The Outlook for U.S. Agriculture – 2020: The Innovation Imperative

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Welcome to the 96th annual Agricultural Outlook Forum (AOF). As Deputy Secretary Censky just mentioned, we have a great program for you. Our theme this year is "The Innovation Imperative" (see slide 1). This year our speakers will focus on innovative solutions to current challenges facing producers and consumers today with a critical eye towards the longer-term objective of ensuring that the growing global population has access to safe, nutritious, and affordable food. And Secretary Perdue will be announcing USDA's Agricultural Innovation Agenda in support of achieving environmental, economic, and social sustainability in U.S. agricultural production as a way to meet these future challenges.

Efforts to plan for the future, whether that be for this coming crop year, for an orderly succession of a family farm from one generation to the next, for integrating 21st century technology on-farm, or for meeting growing consumer demands domestically and globally, are often hampered by uncertainty. And we know that 2019 was a year filled with uncertainty for the agricultural sector. While the U.S. economy continued to grow, producers were faced with one challenging uncertainty after another. Weather conditions were terrible for planned production – it was the wettest year on record and it was also the hottest year on record for many areas; it was the coldest, slowest planting season resulting in the most prevent plant recorded; we went into 2019 with record soybean stocks and uncertain demand for animal proteins globally; and underlying it all was extraordinary uncertainty about trading relationships with our primary customers.

While uncertainty makes planning more difficult, it does not imply only negative outcomes. Interest rates remained low, which lowered borrowing costs. Unseasonable wet and cool planting weather hindered farmers, but farm policies were in place to help them cope with those conditions and new policies were developed to bolster those programs. In addition, to support farmers in the face of trade uncertainties, the Administration continued and built on the 2018 trade remediation programs, establishing new food purchase and distribution targets, new trade outreach projects, and a new market facilitation program for producers most affected by the retaliatory tariffs.

Those conditions characterized the 2019 season, and some of those conditions persist today. However, driven by expectations of more normal conditions and finalization of several trade deals, 2020 is shaping up to be a year with less uncertainty, giving producers a better chance to plan and innovate. We will explore many of those issues in detail over the next two days. Most notably, tomorrow morning Secretary Perdue will be hosting Agricultural Secretary Villalobos from Mexico, Agricultural Minister Bibeau from Canada, and Minister Basterra from Argentina to discuss opportunities for improved cooperation and trade between the major Western Hemisphere agricultural producing countries. In addition, we will discuss in greater depth the implications of the new trading agreements that will reset the outlook for US agricultural trade in 2020 and beyond: specifically, the new USMCA agreement, the new Japan trade agreement, and the new Phase One deal with China.

Moving to my presentation, I plan to cover three main topics this morning (see slide 2) —the outlook for trade, the outlook for crops and livestock, and the outlook for the farm economy.

Global growth has weakened over the past year.

At the time of the last Outlook forum, growth in the global economy was expected to reach 3.5 percent. Unfortunately, global GDP grew just 2.9 percent in 2019, marking the first time that global growth slowed to less than 3 percent since the worldwide recession in 2009 (see slide 3).

Much of the divergence came from slower growth in emerging and developing economies. Those economies, which grew at annual rates of 6 percent from 2000 to 2014, now appear to have slowed, averaging just 4.4 percent in the prior four years. While that reduction in annual growth rates may seem small, if that lower growth trend continues, it means the growth of those economies be 32 percent smaller at the end of the next ten years, as compared to what they would have been with the previous higher growth rates. It also implies a difference of $1.1 trillion in global purchasing power over the 2019-2021 period, concentrated in developing and emerging economies.

Those forecasts from the International Monetary Fund (IMF), completed in January, did not account for the current global outbreak of the coronavirus, which is expected to slow Chinese economic growth this year by an additional percentage point, and likely will have negative impacts in other emerging and developing countries. Private forecasters have downgraded China growth in the first quarter by almost 2 percentage points but expect growth to rebound back to around 6 percent in Q2 – Q4. (see slide 4).

