	4.03	4.04	4.05	4.07	4.09	4.13
Thailand	9.20	9.50	10.16	10.33	10.49	10.70	10.93	11.12	11.30	11.47	11.67	11.83
Vietnam	5.40	5.80	5.97	6.04	6.13	6.32	6.45	6.61	6.76	6.89	7.02	7.15
Burma	1.20	1.50	1.53	1.55	1.57	1.60	1.62	1.65	1.68	1.70	1.72	1.75
Cambodia	0.90	1.00	1.02	1.04	1.06	1.08	1.10	1.12	1.14	1.16	1.18	1.20
Egypt	0.20	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30
Other foreign	0.99	0.95	0.95	0.95	0.96	0.96	0.98	1.00	1.02	1.03	1.04	1.06
United States	3.42	3.56	3.51	3.57	3.62	3.64	3.67	3.70	3.73	3.78	3.83	3.86
Total exports	39.72	40.99	41.98	42.68	43.31	43.96	44.62	45.28	45.95	46.60	47.26	47.89
<i>Percent</i>												
U.S. trade share	8.6	8.7	8.4	8.4	8.4	8.3	8.2	8.2	8.1	8.1	8.1	8.1

¹Excludes intra-EU trade.²FSU-12. Includes intra-FSU trade.³Economic Community of Western African States (ECOWAS) except Nigeria, 14 remaining member countries.⁴Excludes South Africa, Nigeria, and other West Africa.⁵Includes unaccounted.

The projections were completed in November 2016.

Table 32. Soybean trade long-term projections

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
<i>Imports, million metric tons</i>												
Importers												
European Union ¹	14.6	13.0	13.3	13.4	13.5	13.5	13.6	13.6	13.7	13.8	13.8	13.9
Former Soviet Union ²	2.4	2.1	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.7	1.6	1.6
Mexico	4.1	4.3	4.4	4.5	4.6	4.7	4.7	4.8	4.9	5.0	5.1	5.2
South America	2.1	1.8	2.1	2.1	2.1	2.1	2.1	2.2	2.2	2.2	2.2	2.2
Central Amer & Caribbean	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6
Egypt	1.3	2.4	2.4	2.5	2.5	2.5	2.5	2.6	2.6	2.6	2.6	2.7
Iran	1.9	2.1	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.6	2.6	2.7
Saudi Arabia	0.7	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
Turkey	2.3	2.3	2.3	2.4	2.4	2.5	2.5	2.6	2.6	2.6	2.7	2.7
Other Middle East	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Africa	0.9	0.9	0.8	0.8	0.9	0.9	0.9	1.0	1.0	1.1	1.1	1.1
Pakistan	1.3	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.5	2.6	2.7
China	83.2	86.0	90.0	94.4	97.7	101.0	104.3	107.7	111.0	114.3	117.6	120.9
Japan	3.2	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
South Korea	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
Taiwan	2.6	2.6	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.6	2.6	2.6
Malaysia	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9
Indonesia	2.3	2.4	2.4	2.5	2.6	2.6	2.7	2.7	2.8	2.8	2.9	3.0
Vietnam	1.4	1.8	1.8	1.8	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Thailand	2.8	2.7	2.7	2.8	2.9	3.0	3.0	3.1	3.2	3.3	3.3	3.4
Other	2.2	6.2	5.2	5.2	5.2	5.2	5.2	5.3	5.3	5.3	5.3	5.3
Total imports	132.1	139.2	143.2	148.3	152.2	156.1	160.0	163.9	167.8	171.6	175.5	179.4
<i>Exports, million metric tons</i>												
Exporters												
Argentina	9.9	9.3	9.3	10.2	10.4	10.5	10.9	11.1	11.6	11.7	11.7	12.1
Brazil	54.4	58.4	60.5	64.8	69.3	72.3	74.9	77.8	80.2	83.2	85.9	88.9
Other South America ³	7.3	8.3	8.9	9.2	9.5	9.8	10.1	10.3	10.6	10.8	11.1	11.3
Ukraine	2.4	2.4	2.2	2.2	2.3	2.4	2.5	2.5	2.6	2.8	2.9	3.0
Canada	4.3	4.0	4.1	4.2	4.2	4.3	4.4	4.4	4.5	4.5	4.6	4.7
Other foreign	1.2	1.1	1.0	1.0	1.0	0.9	0.9	0.8	0.8	0.8	0.8	0.9
United States	52.7	55.8	57.2	56.7	55.5	55.9	56.3	56.9	57.4	57.8	58.5	58.5
Total exports	132.1	139.2	143.2	148.3	152.2	156.1	160.0	163.9	167.8	171.6	175.5	179.4
<i>Percent</i>												
U.S. trade share	39.9	40.1	39.9	38.3	36.5	35.8	35.2	34.7	34.2	33.7	33.3	32.6

