

**THE STATE OF THE RURAL ECONOMY WITH
AGRICULTURE SECRETARY SONNY PERDUE**

HEARING

BEFORE THE

**COMMITTEE ON AGRICULTURE
HOUSE OF REPRESENTATIVES**

ONE HUNDRED SIXTEENTH CONGRESS

SECOND SESSION

—————
MARCH 4, 2020
—————

Serial No. 116-32



Printed for the use of the Committee on Agriculture
agriculture.house.gov

—————
U.S. GOVERNMENT PUBLISHING OFFICE

42-600 PDF

WASHINGTON : 2020

COMMITTEE ON AGRICULTURE

COLLIN C. PETERSON, Minnesota, *Chairman*

DAVID SCOTT, Georgia	K. MICHAEL CONAWAY, Texas, <i>Ranking</i>
JIM COSTA, California	<i>Minority Member</i>
MARCIA L. FUDGE, Ohio	GLENN THOMPSON, Pennsylvania
JAMES P. McGOVERN, Massachusetts	AUSTIN SCOTT, Georgia
FILEMON VELA, Texas	ERIC A. "RICK" CRAWFORD, Arkansas
STACEY E. PLASKETT, Virgin Islands	SCOTT DESJARLAIS, Tennessee
ALMA S. ADAMS, North Carolina	VICKY HARTZLER, Missouri
<i>Vice Chair</i>	DOUG LAMALFA, California
ABIGAIL DAVIS SPANBERGER, Virginia	RODNEY DAVIS, Illinois
JAHANA HAYES, Connecticut	TED S. YOHO, Florida
ANTONIO DELGADO, New York	RICK W. ALLEN, Georgia
TJ COX, California	MIKE BOST, Illinois
ANGIE CRAIG, Minnesota	DAVID ROUZER, North Carolina
ANTHONY BRINDISI, New York	RALPH LEE ABRAHAM, Louisiana
JOSH HARDER, California	TRENT KELLY, Mississippi
KIM SCHRIER, Washington	JAMES COMER, Kentucky
CHELLIE PINGREE, Maine	ROGER W. MARSHALL, Kansas
CHERI BUSTOS, Illinois	DON BACON, Nebraska
SEAN PATRICK MALONEY, New York	NEAL P. DUNN, Florida
SALUD O. CARBAJAL, California	DUSTY JOHNSON, South Dakota
AL LAWSON, Jr., Florida	JAMES R. BAIRD, Indiana
TOM O'HALLERAN, Arizona	JIM HAGEDORN, Minnesota
JIMMY PANETTA, California	
ANN KIRKPATRICK, Arizona	
CYNTHIA AXNE, Iowa	
XOCHITL TORRES SMALL, New Mexico	

ANNE SIMMONS, *Staff Director*

MATTHEW S. SCHERTZ, *Minority Staff Director*

CONTENTS

	Page
Conaway, Hon. K. Michael, a Representative in Congress from Texas, opening statement	3
Submitted report	69
Craig, Hon. Angie, a Representative in Congress from Minnesota, supplementary material,	83
Peterson, Hon. Collin C., a Representative in Congress from Minnesota, opening statement	1
Prepared statement	2
Schrier, Hon. Kim, a Representative in Congress from Washington, submitted letter	84
WITNESS	
Perdue, Hon. Sonny, Secretary, U.S. Department of Agriculture, Washington, D.C.	4
Prepared statement	7
Supplementary material	86
Submitted questions	92

THE STATE OF THE RURAL ECONOMY WITH AGRICULTURE SECRETARY SONNY PERDUE

WEDNESDAY, MARCH 4, 2020

HOUSE OF REPRESENTATIVES,
COMMITTEE ON AGRICULTURE,
Washington, D.C.

The Committee met, pursuant to call, at 10:04 a.m., in Room 1300 of the Longworth House Office Building, Hon. Collin C. Peterson [Chairman of the Committee] presiding.

Members present: Representatives Peterson, Costa, Fudge, McGovern, Vela, Plaskett, Adams, Spanberger, Hayes, Delgado, Cox, Craig, Brindisi, Schrier, Pingree, Bustos, Maloney, Carbajal, Lawson, O'Halleran, Panetta, Kirkpatrick, Axne, Torres Small, Conaway, Thompson, Austin Scott of Georgia, Crawford, Hartzler, LaMalfa, Davis, Yoho, Allen, Bost, Rouzer, Abraham, Kelly, Comer, Marshall, Bacon, Dunn, Johnson, Baird, and Hagedorn.

Staff present: Lyron Blum-Evitts, Carlton Bridgeforth, Melinda Cep, Jacob Chisholm, Patrick Delaney, Jasmine Dickerson, Brandon Honeycutt, Chu-Yuan Hwang, Prescott Martin III, Chief Counsel; Félix Muñoz, Jr., Michael Panetta, Troy Phillips, Lisa Shelton, Anne Simmons, Ashley Smith, Luke Theriot, Katie Zenk, Paul Balzano, Callie McAdams, Matthew S. Schertz, Ricki Schroeder, Patricia Straughn, Jennifer Tiller, Trevor White, Dana Sandman, and Justina Graff.

OPENING STATEMENT OF HON. COLLIN C. PETERSON, A REPRESENTATIVE IN CONGRESS FROM MINNESOTA

The CHAIRMAN. Members take their seats, and we will get started here. We are a couple minutes late, but we obviously have a quorum, and we appreciate everybody being here, and very much appreciate the Secretary being willing to come up and spend some time with us.

First of all, Mr. Secretary, on behalf of my sugarbeet guys, I want to thank you and the President for what you did to help our industry. It was a huge hit that we took, and you are going to help us survive. I hope you tell the President as well that we very much appreciate what you guys did.

We welcome you here to the Agriculture Committee today to review the state of the farm economy. The Secretary has, of course, been at his job for what, 2 or 3 years now, 3 years? You still have a little bit of hair left. He is going to tell us where he sees the farm economy going in the coming year, as well as what is going on over at the Department.

Today, we are also welcoming our newest Member of the Committee from New Mexico, Xochitl Torres Small, who is from New Mexico's 2nd Congressional district, which has a lot of agriculture. It is a rural district, has a border area, and she is going to be a great new Member and it is going to be a great thing for her district to have her on the Committee. We very much welcome you and look forward to working with you.

We have seen farm income numbers come out for 2019, and really, if it weren't for the payments to farmers through the Market Facilitation Program and disaster payments, farm income would have been in the tank last year. A farm economy that is propped up by payments, I think we all agree, is not what we want and that is not a healthy farm economy. I really hope that these markets can return to normal, but I am concerned about the President's comments that we are going to have a third payment potentially. I don't know, maybe you can give us some insight into that. But that makes me wonder if we are talking about third payments as to what is going on with these trade deals and whether things are going to turn around there. I hope they do. A promise has been made to these farmers, and they don't want these payments. They want trade. They want these markets reestablished, and I think you understand that. We all understand that, and we all want to work together to try to make that happen.

I told you last year that I appreciated you always shooting straight with us. You have done that, and so, I would like to hear today from you some of your straight talk, how you view things in the farm economy, over at the Department, and how you see us recovering and thriving, getting back to where we were some years ago.

[The prepared statement of Mr. Peterson follows:]

PREPARED STATEMENT OF HON. COLLIN C. PETERSON, A REPRESENTATIVE IN
CONGRESS FROM MINNESOTA

Good morning, and welcome to today's hearing to review the state of the farm economy. Welcome also to our witness, Agriculture Secretary Sonny Perdue, who will talk about where he sees the farm economy going in the coming year, as well as what's going on over at the Department.

Today we are also welcoming the newest Member of the Committee. Congresswoman Xochitl Torres Small from New Mexico's second Congressional District has joined us. Coming from a rural, border district with a significant agricultural presence, we are lucky to have her perspective and experience.

We've seen the farm income numbers come out for 2019. If it weren't for payments to farmers through the Market Facilitation Program and disaster payments, farm income would have been in the tank last year. A farm economy propped up by payments from the government isn't a healthy farm economy.

I really hope the markets return to normal. But the President's comments about a third payment also don't give me a lot of hope that we'll see tangible benefits from these new trade deals anytime soon. That's a promise that the Administration made to farmers, and without it, the farm economy isn't going to recover.

I told you last year that I appreciated you always shooting straight with us, Secretary Perdue, so I'd like to hear from you today on how you view the state of things and how to make sure the farm economy recovers and thrives like we all want it to.

The CHAIRMAN. I appreciate you being here, and I recognize the Ranking Member for a statement.

**OPENING STATEMENT OF HON. K. MICHAEL CONAWAY, A
REPRESENTATIVE IN CONGRESS FROM TEXAS**

Mr. CONAWAY. Thank you, Mr. Chairman. Secretary, thank you for being here. I also would like to welcome our new Member. She represents my three grandsons who live in Los Cruces, and so I am glad to have her on the Committee. She will do a great job.

Mr. Secretary, we recognize your hands are full. Your hard work in implementing that 2018 Farm Bill, WHIP+, disaster assistance, Market Facilitation Program, has been and continues to be absolutely vital in helping our farmers and ranchers weather the seventh straight year of recession and a brutal string of natural disasters. I know that you and the President have taken some heat for providing Market Facilitation Program payments to farmers, but I would hate to see what the situation in farm and ranch country would be right now if you had not taken those steps. We would be having a very different conversation today, akin to the kind of discussions that were taking place through the 1980s farm financial crisis.

Our farmers and ranchers were targeted by China because the President put his foot down against nearly 30 years of predatory trade practices that hurt American workers, as well as our producers. The first and second MFP payments were as justified as they were critical to our farmers and ranchers, and I strongly believe that unless something gives here very soon, an announcement of an MFP 3 will be absolutely vital to the survival of our producers.

I am also grateful that the President communicated directly with farmers and ranchers in rural America last week to assure them that he and his Administration are going to continue to stand by them through these difficult times.

For those who have ideas on how to improve MFP so it works better for their producers, they should talk with the Secretary about those ideas rather than simply criticize this vital assistance that literally means the difference between farming another year, or losing the farm. To the critics, I would say they ought to be a part of the solution, rather than always being a part of the problem.

Mr. Secretary, I greatly appreciate all that you and the President are doing to open up new markets for our farmers and ranchers. Passage of USMCA, completion of the Phase 1 agreement with China, the U.S.-Japan agreement, the U.S.-Korean agreement, all hold great promise for our farmers and ranchers, and I know that you and the Administration will be vigilant in ensuring that the promises become reality.

The real potential for bilateral agreements with the UK and the EU and with India are also very encouraging, and I especially appreciate your leadership, Mr. Secretary, in pressing the EU to at last adopt Norman Borlaug's Green Revolution, which has saved billions of lives while conserving natural resources worldwide. If we are going to feed nine billion people in the next 30+ years, the path Borlaug charted decades ago remains the only acceptable path forward. That is why I am pleased to work with you and what you are doing, Mr. Secretary, in your recently announced Agriculture Innovation Agenda. Reducing food waste, enhancing water quality,

conserving resources, and strengthening U.S. energy independence are all goals that we can and should be able to agree on. Thank you for leading the way on this effort and for making our nation's farmers and ranchers an integral part of your plan.

There is one issue I want to visit with you about, and that is making sure that for the WHIP+ Disaster Program, that it complies with the law and your strong belief that the program should incentivize higher levels of crop insurance, not hinder them. Unfortunately, an unintentional glitch in the WHIP+ formula means that farmers who bought higher levels of coverage are penalized more than those who bought lower coverage in the case of unharvested acres. I know that this is not your intent, and I believe that the USDA did not desire this result. But it is a serious problem and I think it ought to be fixed so we honor the intent of the law and your conviction that disaster aid should never undermine crop insurance. I look forward to our continued work on this issue to minimize these disparities.

For now, I want to reiterate my thanks to you and the President for all you are doing to stand by our farmers and ranchers through these very difficult times.

With that, Mr. Chairman, I yield back.

The CHAIRMAN. I thank the gentleman, and I ask that other Members submit their opening statements for the record to ensure that there is ample time for questions during this hearing.

I, again, welcome our witness, Mr. Perdue, Secretary of the Department of Agriculture. The floor is yours and you may take as much time as you consume. I am not going to run the clock on you, and we very much appreciate you being here.

**STATEMENT OF HON. SONNY PERDUE, SECRETARY, U.S.
DEPARTMENT OF AGRICULTURE, WASHINGTON, D.C.**

Secretary PERDUE. Well, thank you very much, Chairman Peterson and Ranking Member Conaway. First of all, I appreciate the opportunity to be here. I appreciate, really, the attendance of the Committee today, for all the distinguished Members here. I look forward to hearing their questions and responding the best I can.

You are absolutely right, Mr. Chairman. It was a tough year. Spring of 2019 was tough, and the payments that you all have authorized and facilitated, both indemnity as well as the Market Facilitation Program, made a difference in lives across rural America this last year. It was spring flooding in the Midwest, continuation of cold, wet conditions, and then as you well know and experienced, an early blizzard in Minnesota and the Dakotas. A lot of the crops got frozen on the ground, and some are still yet to be harvested in that way.

But despite a tough weather year and tough trade environment, it is interesting the facts show that net farm income increased 11.7 percent from \$83½ billion to \$93 billion, and frankly, we have already talked about some of the reasons for that. That was the indemnity payments. The safety net of crop insurance spent \$9.46 billion in indemnity benefits distributed to producers, along with the \$600 million in prevented plant top off payments that way. The standing disaster program administered by the Farm Service Agency, that is the safety net that you all vote for in the farm bill, pro-

vided nearly \$690 million for assistance in 2019, and as you well know, you all participated and supported and voted for an additional \$4.5 in *ad hoc* disaster payments as well for 2018 and 2019 losses for those caused by hurricanes, tornadoes, floods, snow storms, excessive moisture, wildfires, drought, and most anything else that can happen on the farm.

Thank you for y'all's thoughtfulness and concern about the American farmer and rancher, and we appreciate the ability to be able to do this. We appreciate—farmers are optimistic and we hope—we are glad 2019 is in the books, and we look forward to better times in 2020.

As you indicated, Mr. Chairman, we heard the mantra loud and clear over trade not aid, and I think that is where we are headed. This is not my prepared remarks, but I want to go ahead and address the issue that you mentioned about a third Market Facilitation Program payment. I am telling farmers to do what they have always done and part plant for the market. The President did make a tweet, but many people, and farmers in particular, we always read what we want to see in that. It was preceded by a major two-letter word there in the beginning, *if*. If the trade does not materialize as we anticipate it will, then he is willing to support another one. But I am telling farmers not to anticipate one. Don't expect one. We know there will be some weaning pressure here as people have come to be comfortable with that. Our goal is not to continue a Market Facilitation Program payment in the ongoing future. The safety net that you all designed under the crop insurance program and the other programs for USDA, we believe, is adequate for the future in that regard.

I am telling farmers that if we get the export, we get the trade, and we don't see prices increase, then the Market Facilitation Program was not a price support program. It was a trade disruption program, not price support. If we see trade increase and prices don't go up, that is a market signal to farmers who are producing too much, and that is the way the markets have always worked. We have more supply and less demand, prices go down. Less supply, more demand, prices go up. So, don't look for us to support a Market Facilitation Program as a price support program. Look at it for a trade disruption program. That was the principle in the foundation of the original Market Facilitation Program regarding trade disruption. I want to be clear about that. We can talk more about that in the questions, but I really wanted to get that out, since you mentioned it earlier, about that.

But we do, at USDA, remain committed to delivering those programs of support that you all have authorized for those that need it most. The new trade deals and the strong consumer demand in the United States and abroad are a signal that bright days are ahead. None of us obviously know what the impact is going to be with the coronavirus, and that is yet to be determined. We are going to do what we have always done, and do what needs to be done in that regard, nationally and internationally in that way.

The good news is we serve a group of people who are ultimate optimists. It takes that spirit and optimism every year to take their equity and put it in the ground and hope a good crop and weather makes it productive. And that is why it is fun to serve these folks,

and they have made it perfectly clear to me that they would rather have trade, not aid, and it is certainly more fulfilling when we grow and produce things, rather than getting a check in the mailbox.

The Phase 1 deal with China, I am encouraged by USMCA, Japan, the renewal of the KORUS arrangement, and again, to all the smaller countries, the singles that Ambassador Lighthizer talks about, will set us up for a great future. I am not a market prognosticator, and I don't want to pretend to be one, but we have seen, based on the future of the trade deals, We have seen the lows put in for the recent area. It is not going to just climb up. We were disappointed that we didn't see prices respond more in the Phase 1 deal, but obviously, the market and all farmers kind of act like they are from Missouri. They want to see it rather than hear about it, and I think that is what we are seeing that way. I think that is what we will see.

The good news about that is, from a technical level at USDA and working with the technicians in China, they are doing the kind of things that it is going to take to facilitate that trade. A lot of those non-trade barriers, they are working on those types of things on an ongoing basis. We see a sincerity in them living up to the agreement, those hardline numbers that Ambassador Lighthizer negotiated. We see a commitment to doing that. We are going to be tracking that. Right now, we are in a trusting but verifying environment, and that is what we will continue to report to you all and the President as we go forward. The unilateral ability to enforce that is a very powerful tool in that regard. We appreciate these trade agreements. That is what farmers want to see is trade, not aid.

Last week, as you may have heard, we also tried to support the ethanol market by declaring that we will promote another infrastructure program in helping to move to E15 year-round. The President, as you know, created the year-round market for E15 or authorized that, and we will be doing a Higher Blends Infrastructure Incentive Program of \$100 million in helping the retailers to move to infrastructure that can support ethanol, E15, and B20 and higher as we go forward. We are taking applications. It will be done on a competitive basis as people, and scored, and really to make sure we get skin in the game from the retailers, as well as just accepting a grant.

Our goal at USDA is to work all across the environment of the economy to increase rural prosperity. This week, we are announcing more rules on employment and training programs to help promote long-term success and self-sufficiency as we try to move people into employment. And I do want to tell you, I think we have gotten great results and great acclaim out here in putting the money to work that you all did with the ReConnect Program. You know how important broadband is to our whole country. It has the potential to be transformative, and where we are able to go in these communities, and a lot of times run fiber to the home, it is going to be life-changing for many of your citizens out there. We have had good results and good feelings where that happens. We just need to continue. We have opened up the second round of applications. It will close the 16th of March, and more of your com-

munities will be served based on the second and third round that you gave, \$1.1 billion in that way for reconnecting broadband across the country.

Ranking Member Conaway talked about the Agricultural Innovation Agenda to best allow our programs and research and provide farmers the tools they need to continue to be innovative and successful. We are talking about the miracle of American agriculture for the last 75 years has just been phenomenal in its productivity, reducing its environmental footprint, doing more with less, and actually less arable acres, ten percent less acres, and 400 percent increase. That is a real miracle that we don't talk about a lot, but I am going to be talking more about it.

I don't see my friend Congressman Scott here, but I know Al and others—excuse me, Mr. Lawson, I know you all are interested in the program you all did on the future of 1890s universities. We have gotten that—those, because of you, those—we are going to be welcoming those students holding those scholarships here for this fall, and I visited several of them, and they are excited about that aspect as well.

All in all, we have working to implement the 2018 Farm Bill, and stood up the key new programs that you all did, like Dairy Margin Coverage Program and rules for industrial hemp, and obviously, we have had a busy year. Certainly with the farm bill implementation, another Market Facilitation Program payment, *ad hoc* disaster program, and there is still a lot of work to be done.

As you well know, one of the other issues that we have to deal with is a stable, reliable ag labor workforce in order to maintain the best and most competitive agricultural sector in the world. We look forward to working with Congress to do that.

I just want you to know, I love this job. It is an honor to serve as the 31st Secretary of Agriculture of the United States of America, and I am proud of the great strides. We have a great team over there. We have 100,000+ good folks that just want to do good for America, and I am proud of them. We will continue to try to work every day in making USDA the most effective, the most efficient, and most customer-focused Department in the Federal Government.

Thank you for the opportunity to be here to make that statement uninhibited. I look forward to your questions, Mr. Chairman.

[The prepared statement of Secretary Perdue follows:]

PREPARED STATEMENT OF HON. SONNY PERDUE, SECRETARY, U.S. DEPARTMENT OF AGRICULTURE, WASHINGTON, D.C.

Chairman Peterson, Ranking Member Conaway, and distinguished Members of the Committee, it is a privilege to once again appear before this Committee as the 31st Secretary of Agriculture and testify on the state of the rural economy.

Sowing Prosperity in Rural America

Since we last met, USDA has worked diligently to implement the 2018 Farm Bill. Among our milestones, I committed to you in February last year we would offer the Dairy Margin Coverage (DMC) Program, a significant new risk management tool, in June of 2019, and we followed through. Implementation of conservation programs by the Farm Service Agency (FSA) and the Natural Resources Conservation Service (NRCS) is on track as well, including FSA's 54th Conservation Reserve Program general sign-up, which opened in December—another commitment kept. We established the U.S. Domestic Hemp Production Program in advance of the 2020 planting

season and adapted several existing programs to this promising commodity not widely cultivated since 1937.

USDA made strides to reduce trade barriers and ensure farmers, ranchers, and food manufacturers and workers can fairly compete against anyone in overseas markets. Examples of our accomplishments include securing full access for beef to Argentina and Japan, restoring market access for poultry and poultry products to China, improving access for wheat to Brazil, and guaranteeing rice access to the Korean market. In our effort to promote U.S. products around the world, USDA led six trade missions that enabled more than 170 U.S. companies and organizations to engage in 3,200 one-on-one meetings with foreign buyers. Our trade missions and 22 endorsed trade shows generated nearly \$3 billion in projected export sales, while our export financing programs supported another \$2 billion in exports in 2019. President Donald Trump, meanwhile, laid the foundation for a stronger farm economy through trade accomplishments like the Phase 1 Deal with China, USMCA, and trade agreement with Japan, which USDA will look to build upon in 2020.

Not only is the United States producing food efficiently and sustainably, but most importantly we have one of the safest food supplies on the planet. Over the last decade, USDA has modernized inspection systems to align with 21st century technology and to prevent the hazards that we cannot see—the invisible pathogens and microbes that cause foodborne illness. USDA is committed to using the best science and technology available to protect the American food supply and ensure the safety of meat, poultry, and processed egg products.

As we served out our motto to “Do Right and Feed Everyone,” USDA finalized a rule that will encourage more American to enter, re-enter, and remain in the workforce, helping individuals and families start on a path to a better life. The Trump Administration has produced the longest economic expansion in U.S. history, with an unemployment rate of 3.6% and 6.8 million job openings. All individuals deserve the dignity of work and the lasting transformation it provides to achieve their own American dream. Congress asked us in the 2018 Farm Bill to focus on case management and promote the long-term success and self-sufficiency of SNAP recipients and later this week, we will be issuing a proposed rule that will strengthen the way states serve our customers through Employment and Training programs. We believe that human connection, not just a monthly SNAP benefit, has the power to change people’s lives.

USDA plowed ahead with IT modernization initiatives to improve customer experience. Customers can now discover our national treasures on *Recreation.gov* or save time and paperwork associated with disaster assistance, farm programs, and H-2A applications on *Farmers.gov*, all using our interactive tools in the palm of their hand. USDA also developed dashboards across eight Mission Areas and seven administrative functions, which provide employees with sophisticated data analytics to improve internal decision-making and maximize the impact of customer-facing programs. USDA will continue innovating across the enterprise to achieve faster, easier, and friendlier programs, with a special focus on areas of greatest potential impact on customer service, like expanded payment options for farm programs, automated AGI threshold compliance, and digital acreage reporting.

The Forest Service used the new farm bill and 2018 Omnibus authorities to do work in the right place at the right scale. We sought to improve forest conditions across all forests by setting aggressive targets for treating acres and producing timber volume. At the same time, we maintained our commitment to reducing hazardous fuels and restoring forest health. In 2019, USDA signed shared stewardship agreements with twelve states and the Western Governors Association to better coordinate our forest and grassland management resources and priorities. In the coming year, USDA will seek to more than double our shared stewardship partnerships.

USDA worked closely with the Environmental Protection Agency (EPA) to strengthen America’s energy production, energy security, and supported our nation’s farmers by promoting domestic ethanol and biodiesel renewable fuel use through the approval of year-round E15. We provided greater transparency and certainty in the Renewable Fuel Standard by making the commitment to ensure that 15 billion gallons of conventional ethanol be blended into the nation’s fuel supply beginning in 2020, and that the volume obligation for biomass-based diesel are met.

Last week, as part of President Trump’s key promise to promote biofuels I announced USDA’s Higher Blends Infrastructure Incentive Program (HBIP) which will open for application early this summer and will provide for \$100 million in grants to better enable market adaptation for higher blends of ethanol and biodiesel by investing in infrastructure. More than that USDA is putting our money where our mouth is. Last week I directed the USDA to increase the number of biofuel-capable vehicles, and the use of biofuels, in our fleet operation which is one of the largest fleet operations in the Federal Government. This Administration will continue to

support renewable fuels, including ethanol, biodiesel, and biomass to achieve market-driven demand.

President Donald J. Trump is also sowing prosperity in rural America through broadband deployment. USDA's initial round of the ReConnect Pilot Program provided \$751 million in grants and financing for 83 projects to extend broadband access to 431,000 rural Americans. USDA is helping reconnect rural communities to each other and the rest of the world, giving patients access to telehealth, students access to digital learning, and farms and businesses access to new technology and innovation. In December, USDA launched Re-Connect Program Round 2. The Rural Utilities Service is now accepting applications, grants, low-interest loans, and 50/50 grant/loan combinations. In Fiscal Year 2019, Congress appropriated \$550 million and an additional \$555 million was made available in the FY 2020 Appropriations Act. In total, USDA now has \$1.1 billion waiting for rural broadband deployment. I often say we need a moonshot approach to bring high-speed internet access to everyone in rural America. I extend my appreciation for Congress' continued commitment and investment in our ReConnect efforts.

Despite our accomplishments in 2019, USDA recognizes these are challenging times and current state of the rural economy compels us to do more.

The State of the U.S. Rural Economy

For 2020, net farm income is forecast at \$96.7 billion, a three percent increase compared to 2019. While 2020 net farm income is still forecast far below the inflation-adjusted peak of \$139.1 billion in 2013, 2020 net farm income is anticipated to be five percent above its inflation-adjusted average (2000–2018) of \$91.7 billion. This forecasted increase is in spite of a decrease in government payments and the trade deal with China not yet fully realized in market prices.

Net cash farm income is forecast to decrease by nine percent from \$120.4 billion in 2019 to \$109.6 billion in 2020. However, the 2020 net cash farm income forecast is line with its inflation-adjusted average (2000–2018) of \$110.2 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.

Spring flooding in 2019 pummeled the Midwest, leading to the slowest planting progress on record for corn. For 2019, roughly 20 million acres were recorded as "prevent plant," which is nearly double the previous record set of 11 million acres in 2011. The continuation of cold and wet conditions, and an early blizzard in October located in the Dakotas and Minnesota, led to hardship during harvest. This led to many acres of corn, soybeans, and sugar beets being left unharvested at the end of 2019. However, for 2020, cash receipts are anticipated to increase by one percent for crops overall, generally due to higher production, and 4.6 percent for livestock due to both higher prices and production.

For 2020 we anticipate that producers will spend more on production with most expenses, including feed, labor, and fuel forecast to rise relative to 2019. This year will be the first since 2014 that total inflation-adjusted production expenses at the sector level are forecast to increase. Producers have less cash on hand as working capital is forecast to fall 15 percent from 2019 and 57 percent from the most recent peak in 2014. The decrease is the result of current assets—the value of items such as crop inventory, non-breeding animal inventory, and purchased input inventory—decreasing by four percent, while current debt—debt in which payments are due in the next 12 months—increases by two percent.

Farm sector debt continues to grow and 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. Accounting for inflation, equity is forecast to decrease 0.7% in 2020 compared to the previous year, while debt is anticipated to increase 0.5%. This puts the debt-to-asset ratio for the farm sector at 13.59 for 2020, the highest level since 2003 and passing the levels seen during the Great Recession. These overall values can mask areas of even greater vulnerability. The strength of land values varies geographically, with some states, like New Mexico, Minnesota and Georgia, seeing greater weakness even as others—such as California, Utah, and Idaho—hold steady or see modest increases. Debt-to-asset ratios also 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 lever-

aged 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.

As farms become more financially vulnerable, the risks of loan delinquency and bankruptcy increase. For Farm Service Agency (FSA) direct loans, the rate of delinquency was similar at the end of 2019 compared to the rate of delinquency at the end of 2018. However, the rate of Chapter 12 bankruptcy—bankruptcy specific to family farmers and family fishermen—is nearing three bankruptcies per every 10,000 farms, a rate we are monitoring, but is still low compared to the 1980s. The bankruptcy rate varies substantially by state. For example, in Wisconsin the rate is around seven bankruptcies per every 10,000 farms, while in Illinois the bankruptcy rate is roughly two bankruptcies for every 10,000 farms.

Our farmers work hard, are the most productive in the world, and we aim to match their enthusiasm and patriotism as we support them. When conditions test the resilience of the men and women who feed, fuel, and clothe the nation, President Trump has called on USDA to respond, and 2019 was no different.

Standing Up for America's Farmers and Ranchers

When I appeared before this Committee a year ago, the fallout of monumental storms and wildfires was testing the resilience of producers in the southeastern and western U.S. In 2019, farmers faced exceptional new challenges. Natural disasters, floods, drought, blizzards, and severe freezes dealt a hefty blow to some of the most productive regions in the heartland. USDA responded with all the tools available, 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 aided 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 these 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+ enabled \$242 million in relief to-date for losses in 2018 and 2019, representing 10,433 applications, and our diligent FSA staff continue to process new loss claims. This supplemental funding also provided roughly \$592 million in additional assistance to producers who experienced unprecedented prevented planting in 2019. USDA is steadfastly implementing the new funding and authorities Congress provided in December. Although disaster assistance will not make producers whole, we hope the assistance will relieve some of the financial strain farmers are experiencing.