The average growth rate for advanced economies, such as the U.S. and EU, appears relatively more in-line with last year's projection and is expected to be 1.6 percent. Unemployment across advanced economies continues to decline, with U.S. unemployment rates as low as 3.5 percent, the lowest since the late 1960s. Both Canada and the EU are also seeing unemployment rates not seen since 2008. Despite that strong labor growth, central banks have collectively found it necessary to cut interest rates in 2019. With inflation in check and sluggish wage growth, there were at least 71 different rate cuts across 49 different central banks last year.

U.S. dollar appreciation mixed going forward.

Those interest rate cuts and continued uncertainty about global growth impacted the value of the U.S. dollar in many ways over 2019. The beginning of the year was marked by considerable trade uncertainty globally, but stable monetary policy domestically from the Federal Reserve (see slide 5). The dollar's safe-haven status and the higher interest rates in the U.S. helped to prop up the value of the dollar against most other currencies. However, since the Federal Reserve cut target interest rates for the second time on August 1st, the dollar has broadly depreciated.

Looking ahead to 2020, many of the factors that influenced exchange rates last year are expected to continue. The UK pound has appreciated significantly against the dollar, up from near record lows, since the British elections in December. The value of the pound will continue to be closely related to the terms of the U.K.'s withdrawal from the EU. U.S. tensions between Iran and China led many investors toward the safe-haven U.S. and Japanese currencies. As these tensions have diminished, investors are flocking back to emerging markets, depreciating the dollar. And in South America, considerable market uncertainty remains in Brazil and Argentina. The Argentinian peso depreciated 60 percent in 2019 relative to the dollar, though it has remained stable since October following elections and a new government. The Brazilian real has shown some of the greatest volatility over the past year, ebbing and flowing with the volatile commodity markets. The real

depreciated 8 percent in the 3rd quarter of 2019 before appreciating 4 percent in the final quarter of the year. Now the real is down again, 8 percent since the beginning of this year.

Many questions remain for the 2020 Agricultural Outlook, probably none more important than the outlook for trade.

Despite mixed signals heading into 2020, there has been important progress on the trade policy front over the past year and significant improvements in market access for U.S. agriculture in 2020. The U.S.-Mexico-Canada Agreement (USMCA) was signed into law last month and once the agreement enters into force, agricultural producers in all three countries will benefit from even stronger integration and science-based trading rules. The U.S.-Japan Agreement eliminates or reduces tariffs on $7.2 billion in U.S. agricultural and food products, and importantly U.S. beef and pork exports now have the same preferential access to Japan's $5 trillion economy as competitors such as the EU, Australia, New Zealand, and Canada, which have increased exports and market share over the past year. Lastly, the United States and China reached an agreement that addresses many long-standing agricultural barriers to China's market and expands U.S. agricultural exports over the next two years.

Those three trade deals alone cover over half of U.S. agricultural exports (see slide 6). But we can see that there are a number of key markets that have tremendous potential for increased trade if barriers to U.S. agriculture are addressed. For example, improved access to India's $2.7 trillion economy, with nearly 1.4 billion consumers and rapid middle-class growth, could greatly boost U.S. agricultural exports. Looking at the past 30 years of U.S. exports to different countries as a function of their per capita income (see slide 7), we can track the main U.S. export markets and see that China and India started at roughly the same point in 1990.

As China's economy grew and became more open as a result of joining the WTO in 2001, U.S. exports also grew. In contrast, U.S. exports to India have increased slowly relative to China. However, fiscal 2019 exports to India reached a high of $1.8 billion and ongoing bilateral engagement is aimed at addressing trade barriers that have hindered U.S. market access. At the same time, the impact of retaliatory tariffs on U.S. exports, particularly to China, is also evident starting in 2018. The outlook for 2020 is more positive, as U.S. agricultural exports are currently forecast at $139.5 billion, up $4 billion from 2019, with nearly all of that increase due to higher projected exports to China (see slide 8).