¹Excludes intra-EU trade.²Covers FSU-12. Includes intra-FSU trade.³Covers South America, excludes Argentina and Brazil.
The projections were completed in November 2016.

Table 33. Soybean meal trade long-term projections

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
<i>Imports, million metric tons</i>												
Importers												
European Union ¹	19.3	21.0	21.0	21.0	21.0	20.9	21.0	21.1	21.3	21.4	21.3	21.2
Russia	0.4	0.6	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.8
Other Former Soviet Union ²	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7
Other Europe	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Canada	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0
Japan	1.7	1.8	1.8	1.8	1.8	1.9	1.9	1.9	1.9	2.0	2.0	2.0
South Korea	2.1	2.0	2.0	2.0	2.1	2.1	2.1	2.1	2.1	2.1	2.2	2.2
Indonesia	4.3	4.7	4.9	5.1	5.3	5.4	5.6	5.8	6.0	6.2	6.4	6.6
Malaysia	1.4	1.7	1.7	1.7	1.8	1.8	1.8	1.9	1.9	2.0	2.0	2.1
Philippines	2.6	2.8	2.8	2.9	3.0	3.1	3.1	3.2	3.3	3.4	3.5	3.6
Thailand	2.4	3.2	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0
Vietnam	4.8	5.2	5.5	5.8	6.2	6.6	7.0	7.4	7.8	8.2	8.6	9.0
Other Asia & Oceania	1.8	2.0	2.0	2.1	2.2	2.3	2.3	2.4	2.5	2.5	2.6	2.7
Mexico	2.4	2.5	2.6	2.6	2.7	2.7	2.8	2.9	2.9	3.0	3.0	3.1
Central Amer & Caribbean	1.8	1.9	2.0	2.0	2.1	2.1	2.1	2.2	2.3	2.3	2.3	2.4
South America	4.7	4.9	4.8	5.0	5.2	5.3	5.5	5.6	5.8	6.0	6.1	6.3
Egypt	2.3	1.2	1.4	1.4	1.4	1.5	1.5	1.6	1.6	1.7	1.8	1.8
Iran	1.4	1.6	1.5	1.6	1.7	1.7	1.8	1.8	1.9	2.0	2.0	2.1
Saudi Arabia	0.8	1.0	0.9	1.0	1.0	1.0	1.0	1.1	1.1	1.1	1.2	1.2
Other Middle East ³	4.2	4.3	4.3	4.5	4.6	4.7	4.8	5.0	5.1	5.3	5.4	5.5
Other North Africa ⁴	2.3	2.5	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4
Other	5.3	4.8	5.1	5.2	5.2	5.2	5.3	5.3	5.3	5.3	5.4	5.4
Total imports	65.6	68.8	69.9	71.5	72.9	74.3	75.9	77.7	79.6	81.3	82.7	84.2
<i>Exports, million metric tons</i>												
Exporters												
Argentina	30.3	32.7	34.1	34.5	35.5	36.3	37.3	38.5	39.9	41.0	41.8	42.7
Brazil	15.4	15.5	14.9	16.0	16.6	17.2	17.8	18.3	18.9	19.5	20.1	20.7
Other South America	4.5	4.6	4.8	4.8	4.9	4.9	4.9	5.0	5.0	5.1	5.1	5.2
China	1.9	1.9	1.9	1.8	1.8	1.8	1.7	1.7	1.7	1.6	1.6	1.6
India	0.2	0.9	1.3	1.4	1.4	1.4	1.3	1.2	1.1	1.1	1.1	1.1
European Union ¹	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Other foreign	2.1	2.0	1.9	1.9	1.9	1.9	1.9	1.8	1.8	1.8	1.8	1.8
United States	10.9	10.9	10.7	10.7	10.6	10.6	10.7	10.7	10.7	10.8	10.8	10.9
Total exports	65.6	68.8	69.9	71.5	72.9	74.3	75.9	77.7	79.6	81.3	82.7	84.2
<i>Percent</i>												
U.S. trade share	16.5	15.8	15.3	15.0	14.6	14.3	14.0	13.8	13.5	13.3	13.1	12.9