While President Trump worked to address long-standing market access barriers across the U.S. economy, China, EU, Turkey, and India honed their pressure on the American farmer, for whom the success of producing abundance and selling to the world made especially vulnerable to trade disruptions. The President stood with rural America. After unjustified retaliatory tariffs from foreign nations targeted billions of dollars of agricultural trade and disrupted markets for commodities ranging from soybeans to almonds to pork, President Trump directed USDA to support our U.S. farmers and ranchers. While President Trump worked to address long-standing market access barriers, USDA continued its three-pronged approach developed in 2018 with modifications to make the Support Package for Farmers stronger and more effective for producers, authorizing up to \$16 billion in support to respond to trade disruptions and unjustified retaliation.

The Market Facilitation Program (MFP) provides funds to help producers implement alternative marketing strategies for their products. MFP was designed to help all farmers hurt by tariffs, but payment rates reflect the severity of the impact of trade disruptions, as some export-dependent commodities, such as soybeans, suffered larger trade damage than others that are less dependent on the markets affected by retaliation. Although the commodities most affected by the tariffs are generally produced on larger farms simply by the nature of the commodities themselves, USDA applied payment limitations and income-based eligibility criteria to limit large payments to single farms consistent with what Congress established for traditional farm programs and recent supplemental disaster assistance programs. In addition, recipients were required to be actively engaged in farming with respect to "covered commodities," which is assessed based on their contribution of inputs or management services to the operation. While limiting mechanisms effectively lowered payments to large producers, USDA also established a minimum per acre payment at \$15 to increase assistance for farmers who produce on a smaller scale or grow commodities less affected by retaliatory tariffs. Although there has been much discussion about the size of farms and regional distribution of the MFP assistance, by design, the assistance flowed to states that produce or export the commodities

most affected by retaliatory tariffs and the farms growing those commodities received more in assistance, subject to the guardrails highlighted above. The top commodities affected by the unjustified retaliatory tariffs were row crops, hogs, dairy, cherries, and almonds and those commodities—especially row crops—are generally produced on larger farms simply by the nature of the commodities themselves. The top states that received the assistance include Iowa (\$1.6 billion), Illinois (\$1.4 billion), Texas (\$1.1 billion), Minnesota (\$1.1 billion), and Kansas (\$1 billion) among the top five for 2019 MFP payments. Between July 25, 2019, when MFP was first announced and through the third and final tranche announced on February 3rd, 2020, FSA processed 1.8 million MFP transactions, providing more than \$14 billion to 658,356 farmers.

The Food Purchase and Distribution Program (FPDP), the second prong of our Support Package for Farmers, acquires surplus fruits, vegetables, milk and meats affected by trade retaliation. All products purchased were grown and raised on American farms by American farmers. FPDP represents a collaboration between the Agricultural Marketing Service and the Food and Nutrition Service to do right and feed everyone, acquiring the abundance of America's harvests for delivery to food pantries, school meals and other outlets serving low-income Americans. Examples of products delivered to those in need include pork, poultry, citrus, apples, and blueberries, to list a few. Through the first quarter of Fiscal Year 2020, USDA purchased nearly \$350 million, or more than 7,000 truckloads, worth of nutritious American-raised food, including pork, poultry, citrus, apples, and blueberries, to list a few. In the months ahead, USDA is working to reach its target of \$1.4 billion in total purchases.

Agricultural Trade Promotion (ATP) Program, or the third prong of our Support Package for Farmers, awarded \$100 million to 48 cooperator organizations to support trade missions and promotional activity for U.S. agriculture, food, fish and forestry products abroad. By providing foothold in new export markets, ATP funding will continue to generate sales and business for U.S. producers and exporters many times over for years to come.

Our trying times in rural America call upon our immediate assistance but also focus USDA on establishing a vision for sustaining U.S. agriculture's leadership in the world.

Envisioning the Future of U.S. Agriculture

We know ahead of us lies a dual challenge to produce enough food and agricultural products to meet the needs of a growing population and protect the natural resource base on which agriculture depends—both for current and future production. This challenge demands bold goals and bold actions. The Agriculture Innovation Agenda I announced on February 20, 2020, at our Agricultural Outlook Forum is USDA's commitment to the continued success of American farmers, ranchers, producers, and foresters in the face of these future challenges. Our commitment is bold: to increase U.S. agricultural production by 40 percent while cutting the environmental footprint of U.S. agriculture in half by 2050. This is a Department-wide effort to align USDA's resources, programs, and research to provide farmers with the tools they need and to position American Agriculture as a leader in the effort to meet the food, fiber, fuel, feed, and climate demands of the future. I welcome your partnership as USDA supports farms of all sizes by setting goals and prioritizing innovation through research and program delivery through our Agriculture Innovation Agenda.

Advances in biotechnology have great promise to enhance rural prosperity and improve the quality of American lives. Gene editing has emerged as a formidable agricultural tool to help the world meet its food production needs and increase the productivity of the American farmer and rancher by improving crop quality, increasing the nutritional value of crops and animal products, combating pests and disease, and enhancing food safety.

USDA is actively working to ensure our domestic producers have access to these technologies by implementing President Trump's Executive Order 13874 (Modernizing the Regulatory Framework for Agricultural Biotechnology Products), which directs USDA and other Federal agencies to streamline our regulatory processes and facilitate the innovation of agricultural biotechnology to the marketplace through a predictable, consistent, transparent, science-based and risk-proportionate regulatory system.

Farmers need access to a stable and legal workforce to help cultivate, harvest, and deliver to market America's agricultural abundance. Many farmers experience trouble recruiting workers during peak seasons of need in rural parts of America, and our record-long economic expansion and low unemployment have compounded this problem. Estimates show currently over half of the experienced agricultural

labor force is working without proper documentation on our farms, and the H-2A program needs improvement and modernization. Despite being a program used as a last resort, we have seen exponential growth in the H-2A program, suggesting that local workers are not available to do farm work. Farmers need long-term solutions that guarantee access to a legal and stable workforce. USDA has worked closely with the Departments of Labor, Homeland Security, and State to modernize the burdensome H-2A application process, making it easier for farmers and ranchers to follow the law and hire farm workers through the H-2A program. However, there are dimensions of this challenge only Congress can address, so we hope to see Senate and Conference actions to yield a bill President Trump can sign.

I know Members who serve on this Committee and beyond share my goal to ensure USDA is adequately staffed to deliver efficient and effective service for our farmers, ranchers and rural communities. Even as USDA strives for innovation, automation, and business process reengineering—customers will always count most on our people. For the fifth consecutive year, attrition at USDA outpaced hiring in Fiscal Year 2019. Our agencies hired 5,002 permanent employees, while 6,954 employees left USDA, most of whom were field based. Already in Fiscal Year 2020, USDA faces a deficit of hiring to attrition of nearly 600 employees. The pace of attrition places an extraordinary demand on a Federal hiring process that is encumbered with hundreds of pages of requirements that frustrate qualified candidates and hiring managers alike. To help overcome this mounting challenge, USDA requested and received limited, temporary direct hire authority from the Office of Personnel Management for field and front-line positions in FSA, NRCS, Forest Service, Rural Development, and other agencies with significant field operations. Nonetheless, our administrative direct hire authority is limited by position, location, and duration and retains many restrictive features of the traditional Federal hiring process, so I am asking for your help in authorizing expanded direct hire flexibility at USDA to fill our field and front-line positions.

Conclusion

Before I conclude, I want to thank our dedicated employees, without whom our service to rural America would not be possible. In 2019, we asked more of our people than perhaps at any other point: implementation of a new farm bill, execution of two Support Packages for Farmers, implementation of a supplemental disaster assistance program and its subsequent revisions, all in addition to their normal operations. It is a privilege to lead OneUSDA, while we strive to “Do Right and Feed Everyone”.

Thank you for the opportunity to testify this morning. I would be happy to answer any questions at this time.

The CHAIRMAN. Thank you very much, Mr. Chairman. Mr. Secretary. Maybe I will give you this job. It might not be all that bad.

I want to remind Members that they will be recognized for questioning in order of seniority, including Members that were here at the start of the hearing. And after that, you are going to be recognized in the order of arrival.

With that, I would recognize myself for a couple of questions. First, as I said, we really appreciate you getting the announcement on the disaster for what happened to us in the sugarbeet area last week. The other questions I am getting from my constituents is about the quality loss issue that is part of the WHIP+. You are working on that, as I understand it. Can you kind of give us an update on where you are at with that, and when we might be able to see some kind of announcement about where that is?

Secretary PERDUE. The quality loss provisions, as you know, many of the crops that are standing in the fields, some yet to be harvested, many of them suffered weight loss issues and other quality loss issues that depress their prices when they are sold. They may have volume, but the quality is a huge disadvantage, and you all authorize us to look into the disaster provision over quality loss. It is a more complex thing. It is much more subjective and not as data-driven as others, but we are currently working on devising those rules, and it will have to be rules-based so it is

never as fast as I would like to do it right away. But it will be rules-based. We will open that rule as soon as possible so farmers can take advantage of the quality loss provisions that you all authorize.

The CHAIRMAN. You don't want to hazard any kind of a guess on how long this is going to take?

Secretary PERDUE. I would say probably in the April–May time period.

The CHAIRMAN. Okay. Thank you.

The other thing we have heard from back home and around the country is that folks went into their local FSA office to sign up for the general CRP signup that just closed. I guess it closed on the 28th. We are told that in some cases that the software wasn't working and that the handbook wasn't available apparently in those county offices. This meant that landowners weren't able to see what their county rental rate might have been so that they could take that into consideration when they were deciding whether to make an offer or not.

Are you able to tell us, in light of all of that, how many offers were actually received during this signup, and how many acres were offered? Do you have any information on that?

Secretary PERDUE. Mr. Chairman, because of the software glitch and other types of things of people coming in at the end to sign up, we let everyone; well, we didn't extend. We put everybody's name who was interested even in inquiring on a register, and they will be eligible to work through this if they came in and the software was not available, which allowed them to look at all their potential outcomes of their farms, and we didn't have that or information they needed. Then they will be able to finish that up and be included in the signup. That is the reason we don't have good numbers today of that. We had some preliminary numbers, but we don't have good, sound numbers. We will get those numbers to you all and Members of the Committee as soon as we can process all those, and I think that will be soon. I am not talking about weeks; I am talking about really days in that area of processing those.

The CHAIRMAN. You don't have a list of these people that got in there and how many people are involved in that?

Secretary PERDUE. We have a register of those who were not able to get there, whether it was a software glitch or they just got there and there was a line there.

The CHAIRMAN. But you don't have any idea how many people that is nationwide that are on that registry?

Secretary PERDUE. I am sure FSA does. I don't have those numbers with me here today.

The CHAIRMAN. If you could find out, if you know, I would like to have that information.

Secretary PERDUE. I feel like we can get that to you by the end of the day.

The CHAIRMAN. However many people that is, they are going to be able to be processed before this issue.

Secretary PERDUE. Absolutely. That is the commitment, and we told them that when they came in. If there was a glitch and we couldn't have the software where they could see all their options, we put them on a register. But if they came in and we just didn't—

they came in a group of people and we didn't have time to get to them, we put them on a register with a commitment that they would absolutely be eligible.

The CHAIRMAN. Have these technical issues been fixed now at this time?

Secretary PERDUE. I am sorry?

The CHAIRMAN. Are these technical issues that were—

Secretary PERDUE. They are resolved, and I am frankly embarrassed that we had them at all. I got a little peeved about that, actually.

The CHAIRMAN. And the handbooks are out? The handbooks are out to the counties?

Secretary PERDUE. Yes, sir. The information should be all there. I don't know how many places there were limitations of not having a handbook of all the provisions of the program. We try to do a good job at that. We had these rules out in December. I would have thought everyone would have known all the provisions there, but yes.

The CHAIRMAN. I assume that you are not entertaining any requests to have the CRP reopened?

Secretary PERDUE. No, I think we are amenable to that. Obviously, I want to see what the numbers look like. Our target goal for this year is 24½ million acres of variety, whether it is grasslands or other types of working lands and those sort of things, but my goal is to reach that target. I think that is your goal. Those are the targets you all set, and I am not saying that—your rules call for at least one general signup a year, but I am not saying that we can't have more than one.

The CHAIRMAN. I appreciate that, and some of the folks who have been calling me would be pleased to hear that there is some flexibility there if you find you that we didn't have that good of a signup.

Secretary PERDUE. What we want to do is look at the numbers and be wise about how we look at those numbers. As you all know, you all changed some of the provisions that way, and we want to see what the response is from the farm community to know how to go forward.

The CHAIRMAN. I am running over a little bit, but on the GRP, the Grassland Reserve Program, that signup doesn't start until you are done with CRP.

Secretary PERDUE. That is right.

The CHAIRMAN. So, that means it will be put off for what, a month or 2 before it starts?

Secretary PERDUE. I think that is going to be in March as well.

The CHAIRMAN. Okay. I am still getting feedback from around the country that people don't know about this program. Even in your FSA offices, they don't seem to know about this, and the farmers don't seem to know about it. The cattlemen don't know about it. Whatever you can do to try to do a better job of getting the information out about the Grassland Reserve Program; and hopefully, get the good signup out of that situation, would be appreciated, at least from this Member.

Secretary PERDUE. We will do our best, again, to communicate the program. If farmers don't know about it, that is bad. If we don't

know about it, that is horrible, and we will make sure our people at our FSA offices certainly know the program, can talk about to farmers as they come in to do that. You know that you all created this and expanded the acres because of wildlife and other water quality issues, and really giving people an opportunity to take fragile land out of production and maybe improve their overall profitability.

It is an important program that we want to do well. If we are not doing our job and helping people understand what it is, I will have to figure out what it is, how we have communicated that, and whether we are just doing a website or whether we are actually evangelizing that program.

The CHAIRMAN. Thank you. Thank you, Mr. Secretary.

Mr. Conaway, 5 minutes.

Mr. CONAWAY. Thank you, Mr. Chairman.

Mr. Chairman, I have a report here on the Market Facilitation Program payment that was published by the Ag and Food Policy Center at Texas A&M. I would like to submit that for the record.

The CHAIRMAN. Without objection.

[The report referred to is located on p. 69.]

Mr. CONAWAY. This report determines that a significantly higher number of farms would be in poor financial condition and less likely to cash-flow without the assistance provided by the Administration. The report also found there is no regional bias built in to how county payment rates were calculated, and observes that 70 percent of the aid went to midwestern states. Given the competing narrative that MFP is allegedly biased toward southern producers, Mr. Secretary, would you explain to us the methodology about how the USDA determined those county payment rates for the second round?

Secretary PERDUE. I will do my best, Congressman. First of all, my instructions to our economists were kind of Sergeant Webb, just the facts, sir. In this area there was no predetermined regional demographic or sector bias in any of this.

In fact, I would like to show you, you mentioned something. I have a chart here for your Committee that shows you the states that here that have—we will provide an electronic copy of all of that, but the darker states are where the highest payments were. This is \$700 to \$1 billion there per state. These lighter colors, it goes up lighter that way. I think you can see, Mr. Conaway, your state did okay along with Illinois and Kansas and Iowa and Minnesota in that way in those states. So, that is kind of where the money came down. I know there have been some press reports about trying to favor one region than another. That was not the case. We let the chips fall where they may. It was a trade disruption program, and if you remember the first year, we hadn't traded a lot of corn to China, so there was a big problem with how corn really responded to soybeans in that area. We took a different approach based on the feedback we got from you all and constituents across the country, and went to a per acre concept here that I thought was better received. It is, again, probably not perfect. Anyone can have a different, if you ask ten economists there, you are probably going to get 12 opinions about how this could be done in that way.

[The information referred to is located on p. 86.]

I thought we did a pretty good job in trying to respond to the marketplace, but the complaints about it being regional biased are just unfounded.

Mr. CONAWAY. Well, I agree with you. I think the cherry-picking a couple counties in two different states and trying to compare those is disingenuous by our Senate colleagues that have posited this issue.

Secretary PERDUE. I was sort of proud of the fact that the Chairman's Congressional district got more money than all the State of Georgia did.

Mr. CONAWAY. Facts are a pesky thing. Facts are a pesky thing.

The CHAIRMAN. Just doing my job.

Mr. CONAWAY. Mr. Secretary, the gene editing and biotechnology advances that have the potential to transform our agriculture industry are facing some issues. With FDA saying that gene editing available traits is an FDA issue. In your discussions with producers, what challenges has the livestock community identified with the FDA's regulatory process, and how can we help you and the Administration resolve these issues?

Secretary PERDUE. Well, thank you for the question. This is an issue we have been involved in for a couple of years and inter-agency developments. We are actually making progress in inter-agency developments and conversation, moving to principles level between FDA and USDA in this regard, as well as moving it to NEC level and further if need be in trying to do that.

These techniques, these biological techniques were not even thought about, contemplated in the 1980s when it was parsed out about how did it happen. We have done, at USDA, a good job on new plant technology and the part 340, the secure rule will be coming out about plants on non-transgenic type of gene editing will not be determined to be eligible for registration if they were the same types of things that could be done through natural breeding techniques.

The same thing can happen with animals, and you know that we have already have some discoveries out here that could have animal diseases there. In plants, we can do things like peanut allergies and those kinds of editing. Non-transgenic: we are not taking other genes from other parts, animals, or plants in order to do that. But, we are making progress. FDA—honestly, if you want to know the truth, it almost comes down to more of a Committee jurisdictional issue than anything else, and that may be one way where you all can help in that regard with your colleagues over that. We do believe that the lost opportunity—if these types of new techniques go to Argentina, Brazil, who already opened doors, Canada, China, other types, and we lose our edge in innovation, this is kind of the beginning of a long haul for American agriculture. There are things out there that are amazing, that are safe, that are healthy, and FDA intends to continue to develop these as drugs, and you know how long it takes to get drugs approved, and that is the challenge that we have. These are real-world opportunities that we have, and we will have a lost opportunity if we don't keep regulatory agencies up with the world.

Mr. CONAWAY. Mr. Secretary, thank you for that, and thank you for the great work your team is doing. I know your FSA guys are overworked throughout this entire process, and I am just acknowledging from our side of the room that we certainly appreciate all their hard work on behalf of producers throughout the nation with all the work we put on them in these past 2 years.

Thank you for that, and I yield back.

The CHAIRMAN. I thank the gentleman.

The gentleman from California, Mr. Costa.

Mr. COSTA. Thank you very much, Mr. Chairman, and Mr. Secretary, we are always pleased to see you here and as you get around the country, and you do a good job, and we like you to continue to come to California. I know you were there last month, and we appreciate that.

I have a couple questions here I want to go quickly on. Is there going to be a Phase 2 trade agreement with Japan, and will that include more agriculture commodities and SPS protections, and if so, when you and Ambassador Lighthizer are looking at that?

Secretary PERDUE. I think labeling this initial agreement with Japan as Phase 1, it means that there will be a Phase 2. Honestly, we got a pretty good deal in the Phase 1, about \$7 billion work in ag products in that area. Leveling these tariffs that would have been essentially where we were in some of the earlier agreements in that way, but making a significant difference in leveling the playing field for our producers.

Mr. COSTA. Do you think there is going to be a Phase 2 that is going to come?

Secretary PERDUE. I do believe there will, yes.

Mr. COSTA. And within the next year?

Secretary PERDUE. I can't tell you the timeframe on that.

Mr. COSTA. Okay. You also talked, since we are in Asia right now, and you talked about the Phase 1 of the China agreement, the President mentioned a number last month after the conclusion of the signing that seemed much higher than previous purchases by China in the past of agriculture commodities throughout the country. What is your realistic expectation now with the coronavirus? We have other issues. We have products that have been sent from California that are sitting in the ports. Their ability to get those products off the ports and maintain refrigeration and other factors are of concern. We have people going over there these days. You want to give us a quick summary?

Secretary PERDUE. Sure. The hardline numbers were \$40 to \$50 billion, which—

Mr. COSTA. Yes, I thought the President had \$200 billion. That seemed a little—

Secretary PERDUE. That was a total deal; \$40 to \$50 billion was agricultural portion of that, \$200 billion was the overall deal on Phase 1; \$40 to \$50 billion was the agricultural portion, which essentially doubles ag exports to China.

We are encouraged. As I indicated, I think that the signals are they want to comply. We don't yet know what the effect of coronavirus will be on China or really the globe or economically here. But we see signals that they want to fulfill that commitment.

Mr. COSTA. Do we have USDA people over there trying to deal with the initial issues involving quarantine and the ability to ship product?

Secretary PERDUE. We do. We have——

Mr. COSTA. Do you want to keep the Committee informed of that effort?

Secretary PERDUE. We will.

Mr. COSTA. All right. I want to switch over to look at the MFP, the Market Facilitation Program and the data there, and I don't think California is in the top ten, and I want to know why more specialty crops haven't been included like citrus, stone fruit, berries, cashews, olives, tomatoes, that have had substantial losses to China and yet have not been a part of the Market Facilitation Program?

Secretary PERDUE. I think, again, the types of crops produced in California, it is a large export. I believe——

Mr. COSTA. Forty-four percent of our product.

Secretary PERDUE. If you check with your almond people, the last Market Facilitation Program payment included those specialty crops. The first one we did not, and those types of areas, as well as a purchasing program, they participated in that.

Mr. COSTA. Is the Department looking for expansion of additional specialty crops?

Secretary PERDUE. In which way?

Mr. COSTA. Well, there are ten right now, and there is a whole host of other, I mean, we grow a lot, as you noted.

Secretary PERDUE. Is it the Market Facilitation Program?

Mr. COSTA. Yes.

Secretary PERDUE. We don't have any plans to expand that. I think that that is over with.

Mr. Chairman, could I get a little more volume on the hearing? I am having a little bit difficulty hearing the——

Mr. COSTA. I will try to speak a little louder, if that is helpful Mr. Secretary

Secretary PERDUE. Okay, thank you.

Mr. COSTA. Also, the efforts on the payments with Farm Service Agency continue to be problematic, it seems. We have people that have applied in 2019, and in some cases, 2018. We have continued to ask you folks and then locally with the FSA offices why they haven't processed in a more timely manner. Are we looking at bringing more personnel to expedite that?

Secretary PERDUE. We are always trying to hire, but I would love to know specifically if people have not gotten those kinds of payments in that kind of period of time.

Mr. COSTA. I would be happy to provide you a list.

Secretary PERDUE. Surely. Absolutely, and we will look into that. [The information referred to is located on p. 87.]

Mr. COSTA. In the areas that I am aware of.

Secretary PERDUE. Usually it is a matter of a lack of data information that we have to validate and verify.

Mr. COSTA. All right. I will yield back the balance of my time. Thank you very much. Keep up the good work.

The CHAIRMAN. I thank the gentleman.

The gentleman from Pennsylvania, Mr. Thompson, 5 minutes.

Mr. THOMPSON. Mr. Chairman, thank you. Mr. Secretary, it is good to see you. Thank you for your leadership.

Mr. Secretary, in your testimony it references the exceptional new challenges that farmers across the U.S. faced recently with unprecedented widespread natural disasters, floods, droughts, blizzards, and freezes. These disasters expose gaps in coverage and led to additional *ad hoc* assistance. What improvements do you think that we can make to crop insurance to make it even more effective in these disaster situations?

Secretary PERDUE. Well, I think I am going to have to tread very carefully. I think crop insurance does a great job as a general safety net. It does not contemplate catastrophic disasters like hurricanes and floods, frankly, and it can be used for droughts and those sorts of things. But, I don't know that we would want to develop a program as broadly as one that contemplated huge disaster programs.

Mr. THOMPSON. This year, we hope to reauthorize the U.S. Grain Standards Act. Can you share with us the importance of the Federal grain inspection enterprise on our ability to market grain, both here and abroad?

Secretary PERDUE. I would love to. This is one of the issues where we are really having discussions with China right now, and frankly, our colleagues in the western hemisphere, the major producers of beans, China—this is one of the ways China has sort of harassed our shipments there, making sure we put weed seeds on the sanitary/phytosanitary list. That is a grain standard, not a sanitary/phytosanitary issue, and one which we are discussing with China as we speak about that. They put out an edict, they wanted to clear that.

Grain standards are very important, just like any kind of food safety standards internationally, and we take great pains to try to agree internationally on those standards, and where everyone can be assured of what they are being judged by when they ship grain back and forth.

Mr. THOMPSON. I want to thank you and your team for all your work and support for USMCA. This agreement holds, obviously, tremendous potential for U.S. agriculture, and for the dairy sector in particular, as we were kind of locked out of the Canadian market.

To get the full benefit, though, it is going to be essential we know exactly how Canada and Mexico plan to implement their commitments. And with Canada, important details need to be finalized on dairy market access. In the case of Mexico, we need more clarity on how they will allow common cheese names.

Since USDA plays an incredibly important role in working with the U.S. Trade Representative on all the fine print of our trade agreements, what is the Department doing to ensure proper USMCA implementation by our trading partners?

Secretary PERDUE. Well, 2 weeks ago I met with my Canadian peer, Minister Bibeau, and asked her were there any issues regarding the Canadian ratification of that. She expects that to be concluded very quickly with no changes. We are anxious to get all those moving.

Geographical indicators, as you mentioned for cheese is something that we continually fight against internationally in that way. That is an EU plan over some of those names. They are trying to patent names that have been in the marketplace for many years, and we have had fairly good success with Mexico in accepting that.

Mr. THOMPSON. Just changing one last gear here. The U.S. Forest Service maintenance backlog is more than \$5.2 billion. It is the second largest backlog between the four Federal land management agencies. What steps is the Forest Service taking to minimize maintenance backlog for the Forest Service, and what is the Service doing to increase access to public lands and generate more revenue for our rural communities?

Secretary PERDUE. Right. What you all did already with the forest fire fix is the funding fix on that is one of the best things. We got in the backlog because we were having to take operational maintenance money there to suppress fire. What you did there beginning this fiscal year enables us to have a plan of maintenance there. When you look at the budget for this year too and the proposal you will also see backlog maintenance money attributed to that.

We want to do that. Many of those are roads and bridges that address really the issue that you ask about, and that is public access. We want to make sure the public can get into these places. I don't want to see gates shut, because this closed because of maintenance and those sort of things. We also encourage a huge volunteer network and we have a lot of NGOs across the country that work with us on helping to improve the access through roads and bridges.

Mr. THOMPSON. Thank you, Mr. Secretary. Thank you, Mr. Chairman.

The CHAIRMAN. I thank the gentleman.

The gentlelady from Ohio, Ms. Fudge.

Ms. FUDGE. Thank you, Mr. Chairman, and thank you, Mr. Secretary, for being here today.

Mr. Secretary, I represent one of the poorest districts in the United States. More than one in six Cuyahoga County residents lack access to nutritious food every day. SNAP provides critical nutrition assistance to nearly 200,000 people in Cuyahoga County, including 82,000 children.

Unfortunately for poor Americans in my district and across the country, you and the Administration are actively working to finalize and implement three SNAP rules that will increase food insecurity and gut state flexibility—which I thought was something very important to you—to provide people in need with critical lifesaving food assistance. Altogether, roughly four million people would be kicked off SNAP, and nearly one million children will lose their automatic access to free school meals.

The rules amount to about \$19 billion in cuts to SNAP over 5 years. This comes very close to the \$22 billion handed out to ailing farmers impacted by a trade war that was started by this Administration.

We can all agree affected farmers should be compensated. However, giving farmers billions in Federal assistance shouldn't mean taking those same billions from food-insecure people.

It sounds to me like you are using administrative PAYGO to pick winners and losers, and pit food producers and consumers against each other. If the Administration can understand farmers are hurting, and we can, surely you can empathize with our nation's hungry.

I ask where is your commitment to feed everyone?

Just as concerning are reports that more than ½ of the initial farm bailout funds were paid to the top ten percent of U.S. farmers. There are recent reports of payments going to farmers previously convicted or accused of fraudulently obtaining Federal agricultural subsidies. Now, if that is true, it is certainly concerning and irresponsible, but it as well may be illegal. Because as you know, as I do, Federal law requires farmers convicted of felony fraud to be temporarily barred from USDA programs. I would like to follow up with that with your staff, if you would have someone contact my office.

Now to my questions. We are all monitoring the spread of coronavirus in the United States, which you, quite rightly, called a pandemic some time ago.

On April 1, USDA is planning to implement a final rule to strip SNAP away from 700,000 people in need. Given the timing and the anticipated strain on our nation's food banks, are you willing to delay the implementation of this final rule?

Secretary PERDUE. No, ma'am, we have no plans to eliminate. We do have flexibility, though, if there is an outbreak here, to relieve those issues. But until we see that here, we are willing to move just as flexibly as we do in natural disasters. If there is a health emergency and a disaster, we will do that here as well.

Ms. FUDGE. Thank you. Last, certainly, I have made no secret of my concerns with your civil rights enforcement. The resignation of Naomi Earp presents an opportunity to you, to USDA, to show its employees and the people it serves that the Department is committed to overcoming its long history of discrimination.

I understand that you have appointed Mr. Westil to head the civil rights office. As Chair of the Subcommittee responsible for oversight of the Department, I just want to be clear that I am going to hold him as responsible as we did Ms. Earp, and I certainly hope that your staffing will find itself in a position that raises morale, which the morale is at the bottom right now; that we will finally staff up the offices that are saying that they are thousands of people short; that we will do what the USDA is intended to do, and take care of the people it is intended to serve.

Mr. Chairman, I yield back.

The CHAIRMAN. I thank the gentlelady.

The gentleman from Georgia, Mr. Scott.

Mr. AUSTIN SCOTT OF GEORGIA. Thank you, Mr. Chairman. Mr. Secretary, I was in the old governor's office the other day with Secretary Kemp, and when you said you got upset, I had a little bit of a flashback there to budget meetings. You were a great governor and you have been a great asset for the State of Georgia, and I am glad that you are the Secretary of Agriculture, and I appreciate your support of our producers.