Growing global demand for agricultural commodities, especially by low-income countries and emerging markets, is expected to lead to increasing world imports over the next 10 years. Even looking at USDA's recently published long-run projections, which include the continuation of tariffs with China and do not reflect the U.S.-China agreement, the prospect for additional U.S. exports over the next 10 years is strong, growing 2.6 percent per year to $183.6 billion, reflecting strengthening agricultural demand from steady global economic growth. Top U.S. export commodities to the world include soybeans, corn, and wheat. However, exports of high value products, including horticultural and animal products, comprise the majority of exports and will continue to account for two-thirds of export value through the projection period (see slide 9).

World coarse grain trade is projected to increase by 37 million tons (17 percent), and expansion of livestock production in feed-deficit countries continues to be the main driver of growth. Key growth markets are the Middle East, Africa, Southeast Asia, and Latin America (except for

Argentina and Brazil). Corn trade is projected to account for about 83 percent of the world's coarse grain trade.

Global soybean trade is projected to increase by 36 million tons (24 percent), reaching 187 million tons by 2029/30. China's soybean imports account for 74 percent of this projected increase and China remains the world's predominant importer of soybeans. However, some countries in North Africa, the Middle East, and Southeast Asia that have invested in crushing capacity in response to increasing feed demand are also projected to increase oilseed imports given limited opportunities to expand production.

Wheat imports are projected to increase 30 million metric tons (16 percent). Growth in wheat imports is concentrated in developing countries in regions where income, urbanization, and population gains drive increases in demand, which includes Sub-Saharan Africa, Egypt, Indonesia, the Middle East, and Southeast Asia. Growth in global meat consumption is projected to continue over the coming decade, leading many countries to increase meat imports. Poultry consumption rises the fastest, with a projected annual growth rate of 2.2 percent, followed by pork (1.6 percent) and beef (1.1 percent). China is the leading growth market for beef and pork, while Sub-Saharan Africa and the Middle East are forecast to increase poultry meat imports by 1.6 million tons, accounting for over 40 percent of the projected global increase.

Outlook for 2020 crops better than in 2019

The forecast for 2020 crops and livestock production is up compared to 2019 (see slide 10). Of course, the new farm income numbers paint a slightly more nuanced picture with net cash income down and net farm income up in calendar 2020, which I will talk about shortly. But first, I would like to recap what happened with USDA forecasts in 2019, which drew a lot of attention and critiques.

This time last year based on relative prices and economic conditions, we estimated that farmers would plant 92 million acres of corn and 85 million acres of soybeans. Our yield estimates at that time were for trend yields and normal weather, or approximately 176 bushels per acre and 49.5 bushels per acre, respectively. Our corn production estimate was at roughly 14.9 billion bushels. Moreover, we did not have any of the recently completed trade agreements on the books. And it quickly became apparent that the assumption of normal weather and yields would need to be revised following historic precipitation (see slide 11).

In June, corn yield was estimated to be 166 bushels per acre and harvested acres at 82.4 million based on the spring weather that was delaying planting (see slide 12) lowering the production estimate to 13.7 billion bushels. In July, we boosted harvest area by an additional 1.2 million acres based on farmer responses in the June *Acreage* report. At that point our estimate of the corn crop was at roughly 13.9 billion bushels. In August, NASS surveys came in from producers noting fewer acres planted than expected, but higher yields than had been forecast earlier in the season. Overall, the corn harvest was pegged at roughly 13.9 billion bushels, slightly above the July estimate, but higher than the trade estimate (see slide 13) by more than 600 million bushels.

Many farmers and outside analysts felt that the USDA estimates did not reflect the poor planting conditions that had been expected to reduce the prospects for such a big crop. Of course, what the

estimates did reflect was what farmers were saying on the NASS surveys coupled with satellite information as well as administrative data from the Farm Service Agency and the Risk Management Agency. Nevertheless, when there is a large market surprise like the August Crop Production and WASDE reports, a market correction is expected, which happened in August, with December futures falling quickly by roughly $0.50 per bushel, further frustrating farmers who were dealing with difficult planting conditions (see slide 14).