¹Excludes intra-EU trade.²Covers FSU-12 minus Russia. Includes intra-FSU trade.³Middle East excluding Saudi Arabia and Iran.⁴North Africa excluding Egypt.

The projections were completed in November 2016.

Table 34. Soybean oil trade long-term projections

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
<i>Imports, million metric tons</i>												
Importers												
China	0.6	0.8	0.9	1.0	1.0	1.1	1.1	1.2	1.2	1.3	1.3	1.4
India	4.4	4.0	3.8	4.0	4.1	4.2	4.3	4.5	4.6	4.7	4.8	4.9
Bangladesh	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Pakistan	0.2	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5
South East Asia	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4
Other Asia & Oceania	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.6
Mexico	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Central Amer & Caribbean	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6
South America	1.2	1.2	1.3	1.3	1.3	1.4	1.4	1.4	1.5	1.5	1.6	1.6
Iran	0.3	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Egypt	0.7	0.4	0.4	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.6	0.6
Other North Africa ¹	1.3	1.2	1.3	1.3	1.3	1.4	1.4	1.4	1.5	1.5	1.5	1.6
European Union ²	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	0.6	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2
Total imports	11.8	11.7	11.9	12.3	12.6	13.0	13.3	13.6	14.0	14.4	14.7	15.1
<i>Exports, million metric tons</i>												
Exporters												
Argentina	5.7	5.6	5.8	6.0	6.1	6.3	6.5	6.6	6.8	7.0	7.1	7.3
Brazil	1.6	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5
Other South America	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.3
European Union ²	1.0	1.0	0.9	0.9	1.0	1.0	1.0	1.1	1.1	1.1	1.2	1.2
Former Soviet Union -12	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
Other foreign	0.9	1.0	0.9	0.9	0.9	0.9	0.9	1.0	1.0	1.0	1.0	1.0
United States	1.0	1.0	0.9	0.9	1.0	1.0	1.0	1.1	1.1	1.1	1.2	1.2
Total exports	11.8	11.7	11.9	12.3	12.6	13.0	13.3	13.6	14.0	14.4	14.7	15.1
<i>Percent</i>												
U.S. trade share	8.6	8.3	7.3	7.5	7.7	7.7	7.8	7.7	7.8	7.9	8.0	8.1

¹Excludes Egypt.²Excludes intra-EU trade.

The projections were completed in November 2016.