You mentioned the E15. I have just one thing I want to mention there. If E15 is going to become more prevalent in the marketplace,

then the labeling standard needs to be put on the pumps that cautions people that if you put E15 in a marine engine or a chainsaw engine or a high performance engine, that you are absolutely going to destroy that engine. I have no problem with E15 being expanded. I do have a problem without a labeling standard that cautions the consumer that if put in certain engines, it will destroy that engine. And so, any help with that, I certainly would appreciate it as we work on the labeling.

Secretary PERDUE. That falls under the EPA, of course, but we are working with them. They have a fairly good strong skulls and crossbones on there but it causes a lot of things, and that is certainly one of those that needs to be included.

Mr. AUSTIN SCOTT OF GEORGIA. While we are on labeling, it does concern me from our farmers' standpoint that we have non-dairy products that are being marketed as *milk*. We have non-meat products being marketed as *meat*, and we have non-rice products being marketed as *rice*. My wife tricked me into eating cauliflower the other night, and it was actually the best cauliflower I have ever had, although I don't intend to have it again.

But, I do think that this is an area that we need to be very careful of as we push forward, and I do think that it has the potential to create some disruptions for the producers. With that said, as you know, I represent your hometown and you mentioned that farm income was actually up. I would be interested if you have any studies on that, and which regions and which commodities that it is actually up in. Certainly in our area where we have been hit by natural disasters and other things, we would be on the low end of the totem pole in that.

But after watching the crop insurance and disaster payments, I have two suggestions. One is if there is any way for this year that we can find a way to include the value of the MFP in the price loss coverage, I think it would be helpful to our farmers and the lending institutions. I don't know that you can legally do it, but as you know as the commodity prices have come down, the value of the crop insurance is not there to cover the loans that the farmers have to obtain. And then in disasters, can we find a way to better integrate the actual loss data from the land-grant institutions into the disaster payment calculations? I know we can't just take a farmer that says, "Hey, I had 3 bales to the acre," but we did have actual data from the land-grant institutions this year, and unfortunately we were not able to incorporate that into the loss data on the disaster payments.

Any comments?

Secretary PERDUE. Well, we have to be very careful, obviously, in both the loss data, based on what many of your constituents wanted to have happen when they had the hurricane come in, they knew they were harvesting 3 bales of cotton to the acre. But insurance may not have covered that amount, and that is really, they did lose that because when they got back in, there was nothing left to harvest in that way. So, there were losses that way. It is very difficult, that is where the *ad hoc* disaster program comes in. That is what we are trying to address with that. One of the other challenges is, is that we don't think the taxpayer should support over 100 percent of loss, and that is—

Mr. AUSTIN SCOTT OF GEORGIA. I agree 100 percent with that.

Secretary PERDUE.—where some of the other things come in that many farmers, they wanted to pay for that huge crop, and plus. And that is the challenge.

Mr. AUSTIN SCOTT OF GEORGIA. We can never, never make somebody more than whole. That would destroy this support for the ag community throughout the country. I agree with you 100 percent on that.

I do have a suggestion as we move to write the next farm bill over the next couple of years is that if there is a way in working with the Risk Management people in your office that we are able to create a harvest-type contract where if that 3 bale per acre crop is on the ground and the farmer was only able to insure 1 bale per acre because of historical averages. That if we have the data from the land-grant institutions, and it has to be appraised before they can insure it. That we allow them to have some type of step-up coverage prior to harvest once the crop has been produced.

Secretary PERDUE. I am asking our RMA leader, Martin Barbre, right now on disaster losses, how do we adjust that for pricing and yields. That way we are looking at—I don't know how much legal flexibility we have in that way in looking, but I understand what you are saying. I understand the challenges from the producer's perspective. We want to be as flexible as we can.

Mr. AUSTIN SCOTT OF GEORGIA. One quick suggestion on that would be to allow them to cut out more of the bad years, might allow them to insure more of the yield.

With that, Mr. Secretary, I appreciate you and I appreciate our friendship, and what you do for the country and the State of Georgia, and I have to get to an Armed Services meeting.

The CHAIRMAN. I thank the gentleman.

The gentlelady from Connecticut, Mrs. Hayes.

Mrs. HAYES. Thank you, Mr. Chairman.

Thank you, Mr. Secretary, for being here. I know there is a lot we are talking about on the Committee, but when I have the Secretary in front of me, I have to talk about what is important to me and my constituents.

I looked, and you mentioned several of your Department's proposals to gut SNAP benefits in your written testimony that was submitted to the Committee, yet there is no mention that the President's budget request for Fiscal Year 2021 revived your previous proposal to take away benefits from households and replace them with what you are calling Harvest Boxes of pre-selected non-perishable food items.

My question to you is, do you think that SNAP recipients are incapable of choosing groceries for themselves or their families?

Secretary PERDUE. No, we do not, in answer to your question. This is a proposal we have suggested. We think we would still like to have an opportunity for a pilot. As you know, many of your constituents and others are getting their food delivered at home, which would be essentially the choices that we would hope to provide in a Harvest Box.

Mrs. HAYES. Yes, I saw that this was being compared to programs like Blue Apron. I doubt that that is what it would be like, but there is little or no evidence that this proposal would lower

costs for the USDA or the American taxpayer. In reality, the proposal is likely more expensive, when you consider cost burdens on states, and it will cost \$2.3 billion in grocery sales and \$368,000 in grocer jobs.

What I can't find is how this plan would be implemented, so I guess I am going to ask you if you can expand on how this program would be delivered? Have you thought about who would deliver the boxes, or what would we do in the event that a box got lost or stolen, or are there plans for delivery in the wake of a disaster, or a storm? In my area, we have many winter storms. How would we deliver benefits to people who don't have an address? Has the Department investigated any of those avenues in what you call a pilot?

Secretary PERDUE. Yes, we spent a good bit of time on many of that. You know that in many ways, obviously when food is delivered at home, the statistics over that, the delivery mechanism, the logistics being developed in that way—

Mrs. HAYES. No, I don't know, that is why I am asking you; can you explain how this program would be implemented, or just if you thought about how that would take place?

Secretary PERDUE. We have thought about that, and I would love to have an extended conversation with you about that. I am not sure this is the way to do that, but this is the place to do that. But, there was a lot of study put into that about the home delivery there, giving people a choice, maybe an app on their phone of the groceries they wanted delivered there, and using commercial distributions. We are working with both Amazon and Wal-Mart and others who expressed great interest in utilizing these services.

Mrs. HAYES. Is this information anywhere where I can access it, because I spent a lot of time trying to look up the details of it and I can't find it.

Secretary PERDUE. I would be happy to have our FNS people deliver to you what we discovered, yes.

[The information referred to is located on p. 88.]

Mrs. HAYES. Is it available anywhere, or do you have to individually request it, because I am sure other people would like to see the same information?

Secretary PERDUE. I don't know if it is, we want to be responsive to you, Members of Congress. I am not sure of the kind of depth of questions you ask, whether that information and extensiveness is out there or not, but we can provide it and if you want to make it public, then that would be fine.

Mrs. HAYES. Well yes, I guess I am asking then can you provide it, because this is a plan that has been introduced multiple times in multiple budgets. I would imagine that the way it will be implemented should be well thought out and thoroughly investigated at this point. This isn't the first time this came up in a budget.

Secretary PERDUE. The first time? I think it has been in three budgets.

Mrs. HAYES. Exactly. That is what I am saying. This has been in multiple budgets.

Secretary PERDUE. We appreciate the opportunity to implement it, and will give you all the details you need.

Mrs. HAYES. Our role is to look at the plan for implementation before it happens, not after. Again, if you could just—I would love that. I will have my office follow up, but if you have it, I would imagine you have it planned out to the letter now, since it has been introduced or proposed in three separate budgets, so it is something that has been going on in an ongoing conversation for many years, so I would like to see it so that I can share it out.

Secretary PERDUE. Sure.

Mrs. HAYES. And just as part of that, I would ask you for specifically how you would address people with food allergies or medical needs if these are generic, pre-selected boxes that would be going out?

That is all I have, Mr. Chairman. I yield back. Thank you.

The CHAIRMAN. I thank the gentlelady.

The gentleman from Arkansas, Mr. Crawford.

Mr. CRAWFORD. Thank you, Mr. Chairman, and thank you, Mr. Secretary, for being here.

You touched on something earlier. I think my friend from Pennsylvania brought this up, the Grain Standards Act and how that impacts trade and so on, and you mentioned sort of the overlap between our grain standards and phytosanitary/sanitary considerations.

That brings me to the question: I kind of got asked this on behalf of my rice farmers. We have been talking about importing or exporting, rather, to China for 20+ years, and we have yet to export any rice to China. All of it tends to come back to this sort of moving standard that they have there. I wonder if you could maybe provide a little more insight into where we stand today, what the potential is for us to actually move some rice into China at some point in the near future.

Secretary PERDUE. Based on the Phase 1 agreement, Congressman, I am pretty optimistic we will get rice in to China. Those non-tariff trade barriers were some of the things I was referencing earlier that we are dealing with from a technical level. That is the kind of harassment that we have had in that regard, and rice would be included in that. It was obviously one of the commodities that was anticipated, and it would be a great market that hadn't been available in rice. We are looking forward to that.

Mr. CRAWFORD. Excellent. Let me change gears a little bit. I have some concerns about the aging population of our farm producers. We talk about the aging workforce, but I really want to focus on the actual producers where we see the trajectory is not going in the right direction with regard to the age of our actual farmers. A few weeks ago at the USDA outlook conference, you highlighted innovation in the future of ag producers and so on. That has to be a consideration. I am wondering what we can do here in this body to assist you in helping us to change the trajectory and getting more young people engaged in the production side of agriculture?

Secretary PERDUE. Honestly, the real answer to your question is young people are smart. They do what is in their economic best interest. I think the profitability of agriculture needs to show them a bright, promising future, where if they put their efforts into

farming, they can have a lifestyle like their colleagues that choose to go to town and work. So, that is the ultimate answer there.

You have put programs in for beginning and new farmers, but ultimately, we talk about sustainability a lot. We are talking about environmental sustainability, social sustainability of available and affordable food, but there is also an economic sustainability. We can't expect farmers to come into the business and not being able to make a livelihood like they could. We know that the average income of farmers is not comparable to many other jobs in that way.

Mr. CRAWFORD. Well, given the cost of doing business and what the return on that investment is, it doesn't make for a very attractive opportunity for young people, and so we have talked about policy and what the Federal Government can do to incentivize young people for years. It is nothing new. We have talked about this for a long time, and I don't see that we are doing anything right here in regard to that. We are still seeing that struggle take place. I haven't seen any measurable improvement in that. Are there things that we can identify that, from your perspective that you could say, "Stop doing that. Don't do that anymore, because it is not helping." Because, I know it is a market-based, market-driven largely. I just kind of want to get your insight on that. Lessons learned, what we can we do differently?

Secretary PERDUE. Let me tell you one of the things I think you all did positively that helped. You readjusted the CRP payment limits or per acre this year. That was really keeping a lot of young farmers out of the business. Senior farmers are using that kind of as a retirement program and rather than letting their farm be utilized for productive agriculture for the next generation. So, that is one of the things you all did that will help in that regard. We had complaints about that and we addressed that together.

Mr. CRAWFORD. Ironically, that wasn't geared toward trying to address the young farmer. It is just a byproduct of having done that, correct?

Secretary PERDUE. That is right.

Mr. CRAWFORD. Again, I know that we kind of struggle with this because we are trying to do the right thing by the next generation, but sometimes it doesn't manifest that way in reality. And so, I agree with you. We just need to take more of a market-based approach to help drive young people into the business. But, the market needs to catch up with us on that at some point, but there are limits, obviously, in what we are dealing with now with regard to trade is probably as much of a factor as anything, wouldn't you say?

Secretary PERDUE. We did see a lot of bright young people come back into agriculture that might have been born there, went off to town in those periods of years from 2008 to 2014. They came back. Their fathers and mothers said, "We feel like we can support another family member here, another family group." We saw them come in. Honestly, sadly, those are the ones that are hurting the most from the downturn since that period of time.

I kind of go back to the original thing. It is a macroeconomic issue. Farming is tough. It is risky and it is tough. It is a tough life. You almost got to be committed to it in a different way, but

productivity is the key. Ag innovation is the key. Those are the things that we are doing—

Ms. ADAMS [presiding.] The gentleman's time is up.

Mr. CRAWFORD. I guess I am done. Thanks.

Ms. ADAMS. Thank you very much.

Mr. Delgado, the gentleman from New York, you are recognized for 5 minutes.

Mr. DELGADO. Thank you, Madam Chair. Secretary Perdue, it is good to see you.

During our last Committee hearing in February of last year, you may recall that I asked you what could be done to improve the plight of small family farms, especially dairy farmers whose numbers have been in decline for many years? And in your answer, and I want to quote, you said: "These are economy-of-scale issues that impact the entire economy, not just agriculture. And the economy-of-scale for a small dairy is going to be extremely difficult going forward, even with the new farm bill. I don't think any of us would submit that we are compelled to keep anyone in business if it is not profitable." Since that conversation, the situation has become very dire, more dire, as evidenced by the trade aid. In 2019, we saw the largest decline in dairy operations in more than 15 years. I believe that priorities dictate policies, and when it comes to your agency's priorities, I am concerned that we are not seeing the kind of recalibrating needed to prioritize and assist our small farms.

My question is what, if any, plans is the USDA considering to provide assistance to, and create new market opportunities for, our small family farms?

Secretary PERDUE. What we see most effective is value-added grants, that we see the dairies that are surviving, particularly the smaller dairies are more successful when they add processing there and creameries. We have been losing dairy farms for a number of years. Sadly, the cows or number of cows and number of dairies are down, but the milk production is up. That is really the challenge. That is why we see the continued price pressure that makes it very difficult for smaller dairies.

I was visiting with the organic dairy providers the other day, and many of them have small producers. There is a large organic dairy co-op that has a lot of smaller producers, a lot of cows, herd number under 75, which is a very small dairy today. They are taking those kinds of actions to do that. The fact remains that the economy-of-scale with equipment, land, cows, and others, it is a very difficult economic challenge to do that. I thought you all did a good job in the Dairy Market Coverage Program, in the farm bill by skewing that to smaller dairies and giving them up to 5 million pounds of milk, and aside from that, it is that other types of programs were open to those, and we are trying to fulfill that. But it is a difficult life.

Mr. DELGADO. Thank you.

You mentioned your visit to an organic dairy farm, and I just want to flag for you, and I am interested to get your thoughts on this. The proposed budget by the Administration reduces funding for the National Organic Program. It also cuts more than \$25 billion from crop insurance over the next 10 years, and reduces funding of the Agricultural Conservation Easement Program as well. Do

you believe this is consistent with supporting small farms and dairy farms?

Secretary PERDUE. Well, again, overall budget is work. It is proposed to you all. You know that you all, the appropriators, the President makes and presents his budget that way, and you all have been kind in the past to do that. We think certainly some of those programs that I mentioned, the organic program has been the lifesaver for many small dairy farms. Obviously, not everyone can participate in that. We are taking—

Mr. DELGADO. It wouldn't be helpful, though, it sounds like. If you are saying it can be a lifesaver, then it probably wouldn't be helpful to reduce the funding around it?

Secretary PERDUE. I think it would be helpful to have those programs.

Mr. DELGADO. Right. The other piece that I want to just clarify is the trade aid. The reports, while they might not be regionally biased, from what I understand, and I appreciate the map that you provided. There does seem to be a bias for large-scale operations and some of the more wealthier farms, and I am curious to what extent anything is being done to offset that imbalance?

Secretary PERDUE. What you all did in the farm bill as well as continuing that we did, the price gaps. The facts of the matter is, is that the larger farmers farm the probably 50 to 60 percent of the land and produce about 75 to 80 percent of the products in the United States.

Mr. DELGADO. Would those farmers be profitable but for the trade aid in 2019?

Secretary PERDUE. Many of them would not.

Mr. DELGADO. Right, but then you said—

Secretary PERDUE. It is like the bigger you are, the harder you fall.

Mr. DELGADO. Understood.

Secretary PERDUE. The losses would be—

Mr. DELGADO. But to be clear, you are on record saying that keeping farms in business that aren't profitable is not really the focus, right?

Secretary PERDUE. Say again? I am sorry.

Mr. DELGADO. You are on record, I believe you said you are not compelled to keep anyone in business if it is not profitable.

Secretary PERDUE. Again, we have to recognize that farming is a business, and you have to make a profit. That is what my answer to the question was. The profitability of agriculture—

Mr. DELGADO. I totally understand. I am saying that as you make that decision, it appears that you are prioritizing the big farmers over the small farmers who aren't making a profit.

Secretary PERDUE. I would disagree with that. We are at no bias toward large or small. It is a matter of fact that the larger you are, the more you are eligible for those payments.

Mr. DELGADO. That is my time. Thank you.

Ms. ADAMS. The gentlelady from Missouri, Mrs. Hartzler.

Mrs. HARTZLER. Thank you, Madam Chair, and thank you so much for mentioning the "Show Me State," Missouri. I couldn't agree more that it is really important that we trust but verify these trade agreements, and I am really excited, though, about the poten-

tial there, and appreciate all the work of the Administration and you and your support for helping expand that.

One of my colleagues, Ranking Member Conaway, asked a question already that I was going to touch on about gene editing, and I wanted to just, I guess, foot stomp what you both have said about how important this is that we get this right, and make sure that the United States keeps this innovation capability.

I represent the University of Missouri, and you have probably heard of Dr. Randy Prathers' research where he has developed a PRRS resistant pig and how important that is that we get that through the process where we are able to replicate that and to take advantage of this innovation and this hold up between the FDA and the USDA is just really critical that we get this moving forward.

Do you have any more you want to add on that before I go to another topic?

Secretary PERDUE. Well you mentioned one. I didn't use that example earlier, but just think, we have seen the devastation of African Swine Fever. What if we genetically edit a swine that was resistant to African Swine Fever? We think there is a huge, once the regulation catches up with the biotechnology here, we think there is a lot of potential out here for making actually food therapeutic, actually medicinal type of food, healthy, safe, nutritious food for our populations.

Mrs. HARTZLER. That is exciting, especially with the challenges we have the high costs of prescription drugs and the old way of addressing things. If we can prevent it just by the food we eat, that is just revolutionary.

In the 2018 Farm Bill, I passed the Community Facilities Lending Provision to increase the threshold for the community facilities and the water waste programs to population of 50,000 people to allow more of our small communities to be able to access these funds. Can you tell me if the Department has yet made any loan guarantees to the newly eligible communities under this program?

Secretary PERDUE. I cannot tell you definitively. I believe that we have. We were anxiously awaiting that expansion there. We had a lot of demand—

Mrs. HARTZLER. Right.

Secretary PERDUE.—in communities that exceeded the 10 and \$20,000, 20 person population limit, and I would assume that we have. I can't definitively tell you that, but we can get you the number of people and the populations that we served.

Mrs. HARTZLER. That would be great, and if you could also get me more information about when they can apply, those new communities. That is exciting. That would be great.

[The information referred to is located on p. 89.]

Mrs. HARTZLER. We had a discussion a little bit with another colleague, G.T. Thompson, about crop insurance and flooding and disasters. Of course, being from Missouri, we had a lot of flooding of the Missouri River. We have a lot of levees that had breaches, and we are not going to be able to get all of those levees repaired by spring planting season. Farmers are making efforts to try to repair them on their own, and making some temporary filling of the gaps. But are you aware, is there going to be any flexibility in the crop

insurance to allow for partial repair of a levee or something to help give a range of crop insurance products so that perhaps they could afford something, and incentivize them at least to plant something in the next couple of weeks?

Secretary PERDUE. I am not aware of anything within the crop insurance realm. I know that through NRCS and the EQIP Program and those types of damage programs there that we are trying to address what farmers' needs are when they are facing those levee breaches.

Mrs. HARTZLER. Okay. That is something we need to work on, for sure.

Renewable fuels are very much a win-win for our country, win for our farmers, win for our consumers, win for America, and win for the environment. And I applaud your goals regarding sustainability where you talk about the economic sustainability, environmental sustainability as well. I like also what you have done regarding the ethanol grants, \$100 million for the new infrastructure program to help with the E15, B20.

I was wondering, can you provide additional information on how you think the biofuel sector can contribute to reducing environmental footprint that we have in this country?

Secretary PERDUE. Well, I know there has been some data that is out that we believe is inaccurate. But our latest information and research shows that the contribution of ethanol and biofuels, obviously lower greenhouse gas emissions and is good for the environment. That was one of the original purposes as far as American-grown fuel as well.

Mrs. HARTZLER. Absolutely. Well, I appreciate all your work, and I yield back.

Secretary PERDUE. Thank you.

Ms. ADAMS. Thank you very much.

I now recognize the gentlelady from Virginia, Ms. Spanberger.

Ms. SPANBERGER. Thank you very much, Madam Chair.

Secretary Perdue, ahead of these hearings, I reached out to producers in my district in central Virginia, and I asked them how they felt that the rural economy is working for them. And resoundingly, the answer that we heard was it is not. Our farmers are continuing to struggle with the loss of market access abroad as a result of our trade war with China.

One of my constituents who I see fairly regularly, a soybean farmer, large family farm, conveyed to me that despite the recent U.S.-China Phase 1 agreement, he had little confidence that the agreement would provide meaningful relief to him and his family. He literally said it was too little, too late. And he felt that all the decades of time and money spent by farmers like him in his community, building business relationships and partnerships in China had been thrown away and as he called it, "irreparably harmed." Today, he is finding that the buyers who used to buy his product have developed new relationships in Brazil and Argentina, and they don't seem ready to abandon those. He is afraid that he won't be able to get his business back.

My question is, I understand that USDA may be unable to repair the damage done by this trade war, but as we think about the purchase commitments agreed to in the U.S.-China Phase 1 agree-

ment, what role do you see USDA playing in monitoring China's compliance to ensure that farmers at last have the chance to receive some relief as they work hard to try and rebuild relationships and gain back some market share?

Secretary PERDUE. Well, first of all, I am much more optimistic than your producer there. Again, we will regain those markets and USDA's role is to monitor that. As I said earlier while you weren't here, we are going to trust but verify. We think these agreements that were signed were hard numbers that are enforceable, unilaterally enforceable, and our role is to provide the Administration, USTR, Commerce, and the President with how we are coming on that. What is that data? We have the ability to track the shipping data, the export data. Some of it lags sometimes a month, but that is what we will be doing. And also, I mentioned prior to your coming in was that we see good, encouraging signs of China doing things underneath from a technical resolution of some of the non-tariff trade barriers that are encouraging.

We are hopeful. We are optimistic. We believe that China is a shrewd consumer. They are going to buy where the best deal is. This time of year, they buy soybeans from Brazil. We think they will come into this market in late spring and summer and fulfill the commitments, but we will be looking.

Ms. SPANBERGER. And here, this particular producer that I am talking about is a family farmer who has been farming in one of our counties for decades. His family continues to farm, and he himself is in his late 70s. I would make the position that my answer to him as his Representative in Congress can't be that he needs to be more optimistic, because he is seeing the day-to-day results of this trade war, as are other farmers and producers across our district. And he was talking about this year as he was filing his taxes. He was troubled by the fact that on his schedule F, the government payouts he received exceeded the profits that he made. He doesn't want payouts. He said his friends don't want payouts. He wants a fair shot. He wants open markets. He has worked for decades to build up relationships and have the ability to compete internationally. But he has a growing sense of insecurity and uncertainty, and so, I would ask when we are moving forward that we please ensure that we have a level of strategy recognizing that we need a lot more than optimism to help our farmers and producers, particularly our small family farmers.

Secretary PERDUE. Ma'am, I think the trade as it develops will create optimism. I didn't indicate that, you can suggest your producer become more optimistic. I said I am more optimistic about that, based on what I know. I would really seriously doubt that if he has developed personal relationships of people buying soybeans in China—we have done a great job as an industry. We think that market is going to come back based on what we are seeing already, and I am more optimistic about that.

Ms. SPANBERGER. And sir, I am a former CIA officer. I worked in national security. One of the tenets of everything we ever did was contingency plan for the absolute worst case. And so, is USDA planning for the absolute worst case if these markets don't come back?

Secretary PERDUE. I think that was the essence of the President's tweet where he said if the trade does not develop as we expect and hope that it will, then I am willing to support the farmers with another round of MFP payments. That was a big if. I am telling farmers, let's plant for the market, hope for the trade and pray for the trade to come back as we think it will. But if it doesn't, the President is willing to support any kind of trade disruption.

I also said that these Market Facilitation Program payments are not price support programs. They are market trade disruption programs, and the farmers need to plant for the marketplace.

Ms. SPANBERGER. In planning with the if and the tweet that you mentioned, that is, from my perspective, kicking the can down the road. That is not planning for what happens when they don't come back. That is delaying what might be the worst-case scenario.

I thank you for being here today, and I yield back.

Ms. ADAMS. Thank you very much.

The gentleman from Georgia, Mr. Allen, you are recognized.

Mr. ALLEN. Thank you.

Mr. Secretary, good to see you today, and thank you for coming down to the district and announcing that a grant for \$5 million, USDA grant for our broadband in Evans and McIntosh Counties. That was a great event. I wish I had brought a big, heavy coat, maybe two or three. I could have shared them. The temperature at this event, it dropped from like 48° to 28° during the hour.

But anyway, that was a big deal. Thank you for doing that.

I am going to start off with pecans. Obviously, we are the top state in pecan production, and that industry is vital to Georgia and our economy. The pecan farmers have been unfairly targeted by the tariffs in India, and currently there is a 36 percent Indian tariff on U.S. pecan imports. India does not produce pecans, and we have written the U.S. Trade Representative on the pecan tariff and discussed with the USTR team, but it would be helpful if you could help assure us that it is on the U.S. list of tariffs to be removed during our trade negotiations with India. And would you consider doing that for us?

Secretary PERDUE. I can verify that it was on the list. In fact, Ambassador Lighthizer had presented a list of options to the President, who determined that it was not a big enough kind of deal, and he believes that as he has been successful in the past, using the leverage of his office there will be a better opportunity for India. You know that India has been a very tough export market for the United States with very unfair non-reciprocal trade barriers there. We hope to have some better news in that market.

Mr. ALLEN. Well, obviously one time I had the President's ear on the whole China thing, and because the Chinese were being so unfair with how they were dealing with us that I recommended that he go to these other countries and let's see if we can work with countries that will promote fair trade.

The other big issue in the district is labor, the H-2A program, and I constantly hear from producers about the inability to find labor on their farms. Many use the H-2A visa program, but it is frustrating. It is complex. It costs a lot to participate in the program. I know that you have worked diligently with the Department of Labor on regulatory reforms of the H-2A program. Where are we

with those reforms, and what are some of the other problems with the H-2A program that you have identified where Congress needs to get involved and do some type of legislative fix?

Secretary PERDUE. Well, labor obviously is really the number one and number two issue with trade all over the country, and it is time we separated the immigration issue where people want to come to a country and become citizens with an economic labor issue of where they want to come for economic opportunity to help grow our economy. I think those two have been conflated for too long, and that the challenge has been the people fear that people who want to come on a temporary basis, such as H-2A workers, are looking for immigration, and that is not the case at all. Again, the Labor rules are at OMB waiting to be certified there to be able to put out. It will help to modernize that, but Congressman, there is still the issue of really this adverse wage rate has become a perverse wage rate in agriculture. We essentially have—in agriculture, a \$15 minimum wage there where we don't anywhere else in the economy.

Mr. ALLEN. Yes, sir.

Last, and I have about 54 seconds, so we have to make this quick, but you recently traveled to Europe. As far as trading relationships with Europe, European Union, and UK, and there are real concerns here in the U.S. on which they say a blatant disregard for science. The EU has said in setting their policies, from your perspective on your trip, what are the biggest sticking points to U.S. trying to negotiate deals with Europe on particularly peanuts and things like that?

Secretary PERDUE. Well, the European culture has sort of denigrated American food as unsafe. We are giving them the facts based on sound science about that. They talk about chlorinated chicken. We really don't do that at all. We use other products there, and our food safety record is better. How do you change the mind of people who have an opinion? It is almost like an ideology of religion, but we are continuing to use sound science. And I think the future is better for the UK. We are looking forward to going and having a free reciprocal trade with the UK once they are out of the EU, which then will facilitate better relationships with the EU.

Mr. ALLEN. Thank you for your service, sir. I yield back.

Ms. ADAMS. Thank you very much.

I want to recognize now the gentleman from California, Mr. Cox, you are recognized.

Mr. COX. Secretary Perdue, thank you so much for being here today, and certainly thank you so much for making it out to the Central Valley of California. You are always welcome there.

On a particular note, I really want to say thank you and I appreciated your willingness to work with me to implement the needed changes to the Pima Cotton Competitiveness Program, which is providing much needed relief and support to the pima cotton producers, certainly in my district.

But in the last couple of days, we have been hearing about staffing shortages at the county FSA offices across the country, and certainly in my district it is no exception. My staff has been working with local farmers unable to access the critical farm programs, and

certainly the lack of staff at these offices is consistently being brought up as the reason for the delay in service and payments. I have, frankly, grown very concerned since my time here in Congress with the decline of staff morale at the USDA, the relocation of core offices, and reports of understaffing at the core USDA mission areas.

And so, given the expressed commitment to excellent customer service, I mean, I would like to hear what you plan to do to ensure that USDA is filling these crucial positions and is seen as a desirable place to work.

Secretary PERDUE. Very good question, and I want to commit to you, we want to hear from you when you have service level problems within any district here from any Member. This has been a very frustrating situation for us. With an unemployment rate of 3.5 percent, I never thought we would have as much difficulty hiring people to the Federal Government as we have. And it is not because of a lack of effort. It is a very onerous onboarding process. We have been given some direct hiring authority, which enables us to do a quicker onboarding job, and we hope to fulfill that.

But I can tell you, this has been a very—we talk about it almost every week. It has been a very frustrating problem trying to find through the Federal system workers to come into there. We find that when they apply nationally, they don't want to move to a particular area. When they apply from California, they don't want to go to the East or *vice versa*. So, the local hiring authority will enable us to help fulfill these sooner.