As we saw with the earlier slide on this year's forecasts, the estimates we release today and tomorrow regarding the upcoming year incorporate the latest information available. We will be watching to see how spring planting weather shapes up and how price developments driven by the South American crop evolve over the next month.

By the time we see farmers' responses to the August survey, the overall situation going forward changes very little. One thing we've heard this year, is why doesn't USDA use satellite information to help them with their estimates? In fact, we have been using satellites for many years, and those data and our ability to utilize them continues to improve our estimates. You can see how improved satellite information and improved usage of administrative data have helped NASS further refine their estimation procedures over time (see slide 15). We haven't seen a year when the corn crop forecast in August was more than 7.5 percent off the final since 1995, and the deviation has been less than 5 percent over the past 5 years.

Let's look ahead now to planted acres for 2020. Planted acres of the 8 major row crops (corn, soybeans, wheat, upland cotton, sorghum, rice, barley, and oats) averaged nearly 257 million acres during the recent peak in 2012-14, and since 2014, have averaged nearly 250 million acres, including last year. Planted acres are expected to remain between 246.3 and 249.4 million acres over the next decade starting in 2020. However, the principal crop acreage for the 22 NASS principal crops was down by more than 16 million acres in 2019 (see slide 16). While we are only looking at the 8 major crops today, an important question being asked is "Where will all those acres go that were not planted in 2019?" We would expect a good portion of those unplanted acres to be planted to corn and soybeans in 2020. Taking a look at the global stocks to use, we do see slightly lower stocks relative to demand (measured in days of use) after the poor production year in 2019 (see slide 17), which suggest better returns for corn and soybeans relative to wheat, cotton and rice. Still, stock levels for those crops sit at roughly the same levels we saw back in the early 2000s when prices were quite low.

Overall, rising demand globally for more varied diets and increased animal as well as plant protein consumption continues to stimulate demand for feed grains and soybeans. Accompanying increased global demand is rising competition from Brazil, resulting in more soybean acres and a second-season corn crop that has now overtaken Brazil's first-season crop (see slide 18). These increased second-crop acres and an improved northern port infrastructure in Brazil have increased the competition U.S. corn faces on global markets right at the time of harvest in the U.S.

In addition to global or domestic stocks relative to use, prices and planting decisions will be affected by a number of other factors such as expectations about trade and tariffs compared with rising input costs. Current futures prices point to a large U.S. corn crop - the soybean-to-corn price ratio has dipped to 4-year lows. In addition, local demand and transport costs will drive regional

economic signals to plant corn or soybeans this spring. Right now, the soybean:corn price ratio favors the planting of more soybeans in the Dakotas compared to a signal to plant more corn in the eastern Corn Belt (see slide 19).

Under the expectation of a return to normal trade with our major trading partners, with some growth in those markets boosted by trade agreements, we project that soybean prices will rise modestly, up $0.05 to $8.80 per bushel (see slide 20). The soybean price will be supported by lower stocks compared to last year's record level, but increased South American production and exports, as well as a strong dollar, will weigh on the market. In contrast, corn is expected to decline $0.25 cents to $3.60 per bushel, with larger corn acres and an expected return to trend yields following last year's adverse planting weather. Wheat prices are projected up $0.35 to $4.90 per bushel, reflecting the lowest ending stocks in six years.

A very large 2020/21 rice crop and growing stocks are projected to lower the all-rice price $1.00 per cwt to $12.00, which would be a four-year low. Falling U.S. and world production is expected to raise the price of cotton by 3 percent, or $0.02 per pound, to reach an upland cotton farm price of $0.64 per pound. However, global economic conditions and the return to normal trading patterns with China remain as significant uncertainties for the cotton market in the coming year.