Table 35. All cotton trade long-term projections

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
	<i>Imports, million bales</i>											
Importers												
European Union ¹	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 ²	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
Mexico	1.0	1.3	1.2	1.2	1.2	1.1	1.1	1.1	1.1	1.1	1.0	1.0
Japan	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2
South Korea	1.2	1.3	1.2	1.2	1.2	1.1	1.2	1.1	1.1	1.1	1.1	1.1
China	4.4	4.5	4.8	5.0	9.0	12.5	13.5	13.8	14.1	14.2	14.3	14.4
Indonesia	3.0	2.9	2.8	2.8	2.8	2.9	2.9	3.0	3.0	3.0	3.0	3.0
Vietnam	4.5	4.8	4.8	5.0	5.2	5.5	5.7	5.9	6.1	6.4	6.6	6.8
Thailand	1.3	1.2	1.2	1.2	1.1	1.1	1.1	1.0	1.0	1.0	0.9	0.9
Pakistan	3.3	2.2	2.2	2.0	1.9	1.8	1.8	1.9	1.9	2.0	2.0	2.1
India	1.1	1.8	0.9	0.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Bangladesh	6.2	6.3	6.3	6.4	6.7	6.9	7.2	7.3	7.5	7.7	7.9	8.1
Taiwan	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6
Other Asia & Oceania	0.7	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8
Turkey	4.2	3.7	3.7	3.7	3.8	3.8	3.8	3.8	3.7	3.7	3.7	3.7
Other	2.1	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
Total imports	35.1	35.1	34.1	34.7	39.1	43.0	44.5	45.1	45.9	46.4	46.9	47.4
	<i>Exports, million bales</i>											
Exporters												
Former Soviet Union ²	4.4	3.7	3.2	3.2	4.0	4.5	4.9	4.9	4.9	4.9	4.9	5.0
Australia	2.8	3.9	2.4	2.7	3.9	4.4	4.6	4.6	4.6	4.7	4.7	4.8
Argentina	0.2	0.4	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Brazil	4.3	2.9	3.7	4.1	4.7	5.5	5.9	6.2	6.4	6.5	6.7	6.9
Other Latin America	0.2	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Pakistan	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3
India	5.8	4.2	4.4	4.4	5.6	6.7	7.1	7.4	7.5	7.7	7.8	8.0
Egypt	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
West Africa (ECOWAS) ³	4.0	3.9	4.1	4.2	4.6	4.9	5.1	5.2	5.5	5.6	5.7	5.8
Other Sub-Saharan Africa ⁴	1.7	1.7	1.4	1.4	1.5	2.1	1.7	1.7	1.7	1.6	1.6	1.5
Other foreign	2.1	2.0	1.6	1.7	1.9	2.2	2.3	2.3	2.3	2.3	2.4	2.4
United States	9.2	12.0	12.5	12.4	12.2	12.0	12.2	12.2	12.3	12.3	12.4	12.4
Total exports	35.1	35.1	34.1	34.7	39.1	43.0	44.5	45.1	45.9	46.4	46.9	47.4
	<i>Percent</i>											
U.S. trade share	26.1	34.1	36.7	35.8	31.3	27.9	27.3	27.0	26.8	26.5	26.4	26.1

¹Excludes intra-EU trade.²Covers FSU-12, including intra-FSU trade.³Economic Community of West African States, 15 countries (ECOWAS)⁴Includes South Africa.

The projections were completed in November 2016.