Mr. COX. All right, and more in a global sense, we have an Administration, certainly when they first came to office, one of the first things they did was implement a hiring freeze. And then they issued a directive about reducing the size of the government workforce, the Federal workforce through attrition. And so, that seems to be at odds with the intent to hire more people at the FSA or the USDA. And so, how does that reconcile?

Secretary PERDUE. I have had no such directions at USDA. We have hiring levels. We have had some funding issues, frankly, on the FSA issue, so some of the budget issues that were addressed last year and in this budget recommended will help. But we had some limitations. NRCS has been more of a difficulty finding people, but there were some budget cap issues on the hiring process that slowed us down on the FSA people.

Mr. COX. Well, sir, just to be clear, the agency reform plan, which was supposed to detail workforce reductions through attrition, that is not something that USDA is looking at or implementing?

Secretary PERDUE. No, we have a hiring plan that continues to move, and as I said, one of our principles is customer service. You have to have the people to do that.

Mr. COX. All right, and so I guess just in a general sense, USDA, we want more employees? We would like to grow that workforce?

Secretary PERDUE. We want enough people to get the job done. I don't want more or less. I want enough people to get the job done. That is what our—

Mr. COX. And right now we don't have enough though?

Secretary PERDUE. We are not having enough in some places. We have an optimum office production that tells where the workload is, and who needs to be there.

Mr. COX. And do we have metrics from that optimum office yet to detail how well that is working?

Secretary PERDUE. We do.

Mr. COX. That would be great to see. Thanks so much.

[The information referred to is located on p. 89.]

Mr. COX. I want to reiterate what Congressman Costa was saying, which is trade is so vitally important to my district, and the Phase 2 trade deal with Japan is just such a promising market, especially for the specialty crop sector. And so, can you just expand once again on what the USDA is doing to help open and expand those markets?

Secretary PERDUE. Well certainly.

Mr. COX. My last 20 seconds.

Secretary PERDUE. Japan, obviously, which is a good destination from your State of California there, and \$7 billion more in agriculture, many of the products, almonds and other products of the variety of products you all grow there is going to be beneficial. Also, the Korea market, Korea agreement on rice for your California premium rice is also a big benefit in the Korea agreement.

Mr. COX. Great. Thanks so much, Secretary. Always great to see you.

Secretary PERDUE. Thank you.

Ms. ADAMS. Thank you.

The gentleman from Illinois, Mr. Bost, you are recognized.

Mr. BOST. Thank you, Madam Chair.

Secretary Perdue, first off, thank you for what you have done with the agency, and also for being in our own district and mine and Rodney Davis's over the times you have been there. I also want thank the Administrator of the RMA, Marty Barbre, for his work with FAC and NFAC issues that affect double-cropped soybean growers. It was an issue last year. We were able to work through it, and the insurance agents now can move with more clarity on how to better serve their clients with that double crop.

Last year, crop reports sent the markets tumbling, because of the inflated claims of acres planted for corn and soybeans. Can you explain NASS's process behind the reports, and additionally, why would that report exist if the FSA already has the reported number of acres for each crop?

Secretary PERDUE. Well, they are two different reporting schemes. One lags another. The FSA reports acres by what farmers come into it. NASS has a consistent protocol of assessment over acres, going forward.

One of the issues with the farm complaints last year is that one of the reports in the middle of the summer last year, the market expectations were far off from what NASS had developed, and it caused the prices to go down because of the expectation with the wet weather, wet spring, and prevented plants. At the end of the day, Congressman, NASS got it better than the market did, and that is the end of the story there is that we can't control what the market expects there, and what they trade on. And when the mar-

ket goes down because when they see the NASS numbers, they realize they may have been too optimistic, and that is what happens.

Mr. BOST. Well, thank you for that.

I want to go back to where there was a statement made earlier, and I want to let you know what somebody brought up to me about how their farmers were feeling in their district. Let me tell you how my farmers are feeling in my district.

As this trade thing started with China, here is what they told me early on. And you and I had this conversation. They told me that they believe it had been a long time coming with China, and that trade negotiation had to occur. They didn't want it to last too long. They wanted to get through it as fast as possible. I believe one of the problems, and they do, too, was the fact that the trade negotiations on the USMCA was actually because it took so long for it to move through this House being held up by leadership that it actually gave the President and the Administration trouble in negotiating the China deal, and that is what slowed that deal down and that is what caused a lot of the problems in the market at that time. It is kind of amazing we sit in these rooms and we watch and how somebody—if you just say something long enough that isn't true, it automatically becomes true. I want to thank you for what you do in your office and what we have been doing.

The concerns we have every day with the markets is because we know that farmers work off of each other. Each year, they are worried about too much rain, not enough rain, what are the markets going to do, and the concerns they have. It is natural, being in agriculture, that you have a fear. That is life. That is what it is in ag. But I am going to tell you this. I don't know about the other Members here that were asking questions, but I can tell you this. Our farmers know that we are trying to do everything we can for them, and the Administration is doing that, and they are very happy with that. And the trade deals are going to help tremendously with the farmers, and it is looking very, very positive from here on out.

I thank you for being here today, and I yield back.

The CHAIRMAN [presiding.] I thank the gentleman.

The gentlelady from Minnesota, Ms. Craig.

Ms. CRAIG. Thank you, Mr. Chairman, and thank you, Secretary Perdue, for appearing before the Committee this morning.

As we have heard from a few of my colleagues, and especially in districts like mine where we have just a ton of family farmers, it is no secret that the trade policies of the last few years have put Minnesota farmers in a little bit of turmoil here.

The Market Facilitation Program certainly kept farmers afloat, but I am concerned that we have set a terrible precedent for U.S. farm policy. This Committee has spent decades working toward a farm safety net that is predictable and reliable. At the agency's Ag Outlook Forum, you said regarding another round of MFP, I would not anticipate it. Farmers have to farm for the market and what it is telling them, and what their capabilities are from a production perspective. The next day, the President tweeted that additional MFP payments are possible until the new trade deals kick in.

I spent 25 years working in business before I came here last year, and this kind of policymaking, it is not predictable. It is not reliable. It is no way to make farmers run their businesses; and,

given that farm debt is increasing twice as fast as farm equity, how can their lenders ignore such a statement from the President? Should I take your comments here and this morning to mean that you are advising the President against the release of another round of MFP, which by the way, I strongly supported the previous rounds? And can you comment on why the President tweeted about the possibility of more *ad hoc* MFP payments in the same month that he proposed a budget that would gut Federal crop insurance, which is, of course, one of the most predictable and market-based risk management options available to farmers?

Secretary PERDUE. Certainly. I would stand by my statement that if the President asked me today, and we communicate on a regular basis, is that I would not recommend another Market Facilitation Program payment. His tweet, as I understand it and I read it, was preceded by the preposition *if*, which means a contingency there. If this trade we expect does not materialize, he is prepared again to help people, farmers, move through this. We already heard today that it has been critical for their bottom lines to be able to continue. Lenders, have to look at the market, look at the production plans of their producers coming in. It is tough out there, but it is going to be challenging. Again, I have expressed optimism that the trade will develop, but if it does not, I believe that the President will do what he said he will do.

Ms. CRAIG. Well, I would just like to respond to that, and then I will move on to my next question. Good farm policy should be focused on good economics, not political expediency. And this is exactly the problem, Mr. Secretary, is what about that is a predictable farm safety net and how are small and beginning farmers supposed to plan with comments like that?

With that, I will leave it to you to figure out how we decrease his use of Twitter.

I would like to now shift to beginning farmers. For more than a decade, the Main Street Project outside of Northfield, Minnesota, where I represent, has trained rural Latino immigrants on regenerative ag practices in poultry as a means out of poverty. This is Janet. She is just one of the beginning farmers who has taken part in training through the Main Street Project. In August, the project was informed that they had been awarded a U.S. NIFA Beginning Farmer and Rancher Grant. Those grant funds were publicly announced in October, but as of today, the organization still does not have the funds they were promised by USDA. You said the move of ERS, NIFA to Kansas City was to better serve farmers and ranchers where they are, but that just hasn't proven to be the case for farmers like Janet.

[The information referred to is located on p. 83.]

Ms. CRAIG. Following relocation, the Office of Grants and Financial Management only has 26 positions filled out of the 95 total permanent positions. What impact has this had on the agency's ability to get money out the door?

Secretary PERDUE. I can tell you what I have been told by NIFA is that the money is getting out of the door. I would love to hear about the specific one. I will absolutely respond back about where that grant is. But I am being told that deliverables are on schedule in that way. We continue to hire there while we extended some

people here in order to deliver the services we were committed to, that services would not suffer, and that this is a broad-based issue. I will be back, but we will specifically talk about this one.

Ms. CRAIG. Thank you. We have been in touch with USDA, but it shouldn't take a Member of Congress to get those dollars to the folks they have been awarded to.

Secretary PERDUE. Absolutely not. I agree.

Ms. CRAIG. Thank you again, Mr. Secretary, and I yield back.

The CHAIRMAN. I thank the gentlelady.

The gentleman from North Carolina, Mr. Rouzer.

Mr. ROUZER. Thank you, Mr. Chairman.

I noted the conversation a little earlier about big operators *versus* small operators, and so forth, and it is important for the record to point out the bigger you are, the bigger your note at the bank. A lot of people forget that. It is not like your margins get so much greater the bigger you get. The margins are small, so you have to get big in order to make it all work.

Mr. Secretary, thank you for being here. You are doing a great job, and I really appreciate all the work that you and your team are putting in.

I have a constituent back home that has a unique situation. He is not eligible for WHIP, not eligible for NAP. We had Hurricane Florence come through in 2018, totally wiped him out, about a \$1 million loss for him. He produces native warm season grass seed and wildflower seed, and a lot of those. A lot of that is used in our conservation, CRP, *et cetera*. And I know you and Commissioner Troxler have been in consultation about the block grant to the states and trying to work out some agreement there. This is a very unique situation. I am sure this gentleman is not the only one who finds himself ineligible for NAP and not eligible for WHIP. I would like for you guys to, in your Department, to take a good look at his situation, if you don't mind, and if it is possible to get something worked out with Commissioner Troxler on that front.

I know the Commissioner's team are very much aware of this individual and his particular situation, and it is important to me that we exhaust all angles to see if we can help him out.

Secretary PERDUE. Sure. We would rather be in negotiation rather than a confrontation.

Mr. ROUZER. Absolutely, absolutely. I know you all are going back and forth, so I would categorize it as a negotiation. Like I said, I know the Commissioner's folks are well aware of this particular situation as well.

Second point, the vaccine bank for FMD, there are a number of us on this Committee that have an interest in that and the implementation of that. I am just curious where that stands?

Secretary PERDUE. Yes, Under Secretary Ibach, he issued a request for information over people interested in proposals and doing that. That was the third leg of the stool, along with the overall early detection through, we have already put money out into the labs across the country, and then an early detection and biosecurity network of awareness and training. The foot-and-mouth vaccine is where we are getting information and how that can be done. There are some limitations here on the mainland of handling that virus, so we have to take those in consideration and if our NBAF facility

were up in Kansas, we could do it there, but we have to be extremely careful in how that is handled. We are in the midst of taking requests for information now about proposals of what they think they could do in that regard.

Mr. ROUZER. Moving on to trade. We have a great opportunity with the UK to put together a really, really good trade deal that I think if we can do, it will substantially help us in negotiation with the EU later on. Do you have any comments on where we are with the UK and the possibility there, and what that would mean for American agriculture?

Secretary PERDUE. I think the relationship, both heritage and otherwise, I believe it will be a good opportunity for the United States to do a trade deal with the UK. We know that they are constrained until the end of the year, but we are preparing. I will be visiting there in a couple of weeks and making our case over our products from a reciprocal basis in that way, and we are hopeful that we can get something done with the UK, which we think will lead to better relationships with the EU. But we see an anxiousness of a willingness for the UK to trade in an area and a method that is not constrained by some of the EU rules.

Mr. ROUZER. Yes, it is going to be a great opportunity for us, and I think to the degree we are successful with that, it will really help us with the EU. That is my read on it, and let us know how we can be helpful in that process.

Mr. Chairman, I yield back.

The CHAIRMAN. I thank the gentleman.

The gentlelady from North Carolina, Ms. Adams.

Ms. ADAMS. Thank you very much, Chairman Peterson, Ranking Member for hosting the hearing. Mr. Secretary, it is good to see you again.

Secretary PERDUE. Yes, ma'am.

Ms. ADAMS. I would like to ask a couple of questions about the impacts of the ERS and NIFA relocation, and the impact that it is having on 1890 land-grant universities. All 19 schools turned in their applications last November for the 1890 scholarships, which received \$40 million in mandatory funding in the 2018 Farm Bill, but it has been 3 months. They still haven't received the funding. They are concerned that the money which is somewhere in the neighborhood of \$750,000 per school may not be available until late this spring for students entering school in the fall.

Having been a professor for 40 years, I know that schools need to be able to notify students earlier than late spring about their scholarships so that their recruiting can make an informed decision.

Given that about 68 percent of NIFA's positions are vacant, what is USDA doing to ensure this delayed funding doesn't prevent students from studying agriculture at one of our 1890s?

Secretary PERDUE. First of all, Ms. Adams, I am very disappointed to hear that report because it conflicts with what my people at NIFA have told me regarding that, particularly with the HBCUs regarding the student scholarships there. As I indicated in my earlier comments, it is my understanding that these are being disseminated, and I will specifically find out. If your facts are accurate, then I am extremely disappointed in the information I am

being given about that. Our commitment in this move was that the services would not be inhibited, and that is my expectation in that way. We allowed some extensions in order to make sure that services were continued.

Ms. ADAMS. Okay, great. Well, I hope you do look into that. That is the information that I have. You do have a timeline already for dispersing the funding?

Secretary PERDUE. Yes, ma'am. We actually prioritize those HBCU scholarships, because they were new and we know that the students were looking forward to them. As I said, I will check on that and if your facts are accurate, then I am very disappointed in the information I have been given.

Ms. ADAMS. Okay. If you would get back to me, I would appreciate it.

[The information referred to is located on p. 89.]

Ms. ADAMS. Let me also ask about an update on how the implementation is going on the Centers of Excellence, which I did fight for along with some of my colleagues in the 2018 Farm Bill. I have heard that the Department is moving slowly on getting the money out for Fiscal Year 2019, an appropriation of about \$5 million of the centers. Another \$6 million was appropriated for these centers, and we really need to get this money out. I am concerned, again, about the lack of staff for the 1890s program and NIFA due to the move to Kansas, and which has contributed to this delay, we think. How is USDA working to fill the gaps, first of all, during the transition to ensure that the work to support the 1890s is taking place?

Secretary PERDUE. It is my understanding that these consortiums of these Centers of Excellence are being processed in that way over their applications of what they want to do. In fact, I don't know how many I have visited, but I don't hear these things when I am on campus there from the Presidents, and I have been to several HBCUs and we try to be very open about any kind of issues they are facing, and I don't hear those. If they are contacting you, there must be an issue, but I wish they would contact me as well.

Ms. ADAMS. Okay. Well, I strongly supported the inclusion of the Office of Urban Agriculture and Innovative Production in the farm bill, pushed for the funding. One of the provisions in the bill provided \$10 million in mandatory money through the Commodity Credit Corporation. I would expect that with funding already available for use, that those grants would be implemented expeditiously, so I am glad that you are going to look into it.

Do you have any updates on the implementation of the competitive grants, and of the office itself?

Secretary PERDUE. Yes, ma'am. I can't give you the definitive definition. I remember our staff mentioning that to me about where we were on it, but I would rather, since I can't be sure about it, I would rather tell you in a response in a QFR over where we are on those competitive grants.

[The information referred to is located on p. 90.]

Ms. ADAMS. Okay. Just one comment. I just have a few seconds; but, we are still concerned about the SNAP funding. It is really having an impact in my district. It certainly will be in terms of some of the rules, and I mentioned those to you last time we had breakfast.

Secretary PERDUE. Yes, ma'am.

Ms. ADAMS. If you could give me a little update on it or send the information to me, I would appreciate it.

Secretary PERDUE. Yes, ma'am. If I can respond to some of the SNAP concerns here. We are issuing waivers as we speak here, in 18 states, again, on the waivers that do qualify based under the new rules, 186 labor market areas and 18 states. We would have to look if yours are eligible in there and qualify for that, but people are applying for waivers and we are continuing to do that under the new rules that we have put out.

Ms. ADAMS. Thank you, sir. I am out of time. Mr. Chairman, I yield back.

The CHAIRMAN. I thank the gentlelady.

The gentleman from Louisiana, Mr. Abraham.

Mr. ABRAHAM. Thank you, Mr. Chairman.

Mr. Secretary, I know we don't have a language barrier between the great people of Georgia and the great people of Louisiana, and I might argue the rest of the state, but my good, good friend, Rick Allen, called them *pecons*. We call them *pecans* in Louisiana, so just to get that straight on the record.

Mr. Secretary, thank you for being here. As you know, you are a rock star in the agriculture community. We appreciate all you have done. If I could add to your comments about farming, if we take out our soldiers, our men and women in uniform that defend our country most admirably, that farming probably is the toughest and most volatile profession that we have in this country. It is one bad weather storm, and they are in a very precarious position.

Your verbal statement alluded to the high-speed broadband. We all know here how critical that is for just everything, just life now in America and in the global world, the global economy, and thank you for your work. Thanks to your work, we got \$15 million in Louisiana for deployment of high-speed broadband.

My question is, moving forward, what can we as Congress do to help with more deployment of high-speed broadband, and how can we get more companies to buy in to the Federal program? They are already set up to deploy. They have the technology. We just need them to get in the game. So, what can we do?

Secretary PERDUE. One of the things you all already did was to loosen up some of the definition of *unserved*, *under-served* whereby recently, we know there is a real issue with the maps where you see that. Helping us with more definition, I know the FCC is working on that, but if one house in a Census tract had service it was declared as *served* and the most of it was not. So, that has been cured.

Again, I would ask you and your colleagues to look at how we are deploying this money that you have given us, this first \$600 million, the other \$1.1 billion, and if you like that methodology of what we are doing, let's continue in broadening that out from Rural Development. It has been well-received, and we would love to continue to do more of it. It is needed, as you know. The problem is it is a long way from being everywhere.

Mr. ABRAHAM. And about the companies, these big, global, national companies that have the technology in place, they have already got high-speed broadband. They have that infrastructure in

place. How can we get them more involved in some of these projects?

Secretary PERDUE. As you know, the concern about duplication or overbuilt, that is probably going to take some Congressional action with the major carriers there. We have a lot of dark fiber out there that we don't know where it is and not being utilized, and they used Federal money before to put that dark fiber in there but it hadn't been turned on. Some investigation through appropriate agencies and with Congressional impetus there could help that coordination.

Mr. ABRAHAM. Thank you, and just a quick add-on. My farmers certainly in my district and all over Louisiana that I have talked to, and there have been many, they are very optimistic with the trade, the deals that are going on with China, so there are good times ahead.

Mr. Chairman, I yield back. Thank you.

The CHAIRMAN. I thank the gentleman.

The gentlelady from Washington, Ms. Schrier.

Ms. SCHRIER. Thank you, Mr. Chairman, and thank you, Mr. Secretary for being here.

I, first of all, wanted to echo Mr. Allen's comments about the struggles of H-2A visas and what an economic challenge that poses to our farmers in the Northwest. I also wanted to make you aware, if you are not already aware, that there is an excellent bipartisan bill with several Members of this Committee called H.R. 5038, the Farm Workforce Modernization Act that does several really good things for our farmers that people on both sides of the aisle agree on. It streamlines the H-2A visa process; it puts controls on the inflation of wages; and it also has a path to citizenship for people who are working in ag and commit to continuing to work in ag. And so, if you could whisper in the President's ear about that bill, I would love to see, and a lot of people in this room would love to see that move forward.

Secretary PERDUE. We are very aware.

Ms. SCHRIER. That didn't sound reassuring.

My second comment was about something called Little Cherry Disease. In Washington State, apples and cherries are among the state's top 15 exports, so protecting and strengthening the tree fruit industry is critical for our economy. This past cherry season, it became apparent that the Pacific Northwest cherry growers are facing a substantial threat from Little Cherry Disease. It is caused by viruses that are either transmitted by insects or that are transmitted through root systems, and so, the only treatment for this, once it is detected, is to pull the trees out. And that is a significant economic threat. This has reached epidemic proportions in Washington State, and growers are scrambling to obtain new tools to detect and treat this and stop the spread.

I am aware of a tree fruit entomologist position at the Wapato ARS laboratory that remains vacant after the retirement of the scientist in July of 2019, and it is my understanding that ARS has not been able to fill this position due to insufficient funding. In addition to this, I am aware of at least two other positions at the same laboratory that remain vacant, and I know you talked when Mr. Cox asked about staffing and whether we had sufficient staff-

ing, and clearly in this part of my district and in my state, we do not have sufficient staffing for the excellent work between Washington State University and ARS.

This is not a question. It is really more to just bring to your attention how important it is that the ARS labs, specifically the one in Wapato, be fully staffed in order to manage this sector and protect our economy.

The second issue that I wanted to talk about, if I do have a moment, is herbicide resistance. This is becoming an increasing problem across the country, and because herbicides are not working, tillage will now probably increase as the most economical alternative control measure. The problem is that this goes against all the modern science of soil health. It increases wind and water erosion. It also releases more carbon dioxide into the atmosphere and compromises soil health, and will probably also compromise water quality in the Snake River and Columbia River.

Washington farmers all want to do the right thing. They want to conserve soil. They want to have healthy soil. They want to pass this on to the next generation, and they need help. And I wondered how is the USDA addressing regionally-specific problems associated with herbicide resistance and soil conservation, and what do you need from us to help that happen?

Secretary PERDUE. We need, obviously, less tillage—rather, more tillage, as you said. The USDA certainly works closely with our registration partner EPA in making sure these new developments about technology are available as plants and weeds become resistant to other types of things. It is mostly an interagency regulatory issue.

Moving forward, we are working with the Department of the Interior Fish and Wildlife as to issue a Biological Opinion. National Marine Fisheries has to issue a Biological Opinion on new products. We are encouraging them to use the same set of facts and data over this in order to move these along more expeditiously. As things become resistant, we don't want the answer to be more tillage and more plowing. We want it to be more no-till and using these safe products through—to control the problem.

Ms. SCHRIER. Thank you for your comments. I am running out of time, but this calls into question, just like there is an understaffing at the USDA, the issue of losing scientists at the EPA who could really help us solve these problems as well.

Thank you. I yield back.

The CHAIRMAN. I thank the gentlelady.

The gentleman from Kentucky, Mr. Comer.

Mr. COMER. Thank you, Mr. Chairman, and Mr. Secretary, it is great to have you back to the Agriculture Committee. I am big fan, and you are doing a great job, and you are very popular with everyone in the agriculture community. I want to thank you also for your commitment to broadband. That is one of the biggest issues in my rural district in Kentucky is lack of access to broadband. I know that we had three communities in my Congressional district that were rewarded with the first round of ReConnect money, and I was wondering if you could kind of give us an update on how round 2 is going to take place, and what can we do to get more participation in that program?

Secretary PERDUE. Well, the three areas of the \$600 million you gave us initially, we had \$200 in grants, \$200 in loan grants, and \$200 in loans. They all three were oversubscribed. We began our second round of applications this January. It closes on the 16th of March, and we expect oversubscription in those as well, based on the popularity there. As long as that continues to take place, we will probably perpetuate the program the way it goes on, and as I indicated earlier, I hope you all will give us feedback about whether there could be improvements or better, and Congressman Abraham did to some degree. We look forward to hearing from you.

Mr. COMER. Well, I appreciate that, and I am sure you will get more applications from Kentucky and you will be hearing from our office. But again, thank you for that first round.

Next, I wanted to talk about hemp. We have had conversations with hemp and I have had numerous conversations with your great Under Secretaries that I have worked with in the past on this issue. I want to thank you, first of all, for the recent USDA announcement to delay the enforcement of the requirements for labs to be registered by the DEA. That was something I put in my letter request to you, and I appreciate you doing that. That was a big issue in Kentucky.

But, I have always been a huge proponent of hemp and I will continue to be. I believe in hemp. I believe there is a tremendous future for hemp. When I was advocating for hemp when I was Commissioner of Agriculture, I was thinking about fiber.

Secretary PERDUE. Right.

Mr. COMER. And what has happened, especially in Kentucky and many other states, is the CBD oil market has kind of taken over. And I am a farmer, I can say this. In agriculture, we are very good at overproducing things sometimes. Hemp was grossly overproduced in Kentucky and many other states this year. I know that language was put in the farm bill for hemp crop insurance. I am not a fan of that. I fear that that will lead to more overproduction and potential fraud, and I just wanted to publicly say I had some concerns about that, and hopefully that the final end-product will be one that will not encourage overproduction. I know one of the requirements for crop insurance that I had mentioned in a previous Committee hearing to Bill Northey was I hoped that it said you had to have a contractor with a processor before you could get crop insurance to prevent fraud. And that is in the language, the way I understand it. But hopefully there is some awareness of the fact that there are credible hemp companies in America, and there are some that aren't credible. We have had several in Kentucky file bankruptcy that have left the farmers hanging with a surplus crop of hemp.

These are concerns that I have moving forward. I have shared that with many people in USDA. I appreciate the good work that you are doing. I know this is a very challenging thing for the USDA to have to administer, but I appreciate the work that you have done thus far, and I look forward to working with you on that issue in the future.

Now, with respect to trade, I was just wondering if you could kind of give me a brief update of how things are going? I know that we had the Phase 1 agreement with China. Are they fulfilling their

agreement thus far in purchasing the commodities that they pledged to procure?

Secretary PERDUE. The coronavirus has clouded this somewhat. Obviously, this is from a physical perspective of things backing up at the port. The countercyclical part of their buying typically when South America is harvesting, that is when they go there. So, those are some of the considerations.

The bright spot that I mentioned a couple times before this morning is that we see the technical things that need to happen in order to facilitate the kind of trade is happening. The technicians there, and that is where a lot of those little non-trade tariff barriers that China has used to push back are being torn down. I take a lot of optimism from that that they are trying to fulfill their obligation they agreed to on those numbers.

Mr. COMER. Well, my time has run out, Mr. Secretary. On behalf of Kentucky farmers, I want to thank you for your commitment to helping make sure that farmers are a priority in this trade agreement with China. Our agriculture community in Kentucky appreciates you and appreciates the President. Thank you.

Secretary PERDUE. Hemp is tricky. We need your help.

The CHAIRMAN. I thank the gentleman.

The gentleman from California, Mr. Carbajal.

Mr. CARBAJAL. Thank you very much, Mr. Chairman, and welcome, Secretary Perdue. I have always appreciated your candor and your straightforwardness of dealing with the issues at hand.

I want to start out by just expressing my great disappointment with this Administration with the proposed \$182 billion cut from the SNAP Program over the next decade, and the implications that that has for so many food-insecure families, vulnerable families throughout our country and in my district.

In my district alone, I have 111,000 individuals that rely on these important programs, and quite frankly, it is not only callous, but it is extremely misguided. I would be remiss if I didn't share with you my outrage with the direction this Administration is going in regards to the SNAP Program, violating the spirit of compromise that we reached in the 2018 Farm Bill, which dealt with a lot of these issues already. But here we are again. The President didn't get his way, and he is just continuing to just go after the most vulnerable. Please know that I am extremely disappointed, as many people are.

But with that, let me move on to other issues. Earlier, one of my colleagues mentioned H.R. 5038, the Farm Workforce Modernization Act, which is a bipartisan product that lends itself to a lot of potential. I know you mentioned you were aware of it, but I am just wondering, what is the Administration, what are we doing to move that forward if it is such a reasonably decent piece of legislation, and bipartisan?

Secretary PERDUE. Can you mention the program again? Which program?

Mr. CARBAJAL. Oh, no, that was the legislation is the second one I am speaking about. The first one was SNAP.

Secretary PERDUE. Yes.

Mr. CARBAJAL. But the bill that passed the House in a bipartisan fashion, the Farm Workforce Modernization Act.

Secretary PERDUE. Certainly. Labor is a big issue and we have been visiting with the other House here and the Senate to talk about the provisions there that could be included in that, as the way any legislation passes in that regard. It is very needed. We need a legal, reliable workforce, as I indicated earlier. We need in this country to differentiate between immigration, which is one thing, and a legal, reliable, temporary workforce in agriculture.

Mr. CARBAJAL. Absolutely, and that is what that legislation would do. I would hope that the Administration is working with our friends in the Senate and trying to get them to really try to find that compromise so we can move forward with this legislation.

Second, specialty crops grown on the Central Coast, which is in California in my district, are important to our local economy. These high value crops such as wine grapes and citrus are vulnerable to pests and diseases, and USDA and the State of California have historically been strong partners in protecting these crops. That is why, again, I was disappointed to see the proposed cuts to the critical APHIS Program in the Fiscal Year 2021 President's budget request, including an \$8.9 million in reduction in spending to combat specialty crop pests.

Just last month, APHIS and CDFA expanded the quarantine zone for citrus greening in my state. We have seen the impact this disease can have on states like Florida, yet the President did not ask for additional resources to fight this disease in his budget. Additionally, the President's budget requests propose reducing spending on pests, such as the glassy wing sharpshooter, European grapevine moth, and the light brown apple moth, all of which threaten Santa Barbara County and San Luis Obispo County agriculture production, which are the largest economic drivers in my district.

How would these proposed reductions in spending impact USDA's ability to protect California's crop farmers from devastating pests and diseases?

Secretary PERDUE. Well, USDA and APHIS particularly understand the potential for pest destruction of industries. You mentioned the citrus industry and others, and I can assure you that they are using any money that is appropriated to them in order to protect the crops in your area, because across the country we have other issues in Pennsylvania with the lantern fly and all those issues that are continued pests coming in, and we will do the very best we can.

Mr. CARBAJAL. Thank you, and looping back to my initial question on SNAP, is California listed on the waiver list that you mentioned earlier?