Last year's planting difficulties resulted in a 13.1-million-acre year-to-year decline in soybean planted area, equivalent to more than 600 million bushels at trend yields. Thus, soybean beginning stocks in 2020 are projected down sharply relative to a year ago. Those lower carry-in supplies, combined with continued global demand growth, are expected to support an increase in soybean area to 85 million acres in 2020 (see slide 21). Current forward pricing opportunities and a larger expected corn carryout in 2020 support an increase in the soybean-to corn-price ratio to 2.4 in 2020, relative to 2.3 in 2019. Corn area is expected to rise 4.3 million acres to 94 million following last year's prevented plantings, supported by new crop prices that are relatively favorable.

Planted area for winter wheat in 2020 is estimated at 30.8 million acres, down 1 percent from 2019 and 11 percent below the 5-year-average. If realized, this would be the second lowest acreage on record. Poor planting weather and continued expansion of cotton area in Kansas and Oklahoma likely hampered winter wheat seedings. Winter wheat area is unchanged relative to last year in major producing states such as Kansas and Oklahoma, but is down in Montana (-400,000), Colorado (-250,000), Nebraska (-170,000), Illinois (-160,000) and South Dakota (-160,000)

The decline in winter wheat area supported spring wheat prices. However, saturated soils in the Northern Plains may delay or prevent planting of spring wheat and enhance profitability of other crops. As a result, other spring wheat planted area is expected to decline slightly in 2020/21; Durum planted area is projected to rise from the previous year's low level but remain below the 5-year-average. Total wheat area for 2020/21 is projected at 45 million acres, down 158,000 acres from the previous year and a record low. The three-crop area total (corn, soybeans and wheat) for 2020/21 is expected to rebound from last year to 224.0 million acres.

Outlook for livestock and dairy is for continued record total meat and dairy production.
Let's turn to the outlook for the livestock, poultry, and dairy sectors in 2020. With low and stable feed costs over the past few years and projected going forward, the outlook for livestock and dairy

is for another year of record total meat and dairy production (see slide 22). We project that total meat and poultry production will reach nearly 109 billion pounds in 2020, as production of beef, pork, broilers, and turkey all increase. The modest growth in beef production in the first part of the year reflects a higher rate of marketings and heavier carcass weights. However, with a smaller calf crop in 2019, placements and late-year marketings are expected to slow in the second half of the year. Broiler production is also expected to rise as the sector continues to expand the laying flocks. Milk production is projected to reach 222 billion pounds in 2020. With the dairy herd virtually unchanged from last year, the increase will be driven by continued gains in milk per cow and the extra milking day associated with a leap year.

The rate of growth in pork production in the near term will largely reflect increased supplies of slaughter hogs as producers continue to expand production. Although producers have indicated that they will be cautious in their farrowing plans, gains in pigs per litter will support growth in hog supplies. That growth largely parallels increased demand globally for pork, as China and other Asian countries are affected by the outbreak of African Swine Fever.

With the outbreak of African Swine Fever across Asia, we have seen declining pork production in a number of countries, China in particular. USDA estimates China hog production in 2019 was down 195 million head from 2018 and expects in 2020 to see a further 80-million head reduction in the Chinese pig herd, with a subsequent increase in global pork import demand. Chinese pork prices are 150-200 percent higher than they were a year ago and China's export demand has increased dramatically. Even with tariffs and ractopamine bans in place, China has dramatically increased purchase of U.S. pork (see slide 23) with purchases from the U.S. up 150 percent from 2018. While China has mainly looked to the EU and Brazil to supply their shortfall in production, with the Phase One deal in place, we would expect a larger portion of that heightened demand to be filled by U.S. exporters. This past December (latest data available), U.S. exports to China hit a new monthly record of 102,000 metric tons. The Japan free trade agreement should also begin to spur rising demand for U.S. meat products and subsequent price increases. However, the loss in China supplies cannot be met even if China were to purchase all exported pork in the world. This situation will take time to resolve and will continue to affect prices for animal proteins.