Table 36. Beef trade long-term projections

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
<i>Imports, thousand metric tons, carcass weight</i>												
Importers												
Japan	707	715	730	734	734	734	740	744	750	755	760	762
South Korea	414	510	520	528	540	554	568	581	591	602	614	628
Taiwan	135	140	142	144	146	149	153	156	160	163	166	169
Indonesia	86	90	93	100	105	108	111	116	120	124	129	135
Malaysia	240	245	256	264	273	282	291	300	310	320	330	339
Philippines	178	176	180	186	193	203	211	218	228	235	242	250
China	663	825	950	1,007	1,035	1,066	1,102	1,147	1,185	1,220	1,251	1,285
Hong Kong	339	375	375	408	426	450	473	497	523	545	567	591
Other Asia	131	135	136	143	150	162	171	177	188	196	203	212
European Union ¹	363	370	375	373	368	365	365	366	365	365	365	365
Other Europe	120	124	125	125	125	125	127	128	130	131	132	132
Russia	621	585	585	582	578	566	547	536	527	522	516	511
Egypt	360	340	340	344	347	354	369	385	402	420	440	460
Other N. Africa & M. East	811	842	879	945	1,001	1,046	1,086	1,132	1,172	1,206	1,251	1,294
Mexico	175	180	190	198	203	210	217	228	232	240	249	262
Canada	280	260	265	266	267	268	269	270	271	272	273	274
United States	1,529	1,366	1,216	1,246	1,279	1,294	1,302	1,314	1,331	1,348	1,356	1,358
Major importers	7,152	7,278	7,357	7,591	7,770	7,937	8,100	8,295	8,482	8,661	8,842	9,024
<i>Exports, thousand metric tons, carcass weight</i>												
Exporters												
Australia	1,854	1,385	1,325	1,384	1,419	1,439	1,460	1,482	1,501	1,528	1,548	1,572
New Zealand	639	580	550	527	514	524	534	543	550	556	560	562
Former Soviet Union ²	193	269	229	260	264	265	275	285	299	318	334	349
India	1,806	1,850	1,925	2,017	2,077	2,155	2,202	2,261	2,322	2,377	2,436	2,497
Other Asia	197	203	220	229	235	241	247	251	254	256	259	263
European Union ¹	303	330	350	344	344	344	344	341	342	344	345	346
Argentina	186	210	235	231	227	224	217	211	209	207	203	200
Brazil	1,705	1,850	1,950	2,019	2,144	2,204	2,248	2,319	2,392	2,465	2,550	2,646
Other Latin America	622	861	856	590	670	754	796	868	861	823	806	783
Canada	390	430	445	441	442	441	439	438	438	437	436	435
United States	1,027	1,115	1,193	1,246	1,197	1,189	1,224	1,259	1,272	1,279	1,291	1,296
Major exporters	8,922	9,083	9,278	9,287	9,534	9,779	9,985	10,258	10,439	10,590	10,768	10,947

¹Excludes intra-EU trade.²FSU-12. Includes intra-FSU trade.

The projections were completed in November 2016.

Table 37. Pork trade long-term projections

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
<i>Imports, thousand metric tons, carcass weight</i>												
Importers												
Japan	1,270	1,320	1,320	1,325	1,325	1,330	1,330	1,335	1,335	1,330	1,330	1,330
China	1,029	2,400	2,300	2,250	2,260	2,265	2,270	2,277	2,300	2,333	2,370	2,405
Hong Kong	397	485	475	474	485	495	500	505	515	525	530	535
South Korea	599	610	630	645	660	675	685	695	705	720	730	740
Philippines	175	220	250	275	300	315	330	355	375	390	415	430
Australia	220	215	210	226	235	240	245	250	255	260	265	270
Russia	408	410	400	286	225	215	210	200	195	188	177	170
Other Former Soviet Union ¹	91	93	98	102	106	109	111	113	115	117	119	121
Other South America ²	169	212	225	236	240	245	250	255	262	270	275	280
Mexico	981	1,025	1,050	1,062	1,075	1,110	1,130	1,150	1,185	1,212	1,239	1,267
Central Am & Caribbean	164	186	201	208	212	220	230	240	250	255	263	269
Canada	216	210	215	220	230	235	240	245	250	255	260	265
United States	506	502	497	454	472	480	486	493	496	502	509	516
Major importers	6,225	7,888	7,871	7,762	7,826	7,934	8,017	8,113	8,236	8,362	8,481	8,598
<i>Exports, thousand metric tons, carcass weight</i>												
Exporters												
Brazil	627	900	940	948	933	936	925	920	928	942	959	975
Canada	1,239	1,350	1,300	1,310	1,331	1,340	1,365	1,378	1,392	1,405	1,416	1,426
Mexico	128	140	150	154	158	162	168	170	175	179	183	188
European Union ³	2,389	3,300	3,300	3,217	3,243	3,245	3,290	3,351	3,399	3,455	3,495	3,543
China	231	180	180	184	186	187	188	189	191	192	196	198
United States	2,272	2,349	2,468	2,470	2,525	2,621	2,650	2,697	2,759	2,812	2,871	2,929
Major exporters	6,886	8,219	8,338	8,283	8,376	8,491	8,587	8,705	8,843	8,984	9,121	9,259