Secretary PERDUE. Let me see, there are several waivers in California. Yes, sir, there are 17 labor market areas waived in California.

Mr. CARBAJAL. Are any of those San Luis Obispo and Santa Barbara County?

Secretary PERDUE. I think so.

Mr. CARBAJAL. Is that a think so or a yes?

Secretary PERDUE. I can't say for sure. I believe that you are listed on part of the area. I don't know what those 17 areas are specifi-

cally, but we have 17 labor market areas in California that waivers are issued.

Mr. CARBAJAL. Great. If we could loop back later on, can I get that? That would be great.

Secretary PERDUE. We will get that for you.

[The information referred to is located on p. 91.]

Mr. CARBAJAL. Thank you, Secretary Perdue.

Mr. Chair, I yield back.

The CHAIRMAN. I thank the gentleman.

The gentleman from Kansas, Mr. Marshall.

Mr. MARSHALL. Thank you, Mr. Chairman, and let me also add my welcome, Mr. Secretary, for being here.

I can start by spending my 5 minutes saying thanks for so many things for my producers back home. Maybe just start off with the speed and efficiency your Department carried out the MFP payments. You asked your workers to do more with less over the past several years, so thank you for your help there. A special thanks for your continued leadership to support the ethanol and biodiesel industry as well. This is important not only to agriculture, but also the rural communities. In so many of these communities, the same folks that are working in that ethanol, biofuels industry are the same folks that are leading the Rotary clubs, leading United Way fundraising, so that it means so much more than just the jobs there at those plants. So, thank you.

In your comments, you mentioned the higher blends infrastructure, a city program that provides over \$100 million in grants to better enable market adaptation for high blends of ethanol and biodiesel by investing in infrastructure, and we look forward to just what your vision looks like with that, and maybe you could briefly just share what your vision is, going forward, with some of those plans?

Secretary PERDUE. I think our effort would be to make E15 kind of the law of the land regarding that. That is a 50 percent increase in demand of a sound environmentally healthy and safe fuel that would be utilized, and that is why the infrastructure program is there, to help build out the consumers' opportunity to purchase this. We think with a better environmental footprint and less cost, then consumers will rapidly adopt that if they have access to it.

Mr. MARSHALL. Sounds great. So, thanks for your efforts, and we look forward to working with you on that.

Next, if I could talk a little bit about one of my favorite subjects, NBAF, the National Bio Agro Defense Facility located in beautiful Manhattan, Kansas, home of Kansas State University, and just thanks so much for your personal interest in touring that facility with me. As you know, that I am working with our senior Senator, the tight end coach also for the Kansas State Fighting Wildcats, Chairman Pat Roberts. And he and I are working on legislation that would codify the mission and transfer the facility to USDA. How would you envision future partnerships on research with other Federal agencies shaping up at the facility?

Secretary PERDUE. Congressman, I hope you feel as I do. I believe that transition is going very well from DHS. While that facility was initially put under Department of Homeland Security, it really fits more with our scientists and protections there that we

are working at Plum Island to do many of these very dangerous types of things with dangerous diseases. We think the interagency process is going well, the relationship that was described and outlined to you and your Kansas colleagues over the transition of who does what. We think it is going very well. I hope you found that to be the case.

Mr. MARSHALL. Absolutely, and I was just there recently in the past month meeting more and more of the professors, the researchers, people moving from Plum Island, finding how welcoming Manhattan, Kansas is. I agree it is going well.

Given your response, I would also like to get your thoughts on codifying those relationships through legislation here in Congress.

Secretary PERDUE. Again, while we will implement that, I think I will just leave that up to the determination of Congress. If you think those relationships and responsibilities need to be codified, then I certainly would have no objection to that.

Mr. MARSHALL. Okay, thank you, and I have time for one more question here.

I would like to talk about beef for a second. I am getting a few phone calls and concerns back home. Under the Federal Meat Inspection Act and corresponding FSIS regulation, no meat product label may bear any false or misleading statement of origin or quality. However, it is my understanding that current FSIS policy allows imported beef products to be generically labeled as products of the USA, as long as these products undergo minimal processing or repackaging in the USDA FSIS inspected facilities.

Mr. Secretary, do you agree that current policy has the potential to mislead consumers, and if so, how do you intend to address this issue in a way that does not violate current agreements with our North American trading partners?

Secretary PERDUE. I would agree with that, and certainly, you are aware of the overall COOL dispute that was negotiated and litigated at WTO. We have to be very careful. We are under consideration right now of how we can give transparency and information to the consumer that doesn't violate that, and we think there is a middle ground that we think is an appropriate label that looks like slaughtered and processed in the United States. I don't think meat that just comes in and maybe just cut up and packaged from somewhere else ought to be product of the U.S. I think that is another definition. We do feel like we would probably be treading on very difficult ground if we, as some people in the cattle industry want born, slaughtered, and processed. We think we would be, again, taken back to WTO court. And the problem is, they have that billion-dollar judgment hanging over us that has not been suspended, and if we did that, we would be vulnerable to that.

Mr. MARSHALL. Mr. Chairman, could I have 30 more seconds?

Mr. Secretary, at the end of the day, this issue is about truth in labeling, and I am pleased to hear that this is something USDA is working to address. However, I am concerned against any reforms that would ultimately preserve this or any other minimally informative origin labeling claim. There is a growing desire from consumers for more accurate information about the foods they purchase, and I can assure there is broad bipartisan support here on

Capitol Hill for USDA to update these regulations in a meaningful way.

Secretary PERDUE. Thank you.

Mr. MARSHALL. Thank you, Mr. Secretary. Thank you, Mr. Chairman. I yield back.

The CHAIRMAN. I thank the gentleman.

The gentleman from Florida, Mr. Lawson.

Mr. LAWSON. Thank you, Mr. Secretary, one of the things I wanted to respond to: there was some question about the scholarship program for HBCUs, and my dean is here from Florida A&M University. Dr. Taylor, will you stand up there and let him see you? And we discussed this yesterday, they are very, very pleased with the way things are going, in order to provide a scholarship, and also stated that they are recruiting high quality students for this program, which is going to be a very, very successful university. The next time you are in Tallahassee, I am going to make sure you get some of the best peach cobbler that we have there.

Secretary PERDUE. Again.

Mr. LAWSON. Okay. One of the things I wanted to comment on is USDA hemp total testing, the requirement to test for three percent THC, making it difficult for new hemp crops to pass the test. States have to follow up with USDA rules. It is a big problem nationally, and I am sure that you all are aware of it. Are they going to try to fix some of this? Florida growers will be able to submit an application for the cultivation permit within 20 days. The Florida Department of Agriculture is expecting 3,000 applications. There could be a big business in Florida, but testing requirement is making it a little challenging.

Secretary PERDUE. Well, it is no doubt that, while there has been some relaxation recently, I am not sure if your comments reflect what we have done on the lab testing in the last few days. This interim final rule, we didn't get it nailed right in the bulls-eye, and we have tried to make some corrections there, and OMB has allowed us to do that. Frankly, the testing, and the limitations, had a lot of impact from DEA and interagency, and they were not excited about the crop as a whole anyway, and we had some pretty serious constraints, so we are trying to address the lab issue, which was a real limitation.

Mr. LAWSON. Okay. Thank you. In 2019, the Disaster Supplemental package, there was established a historic timber block grant program that was advocated here in a bipartisan manner by \$380.9 million set aside for Florida. The U.S. currently is at a standstill with states, agencies about acreage payment to timber producers. Mr. Secretary, my first question is simply does USDA have an issue with state agencies using the full amount of block grants funds to advocate for them so that they can provide adequate acreage payment to the timber producers?

Secretary PERDUE. This was, again, the balance, Mr. Lawson, in where we are trying to limit the larger landowners. We did that in citrus, as you know. It worked very well there. I think we are really close to a negotiation agreement with Florida over that. They wanted, initially 10,000 acres, then 5,000 acres, which would be very large payments that we didn't feel like would represent the will of Congress in that disaster block grant.

Mr. LAWSON. Right. And last, what benefit does returning useful block grant funds serve for struggling farmers because of the acreage cap, as you talked about? Where would the rest of the money go if they return that money?

Secretary PERDUE. Comes back to the Treasury.

Mr. LAWSON. Okay. All right. I look forward to working with Department and the state officials to make sure that the farmers are receiving their critical disaster assistant funds stemming from Michael.

Secretary PERDUE. If I may, in this time allowed, give the difficulty there. These are estimates. These damages are estimates there. They are not registered, they are estimates there, and the challenge is we estimate, and give that amount that is estimated. And if it doesn't live up to that, based on other things, there has been the desire to think of the money being granted to be able to do whatever they want to with. Our position, USDA, is to meet the need of the disaster, but then if the estimate doesn't reach what was estimated, the need doesn't reach what was estimated, then the money should be returned. That is where the real challenge comes in.

Mr. LAWSON. Okay, thank you. At the conclusion of my time, about to run out, I am sure my dean would like to say hello to you, and let him know how things are going.

Secretary PERDUE. I will do that, I want to hear how his students are doing.

Mr. LAWSON. All right. That is great. Thank you. I yield back, Mr. Chairman.

The CHAIRMAN. I thank the gentleman from Florida. I now yield 5 minutes to my good friend, Mr. Dunn from Florida.

Mr. DUNN. Thank you very much, Mr. Chairman. Secretary Perdue, I want to thank you for providing the agriculture community with the certainty of your updated regulatory approach to the gene edited crops. Under your leadership, USDA was the very first to implement President Trump's Executive Order on a regulatory framework for agricultural biotech products. You have set the bar for the way we ought to regulate these innovative tools, and I hope that the FDA and EPA will follow your lead. Given what is at stake, can you comment on the regulatory burdens that still hurt farmers, foresters, and ranchers, and where can we help you, especially as it regards biotech?

Secretary PERDUE. The good news is, and what I have seen is, Secretary Bernhardt at Interior has Fish and Wildlife basing their Biological Opinions on sound science. We still have some challenges at NMFS that we would love to see the same set of data being adopted there, where we would make a similar type of assessment, rather than using different facts in that way, and EPA has been very helpful in that way. So those interagency agreements are working well, if we can continue that. The animal gene editing is an issue we still have to resolve.

Mr. DUNN. The FDA, you mentioned earlier you are still having negotiations with them about what constitutes—

Secretary PERDUE. We are still in the process of determining how. We have no reason to want to regulate gene editing in all ani-

mals, but we think the food animals, where the USDA has control over the protein source of America, makes sense.

Mr. DUNN. I agree with you entirely, thank you, Mr. Secretary. I know you hear a lot about Hurricane Michael, you can hear one more thing? Our FSA office has struggled to meet the demand after the hurricane, and I wonder what we can do to improve the staffing shortages caused by disaster-related claims. And you and I actually had a discussion a while back about a rapid response disaster team. Have you gotten any closer to that?

Secretary PERDUE. Once again, I answered a question earlier about the frustrating nature, in a 3½ percent unemployment rate, of onboarding people into a Federal job. I never would have thought we would have that kind of difficulty. Some of the permissions we have been given over local hiring authority, or really direct hiring authority, is helpful because we haven't found people who want to relocate. They can apply from other states, and not want to relocate when you offer them a job.

Mr. DUNN. Well, hopefully we can get them a team that comes in for a few months and shores up the—

Secretary PERDUE. Yes, on the jump teams that way, certainly, from hurricanes and disasters.

Mr. DUNN. Yes.

Secretary PERDUE. We try to deploy those kind of teams on a temporary basis.

Mr. DUNN. Yes, that would be outstanding, and it would really help us a lot. USDA is still in discussion with the State of Florida about the block grant program. My good friend Representative Lawson mentioned that as well, and you did a pretty good job answering that, where that is, so keep the pressure up on them. We really want to help out, nobody has ever seen this much timber on the ground, and it is a threat to us now in terms of fires and disease.

Secretary PERDUE. We are doing that, and we are just trying to be reasonable, as far as the balance of the acreage cap, and how we did that. We had a very successful time in citrus. I thought that worked well. Florida did a good job, and we are going to get there soon. I think talks are developing very well.

Mr. DUNN. I want to take the opportunity to thank you, and thank your staff, by the way, who has been very helpful, very easy to work with. I want to put it on the record that your help in making these programs occur, make them a reality. It is just been critical to the recovery in my district, and I am sure also Representative Lawson's. We want to continue to work with you on these projects, and we want to get a long-term fix for those, and we can't say thank you enough for all your efforts on our behalf. Mr. Secretary, thank you. I yield back.

Mr. PANETTA [presiding.] Thank you, Mr. Dunn. I now yield myself 5 minutes, not because I am in the chair, but because it is actually the order, Mr. Secretary, thank you for being here, as always. You never cease to amaze me how you continue to continually provide thorough answers to anything that you are asked, so I always appreciate that. And thank you for your visit to the Central Coast as well, coming out to my district and holding a town hall in my very blue district, so I appreciate that, your willingness

to stand up there and give straightforward answers, and so I hope you do that today too with my question.

I am going to start off also with something that I don't normally do, and that is quoting our President, President Trump. Last year, at the Farm Bureau, he was talking about the current labor crisis, and he said, "You need people to help you with farms, and I am not going to rule that out. I am going to make that easier for them to come in and to work the farms. You have had some people for 20, 25 years, they are incredible. Then they go home, and they can't get back in. That is not going to happen." This is what he said, and he got one of the biggest ovations at that Farm Bureau meeting, just because of that quote.

Now, obviously, you know where I am at on the legislation that we put forward and passed out of the House on a bipartisan basis, H.R. 5038, the Farm Workforce Modernization Act, a bill that protects our existing farm workforce, and promotes an existing agricultural workforce. And earlier today you mentioned the AEWR, the Adverse Effect Wage Rate. Now, this bill, as you know, basically freezes that. Now, you were saying, I think you know that it would go up six percent in 2020. I have another list here, in Georgia it is going to go up 5.2 percent. In Illinois it is going to up 9.5 percent. Kentucky it is 6.6 percent. Minnesota, 6.4, Ohio, 9.5 percent the AEWR's going up. This bill would freeze it for the first year, and then in years 2 through 9 it would put a cap on it at 3.25 percent, and also put a floor at 1.5 percent. Mr. Secretary, don't you think that having a cap on the AEWR will benefit people who deal with the H-2A process?

Secretary PERDUE. A cap would help, but we need to look at the adverse wage rate in a different kind of way. What people are telling me, even with availability now, by the all-in cost of transportation and other things, which don't have to happen in H-2B, the affordability issue is outside. We are seeing producers cut back on production all across the country. We have examples in South Carolina, we have examples in Colorado, and sweet corn, and others, or in California as well.

Mr. PANETTA Mr. Secretary, how would you feel about getting rid of the AEWR?

Secretary PERDUE. We could do a more flexible AEWR that looked toward the economy, generally, in that way. The original intent, as I understand, was not to exploit the foreign workers. We don't want to do that.

Mr. PANETTA. Correct.

Secretary PERDUE. That is not happening now. And also, we don't want to displace domestic workers. That is not happening, because we don't have them out there.

Mr. PANETTA. Understood.

Secretary PERDUE. We need to re-look at that in that way, and I would be very supportive.

Mr. PANETTA. And you know that basically, in year 10, under the proposed legislation, legislation that passed the House, we would have a study, and the potential to get rid of it, or re-look at the AEWR? You understand that?

Secretary PERDUE. That would be a good thing.

Mr. PANETTA. Understood. Now, also, you talked about conflating the people who are here, as well as the H-2A process. Well, as President Trump said, there are people in my community, especially on the Central Coast of California, the salad bowl of the world, that have been here for 20 to 25 years, that have contributed so much. Not just to our economy, not just to our agriculture, but to our community. I mean, they really are the culture of who we are on the Central Coast. And so I do believe that there needs to be a way to make sure that there is some way to protect those people. Doesn't mean you give them citizenship, but there has a way for them to earn it, and I believe that this bill provides that. Are you familiar with this way for those types of people, who have contributed so much to our agriculture, to earn the opportunity to stay here?

Secretary PERDUE. I am familiar with those provisions, yes.

Mr. PANETTA. Okay. And you said something recently, that members of the White House leadership team would oppose the Farm Workforce Modernization Act. Is that correct?

Secretary PERDUE. I think yes.

Mr. PANETTA. And who would be those people?

Secretary PERDUE. I think the Administration, the White House in general.

Mr. PANETTA. Anybody in specific? I know you have had Ms. Boswell, who I appreciated, who's sitting behind you. She's done a very good job communicating with our office. I know she was sent to the White House. Would she have an idea of who would these people—who these people would be?

Secretary PERDUE. I think maybe it would be better for you to ask them. I am sure they would be willing to submit the—to your questions.

Mr. PANETTA. As always, Mr. Secretary, I look forward to working with anybody, anybody, who will help our ag labor situation.

Secretary PERDUE. And I appreciate it. It is really our number one and number two issue.

Mr. PANETTA. Agreed. Thank you, Mr. Secretary, I appreciate that.

Secretary PERDUE. Thank you.

Mr. PANETTA. I yield back my time, and I would give 5 minutes to Mr. Johnson, from South Dakota.

Mr. JOHNSON. Thank you, Mr. Chairman. Mr. Secretary, thanks for being here today. We have had some discussion today about labeling, with regard to protein beef specifically, and I want to continue on that line of discussion, if that is all right. Of course, you get it. Folks in cattle country have some discomfort with the FSIS label of Product of the USA. And there is some comfort level on a lot of the AMS quality claims, and of some of these verified programs, like Certified Angus Beef. I am not sure there has that same sense of accuracy and validity with regard to the Product of the USA.

Now, you have told us that you have an idea about how to proceed. I want to make sure I heard that right. And then if you have any idea about a timeline, or what the way forward might look like, I would be interested in that.

Secretary PERDUE. Yes, I think we are in a serious discussion. This is something we have been talking about for a number, as we hear the concerns, obviously, as you know, from cattle country. They don't quite understand why we can't just go back to COOL, and you all do, but it is a very politically populist type of thing that is not going to happen unless we want to do a billion-dollar litigation damage with Mexico and Canada. We are trying to thread the needle, honestly, with transparency so the consumer can know what they get, while also helping the producers to feel like they are getting value for cattle that have been grown and processed here.

Mr. JOHNSON. If you have something that wasn't fully a product of the USA, as you look to thread that needle, what would be the new label that—

Secretary PERDUE. The choice—the choices—excuse me for interrupting. I think the choices the industry would love to have born, slaughtered, and processed in the United States. That, we believe, would violate the WTO suspension agreement. We think there has to be a middle ground of slaughtered and processed here, which is a different distinction than just processed in the United States. As it currently is, imported meat could come in, and you could cut it up and package it. That means processed in the United States. But slaughtered and processed means that live animal is here, and it was slaughtered and processed here in the United States. I think that is a better deal.

Mr. JOHNSON. And I agree that the consumer deserves some of this additional information, and what you are talking about really does provide the consumer with a better insight into what is going on with that particular beef product.

Secretary PERDUE. And those would be voluntary labels, also.

Mr. JOHNSON. Okay. Moving to the Brazil issue, there has been a fair amount of, in shoregrass country, I am not sure people understand exactly what is happening with allowing Brazil to import beef into the United States. Can you talk to me a little bit about what processes are we putting into place to make sure that the American consumer can have confidence that Brazil has it right? Because, as you know, Mr. Secretary, there have been a number of times in the past when Brazil has not had it right.

Secretary PERDUE. And that really should give comfort, Congressman, that we have suspended them because they didn't get it right. They have had difficulty in fraud in their inspection system, and when we detected that on inbound inspections, we suspended them. Suspended them for over 2 years. But in countries where we have trade agreements there, aside from just outright protectionism, we have to have equivalent safety standards.

That is what FSIS does. They go down and do audits of their food safety inspection system to make sure that they believe it is equivalent to U.S. systems, and then, as a safeguard beyond that, we also have a stepped up inspection. Not an audit, but an inspection of the product coming in to make sure they are continuing to comply.

Mr. JOHNSON. And do we have a sense of how long that heightened inspection regime will be in place?

Secretary PERDUE. Not necessarily. It will be dynamic, as we see continued compliance over a period of months or years. You prob-

ably could see some relaxation to see that they are continuing to comply.

Mr. JOHNSON. I would close with just a couple of thank yous. I mean, you did work with a number of us to move the cover crop prevent plant harvest date last year during a true emergency situation. Of course, we don't know exactly what the weather in 2020 is going to look like, but if we get another terrible situation, hopefully there will be an open mind at USDA about similar flexibility for producers.

Finally, I am hearing increasingly from school nutrition experts that they really feel like they have a partner at USDA to try to get it right. I know you have an open rulemaking. I don't expect you to comment at length, but thank you for your work, sir.

Secretary PERDUE. We hear the same thing, where the trash can's not quite as fat as it once was.

Mr. PANETTA. Thank you, Mr. Johnson. I now yield 5 minutes to Mr. McGovern from Massachusetts.

Mr. MCGOVERN. Thank you very much, and thank you, Mr. Secretary, for being here. I have some questions on SNAP. I remember a time when you came before this Committee when you first became Secretary that I thought we were in sync on the SNAP Program. I asked you, when you became Secretary, I wanted some assurances that you were a strong defender of the program, and I asked your views of the program because I was concerned about some of the rhetoric coming out of the Administration. And you responded to me, and I quote, "But as far as I am concerned, we have no proposed changes. You don't try to fix things that aren't broken." That is your quote.

And then the Congress passed a farm bill that rejected proposals that would throw millions of people off the benefit. And then the Administration, in defiance of Congress, goes forward with some proposals that would adversely impact very vulnerable people. And the first proposal dealt with able-bodied adults without dependents, ABAWDs, the proposal that you proposed last year. You appeared before this Committee, and I asked you if USDA had any detailed data on this population, because I told you that we were hearing from people that this is a very complicated population. It included returning veterans, it included young kids just graduating out of foster care. And you said you did, and you would get back to us, and USDA did get back to us.

And what I received from USDA was that USDA only knows three things about this population, their age, their race, and their citizenship status. That is it. I asked if the group included veterans, they didn't know. I asked if the group included young people who had recently aged out of the foster care system, they didn't know. I asked if this group included people who were recently released from prison, they had no idea. I heard your assurances to Ms. Adams that you are granting waivers, but the criteria is much more strict, and by USDA's own estimation, over 700,000 people will lose their benefit. Now, you add that to your proposed change with regard to categorical eligibility, essentially getting rid of it, and the other changes you have, there are another 3.1 or 2 million people, by USDA's own numbers, that will lose their benefit.

Now, in your testimony here today you said that the USDA serves out our motto, "Do right, feed everyone". Well, when I add all this up, by USDA's own numbers, close to four million people are going to be thrown off this benefit. Four million poor people who get a SNAP benefit that is on average of about \$1.40 per person per meal. Where are they going to get their food? How are they going to deal with this? And this ABAWD population in particular, again, is a very complicated population. Talk to faith-based groups, talk to food banks, talk to social service agencies. They will tell you how complicated this is, and yet you are making proposed rules changes, and USDA has no data on who is actually going to be impacted. I guess the question is how can you do this?

Secretary PERDUE. Mr. McGovern, we are not allowed to collect that information that you talked about, the various segments there. The state implements these rules, and we have no way to collect that information.

Mr. MCGOVERN. Well, with respect to not knowing who this population is, and then to cut them off when we have a lot of data from states, and from other organizations that deal with these people, who they are, returning veterans who are having trouble reintegrating into our workforce, people who live in rural areas who have no access to transportation, the closest workforce training center may be 20 miles away, who don't have access to a job, I mean, when those people lose their benefit, they lose their food benefit. How making somebody hungry is going to make them more likely to get a job is beyond me, and that is before we get into the other rules changes.

Again, four million people, by USDA's own estimation, are going to lose their food benefit. I think that is shameful. I don't know how that is consistent with the motto: "Do right, feed everyone." And I am going to tell you, we are fighting you in court, and we are going to do everything we can to block the implementation of this. I hope that we will get through this year, and then come next year we have a new set of people running our agencies who actually would be offended by throwing four million people off their benefit. I yield back.

Mr. PANETTA. Thank—

Secretary PERDUE. I would love the opportunity to have to respond, but it looks like time is up.

Mr. MCGOVERN. I am happy to sit here and listen to the response, if the chair wants to let you.

Mr. PANETTA. Please, Mr. Secretary.

Secretary PERDUE. Mr. McGovern, in 2000 we had 17 million people on food stamps. I don't know where all those poor people were you are talking about there. That is just a few short years ago. And during the recession, when our unemployment went up, we had 44 million people on food stamps. Unemployment, in the longest economic boom we have seen here, unemployment at 3.5 percent, all I am doing is implementing the law that was passed into this year that says the Secretary may waive the application of the work requirement to any group of individuals in a state if the Secretary makes the determination that the area in which the individual resides. You know the law says—

Mr. MCGOVERN. I do.

Secretary PERDUE.—120 days if you are an able-bodied adult without dependents.

Mr. MCGOVERN. Right. And, Mr. Secretary, you are hurting people.

Mr. PANETTA. Thank you, Mr. Secretary. Thank you, Mr. McGovern. I yield 5 minutes to the co-chair of the Ag Research Caucus, Mr. Davis from Illinois.

Mr. DAVIS. Thank you, Mr. Chairman, and, Mr. Secretary, thank you again for being here. Ag research ultimately plays a major role in our nation's economic prosperity, national security, and public health. With the current crisis that we are facing right now with the coronavirus, and the potential link to an animal source, how can we help the Department be better equipped to combat not only this strain, but future strains and diseases that can be transmitted from animals to humans, either through agricultural research, or other USDA programs that might help prevent future public health threats?

Secretary PERDUE. The budget has been mentioned several times here today. I will do an Appropriations hearing later, but if you look at the proposed budget this year, from a research perspective, you are going to see quite a bit of bump in that just to address the very issues that you mentioned.

Mr. DAVIS. Well, thank you, Mr. Secretary. One of my biggest priorities since coming to Congress is in bolstering funding for ag research. I really appreciate working with you and your team on these ag research issues. I worked alongside my good friend, the acting Chair, Mr. Panetta, to co-chair the Ag Research Caucus, and we want to ensure that we are continuously increasing funding for AFRI programs. We hope to see appropriators, and I hope you can mention this during your testimony when you go see the ag appropriators, I hope we can also raise the money that is in AFRI, and I appreciate the President's request for increased funding for AFRI, but it is essential for us to move to the next level of research to fund the AGARDA Program, Agriculture Advanced Research and Development Authority. And I certainly hope that is something that we can work with your Department on to provide solutions in a high risk type of reward.

Secretary PERDUE. I think that fits right in, Congressman, with our new Ag Innovation Agenda that we have announced at the Ag Outlook Forum, and we would be happy to support that.

Mr. DAVIS. Well, thank you. You actually got into my next statement was about the Ag Innovation Agenda. I appreciate it, we appreciate the work that you are doing. Thank you for sitting here, and thank you for letting me come back to get in front of Yoho to ask questions.

Secretary PERDUE. Thank you.

Mr. DAVIS. I yield back, sir.

Mr. PANETTA. Thank you, Mr. Davis. I now yield 5 minutes to Ms. Torres Small from New Mexico.

Ms. TORRES SMALL. Thank you, Mr. Chairman, and thank you to the entire Agriculture Committee. It is an honor to get to join you on this Committee. And I am grateful to get to advocate and represent the 10,000 farms in New Mexico's 2nd Congressional District, famous for our dairy, our pecans, our pistachios, and certainly

our chile peppers. Thank you so much, Secretary Perdue, for knowing that, and for all that you do for rural America.

When I talk with farmers, one of the first things I hear about are labor shortages. And, Secretary Perdue, thank you for your commitment to this issue as well. The last time you testified before this Committee, you spoke about the access to legal and stable workforce so American-grown products will continue to feed our nation and the world. And just this morning, I appreciate your comments about working with Congress to help find a solution.

The House passed H.R. 5038, the Farm Workforce Modernization Act with overwhelming bipartisan support, and I look forward to seeing our Senate colleagues engage on the subject. I strongly support a workable year-round visa system for our dairy farmers. And on that note, on the specialty crop side last year, you mentioned that you were working with Departments of Labor, Homeland Security, and State to make the application process for your training programs. When will the USDA application portal be ready?

Secretary PERDUE. The Department of Labor regulations are at OMB now. Hopefully they will be released very soon for comment, and we are looking forward to that, because a portal will be there. We have to have the rules there for the portal to be effective.

Ms. TORRES SMALL. Have they given you a ballpark date?

Secretary PERDUE. OMB?

Ms. TORRES SMALL. That is something you are eagerly awaiting?

Secretary PERDUE. We are waiting, right.

Ms. TORRES SMALL. Okay. That is very good to know, if we can help, so that would be the next near-term milestone for that. Do you have a—

Secretary PERDUE. We would hope this year.

Ms. TORRES SMALL. Okay. Thank you. What other specific steps is USDA taking to make it easier for farmers and ranchers to access the labor they need?

Secretary PERDUE. Again, on the website we try to give almost all the documents and the things that you will need in order to comply, so education is one thing. Kristi Boswell, as I mentioned, we deal one on one with producers coming in that have issues over visas and other things.

I think the other exciting possibility is, both for Mexico and Central America, but Guatemala and other Central American countries, developing a pool of workers, almost like they do for Canada, a pre-certified group of people. And I know that the Secretary of Agriculture in Mexico is concerned about their poor peasant population in southeastern Mexico, so we would love to work with those states, and there has been a—Guatemala is already—we have already signed an agreement, and to help that we will facilitate the State Department visa moving forward.

Ms. TORRES SMALL. Thank you, Mr. Secretary. I also really appreciate your comments about trade, not aid, and I am pleased that we are making some strong advancements in that. I appreciate the discussion when it comes to the USMCA about Mexico, and how do we make sure they are not restricting the cheeses. I wanted to go into another piece of the dairy, which of course is Canada's agreement. What steps will USDA take to ensure Canada complies with

the terms of the agreement and eliminates their Class VII pricing system?