Our current projections for fed steer prices average $117.00 per cwt, about the same as 2019, supported by solid demand (see slide 24). Hog prices are expected to increase to $49.00 per cwt, up 2 percent from last year. Despite higher production, increased demand, both foreign and domestic, will support higher pork prices. Prices for broilers, however, are facing increased pressure from expanding production. Prices declined in 2019 and are expected to decline further in 2020 to average 87 cents per pound. Turkey prices are expected to increase for the second year as the industry continues to adjust to current market conditions and work through overhanging stocks. Turkey prices will average just over $1.00 per pound, the highest price since 2016. Milk prices are expected to improve slightly in 2020 with a modest production expansion and improved demand. The all-milk price is expected to rise just over 1 percent this year to $18.85 per cwt. Butter prices and whey prices show some decline as large supplies clear the markets, but cheese prices are expected to be higher as stocks have been worked down and demand improves. Nonfat dry milk is expected to show price strength on improved prices in the global market. With an improved forage base and improved milk prices, margins are expected to improve modestly in 2020.

From a long-term perspective, animal production over the 10-year baseline projection period is characterized by amazing progress in productivity with subsequent declines in real prices. Over the past half-century beef, pork, and chicken prices have fallen by more than 50 percent and output in the United States has more than doubled. These trends are likely to continue. For example, over the next 10-years we expect U.S. pork production to increase by 12 percent, exceeding 32 billion pounds. As a share of production, pork exports increased from 19 percent in 2010 to 23 percent in 2019 and are forecast to be 33 percent by 2029.

In the beef cattle industry, the feed price ratio (cattle price/feed price) is expected to decline over the next 10-years, reflecting both modestly lower cattle prices and slowly rising feed prices and suggesting lower returns to production. In the hog industry, the feed price ratio is expected to start strong and then decline before recovering some of its value by the end of the decade. The broiler industry's feed price ratio is also expected to start strong but decline throughout the remainder of the decade. Meanwhile, both domestic and global demand for total meat and dairy products are expected to remain strong. U.S. red meat and poultry production is expected to increase over the projection period due to efficiency gains and structural change. Milk production is also anticipated to rise with gains in both the dairy herd and milk per cow rates, along with higher farm prices.

Similarly, U.S. milk production is expected to grow by 13 percent over the next 10 years, but milk prices are only expected to increase by 5 percent. As with other sectors, much of the gain in production has been through increased gains in animal efficiency (see slide 25). However, dairy also remains a sector experiencing steady structural change, with the number of licensed herds falling as production increases. The recent USDA Census shows how the distribution of dairy farming operations has been changing from many small dairy farms to fewer, but much larger, operations (see slide 26). The reason for that is apparent in this chart showing the costs of production for dairy farms across the U.S. (see slide 27). The chart shows that the majority of dairy operations have costs of production that are greater than the all-milk price, but the majority of milk production is occurring on operations with costs lower than the all-milk price. Based on this we would expect to see continued consolidation in the dairy sector.

Net farm income expected to rise in 2020.

U.S. farmers faced a number of natural disasters, including floods, blizzards, and severe freezes in 2019 (see slide 28). USDA responded with all the tools available to it, making timely payments for loss claims on crop insurance policies and utilizing FSA's suite of disaster assistance programs for non-insurable crops, livestock, trees, vines, and bushes. USDA provided assistance to producers to install conservation practices on land damaged by severe weather and continues to provide help to communities to restore and enhance damaged watersheds and floodplains. In addition to those tools, USDA implemented the Wildfires and Hurricanes Indemnity Program Plus (WHIP+) using the funding provided by Congress under the Additional Supplemental Appropriations for Disaster Relief Act of 2019 and the Further Consolidated Appropriations Act. WHIP+ provides payments in addition to crop insurance to producers affected by natural disasters in 2018 and 2019. This supplemental funding also provided roughly $600 million in additional payments to producers who were prevented from planting their crops in 2019.

The significant uncertainty surrounding impacts of weather and trade last year was evident in how producers felt about their economic prospects (see slide 29). Last year, farmer sentiment

plummeted by 20 percent following poor planting conditions into spring. Prices seemed poised for an uptick along with news of USDA's new Market Facilitation Program, which buoyed sentiments and prices through early summer. Following the August NASS reports, we can see that prices and farmer sentiment fell again by more than 20 percentage points, before steadily rising through the fall into the winter. Many elements help to explain those numbers. For example, the DJIA index has been performing well throughout 2019, which shows how the broader U.S. economy helps directly or indirectly with the finances of farm households. Prices slowly recovered as well, reinforcing optimism about trade deals. These major indices currently reflect increased optimism about the 2020 outlook compared to last year.