¹Former Soviet Union excluding Russia. Includes intra-FSU trade.

²Excludes Argentina and Brazil.

³Excludes intra-EU trade.

The projections were completed in November 2016.

Table 38. Poultry trade long-term projections¹

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
<i>Imports, thousand metric tons, ready to cook</i>												
Importers												
Russia	249	220	220	202	181	177	166	153	140	133	122	97
Other Former Soviet Union ²	471	507	522	533	548	561	575	590	605	618	631	646
European Union ³	829	853	864	872	878	887	898	907	919	930	940	948
Canada	158	158	163	165	167	168	169	171	173	175	176	178
Mexico	962	994	1,027	1,080	1,125	1,161	1,213	1,244	1,267	1,324	1,353	1,382
Central Amer & Caribbean	635	666	698	716	730	740	763	788	817	845	872	898
Japan	937	956	921	946	948	954	961	970	980	982	985	988
Hong Kong	314	326	335	345	351	356	363	369	375	380	385	390
China	302	444	585	604	616	620	629	638	651	660	669	675
South Korea	119	125	140	145	150	153	156	161	166	171	174	178
Philippines	211	266	286	300	318	332	348	365	384	400	413	428
Other Asia & Oceania	618	619	639	663	685	704	727	750	772	793	813	835
Saudi Arabia	899	888	880	907	931	954	982	1,006	1,030	1,054	1,078	1,103
Other Middle East	1,481	1,575	1,666	1,708	1,763	1,802	1,859	1,900	1,955	2,014	2,071	2,133
North Africa	121	129	137	146	162	180	196	207	219	232	247	261
West Africa (ECOWAS) ⁴	403	419	443	454	473	481	504	525	549	574	596	617
Other SubSaharan Africa	1,086	1,091	1,148	1,226	1,275	1,272	1,307	1,343	1,383	1,425	1,466	1,505
Major importers	9,795	10,236	10,674	11,010	11,300	11,503	11,815	12,086	12,384	12,709	12,992	13,259
Exporters												
<i>Exports, thousand metric tons, ready to cook</i>												
European Union ³	1,294	1,363	1,384	1,395	1,393	1,391	1,393	1,398	1,402	1,405	1,407	1,413
Former Soviet Union ⁵	365	480	525	537	563	583	608	621	641	667	690	717
Brazil	4,038	4,315	4,598	4,735	4,896	4,961	5,152	5,307	5,511	5,725	5,922	6,096
Other South America	328	300	340	354	364	373	387	406	427	449	473	490
China	401	395	345	341	336	336	335	336	331	329	328	330
Thailand	622	670	710	752	782	812	844	873	903	934	965	995
Turkey	325	285	326	347	346	347	348	347	347	346	346	346
United States	3,173	3,351	3,490	3,727	3,805	3,883	3,941	3,988	4,022	4,053	4,069	4,083
Major exporters	10,546	11,159	11,718	12,186	12,484	12,686	13,006	13,276	13,584	13,908	14,201	14,470

¹Broilers and turkeys only.²Former Soviet Union excluding Russia. Includes intra-FSU trade.³Excludes intra-EU trade.⁴Economic Community of West African States, 15 member countries (ECOWAS).⁵FSU-12. Includes intra-FSU trade.

The projections were completed in November 2016.

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