Secretary PERDUE. Sure. We will keep an eye on this Class VII and make sure there has not a circumvention or violation of that. These agreements that Ambassador Lighthizer's writing, and USTR, are pretty legally contract enforceable type provisions, and I am encouraged by that.

Ms. TORRES SMALL. And one thing about those provisions is making sure not only they are eliminating this Class VII system, but they are not reconstituting a similar one. Anything to add there?

Secretary PERDUE. Yes. That is what I was mentioning with the circumvention of creating a loophole in that area. I think they are tight enough not to do that, and we will be watching to call their hand on it if they do.

Ms. TORRES SMALL. And please let us know if you see any challenges. Last, just briefly, I appreciate that you brought that map, the MFP 2 map, and I was wondering if you'd show it again? I do deeply appreciate making sure that we are providing support as we are affected by trade. I know that there are a lot of different crops that were covered in that. Other important products, one of which is dairy, supporting the dairy industry. New Mexico is top ten in the dairy industry, and it is a bright white there, so I look forward to working with you to make sure New Mexico gets the support it needs.

Secretary PERDUE. Get your share.

Ms. TORRES SMALL. Thank you.

Secretary PERDUE. Burn me up with that green chili.

Ms. TORRES SMALL. I yield the remainder of my time.

Mr. PANETTA. Thank you, Ms. Torres Small. I now yield 5 minutes to the gentleman from Minnesota, Mr. Hagedorn.

Mr. HAGEDORN. Thank you, Mr. Chairman. Mr. Secretary, it is great to see you again. I want to thank you for traveling to our district in Minnesota to have a roundtable discussion in Mankato, and also to attend Farm Fest. We enjoyed you holding up our USMCA Now sign, and also for the other folks in the Administration who have helped at USDA and been on the ground in our district under Secretary Northey, was at the Albert's dairy farm in Dodge County, and then this weekend, Under Secretary Ibach will be at a hog farm, the Compart hog farm in Nicollet County, so we appreciate you being on the ground, and meeting the farmers, and getting to know what is on their minds continuously.

Lots of politics today. You heard from people talking about trade, and had some criticisms, but I will tell you what I hear a lot, and that is it shouldn't have been left to this President to deal with China on trade. That should've happened a long time ago, where we had Presidents of both parties that kind of let things get to a point, and we appreciate the fact that he's taking it on. A lot of our farmers do. And the fact that we were able to pass the USMCA trade agreement to help build momentum for other deals, and we are seeing that now with phase 1 with China, hopefully we get to phase 2.

But, there is something going on in China, as you know, this coronavirus, and it seems to be hampering perhaps our exports of pork, and turkey, and beef, and there seems to be a little backup

there now, maybe as much as 11 percent, it says, for pork storage, and then 12 percent for poultry. Are you in any way dealing with what is going on, as far as the backup and the storage issue?

Secretary PERDUE. Well, dealing, we are trying to be aware with our eyes on the ground there. We see some easing of that. More people are getting back to work at the ports, and we see some of that backlog continue to be unloading now. Hopefully, we are over the worst of that, and can move forward.

Mr. HAGEDORN. Well, that is very good. Moving on to African Swine Fever, we have been talking about that quite a bit, and everybody wants to talk about coronavirus, and rightly so, but this African Swine Fever, as you know, presents quite a challenge to us, to make sure we keep that out of the country, and that we can even export more pork products. Recently we passed a bill that the Senate sent over. It was along the lines of one that I put in, to increase the number of inspectors at our points-of-entry, and have more of the beagle brigades, which are very effective in sniffing out that pork.

Secretary PERDUE. Right.

Mr. HAGEDORN. I always joke that they are so good we should take them down to the Appropriations Committee, try to drive down the deficit with those beagle brigades. But, when you look at what is going on, we appreciate the increase in the line item for swine health. That was very good. But you talked a little bit recently with our colleague from Kansas about the NBAF, I guess we would call it, the acronym. How does that fit in with what we are doing on African Swine Fever, and are you making some plans along those areas?

Secretary PERDUE. Well, obviously it is not operational yet completely, but it will be a huge part in all the dangerous global diseases that we face, African Swine Fever, and some we don't even know the names of yet that will happen. Research will be done, that'll be tested over the effects, and also research from how we can prevent that, regarding vaccines, and what the genome make-up is of that disease, and the viruses or whatever organism carries that disease. It will be a really great tool over some very serious types: foot-in-mouth, African Swine Fever, Ebola, those kind of things that have zoonotic potentials there at NBAF.

Mr. HAGEDORN. Do you expect that will go online 2022?

Secretary PERDUE. Probably 2022 to 2023.

Mr. HAGEDORN. Okay. Thank you. Last, just an observation, I appreciate what you are doing on the regulations with SNAP. That is an issue I have been working on since I served Congressman Strangeland, who was a Member of this Committee many, many years ago, and the concept of work for welfare for able-bodied people has always worked. And in this environment, where we have very low unemployment, we want everybody in the workforce. It is a compassionate thing, and if people are able-bodied, I think it is the right thing to do. I appreciate you tightening up the rules, and pushing that forward. It is going to help a lot of people.

Mr. PANETTA. Thank you, Mr. Hagedorn. I now recognize the gentleman from Florida—excuse me, the lady—Ms. Pingree.

Secretary PERDUE. The Chairman—

Mr. PANETTA. Recognize Ms. Pingree.

Secretary PERDUE. The Chairman would never forget about you.
Mr. PANETTA. No.

Ms. PINGREE. Almost. Well, Mr. Secretary, thank you so much for being with us today, and for putting in 3 long hours. The good news is we are about to vote, so eventually we are going to have to let you go. But I am really grateful I have had a chance to listen to a lot of the hearing, and I know you have tackled a whole range of questions, and given us a lot of thoughtful answers.

I want to just talk a little bit about your sustainability initiative, part of the Agriculture Innovation Agenda. You set a goal of reducing greenhouse gas emissions from U.S. agriculture by 50 percent by 2050, so thank you for recognizing the importance of this, and the integral role farmers can play in climate conversations. I think that is critically important. I introduced a bill last week called H.R. 5861, the Agriculture Resilience Act, which I sort of see as a roadmap for a lot of the things that we need to do around sequestering carbon in soil, and we have a lot of overlap in your innovation agenda and my bill around improving data collection, identifying research gaps, enhancing carbon sequestration, so I am looking forward to working with you on that. I am interested in knowing what some of your next steps for moving forward on the innovation agenda is, and how we can be more helpful in Congress.

Secretary PERDUE. You mentioned one of those. I look forward to looking at your legislation as to how we can sync up there. A baseline measurement is one of those things. There was some effort made in 2010, and we did something initially there, and it just kind of got off the radar screen, so we would love to have a baseline of how we are moving. That scoreboard that we did at Ag Innovation Summit, if you are not keeping score, you are just practicing, you are not really serious about it. We wanted to develop metrics of sensor technology, and metrics over what percentage of carbon are we capturing through these practices, how can we do that, and that is where we plan to go.

Ms. PINGREE. That is great. That is critically important. I will just tell you I look forward to you guys looking through the bill and having a longer conversation with you about it. Some of the things in that bill you can do with existing authority, things like making composting a practice within EQIP or CSP. I hope we can find ways to work together as you are doing this, and if some of those things are favorable to you, and we don't have to go through legislation, that would be great.

The one last thing I wanted to talk to you about, there has been so much interest in modernization of environmental services that farmers provide. I know we have talked about this before, but how are you working towards the USDA helping to foster some of those private-sector efforts? And I know, honestly, what you just said is sort of starting with a baseline is critically important, but I see a really serious role for USDA here in understanding how to monetize some of that.

Secretary PERDUE. I think what the Ag Outlook Forum talked about, a public-private partnership of synchronizing our public dollars and our private dollars, and USDA is an appropriate convener of where we are. We ought to be about asking the questions, and what we are doing is convening stakeholder groups and saying,

what are the limitations? Let's imagine what can happen if this were solved, and put our researchers to work, but public and private, in doing that. That is kind of where we would like to head.

Ms. PINGREE. Yes, and I think that, again, there has to be a potential role for farmers to participate in carbon markets, and some of that has to do with, as you said, understanding what the baseline is, but also having a common set of measurements, because there is a lot of research going on at the university level and the private-sector. I know you are looking at it at the USDA; but, again, that is an important convening role for you to play.

I am just really appreciative that in a time when it is hard to get everybody on the same page around what is going on with the climate, or what the appropriate role for farmers is in carbon sequestration, that you have come out and started talking about it, engaging farmers. One of the things I tried really hard to do in my bill was to look at how we treat farmers as our partners. It is all too often in this debate where people try to point the finger and say, "It is all your fault," but the role that agriculture can play in sequestering carbon in the soil isn't very well understood. Even with the environmental sector people don't often understand how important that is, and how so many of the practices that we can continue to encourage at the USDA, like no-till, and cover crops, and increasing the organic matter in the soil.

I am looking for a way to move forward on that to help people to understand the role, to engage farmers, and sort of what works best for them. I have written 180 pages in a bill on that, so it is very thorough and detailed about what we could do.

Secretary PERDUE. Good, we look forward to looking at that. You are exactly right, though. In the possibility of, really, a win-win situation, where you sequester carbon in the soil, and taking it out of the air, but also that is increasing soil health and productivity, so it is really a win-win situation.

Ms. PINGREE. Absolutely. Every farmer we have ever met with that we talked to who has taken some of these steps have seen better water retention, increased yields, all kinds of good things. I yield back, but thank you for putting in your time here. Thanks so much.

Mr. PANETTA. I thank the gentlelady from Maine. I now recognize the gentleman from Florida, Mr. Yoho.

Mr. YOHO. Thank you, Mr. Chairman. Mr. Secretary, always great to see you, and I appreciate the job you are doing, the leadership that you and the Administration are doing. I stand 100 percent behind you. A lot of talk about COVID-19, the coronavirus. As you know, we have dealt with that in veterinary medicine for decades, cattle, horses, dogs, and cats, and we have very effective vaccines for it. We have introduced a bill, it is a bipartisan bill with Kurt Schrader, the other veterinarian in Congress, H.R. 3771, the one health bill that coordinates the cooperation between USDA and HHS. As you well know, six out of ten human diseases show up first in animals, and so this is a way that we can study that, be prepared, and it is a perfect example of that is, number one, coronavirus. Lyme Disease, we saw that in veterinary medicine for a long time; and eventually, the human side picked up on that, and mad cow disease, BSE. We know these things are here in the ani-

mal world, and so the idea behind one health is to coordinate that effort so that we can identify these things before they become a pandemic. I just want people to know that is coming out.

I was happy to hear your conversation about labor. As we know, our farmers face many uncertainties, whether it is commodity prices, weather factors, trade policies, and the availability of labor. I agree 100 percent with you that we should remove the labor issue for agriculture from immigration and concentrate on a guestworker program that doesn't prevent anybody from becoming a citizen, but it doesn't give them the pathway. We are introducing our bill today that I have talked to you about, I have talked to the Administration, and we have shared it with 70 Members of the House and the Senate. It is called H.R. 6083, the Labor Certainty for Food Security Act. The goal is to create a predictable, reliable, certain workforce for our producers, but give opportunity to our workers, and this is both H-2A, for the temporary, and it creates a year-round program. We get rid of AEWR, and we put in safeguards for that. We allow the flexibility of the workers to move around the country, and I sure hope you consider this, because this is a solution for our ag producers that it is so needed in that.

It is been brought up about ASF, African Swine Fever. You are certainly aware of the outbreak, where it is estimate over 500 million pigs have been lost in China. The virus is very hardy, surviving high and low temperatures, and it can survive the transport from China to here, and it can last in the fomite, Feed products, cardboard, things like that, haven't been thoroughly studied, and most of that stuff comes into our ports here in the United States. The beagles are a good tool, but I don't think they are scientifically as accurate as we need. I mean, I will take them now, every day, what I would like to ask you is do you feel that the USDA has enough funding for resources and technology to bolster increased inspection? Because we know how little the containers are inspected.

Secretary PERDUE. Yes, it is a needle in a haystack issue, and it is very anxious in that regard.

Mr. YOHO. It is.

Secretary PERDUE. We do have a good working relationship with Customs and Border Protection. I have gone into borders and witnessed that. Obviously you all have authorized recently some more inspectors at the border. The problem is, is there ever enough, what is safe in that regard, and how do you determine that? That is a real challenge, but we are trying to do our best to determine what the risk is *versus* what the need is.

Mr. YOHO. We know what the percentage is being inspected, and what the percentage is not. I don't want to bring that out right now, but I think that is something we all need to look at bolstering. And last, the USMCA was passed. All nations need trade, but it needs to be fair trade. As you know, my State of Florida, our vegetable producers have been crushed by the competition, primarily from Mexico, seasonality, or the seasonally competitive crops. My ask is, as we move forward, that close monitoring of the labor standards, environmental standards, subsidies coming from the Mexican Government, and a rapid and quick response from this Administration, USDA, USTR, that they respond rapidly. We have

just seen an inverse of the production of blueberries, squash, green peppers, any row crop. It is a complete reversal from 5 to 10 years ago. And we are not playing on a level playing field, and I sure hope that we can have some fixes for our producers.

And, just one last comment on the labor. We are either going to import our labor, or we are going to import our food, and we need to make sure that our policies are in place so that we can protect our farmers. And I yield back, and thank you for what you do.

Mr. PANETTA. Thank you, Mr. Yoho. Just to let you know, Mr. Secretary, votes have been called, but it looks like we have two more Members, we are just going to get through those two real quick, if that is okay. Thank you. I recognize the gentlewoman from Iowa, Mrs. Axne.

Mrs. AXNE. Well, thank you, Mr. Chairman, good to see you.

Secretary PERDUE. Thank you, ma'am. Yes.

Mrs. AXNE. As you know, I represent the southwest corner of the State of Iowa, and our rural counties are the backbone of agriculture in our state. A lot of our rural economy depends, of course, on how corn and soybean farmers are doing, and these folks have had a tough time over the last few years due to devastating weather, demand destruction caused by the abuse of small refinery exemptions and the EPA, and, of course, the Administration allowed this to happen, and the uncertainty of a long trade war. These issues have absolutely hurt Iowa very hard. Iowa farmers hold the highest level of debt in the nation. Forty-four percent say they are struggling to cover bills, and farm bankruptcy in the state is at a 10 year high. With all these issues, and the fact that a majority of Iowans are small or mid-sized farms, I was particularly disturbed when you suggested last fall that smaller farms aren't going to survive. As a matter of fact, you put it in America, the big get bigger, and the small go out.

It is your job to keep that from happening, and we are here today to discuss the state of the rural economy, and with things as grim as they are, it is really discouraging for my constituents to hear from the Secretary of Agriculture that their best option may just be to sell their family farm. The last thing our folks need is additional stress and uncertainty, so I am hoping that your testimony today will provide some reassurance to my constituents. And I am very glad that we got USMCA signed into law, and I am thankful for your announcement of the Higher Blends Infrastructure Incentive Program, as well as the Department's work on the China phase 1 agreement. However, a lot of my folks have questions about whether the Chinese commitment for ag purchases is realistic.

Iowa farmers are on the front line of this trade war, and have taken a lot of the hit for this. It is imperative that the agreement results in gains for Iowans. Last month USDA's own Chief Economist estimated that exports to China would only be \$14 billion at the end of the third quarter, which is a heck of a long way from the \$36½ billion goal for 2020 that was agreed to. My question, Mr. Secretary, is do you expect that China will be able to meet its commitments, and what commodities do you expect to benefit the most under the phase 1 agreement?

Secretary PERDUE. We are expecting China to live up to their agreement. The underlying, under the radar, technical issues are being worked on fairly expeditiously. I think that leads to their ability to accomplish those hardline goals, but we are going to trust, but verify as we go along. And, looking on a week by week, month by month basis of where they are in that regard, there are unilaterally enforcement mechanisms to enforce that commitment, and money—and things they have agreed to, so we do. We think the WASDE report that you mentioned, it was stated in the preamble that it did not include the phase 1 agreement in that effort. So the export numbers that you talked about we expect will grow.

Mrs. AXNE. Okay, great. And which commodities do you expect should receive the most benefit?

Secretary PERDUE. Well, I think all commodities, when the non-public part of the agreement, and the \$40 to \$50 billion of U.S. ag exports were not identified by sector purposely because the Chinese wanted the ability to come into the marketplace as fair buyers in that regard, so we think all sectors, or really a huge majority of that, of the agricultural sector, will benefit. Certainly your farmers in Iowa, from a corn, even ethanol perspective, DDGs, those kind of things we think will have a great potential of helping China achieve those numbers. Things that we have not sent over there recently, such as ethanol byproducts.

Mrs. AXNE. Okay. I am glad to hear you say DDGs, so I appreciate that. I would like—if you can give us any follow up on, as we move down the road, what we can expect to see for ethanol and DDG, I would be really—

Secretary PERDUE. Yes, these tracking documents will be public for—to be seen as how we are doing on those issues.

Mrs. AXNE. Okay. Moving on, I just wanted to ask you real quick here as well, how is the USDA estimating potential purchases in the commodity market forecast reports, and how are you making sure you aren't adding to the volatility in the commodity market?

Secretary PERDUE. Our NASS reports, you are referring to?

Mrs. AXNE. Yes.

Secretary PERDUE. That's consistent protocol, we mentioned earlier, when you were out, that the disturbing Crop Acreage Data Report that came about in the summer was because it was out of line. The NASS report was out of line with market expectations because of the wet spring that prevented plantings. As it turned out, Mrs. Axne, the NASS was right, and the market was wrong. It created a huge drop in price because the markets, and all the traders and estimators thought there was going to be less corn than there was. WASDE had much more. Farmers thought it was a conspiracy to drop down prices, but at the end of the year, the NASS report was much more consistent with where the production was than the other people in the private-sector.

Mrs. AXNE. Okay. Thank you so much.

Secretary PERDUE. Okay. And I wish you knew me better. Maybe we can get to know better, you will know that nobody fights harder for the American farmers, and the quote you took out of context. I would love the opportunity to talk to you about that.

Mrs. AXNE. Well, I would appreciate that. It is what you have said. If you want to set up a time so we can get to know each other better, I would—

Secretary PERDUE. It is what was quoted, but we can all be clipped in a way that is not accurate.

Mr. PANETTA. Thank you, Mr. Secretary.

Mrs. AXNE. Thank you.

Mr. PANETTA. I now recognize the gentlelady from Arizona for 5 minutes.

Mrs. KIRKPATRICK. Thank you, Mr. Chairman. Thank you, Mr. Secretary for being here.

Secretary PERDUE. Thank you for your patience.

Mrs. KIRKPATRICK. Yes. Contrary to the popular belief that Arizona is all desert, we have some beautiful forests, and we are coming up on our wildfire season. And so I want to just ask you quickly, we have seen an increase in temperatures, a decrease in moisture, and this has caused a rise in wildfires. And I am sure you are well aware of that, so I am going to get briefly to my question, which has to do with the wildfire funding fix. How will that fix help you better manage suppression efforts, and how do you expect the funds will help impact other aspects of Forest Service work?

Secretary PERDUE. Okay. Two ways. The fire funding fix allows us to take the appropriations that you give from forest management and do active forest management. That is the prevention phase of that. Then the other part of is that we can treat forest fires like we do other disasters, and spend the money expecting that to be replenished in that way, at that level, so it is really about bifurcation. But the most important thing is, due to the active forest management, to prevent the forest fires. We would much rather prevent them than suppress them.

Mrs. KIRKPATRICK. Yes, absolutely. We have seen some money going into thinning the forests, picking up the shrub—

Secretary PERDUE. Yes.

Mrs. KIRKPATRICK.—that certainly helps us manage better. Because they called votes, I am going to yield back the balance of my time, but again, thank you very much for being here.

Secretary PERDUE. Thank you.

Mr. PANETTA. Thank you, Mr. Secretary. Before we adjourn, I invite the Ranking Member to make any closing remarks he may have.

Mr. CONAWAY. Well, a couple things. First off, Mr. Secretary, thank you again for the great job your team does. Great leadership from you, but executed by an awful lot of good folks over there. I also want to thank Bill Northey, and Richard Fordyce, and Kevin Norton for coming over yesterday and spending a long time with the full Committee, going over all these staffing issues, hirings, challenges, all the things that you have been harassed about this morning. They are doing a terrific job, professional job of addressing that. They understand the problems associated with the moves to Kansas City, and all the things going on, so thank you for their good work.

I also want to quickly comment on the SNAP changes you are making. Throughout the farm bill negotiation with my colleagues in the Senate, they assured me over and over and over again, *ad*

nauseum, that you had all the authority that you needed to do what you are doing with respect to the ABAWD rule, and broad-based categorical eligibility, and that the House-passed version did not need to be included in the conference report. My colleagues on this, Mr. McGovern is particularly passionate about this issue, but passion doesn't necessary create good policy, and good policy is that the rules in place from the 1995 Act have said able-bodied adults under the age of 50 with no dependents should work, or train to work, 20 hours a week in order to stay on food stamps on an extended basis, and you have the authority to waive that particular rule in places where it makes sense, in the rural areas, or where there are no jobs. All of the folks that Mr. McGovern talked about have an ability to be waived.

The rule also applies a 12 percent exemption, for every state to exempt 12 percent of their ABAWD population all the time, and so there is plenty of flexibility to address all those folks. And, again, passion doesn't make good policy. Your changes to the rules does make good policy. I wish we could have gotten them into the law that you are now operating under. Again, thank you, and your team especially, for all the hard work they do, and I yield back.

Mr. PANETTA. Thank you, Mr. Conaway. Mr. Secretary, once again, I really, truly appreciate every time you come to this Committee and demonstrate your thoughtful, and your knowledgeable answers to all of us here. It really means a lot to all of us on this Committee. On behalf of Chairman Peterson, thank you very much. I also want to say thank you for the accessibility not just of you, but your staff, and that we have been able to work with them, and how often they come up here and talk to us, so thank you very much.

And also, just to let you know, and as you can tell, this is the first time I have ever chaired a committee meeting, but let you know what an honor it is that you were the witness for the first time that I have ever been in this position, and let you know that I will never forget this opportunity, but also let you know that the people of this country, and the people in agriculture, will not forget your service to them, and to this nation, so thank you very much.

And at this time, under the Rules of the Committee, the record of today's hearing will remain open for 10 calendar days to receive additional material and supplementary written responses from the witness to any question posed by a Member. This hearing of the Committee on Agriculture is adjourned.

[Whereupon, at 1:20 p.m., the Committee was adjourned.]

[Material submitted for inclusion in the record follows:]

SUBMITTED REPORT BY HON. K. MICHAEL CONAWAY, A REPRESENTATIVE IN
CONGRESS FROM TEXAS



Department of Agricultural Economics
Texas AgriLife Research
Texas AgriLife Extension Service
Texas A&M University

College Station, Texas 77843-2124
Telephone: (979) 845-5913
Fax: (979) 845-3140
[@AFPCTAMU](http://www.afpc.tamu.edu)

Agricultural and Food Policy Center, Texas A&M University
March 2020

Overview of Trade Aid and Its Impact on AFPC's Representative Farms



Cover photo courtesy USDA.
© 2020 by the Agricultural and Food Policy Center

Briefing Paper 20-2

BART L. FISCHER
JOE L. OUTLAW
J. MARC RAULSTON
BRIAN K. HERBST

Executive Summary

Shortly after taking office, President Trump launched investigations into the national security ramifications of steel and aluminum imports from a variety of countries and into the handling of intellectual property rights protection and enforcement by China. Both of these investigations resulted in tariffs being placed on imports from the implicated countries, including China. In response, these countries imposed their own retaliatory tariffs, with China ultimately imposing tariffs on more than 1,000 U.S. agricultural tariff lines.

The U.S. farm economy was already going into the fifth year of recession when retaliatory tariffs were imposed by China and others. The Administration responded by authorizing trade aid packages for both the 2018 and 2019 crop years that included commodity purchases, trade promotion, and direct assistance to producers to help defray the costs of disrupted marketing. There is no denying that the aid package—particularly the Market Facilitation Program (MFP)—has had a significant impact on farm income in the United States. Across all of the Agricultural & Food Policy Center's (AFPC) 63 representative crop farms, MFP 1.0 (2018) and 2.0 (2019)

protected \$16.4 million in net worth over the 2018–2020 study period. Furthermore, under baseline conditions (*i.e.*, no MFP), 35 of the 63 farms had a greater than 50% probability of negative ending cash at the end of 2020 (*i.e.*, needing to borrow on operating notes to finance shortfalls). With MFP in place, that number was cut by 34.3% (23 farms facing significant threat of shortfall).

Some have argued that MFP 2.0 was biased toward southern states. While there was significant variability in county payment rates for MFP 2.0, most of that variability is easily explained by the underlying damage assessments and the distribution of planted acres in the respective counties. And, despite the fact that the highest county payment rates were predominantly in counties with cotton production, almost 70 percent of the assistance under MFP 2.0 went to midwestern states. While we find little validity to the argument of regional inequity, there certainly were disparities between neighboring counties. These differences were particularly disruptive for producers of crops relatively more impacted by retaliatory tariffs who happened to produce in counties with lower payment rates.

Finally, we find that MFP 1.0 and 2.0 have also had a greater than \$41 billion impact on the broader rural economy.

Introduction

In April 2017, the U.S. Department of Commerce initiated investigations into steel and aluminum imports under Section 232 of the Trade Expansion Act of 1962. The Commerce Department found that steel and aluminum imports threatened to impair national security, and on March 23, 2018, President Trump announced that he concurred with the findings from the investigation and imposed tariffs on certain steel and aluminum imports from a number of different countries.

In August 2017, the Office of the U.S. Trade Representative (USTR) launched an investigation into China’s handling of intellectual property rights protection and enforcement. USTR found that China’s practices were unreasonable and burdened U.S. commerce. In response, on July 6, 2018, President Trump imposed an initial series of 25% tariffs on \$34 billion in imports from China. Since then, the United States has gone through four implemented/proposed tariff hikes under Section 301.

In response to these actions, several countries imposed retaliatory tariffs—in many cases targeting agricultural products. While the retaliatory tariffs imposed by Canada and Mexico in response to the Section 232 investigation were lifted effective May 20, 2019, by the fall of 2019, China had retaliatory tariffs in place on over 1,000 U.S. agricultural tariff lines.

With the retaliatory tariffs adding to an already precarious farm economy, on two separate occasions—for both the 2018 and 2019 crop years—President Trump stepped in to provide assistance for agricultural producers who were being negatively impacted by the trade dispute. While assistance also came in the form of commodity purchases and trade promotion, the vast majority was provided as direct assistance to producers via the Market Facilitation Program (MFP).

This report provides an overview of the history of MFP, examines the regional distribution of support, analyzes the impact of MFP on AFPC’s representative farms, and estimates the economic impact on the broader rural economy. The analysis is focused primarily on the non-specialty crops that were eligible for MFP, but select specialty crops and animal products were also eligible.

Market Facilitation Program (MFP) Background

MFP 1.0 (2018)

On July 24, 2018, the U.S. Department of Agriculture (USDA) announced that up to \$12 billion in aid would be made available to producers, with almost \$10 billion being provided through MFP for the 2018 crop year. According to USDA (2018a), the assistance was “in response to trade damage from unjustified retaliation by foreign nations.”

To determine the assistance levels provided to producers, USDA estimated gross trade damages caused by the retaliatory tariffs imposed by several countries in response to the Section 232 and 301 investigations. While we now have the luxury of hindsight, those damage levels were determined before trade data was available (or before lower trade levels could be observed). USDA utilized standard estimation methods to determine damage rates; this paper takes those rates as given. USDA (2018b) published a detailed account of its method for estimating gross trade damages on September 13, 2018.

Table 1. Comparing 2018 and 2019 Gross Trade Damage Rates by Crop

Non-specialty crops	MFP 1.0	MFP 2.0	Units
Hay		\$2.81	Tons.
Chickpeas		\$1.48	cwt.
Corn	\$0.01	\$0.14	bu.
Cotton	\$0.06	\$0.26	lb.
Dried Beans		\$8.22	cwt.
Lentils		\$3.99	cwt.
Peanuts		\$0.01	lb.
Peas		\$0.85	cwt.
Rice		\$0.63	cwt.
Sorghum	\$0.86	\$1.69	bu.
Soybeans	\$1.65	\$2.05	bu.
Wheat	\$0.14	\$0.41	bu.

Ultimately, MFP 1.0 paid on 2018 actual production of the MFP-eligible crops at the associated rates listed in *Table 1*. Payments were limited to \$125,000 per person or legal entity, with separate limits for three different categories—non-specialty crops, specialty crops, and animal products—and an overall limit of \$375,000 per applicant. MFP 1.0 was provided in two different tranches: the first half was announced on August 27, 2018, and the second half was announced on December 17, 2018.

MFP 2.0 (2019)

On May 23, 2019, President Trump announced that an additional \$16 billion in aid would be made available to producers, with up to \$14.5 billion being provided through MFP for the 2019 crop year. In implementing MFP 2.0, USDA largely followed the same methodology—estimating gross trade damages—but they updated the reference point from a single year to using data over a 10 year period (2009–2018). As noted in *Table 1*, the list of impacted commodities and the associated rates was expanded significantly with MFP 2.0. This particular change is discussed in greater detail in the section on Regional Analysis.

While the framework for estimating damages was largely unchanged with MFP 2.0, the application of the rates changed significantly. Perhaps most notably, the payment rates in *Table 1* were not paid by crop on actual production, as was the case in 2018. Instead, USDA applied the rates to average production of all MFP-eligible crops in a county and then divided by the average acres planted in the county over the past 4 years. The resulting county payment rates were then paid on all acres planted to MFP-eligible crops on a farm in 2019 (not to exceed the acres planted on the farm in 2018). Payments were limited to \$250,000 per person or legal entity, with separate limits for the three different categories—non-specialty crops, specialty crops, and animal products—and an overall limit of \$500,000 per applicant.