More than 98 percent of farms in America are family farms, so farm household income is a good benchmark for the sector overall, with family members in many farm households working off the farm to provide for health care and to contribute to the overall household income stream. From this figure (see slide 30), we can see that overall, farm household income stretches from -$8,000 to more than $300,000, with the median at roughly $72,000 – typically above the median U.S. household income. This is down slightly from 2019, with lower net cash income expected from on-farm activities. However, this chart also shows that roughly 50 percent of farms do not earn positive returns from farming activities. We know that more than 50 percent of U.S. farms have a principal operator who is either retired or lists another job as their primary occupation.[1]

A growing U.S. economy helps farm household income but falling commodity prices in recent years for a host of reasons have weighed on farm income. Farm income has rebounded slightly since 2016, in part due to the high levels of prevent-plant payments in 2019, ad hoc disaster assistance in several years, and the trade mitigation programs in 2018 and 2019. Some of that assistance will be paid out to producers in 2020 and will help offset the adverse impacts of disasters on the one hand and trade adjustments on the other (see slide 31).

USDA currently expects net cash income to finish at $120.4 billion in 2019, but to fall to $109.6 billion in 2020. However, we expect net farm income, which includes the value of inventory changes, to rise from $93.6 to $96.7 billion. The difference between the increase in net farm income and the decrease in net cash farm income is due to changes in crop inventory. Net farm income accounts for the value of an increase in crop inventory, reflecting the increased value of production for the year. Net cash farm income accounts for the value of sales from inventory, so when inventory is held, that value does not add to net cash farm income. Given the poor weather in 2019, producers had to draw down crop inventories in 2019, adding to 2019 net cash farm income, whereas net farm income for 2020 reflects the forecast for better crop production that will allow for holding larger crop inventories.

Usually when we think of disaster assistance, we are talking about crop insurance. In this case, crop insurance is still covering the bulk of losses due to natural disasters (see slide 32), but ad hoc WHIP and WHIP+ together with top-up for prevent plant, bolstered crop insurance assistance in 2017, 2018, and 2019 and show up in government payment numbers in those years, although those are only partial for 2019—some of those payments will reach farmers in 2020. In addition, the $14.5 billion in 2019 MFP payments, which will be targeted to those states with commodities most

[1] See USDA-ERS. 2019. *America's Diverse Family Farms* (https://www.ers.usda.gov/webdocs/publications/95547/eib-214.pdf?v=9906.4).

affected by the retaliatory tariffs, will show up in numbers for both 2019 and 2020 (see slide 33).

For this year, farm sector debt is forecast at $425 billion with $265 billion in real estate debt—including loans using real estate as collateral—and $161 billion in non-real estate debt. Overall farm sector debt is near its peak in the early 1980s. Accounting for inflation, equity is forecast to decrease 0.7 percent in 2020 compared the previous year, while debt is anticipated to increase 0.5%. That puts the debt-to-asset ratio for the farm sector at 13.59 for 2020, still low, but the highest level since 2003 and passing the levels seen during the Great Recession (see slide 34). However, both interest rates and inflation are expected to remain low, which has kept debt financing costs low and which also has helped maintain equity in high farmland values. We expect a continued strengthening in debt repayment capacity in 2020, offsetting the worry that farm debt is becoming broadly unmanageable.

Those overall values can mask areas of greater vulnerability. Debt-to-asset ratios vary among farm businesses, with some commodity specializations showing a much larger share of highly leveraged operations. Overall, the number of crop farms in highly leveraged financial situations is approximately 1-in-12 and the number of livestock and dairy farms in highly leveraged financial situations is approximately 1-in-16. The percentage of farms with very highly leveraged balance sheets (debt-to-asset ratios above 70 percent) has been slowly rising for several sectors, including corn, soybeans and hogs (see slide 35).