In hopes that the impasse with China would be resolved and the full amount of aid would not be needed, MFP 2.0 was provided in three tranches: (1) the first 50% was announced on July 25, 2019, (2) an additional 25% was announced on November 15, 2019, and (3) the remaining 25% was announced on February 3, 2020. In counties where the \$15/acre rate applied, the full amount was paid in the first tranche.

Distribution of MFP Assistance

Not surprisingly, the bulk of support from MFP 1.0 was provided to soybean, cotton, and sorghum producers, as reflected in the state-level payment totals in *Figure 1*.

For MFP 2.0, with a significantly expanded list of commodities, several other areas received additional support. As noted in *Figure 2*, the soybean- and cotton-producing areas of the country still received the bulk of the support. While this is discussed in greater detail below, nine of the top ten recipient states were in the Midwest, and that region received almost 70% of the assistance under MFP 2.0.

Because the purpose of MFP is to help producers adjust to disrupted markets due to retaliatory tariffs (and largely the tariffs imposed by China), it stands to reason that the aid would be concentrated in areas with significant production of the commodities most directly impacted. As noted by USDA and reflected in *Figure 3*, MFP payments overlap areas where estimated damages are the highest (when compared to *Figures 1* and *2*).

Figure 1. MFP 1.0 (2018) Payments by State (as of March 2, 2020)

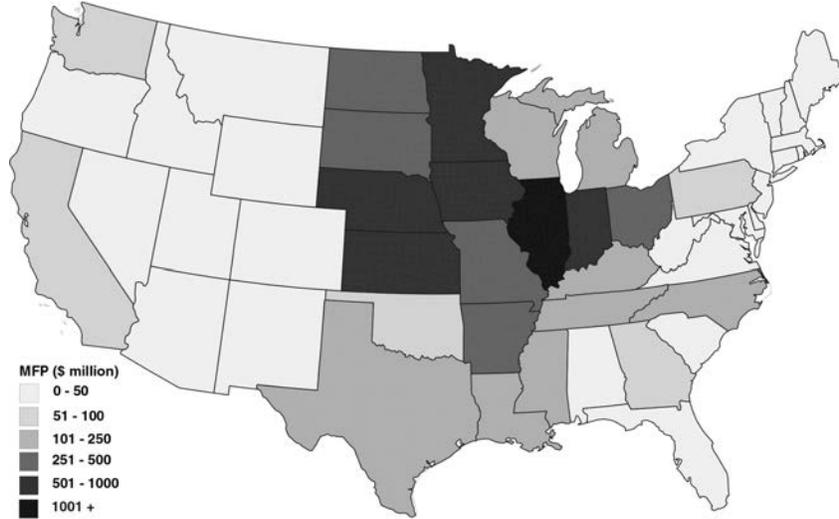


Figure 2. MFP 2.0 (2019) Payments by State (as of March 2, 2020)

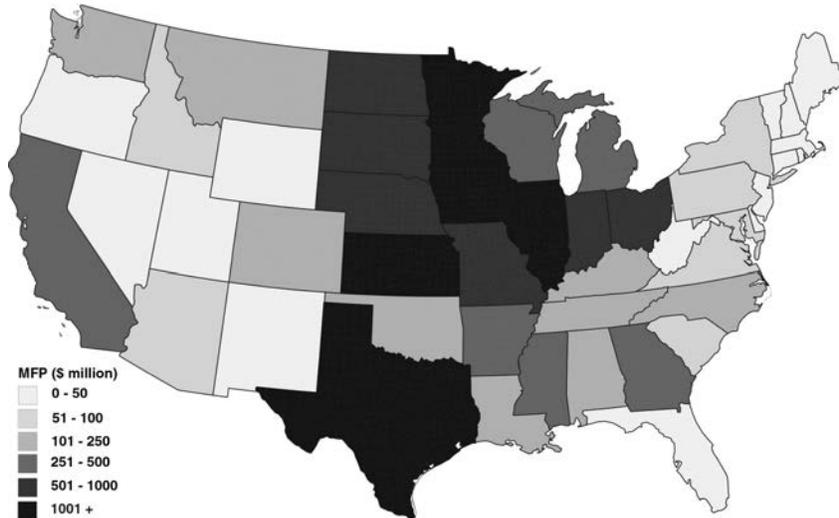
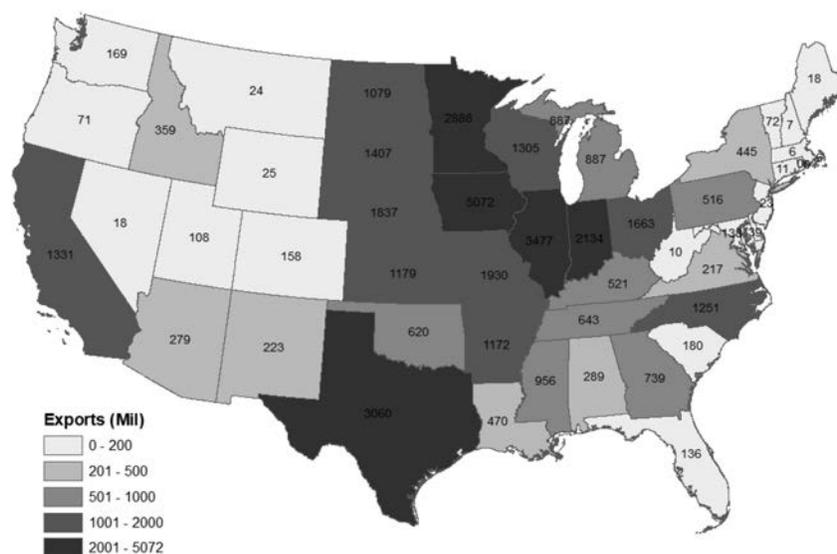


Figure 3. Exports of Major Tariff Affected Commodities (2017)

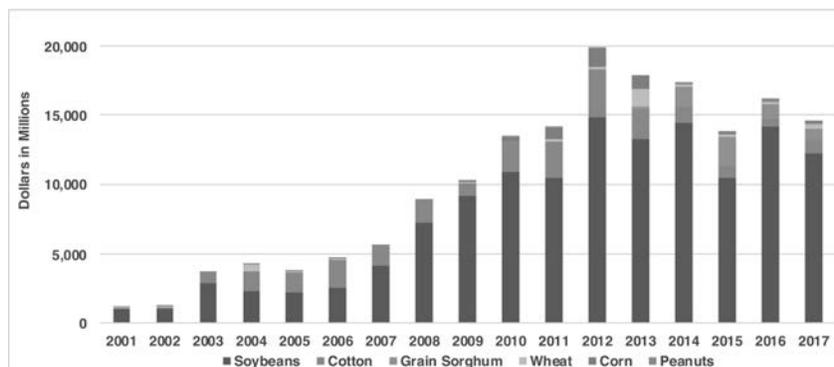
Commodities include: Soybeans, Pork, Cotton, Dairy.
 Total Exports for these commodities: 78,326 Mil.
 Source: ERS.

Regional Analysis

While MFP has undeniably been vital to the financial health of U.S. farms over the past 2 years, there have been recent complaints about regional bias in the Administration of MFP 2.0. Despite those arguments, it appears that the biggest determinant of the regional distribution of MFP is the underlying estimates of gross trade damage and the point of reference on which the estimates are based. Importantly, MFP provides financial assistance that gives producers the ability to absorb some of the additional costs from having to delay or reorient marketing due to retaliatory tariffs, which is perhaps the most misunderstood part of the program. As noted in *Figure 4*, three crops—soybeans, cotton, and sorghum—made up the bulk of agricultural trade with China over the past several years.¹ These products were the ones most directly impacted by the tariffs—because they were the products being exported to China when the retaliatory tariffs were imposed. That is little consolation for corn producers, for example, that had exported up to \$1.3 billion to China in 2012 but by 2017 was exporting just \$142 million, owing in large part to actions on the part of the Chinese government that the World Trade Organization (WTO) has since found were inconsistent with China's obligations under the WTO's Agreement on Agriculture.² For other products like beef, American producers have been largely locked out of the Chinese market for the last 20 years. But, addressing those long-term inequities was the very purpose of the negotiations themselves. Moreover, as previously discussed, the trade damage estimates for MFP 2.0 were based on a survey of trends in U.S. bilateral trade over a 10 year period, in recognition that 2017 may not have been the most representative year on which to base the analysis.

¹ Importantly, USDA's analysis included retaliatory tariffs from several countries involved, but we focus on China here for illustration.

² For more on these cases, see *DS511* on China's domestic support for agricultural producers and *DS517* on China's Tariff Rate Quota (TRQ) administration for certain agricultural products in the WTO.

Figure 4. Major U.S. Agricultural Crop Exports to China

For MFP 1.0 in 2018, USDA estimated gross trade damages relative to 2017 trade. When looking specifically at China, soybeans, cotton, and sorghum made up 72% of the \$19.5 billion in agricultural trade with China in 2017 as reflected in *Figure 5*. As highlighted in *Table 1* earlier, this resulted in relatively lower payment rates for some crops (*e.g.*, corn at \$0.01/bu).

In response to stakeholder feedback that 2017 was not a representative base year for certain commodities, USDA estimated gross trade damages relative to 2009–2018 trade for MFP 2.0. According to USDA (2019), the purpose of using the longer-run trend was “to account for other contributing variables, such as longstanding trade barriers imposed by China and other countries that have affected U.S. exports, as well as the longer-term impact of prolonged retaliatory tariffs.” As noted in *Figure 5*, U.S. corn exports to China were \$142 million in 2017, compared to \$393 million in 2009–2018. By contrast, U.S. cotton exports to China were \$978 million in 2017, compared to \$1.575 billion in 2009–2018.

Equity Between Regions

Much has been made of the resulting county payment rates in MFP 2.0. To make the case for southern bias in MFP 2.0, critics point out that McLean County, IL, received a payment rate of just \$82/acre while Lubbock County, TX, received \$145/acre. There are a lot of factors that drive the county payment rates, but perhaps none are as relevant or important as the distribution of planted acres within the county. For example, the \$145/acre payment rate in Lubbock County is merely reflective of the fact that cotton (with a \$0.26/lb rate) accounted for 84% of the payment rate in Lubbock County—as noted in *Figure 6*—while corn (with a \$0.14/ bu rate) accounted for 51% of the rate in McLean County. Had soybeans been the only crop planted in McLean County, the county payment rate would have been approximately \$135/ac.

Figure 5. U.S. Exports to China of Select Crops in 2017 and 2009–2018

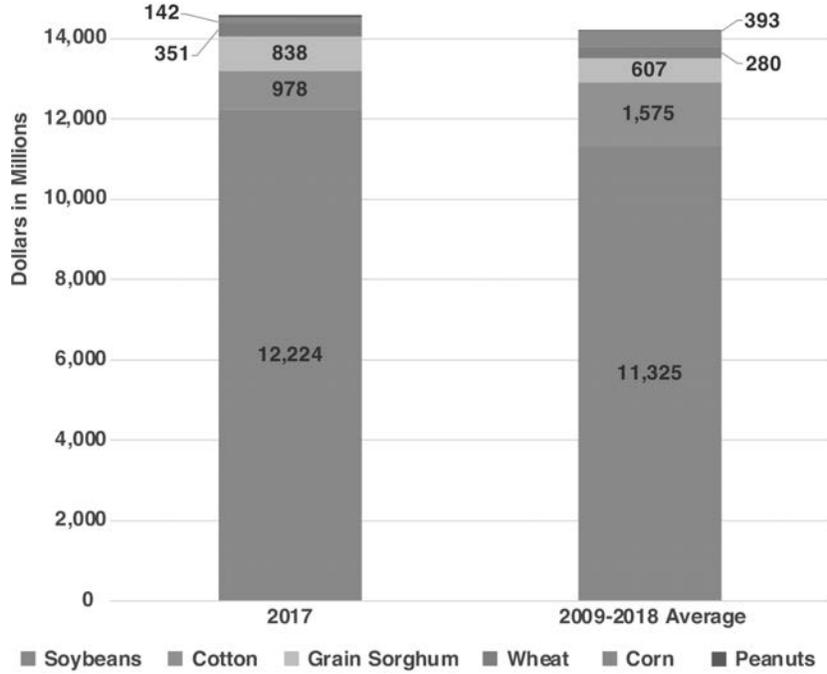


Figure 6. Distribution of Acres Planted by Crop (Average 2015–2019)

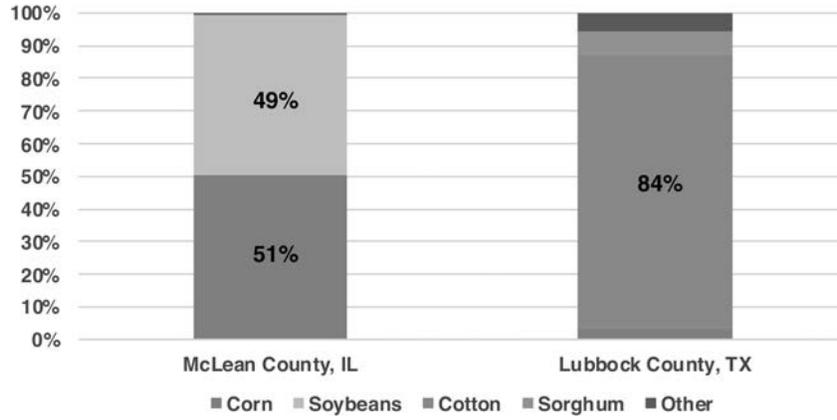
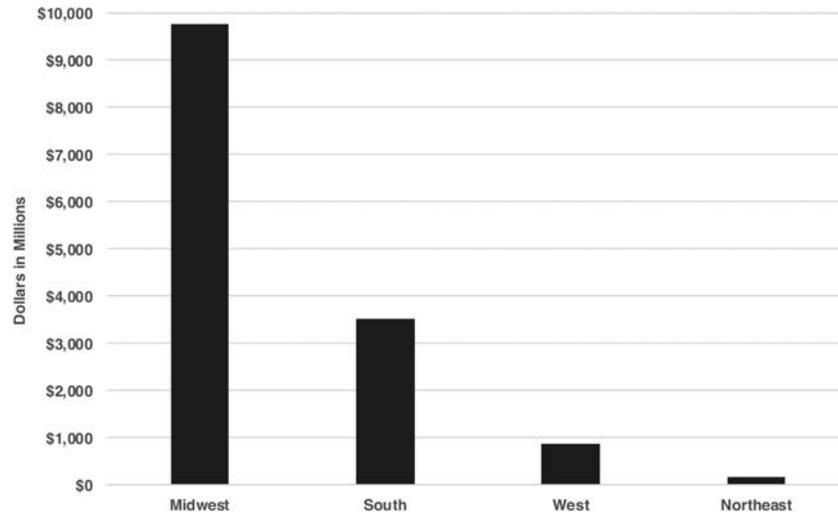


Figure 7. MFP 2.0 Payments by Census Region (as of March 2, 2020)

Put simply, counties with a significant presence of crops directly impacted by retaliatory tariffs had the highest payment rates. The only “bias” we find in the program was the decision to impose a maximum county payment rate of \$150/acre, which most negatively impacted cotton producers. As noted in *Figure 7*, if one looks at where the latest assistance has gone, almost 70%—or just under \$10 billion—has gone to the Midwest. In other words, the amount of support provided to the Midwest is more than double the rest of the country combined.

Equity Between Counties

While we find little validity to the complaints of regional inequity, there are certainly disparities between counties. A producer of a crop that was highly impacted by retaliatory tariffs (*e.g.*, soybeans or cotton) that happens to produce in a county that predominantly grows a crop that was relatively less affected by retaliation (*e.g.*, wheat) is certainly negatively impacted. The same logic applies to producers of irrigated crops that farm in counties with predominantly dryland production. To USDA’s credit, the disparity was somewhat mitigated by the fact that Secretary Perdue imposed a minimum \$15/acre payment on the first tranche of MFP 2.0. However, that’s little consolation to a cotton or soybean producer receiving \$15/acre given that those commodities were more severely impacted by retaliation.

Impact of MFP on Representative Farms

AFPC currently maintains 63 representative crop farms across major production regions of the United States. This paper focuses on MFP for non-specialty crops in part because very little specialty crop production occurs on the representative farms. The representative farms have been used for over 30 years to provide feedback as to the likely consequences of policy changes on real farm operations across the United States. Locations, descriptions, and financial characteristics of the representative farms and dairies along with more information on the representative farm process can be found in AFPC Working Paper 19–1. Representative farm nomenclature follows a standard format where the first two letters indicate the abbreviation for the state in which a farm is located, the next letter (or two letters) generally give(s) regional and/or farm-type descriptors, and the numbers in the name reflect the total acres of cropland on a given farm.

To evaluate the farm-level impact of MFP on the financial condition of AFPC representative farms, two scenarios were analyzed:

- **No MFP**—this base scenario examines the financial outlook of the farms if no MFP was received by producers.
- **MFP**—assumes MFP 1.0 for crop farms paid on eligible production in 2018 and on planted acres of eligible commodities on the farm in 2019 for MFP 2.0 (at the respective county rates). The third tranche of MFP 2.0 appears in the 2020 calendar year financial statements for the representative farms.

For the farm-level MFP analysis, a study period of 2018–2020 was utilized with the results focusing on projected ending cash reserves and the probabilities of farms having negative ending cash reserves at the end of 2020 (*i.e.*, the probability of a having to refinance a carryover debt). Commodity prices and rates of change for input prices, interest rates, and land inflation rates published in the FAPRI 2019 August Baseline Update for U.S. Agricultural Markets were utilized. *Table 2* displays ending cash reserves and the probability of negative ending cash in 2020 for each representative farm under the No MFP and MFP alternatives. Changes in these numbers are also reported for each farm.

Table 2. Ending Cash Reserves and Probabilities of Negative Ending Cash for AFPC Representative Farms under Base (No MFP) and MFP Scenarios, 2020

	2020 Ending Cash Reserves			2020 Probability of Negative Ending Cash		
	No MFP 1,000	MFP 1,000	Difference 1,000	No MFP %	MFP %	Difference %
IAG1350	-768	-641	127	100.0	100.0	0.0
IAG3400	-380	-121	259	84.6	61.6	-23.0
NEG2400	-139	39	178	64.4	47.0	-17.4
NEG4500	-1,756	-1,423	333	99.4	97.6	-1.8
NDG3000	-183	19	202	78.8	48.4	-30.4
NDG9000	868	1,438	570	12.0	0.4	-11.6
ING1000	-25	54	79	60.4	28.8	-31.6
ING3250	-61	209	270	55.4	27.8	-27.6
MOCG2300	39	201	162	49.2	29.0	-20.2
MOCG4200	677	938	261	11.4	3.4	-8.0
MONG2300	-322	-155	166	91.0	76.4	-14.6
LANG2500	-452	-156	296	93.2	69.6	-23.6
TNG2500	-362	-82	281	90.2	63.4	-26.8
TNG5000	228	669	441	34.4	9.8	-24.6
NCSP2000	-1,004	-887	118	99.8	99.4	-0.4
NCC2030	407	517	109	0.0	0.0	0.0
SCC2000	424	556	131	2.4	0.0	-2.4
SCG3500	837	1,029	192	1.6	0.0	-1.6
TXNP3450	212	443	231	31.0	11.2	-19.8
TXNP10880	1,820	2,614	794	10.4	3.0	-7.4
TXPG2500	43	175	132	42.0	27.0	-15.0
TXHG2700	-232	-115	117	85.6	72.0	-13.6
TXWG1600	-171	-97	74	85.8	74.6	-11.2
WAW2800	288	354	66	8.0	4.0	-4.0
WAW10000	1,039	1,272	233	8.4	5.6	-2.8
WAAW5500	-318	-253	65	96.0	92.2	-3.8
ORW4500	-91	-58	33	78.2	70.4	-7.8
MTW8000	989	1,047	58	0.0	0.0	0.0
KSCW2000	173	266	93	5.8	0.6	-5.2
KSCW5300	482	778	296	13.2	2.8	-10.4
KSNW4000	-124	-24	100	72.8	52.6	-20.2
KSNW7000	-109	107	217	59.6	41.6	-18.0
COW3000	-106	-85	21	92.4	89.0	-3.4
COW6000	-851	-788	64	100.0	100.0	0.0
TXSP2500	-216	53	270	87.2	36.2	-51.0
TXSP4500	-411	114	526	81.2	37.2	-44.0
TXEC5000	21	659	638	48.4	8.6	-39.8
TXRP3000	-464	-333	131	99.2	98.0	-1.2
TXMC2500	-190	92	282	68.2	40.2	-28.0
TXCB3750	-738	-78	661	96.6	58.4	-38.2
TXCB10000	-236	889	1,126	59.6	18.0	-41.6
TXVC5500	725	1,412	688	8.4	0.0	-8.4
ARNC5000	1,300	1,843	543	5.2	2.4	-2.8
TNC3000	510	805	294	2.0	0.0	-2.0
TNC4050	122	630	509	38.8	6.0	-32.8
ALC3500	990	1,310	320	0.2	0.0	-0.2
GAC2500	773	1,019	246	1.2	0.0	-1.2
NCNP1600	-733	-556	177	100.0	99.2	-0.8
CAR1200	439	471	31	1.2	1.0	-0.2
CAR3000	-477	-371	107	62.0	55.6	-6.4
CABR1000	189	227	38	16.8	14.2	-2.6
CACR800	-264	-237	27	98.8	97.0	-1.8
TXR1500	-226	-194	32	91.4	89.6	-1.8
TXR3000	-36	31	67	52.8	44.8	-8.0
TXBR1800	68	119	51	30.8	24.6	-6.2

Table 2. Ending Cash Reserves and Probabilities of Negative Ending Cash for AFPC Representative Farms under Base (No MFP) and MFP Scenarios, 2020—Continued

	2020 Ending Cash Reserves			2020 Probability of Negative Ending Cash		
	No MFP 1,000	MFP 1,000	Difference 1,000	No MFP %	MFP %	Difference %
TXER3200	-1,010	-821	190	100.0	100.0	0.0
LASR2000	166	228	61	18.8	11.8	-7.0
ARMR6500	-392	437	829	61.0	27.8	-33.2
ARSR3240	101	375	273	37.0	20.2	-16.8
ARWR2500	-546	-319	227	97.0	83.6	-13.4
ARHR4000	-249	2	251	68.8	47.8	-21.0
MSDR5000	74	647	573	38.4	16.4	-22.0
MOBR4000	-677	-211	466	92.4	68.8	-23.6

Figures 8–11 group the representative farms by farm type based on primary source of receipts. These figures provide a side-by-side comparison of the probabilities of negative ending cash under the two scenarios. AFPC has adopted a color-coded scoring method for financial measures based on probabilities of outcomes. As this report focuses on ending cash reserves, farms are classified as:

- **Good**—good liquidity position (green in charts) if probability of negative ending cash in 2020 is less than 25 percent.
- **Marginal**—marginal liquidity position (yellow in charts) if probability of negative ending cash in 2020 is between 25 and 50 percent.
- **Poor**—poor liquidity position (red in charts) if probability of negative ending cash in 2020 is greater than 50 percent.

The following is a description by farm classification of the financial impact of MFP on ending cash reserves and associated probabilities of refinancing. A summary of how many farms facing the most severe cashflow stress improve their ranking is also provided. A common theme across all of the farms is that—for the farms in counties with higher county payment rates—MFP was a significant help but in no case covered all impacts caused by the retaliatory tariffs.

Feedgrain and Oilseed Farms

AFPC maintains 23 representative feedgrain and oilseed farms in ten states. The MFP scenario resulted in an average increase in ending cash reserves in 2020 of \$240,000. Furthermore, the average likelihood of refinancing in 2020 dropped from 55.8% to 41.3% across all 23 farms as a result of MFP as compared to the Base (No MFP) scenario. Further examination of individual farms reveals that payments received under MFP resulted in four farms moving out of the most severe cashflow (liquidity) situation as described by AFPC (>50% probability of negative ending cash reserves in 2020). The No MFP scenario has 57% of the feedgrain and oilseed farms in poor liquidity position; only 39% of these farms are facing the most extreme cashflow position under the MFP scenario.

Wheat Farms

AFPC currently works with 11 representative wheat farms in five different states. Despite the relatively low payment rate for wheat, a \$113,000 average increase in ending cash reserves in 2020 resulted from payments received under MFP 1.0 and MFP 2.0. The average probability of negative ending cash across all farms in 2020 dropped from 48.6% to 41.7%, a 6.9% improvement resulting from payments in MFP. The MFP scenario also resulted in a shift of one representative wheat farm out of the most serious threat of cashflow problems at the end of 2020.

Cotton Farms

AFPC currently has 14 representative farms in six states with cotton as the primary commodity. On average, the representative cotton farms experienced a \$458,000 increase in 2020 ending cash reserves under the MFP scenario as compared to the No MFP base scenario. The average likelihood of refinancing carryover debt in 2020 dropped from 49.7% across all farms under the No MFP scenario to 28.9% when receiving MFP, a 20.9% decline. Similarly, payments received through MFP resulted in four farms improving their cashflow position significantly enough to no longer be considered in poor liquidity position at the end of 2020. The No MFP scenario had 50% of the representative cotton farms classified in poor liquidity posi-

tion, while the MFP alternative resulted in only 21% of cotton farms in this unfavorable cashflow situation.

Figure 8.1. Probabilities of Negative Ending Cash for Select AFPC Representative Feedgrain and Oilseed Farms under No MFP and MFP Alternatives, 2020

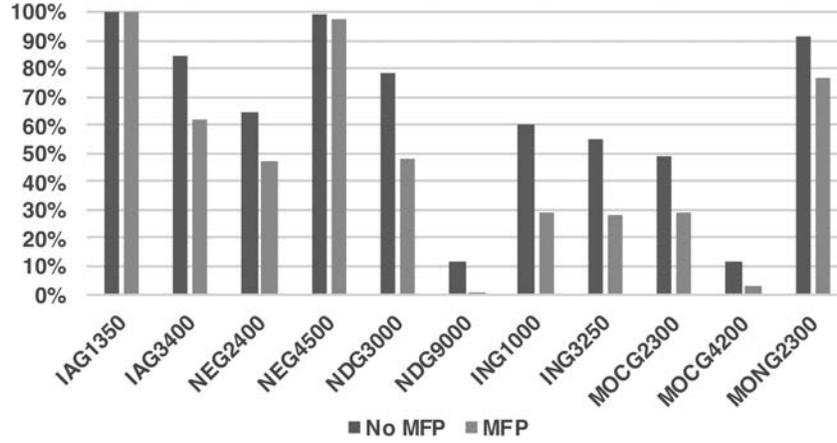


Figure 8.2. Probabilities of Negative Ending Cash for Select AFPC Representative Feedgrain and Oilseed Farms under No MFP and MFP Alternatives, 2020

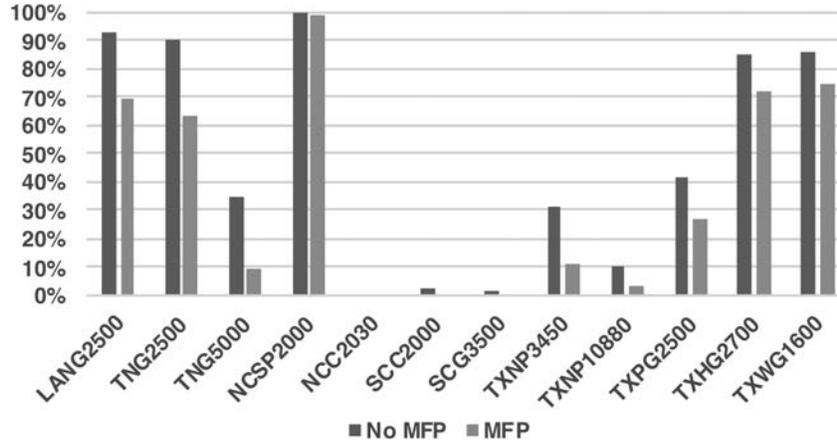


Figure 9. Probabilities of Negative Ending Cash for AFPC Representative Wheat Farms under No MFP and MFP Alternatives, 2020

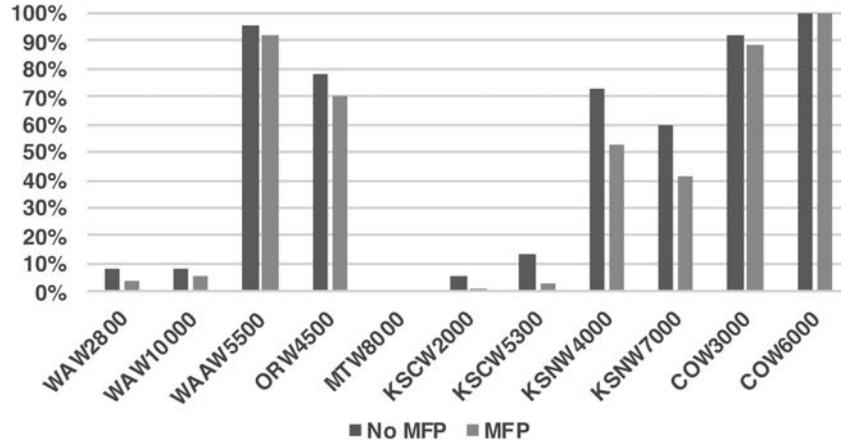
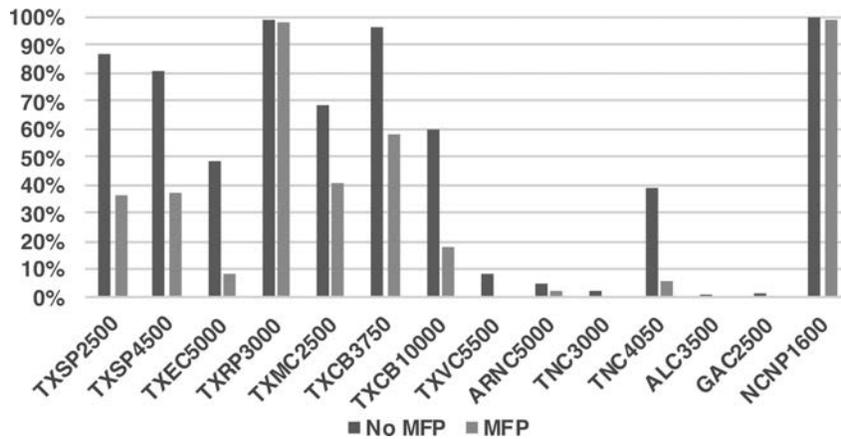


Figure 10. Probabilities of Negative Ending Cash for AFPC Representative Cotton Farms under No MFP and MFP Alternatives, 2020

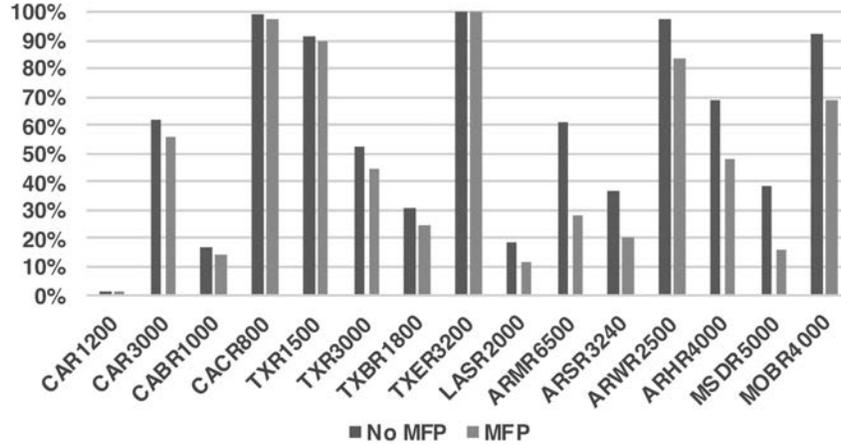


Notably, two farms did not see marked improvements in their cash flow projections. TXRP3000 is in Jones County, TX, which had a relatively low MFP 2.0 payment rate of \$46/ac, largely reflecting a significant presence of wheat production in the county. Similarly, NCNP1600 is in Edgecombe County, NC, which had a payment rate of \$70/ac, which was affected by the relatively large share of corn and peanut production in the county.