The overall farm bankruptcy rate for the U.S., it has remained below 3 farms per 10,000 over the past 9 years, and while it has increased by 24 percent this past year, the rate is much lower than it was twenty years ago (see slide 36). If we look at individual states, there are some that will show higher than average bankruptcy rates, such as Georgia, Nebraska, and North Dakota, but there are others where the bankruptcy rates have been lower than average (see slide 37).

Conclusions.

Overall, going into 2020, the basic fundamentals for many farms look better than they did last year. Nevertheless, the farm balance sheet remains tight for farms without significant land equity. Total costs including land rent, exceed expected revenues in many regions (see slide 38).

Despite the difficult financial times for many producers last year, the American farmer is poised to rebound in 2020 – producing and selling an enormous amount of food that feeds people not just in the United States, but globally. Even in 2019, the U.S. produced the most corn and soybeans in the world and made up more than a third of global corn and soybean exports; this year we expect the largest corn crop ever. The U.S. remains the world's number one beef producer and largest beef exporter at over $7 billion in annual sales despite sales being down 5 percent from 2018. For other important commodities, such as pork, wheat and cotton, American farmers make the U.S. anywhere from the 3rd largest producer to the 5th largest; however, we export relatively more of what we produce than many other countries – we export more cotton and corn than anyone in the world, and we export the second most wheat and soybeans.

Improved trade deals, stable economic conditions, and improved weather will all boost 2020 fundaments (see slide 39). Meat and dairy production are expected to reach a record high in 2020, with potential for increased marketings abroad. And while weather conditions will help U.S.

producers, we know we are in a very competitive marketplace with Brazil poised to expand its corn and soybean acres (see slide 40).

Returning to the theme of our forum, "The Innovation Imperative," we know that increasing productivity at home and growing export markets is what is expected and needed over the next 10 years--both to ensure financially sustainable incomes for farmers, to provide increasing amounts of food for a growing global population, and to do so while facing constraints on land and water.

A lot could affect our ability to meet or exceed those expectations over the long term: economic fundamentals at home and abroad such as costs of credit and energy; political and economic challenges affecting both importers and competing exporters; bad weather delaying or preventing planting or lowering yields; diseases –both in livestock and crops that affect production and in humans that disrupt demand; policy changes in importing and exporting countries; and trade disputes between us and our trading partners.

Our production growth projections assume that recent historic growth rates in productivity continue, despite those challenges. Total production of crops in the USDA baseline for 2029/30 is 612 million metric tons, a 9 percent increase over 2017 (see slide 41).

The U.S. is a country that encourages innovation and has historically been at the forefront in science, technology, and management practices that support farming and food distribution, and we expect this to remain the case. The Secretary will join us in a minute to discuss this in more depth.

As long as production growth keeps ahead of consumption growth, prices will remain competitive, leaving increasing productivity as one of the only ways to ensure good incomes for U.S. farmers and farm workers. And it will also benefit the environment as well as helping to meet the global challenge of feeding a growing world population.

We expect more people to have improved access to food in the coming 10 years as real food prices fall and global growth continues to boost purchasing power. Nonetheless, much work remains to be done in achieving the United Nations' Zero Hunger Target by 2030. The number of people who are food insecure in 2018 was 820 million, or 11 percent of the world population, 10 million higher than in 2017, with much of that increase coming in Sub-Saharan Africa (see slide 42). U.S. producers and U.S. agricultural innovation have a vital role to play in feeding the global population. As well as responding in a sustainable way to challenges facing agriculture today, such as limited land and water and natural disasters.

Thank you.

Robert Johansson, Chief Economist
U.S. Department of Agriculture

Thank you again. Now it is my pleasure to introduce USDA's 31st Secretary of Agriculture, Sonny Perdue. He will be speaking about the new Agriculture Innovation Agenda here at USDA and will speaking with John Hartnett about the innovation imperative facing us today.