Rice Farms

AFPC maintains 15 representative rice farms in six rice-producing states across the nation. Across all AFPC rice farms, an average increase of \$215,000 in ending cash reserves in 2020 resulted from payments received under the MFP alternative. The average probability of farms having to refinance carryover debt dropped from 57.8% to 46.9% under the MFP alternative, an improvement of 10.9%. Three farms were able to significantly improve their liquidity position. Under the No MFP scenario, 60% of AFPC rice farms were in the worst AFPC cashflow classification; conversely, 40% were under the highest threat of experiencing cashflow problems under the MFP alternative.

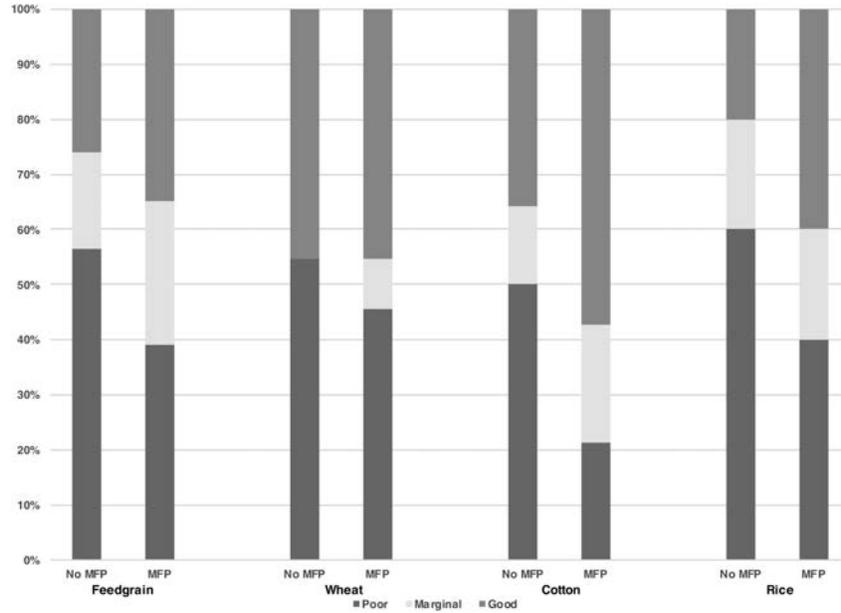
Figure 11. Probabilities of Negative Ending Cash for AFPC Representative Rice Farms under No MFP and MFP Alternatives, 2020



Impact of MFP on the Rural Economy

Beyond examining the impact of MFP on the representative farms and examining equity within the program, we also examined the impact of MFP on the broader economy, recognizing that producers turn over income within the local economies in which they operate. Our analysis used IMPLAN 2018 data to examine the impacts of the 2018 and 2019 Market Facilitation Program payments (*Tables 3 and 4*). We analyzed the payments at the state level and combined the data for the national effect of the 2018 and 2019 MFP payments.

Figure 12. Percentage of AFPC Representative Farms in Good, Marginal, and Poor Cashflow Position by Farm Type Under No MFP and MFP Alternatives, 2020



The direct effect of the MFP payments includes the expenditures by the producers. The indirect and induced effect reflects the multiplied effect as businesses purchase along their supply chains, as well as the household expenditures of employees of both commodity-related businesses and all indirectly affected businesses. The total effect is a sum of the direct, indirect and induced effects. Output measures the overall economic activity and includes Value Added, which measures the return to local resources or the contributions to GDP, and Labor Income, which reflects the effects of wages and profits on the incomes of households in the state. Employment reflects the job count and does not distinguish between full-time and part-time workers.

Table 3. 2018 MFP Payments

(2018 Dollars)

USA Employment	Labor	Income	Value-Added	Output
1 Direct	23,189	\$1,791,629,287	\$3,562,085,819	\$8,503,082,586
2 Indirect	25,320	\$1,196,428,950	\$1,970,387,370	\$4,118,940,604
3 Induced	16,381	\$766,925,738	\$1,376,242,756	\$2,414,364,777
Total	64,889	\$3,754,983,975	\$6,908,715,945	\$15,036,387,967

Table 4. 2019 MFP Payments

(2019 Dollars)

USA Employment	Labor	Income	Value-Added	Output
1 Direct	75,441	\$2,878,518,924	\$5,213,947,233	\$14,192,829,490
2 Indirect	48,545	\$2,285,933,441	\$3,682,596,609	\$7,638,769,437
3 Induced	27,932	\$1,333,912,708	\$2,392,833,727	\$4,195,747,384
Total	151,918	\$6,498,365,073	\$11,289,377,569	\$26,027,346,310

For 2018, the initial MFP 1.0 payments of \$8.6 billion led to a total economic output of \$15 billion, with \$6.9 billion contributing to the national GDP and \$3.75 billion in labor income. For 2019, the initial MFP 2.0 payments of \$14.2 billion led to a total economic output of \$26 billion, with \$11.3 billion contributing to the national GDP and \$6.5 billion in labor income. In total, MFP has had a \$41 billion impact on the rural economy over the past 2 years.

Conclusion

On January 15, 2020, the U.S. and China signed a Phase One agreement that aims to increase exports from the U.S. to China to \$80 billion over the next 2 years, and the deal entered into force on February 14, 2020. Initial market response to the Phase One deal has been tepid, and the spread of the coronavirus is dampening the Chinese economy. While no aid has been provided for 2020, President Trump recently tweeted that “until such time as the trade deals with China, Mexico, Canada, and others fully kick in, that aid will be provided by the Federal Government.”

In the meantime, 2 consecutive years of trade aid have been incredibly important to the economic viability of farms, in some cases preventing more farmers from having to sell and leave the business.

References

FAPRI. “2019 August Baseline Update for U.S. Agricultural Markets: FAPRI–MU Report #03–19.” August 28, 2019. Available online at <https://www.fapri.missouri.edu/wp-content/uploads/2019/08/2019-August-Update.pdf>.

Outlaw, Joe L., George M. Knapek, J. Marc Raulston, Henry L. Bryant, Brian K. Herbst, David P. Anderson, Steven L. Klose, and Peter Zimmel. “Representative Farms Economic Outlook for the January 2019 FAPRI/AFPC Baseline.” Texas A&M AgriLife Research, Texas A&M AgriLife Extension Service, Texas A&M University, Department of Agricultural Economics, AFPC Working Paper 19–1. April 2019.

U.S. Department of Agriculture. 2018a. “USDA Announces Details of Assistance for Farmers Impacted by Unjustified Retaliation,” press release August 27, 2018. Available online at <https://www.usda.gov/media/pressreleases/2018/08/27/usda-announces-details-assistance-farmers-impacted-unjustified> [accessed March 1, 2020].

U.S. Department of Agriculture. 2018b. “Trade Damage Estimation for the Market Facilitation Program and Food Purchase and Distribution Program,” September 13, 2018.

U.S. Department of Agriculture, Office of the Chief Economist. 2019. "Trade Damage Estimation for the 2019 Market Facilitation Program and Food Purchases and Distribution Program," August 22, 2019.

Mention of a trademark or a proprietary product does not constitute a guarantee or a warranty of the product by Texas AgriLife Research or Texas AgriLife Extension Service and does not imply its approval to the exclusion of other products that also may be suitable.

All programs and information of Texas A&M AgriLife Research or Texas A&M AgriLife Extension Service are available to everyone without regard to race, color, religion, sex, age, handicap, or national origin.

SUPPLEMENTARY MATERIAL SUBMITTED BY HON. ANGIE CRAIG, A REPRESENTATIVE IN CONGRESS FROM MINNESOTA

[<https://www.propelnonprofits.org/studies/main-street-project/>]



Case Study (<https://www.propelnonprofits.org/studies/>)



Lending (<https://www.propelnonprofits.org/service-types/lending/>)

Main Street Project

Main Street Project is a Northfield, Minnesota-based nonprofit, working to change the conventional food system by deploying an alternative, small-scale system that is accessible and economically viable. Main Street has three primary areas of focus: to build a new model for regenerative agriculture, to train the next generation of farmers, and to develop a regional food system that delivers on the triple bottom line of social, economic and ecological benefits.

The organization was founded in 2005 by Niel Ritchie, a veteran nonprofit leader with over 25 years of rural policy and organizing experience. Main Street Project's current work on agriculture systems grew out of a Northwest Area Foundation funded collaboration on an ambitious four-state, multi-year community-building initiative called Raíces (roots)—organizing primarily with Latino youth and adults in diverse rural communities.

In 2007, Niel was joined by Reginaldo (Regi) Haslett-Marroquin, a colleague at the Institute for Agriculture and Trade Policy who helped found the U.S. Fair Trade Federation, and launched Peace Coffee as a social enterprise and model of fair trade with coffee growers. You can read more about their history and accomplishments *here* (<http://mainstreetproject.org/who-we-are/board-staff/>).

Using insights they gleaned during the Raices Project—among other professional and personal experiences—Main Street Project launched a pilot program to begin to address questions around food security and agricultural opportunities that might better serve the Latino population. Their focus was on poultry farming (*for a number of reasons* (<http://mainstreetproject.org/blog/>)), and in 2013, Main Street Project's Board and leadership decided to focus entirely on developing the poultry-centered regenerative agriculture model.

The complexity of the model and need for infrastructure investment required more sophisticated management and capacity than the team had in-house. They had cash flow challenges, and needed help to stay afloat. "I had to be convinced that talking to a lender was not an admission of failure—but rather, it was an opportunity," Niel admitted. "I got up the courage—and sure enough, I found out that was true."

Niel reached out to Propel Nonprofits (formerly Nonprofits Assistance Fund), and began working with Portfolio Manager Allison Wagstrom. "Allison was able to understand our situation, demonstrate that the challenges were solvable, and take a chance on us so that we could get our feet under us and move to the next level," he said. The line of credit Propel Nonprofits provided helped Main Street even out their operations while they continued to expand. As Niel said, Propel Nonprofits "took the stress out of the equation."

"They're social entrepreneurs who are trying to make farming a livable employment in a way that's respectful to the environment and to the workers," Allison said. "The work they do is amazing."

In addition to the line of credit, Allison and the Main Street team began meeting regularly to flesh out the organization's 10 year balance sheet projection and business plan. "Allison and the Propel Nonprofits' team continue to be enormously helpful," Niel said, "giving us feedback and advice about planning. They've become partners, coaching and mentoring us so that we can navigate the complexities of lending, program-related investments, and other strategies we're going to need to employ to get our work done."

As Main Street's leadership considers what the future holds, a resounding theme is the need for—quite simply—more space. They've simply run out of operating room, and the model demands testing the system at a farm-scale level. "When we bring it all together," Niel explained, "we'll get more efficiencies and be able to better demonstrate the impact of our system. We're tying economic and ecological success to this model—and we need to do it at scale." Main Street is in the midst of a plan to acquire new land, which will allow them to significantly scale up their training program to reach the aforementioned goals.

Propel Nonprofits is honored to partner with Main Street in this important work, and Allison and the team look forward to continued synergies as they grow. "Propel Nonprofits is one of the strongest partners and most important assets the nonprofit community has here," Niel reflects. "They are a partner for us now, and will continue to be the agency that helps us navigate the complexities of growing and sustaining our work."

To learn more about the Main Street Project, *visit them online* (<http://mainstreetproject.org/>).

SUBMITTED LETTER BY HON. KIM SCHRIER, A REPRESENTATIVE IN CONGRESS FROM
WASHINGTON

January 31, 2020

Hon. KIM SCHRIER,
United States House of Representatives,
Washington D.C.

Dear Congresswoman Schrier:

Thank you for being a strong voice for Washington State's natural resources and agriculture in Congress. In particular, I'd like to thank you for your comments and questions posed to the leadership of the Farm Services Administration (FSA) at the recent hearing of the Subcommittee on Conservation and Forestry, and for sharing the letter of support from the Washington State Conservation Commission (SCC) and Washington State Department of Fish and Wildlife for the State Acres for Wildlife Enhancement (SAFE) program. We appreciate your leadership, and we also ap-

preciate this opportunity to share our concerns about two vital programs for Washington State—the Conservation Reserve Program (CRP) and Conservation Reserve Enhancement Program (CREP).

The following examples demonstrate what makes CREP and CRP so important for Washington. I've included a list of our concerns with the implementation of these programs in an attachment to this letter.

Importance of CREP

CREP is the largest riparian restoration program in our state. The program goal is to enhance salmon habitat in areas where farmland and salmon streams intersect. In the 20 years since its inception, farmers have voluntarily enhanced over 925 miles of stream for salmon—for perspective, that's the distance from Seattle to Fresno. They've planted nearly six million trees. In addition to shading streams, filtering pollutants, and providing habitat, these trees also sequester carbon. Conditions have improved in stream reaches with high levels of participation in CREP. For example, in the Tucannon River in southeast Washington, water temperatures cooled by 10 °F and Chinook salmon runs increased after several landowners along the river participated in CREP. The results CREP can deliver aren't just good news for salmon; it's good for area recovery. Nearly all CREP projects are within priority Chinook stock basins for our Southern Resident Killer Whales.

Importance of CRP

After hearing your comments during the Conservation and Forestry Subcommittee hearing, I know you understand the importance of CRP in Washington, especially as it relates to sage-grouse. CRP also has been important for producers in the Palouse. Whitman County has some of the highest CRP acreage in the state. Local producers rely on CRP as an alternative to farming highly erodible soil, which can choke rivers with sediment. Unfortunately, several CRP contracts in the County are about to expire at the same time that Palouse Conservation District and several other partners and landowners are making progress improving water quality through an extremely successful Regional Conservation Partnership Program (RCPP) project in the Palouse Watershed. These RCPP partners have prevented enough sediment from entering the watershed to fill dump trucks lined back-to-back from the Olympia Capitol to the Space Needle. This progress could be negatively impacted as several sensitive CRP sites are at-risk of being put back into production, not because farmers want to, but because they feel they have no other choice. Restrictions on CRP open enrollment and cutoffs have prevented many farmers from re-enrolling. This is detrimental to the water quality goals that so many partners in the area are trying to achieve.

I hope this glimpse into some of Washington's CREP and CRP accomplishments illustrates why we're so concerned about issues that threaten the future of these programs. I've outlined our concerns in the attached document along with our recommended solutions to ensure these programs deliver natural resource results and engage farmers as partners in conservation. Farmer engagement is key. With the number of places in Washington where ecological and agricultural assets intersect, we cannot expect to make progress on urgent conservation issues without the willing partnership of our farmers.

Again, thank you for your leadership on these issues. I look forward to having the opportunity to discuss them with you in greater depth. I will be in Washington, D.C. the week of March 23. Hopefully we can meet at that time.

If you have other questions on these topics, please contact me at [Redacted] or [Redacted].

Sincerely,



CAROL SMITH,
Executive Director,
Washington State Conservation Commission.

ATTACHMENT

SCC Concerns and Recommendations for CREP/CRP in Washington State

(1) Rental Rates

- *Background:* When farmers voluntarily sign up to replace some of their cropland with native vegetation, they're paid rent for the acreage they plant. Without this, the decision to take land out of production is a prohibitive financial risk.

- *Concern:* CRP/CREP rental rates have been reduced in many areas of Washington State. Prior to 2018, the FSA calculated rental rates by multiplying the county rate by a soil productivity factor that ranged from .5 (least productive) to 1.5 (most productive). In 2018, the top two soil productivity factors (1.25 and 1.5) were eliminated. For many farmers, that means that CRP/CREP rental rates are far below the true crop value of their property.
- *Recommendation:* Restore the productivity factors of 1.25 and 1.5 into the soil rental rate calculation for CREP. This would be done at the Secretary and Under Secretary level of USDA, and the Deputy Administrator of FSA's Farm Programs.

(2) *Incentive Payments*

- *Background:* There are two incentive payments in CREP and CRP, (1) the Practice Incentive Payment (PIP), and (2) the Signing Incentive Payment (SIP). Currently farmers rely on PIP to cover 40 percent of practice installation costs. They also have relied on SIP to pay \$100/acre to help offset the cost of converting cropland to habitat.
- *Concern:* In the future, PIP likely will drop to just five percent of practice costs for both programs, imposing a heavy financial burden on farmers to pay the difference. For CRP, SIP will drop significantly in many areas of Washington. For example, in eastern Washington, the SIP will drop from \$100/acre to just \$16.50/acre.
- *Recommendation:* We're asking Congress to pursue appropriation amendments to restore the PIP to 40 percent and the SIP to \$100/acre. We also request that language in the next farm bill reflect these incentive levels.

(3) *Mid-Contract Management*

- *Background:* Farmers rely on FSA to pay 50 percent of the costs of maintenance activities on CREP projects mid-way through the contract period. This may include things like removing invasive weeds and replanting trees.
- *Concern:* FSA no longer pays for Mid-Contract Management. Without this, plantings have a higher risk of failure, which reflects poorly on the program and prevents us from achieving goals.
- *Recommendation:* We're asking Congress to restore funding of Mid-Contract Management through appropriations and in the language of the next farm bill.

(4) *Acreage Caps*

- *Background:* There are caps set at the Federal level for how many acres can be enrolled in CRP. This includes acres enrolled in CREP.
- *Concern:* Some counties in Washington have reached or exceeded their acreage caps. This is preventing farmers from voluntarily participating in efforts that would benefit threatened species, such as ESA-listed salmon species, sage and sharp-tailed grouse, the pygmy rabbit, and the Washington ground squirrel.
- *Recommendation:* We're asking Congress to ensure that the next farm bill include an administrative process for approval of waivers that provides a pathway for Washington State to enroll CRP acreage above the cap.

SUPPLEMENTARY MATERIAL SUBMITTED BY HON. SONNY PERDUE, SECRETARY, U.S.
DEPARTMENT OF AGRICULTURE

Insert 1

Mr. CONAWAY. This report determines that a significantly higher number of farms would be in poor financial condition and less likely to cash-flow without the assistance provided by the Administration. The report also found there is no regional bias built in to how county payment rates were calculated, and observes that 70 percent of the aid went to midwestern states. Given the competing narrative that MFP is allegedly biased toward southern producers, Mr. Secretary, would you explain to us the methodology about how the USDA determined those county payment rates for the second round?

Secretary PERDUE. I will do my best, Congressman. First of all, my instructions to our economists were kind of Sergeant Webb, just the facts, sir. In this area there was no predetermined regional demographic or sector bias in any of this.

In fact, I would like to show you, you mentioned something. I have a chart here for your Committee that shows you the states that here that have—we will

provide an electronic copy of all of that, but the darker states are where the highest payments were

Given the timing of the 2019 MFP during the crop year, USDA developed a single rate per acre in each county for MFP-eligible non-specialty crops, which include select non-specialty commodities both directly and indirectly affected by the trade dispute, in order to minimize potential distortions. The specific commodity rates that formed the basis of the country rate were derived from the gross trade damage estimates. Commodity rates were calculated by dividing the gross trade damage by the average volume of production in 2015–17 as reported by NASS. The county payment rates were based on historical fixed average area and fixed average yields for all eligible crops.

More details on these calculations may be found in the 2019 USDA Trade Methodology report: https://www.usda.gov/sites/default/files/documents/USDA_Trade_Methodology_Report_2019.pdf. [See Attachment 1].

Insert 2

Mr. COSTA. Also, the efforts on the payments with Farm Service Agency continue to be problematic, it seems. We have people that have applied in 2019, and in some cases, 2018. We have continued to ask you folks and then locally with the FSA offices why they haven't processed in a more timely manner. Are we looking at bringing more personnel to expedite that?

Secretary PERDUE. We are always trying to hire, but I would love to know specifically if people have not gotten those kinds of payments in that kind of period of time.

Mr. COSTA. I would be happy to provide you a list.

Secretary PERDUE. Surely. Absolutely, and we will look into that.

Note: FPAC awaits list from Mr. Costa. At this time, FSA has not seen the list referenced.

Insert 3

Ms. CRAIG. . . .

I would like to now shift to beginning farmers. For more than a decade, the Main Street Project outside of Northfield, Minnesota, where I represent, has trained rural Latino immigrants on regenerative ag practices in poultry as a means out of poverty. This is Janet. She is just one of the beginning farmers who has taken part in training through the Main Street Project. In August, the project was informed that they had been awarded a U.S. NIFA Beginning Farmer and Rancher Grant. Those grant funds were publicly announced in October, but as of today, the organization still does not have the funds they were promised by USDA. You said the move of ERS, NIFA to Kansas City was to better serve farmers and ranchers where they are, but that just hasn't proven to be the case for farmers like Janet.



USDA/NIFA appreciates the Committee's recognition of the importance of the Beginning Farmer and Rancher Development Program (BFRDP), funding a total of 32 projects in FY 2019, for beginning farmers like Janet, and the Main Street Project outside of Northfield, Minnesota. Funds were released to the grantee on 2 April 2020. As of 11 September 2020, the grantee has made use of approximately 76% of the funding originally awarded.

USDA/NIFA remains committed to ensuring there will be a "new generation" of beginning farmers and ranchers. Approximately 400 projects have been funded since the inception of the BFRDP in 2009, providing almost \$200 million in grants to organizations for education, mentoring, and technical assistance initiatives for beginning farmers or ranchers. In FY 2020, all grants for BFRDP program have been awarded and funds have been made available to the grantees.

Insert 4

Mrs. HAYES. . . .

I looked, and you mentioned several of your Department's proposals to gut SNAP benefits in your written testimony that was submitted to the Committee, yet there is no mention that the President's budget request for Fiscal Year 2021 revived your previous proposal to take away benefits from households and replace them with what you are calling Harvest Boxes of pre-selected nonperishable food items.

* * * * *

Mrs. HAYES. No, I don't know, that is why I am asking you; can you explain how this program would be implemented, or just if you thought about how that would take place?

Secretary PERDUE. We have thought about that, and I would love to have an extended conversation with you about that. I am not sure this is the way to do that, but this is the place to do that. But, there was a lot of study put into that about the home delivery there, giving people a choice, maybe an app on their phone of the groceries they wanted delivered there, and using commercial distributions. We are working with both Amazon and Wal-Mart and others who expressed great interest in utilizing these services.

Mrs. HAYES. Is this information anywhere where I can access it, because I spent a lot of time trying to look up the details of it and I can't find it.

Secretary PERDUE. I would be happy to have our FNS people deliver to you what we discovered, yes.

Under the Harvest Box proposal, SNAP participants would receive domestically sourced and produced food, known as USDA Foods, *in lieu of* a portion of their SNAP benefits. USDA would utilize a model similar to that currently used to distribute USDA Foods to other nutrition assistance programs to provide shelf-stable

staple foods to SNAP households at approximately half the retail cost, resulting in significant savings to taxpayers with no loss in food for recipients. This model would also ensure that recipients receive this portion of their benefit as healthy, nutritious foods for home consumption. States would maintain the ability to provide choice to their recipients, including innovative approaches for the inclusion of fresh products.

Insert 5

Mrs. HARTZLER. . . .

In the 2018 Farm Bill, I passed the Community Facilities Lending Provision to increase the threshold for the community facilities and the water waste programs to population of 50,000 people to allow more of our small communities to be able to access these funds. Can you tell me if the Department has yet made any loan guarantees to the newly eligible communities under this program?

Secretary PERDUE. I cannot tell you definitively. I believe that we have. We were anxiously awaiting that expansion there. We had a lot of demand—

Mrs. HARTZLER. Right.

Secretary PERDUE.—in communities that exceeded the 10 and \$20,000, 20 person population limit, and I would assume that we have. I can't definitively tell you that, but we can get you the number of people and the populations that we served.

Mrs. HARTZLER. That would be great, and if you could also get me more information about when they can apply, those new communities. That is exciting. That would be great.

Effective October 1, 2020, the 50,000 population limit will be administered under the OneRD Guaranteed Rule. This Rule implements a standard set of requirements, processes, and forms for four Rural Development guarantee loan programs including Community Facilities, Water and Waste Disposal, Business and Industry, and Rural Energy for America.

As of September 10, 2020, the Community Facilities Guaranteed Loan Program had yet to receive an application for projects located in communities exceeding the previous population limit of 20,000. However, our Community Facilities program has had several inquiries from commercial lenders and constituents expressing a strong interest in the Guaranteed Loan Program for populations exceeding 20,000 and we anticipate an increase in applications during FY 2021.

Insert 6

Mr. COX. All right, and so I guess just in a general sense, USDA, we want more employees? We would like to grow that workforce?

Secretary PERDUE. We want enough people to get the job done. I don't want more or less. I want enough people to get the job done. That is what our—

Mr. COX. And right now we don't have enough though?

Secretary PERDUE. We are not having enough in some places. We have an optimum office production that tells where the workload is, and who needs to be there.

Mr. COX. And do we have metrics from that optimum office yet to detail how well that is working?

Secretary PERDUE. We do.

Mr. COX. That would be great to see. Thanks so much.

Optimally Productive Office (OPO) is a suite of tools allowing FSA to make informed, data-driven staffing decisions and identifies offices to target for staffing placements. FSA began using this tool to make informed hiring decisions in FY 2018.

While the Productivity dashboards are primarily centered around staffing offices for expected core workload, the tool also informs FSA leaders on workload surrounding *ad hoc* and disaster programs by generating benchmarks around metric production for these programs. Those benchmarks can then be applied to projected workload around upcoming programs and streamlining processes and systems.

As of March 2020, FSA leaders, using the OPO tool, identified 268 Farm Program Offices and 151 Farm Loan Program Offices to target for hiring in FY 2020. As of the end of September 2020, our successful FY 2020 hiring efforts have resulted in 190 Farm Program offices and 130 FLP offices still requiring additional staff.

Insert 7

Ms. ADAMS. I would like to ask a couple of questions about the impacts of the ERS and NIFA relocation, and the impact that it is having on 1890 land-grant universities. All 19 schools turned in their applications last November for the 1890 scholarships, which received \$40 million in mandatory funding in the

2018 Farm Bill, but it has been 3 months. They still haven't received the funding. They are concerned that the money which is somewhere in the neighborhood of \$750,000 per school may not be available until late this spring for students entering school in the fall.

Having been a professor for 40 years, I know that schools need to be able to notify students earlier than late spring about their scholarships so that their recruiting can make an informed decision.

Given that about 68 percent of NIFA's positions are vacant, what is USDA doing to ensure this delayed funding doesn't prevent students from studying agriculture at one of our 1890s?

Secretary PERDUE. First of all, Ms. Adams, I am very disappointed to hear that report because it conflicts with what my people at NIFA have told me regarding that, particularly with the HBCUs regarding the student scholarships there. As I indicated in my earlier comments, it is my understanding that these are being disseminated, and I will specifically find out. If your facts are accurate, then I am extremely disappointed in the information I am being given about that. Our commitment in this move was that the services would not be inhibited, and that is my expectation in that way. We allowed some extensions in order to make sure that services were continued.

Ms. ADAMS. Okay, great. Well, I hope you do look into that. That is the information that I have. You do have a timeline already for dispersing the funding?

Secretary PERDUE. Yes, ma'am. We actually prioritize those HBCU scholarships, because they were new and we know that the students were looking forward to them. As I said, I will check on that and if your facts are accurate, then I am very disappointed in the information I have been given.

Ms. ADAMS. Okay. If you would get back to me, I would appreciate it.

The peer-review panels completed their reviews in January 2020. In February 2020, all the 1890 land-grant universities were notified of grant award recommendations and that pre-award costs can be incurred up to 90 days before the start date of the award. The awards were officially announced by the agency on 23 April 2020. NIFA has been in contact with the administration of the 1890s, providing the required guidance and orientation for successful program implementation.

During relocation, NIFA retained essential staff in Washington, D.C., associated with the 1890 programs, to assist with the implementation of the 1890 Scholarships Program and to help train the new staff that the agency was recruiting in Kansas City, MO.

In October 2020, NIFA will begin requesting progress reports from the 1890 land-grant universities and processing continuation awards using the mandatory funding for the program in FY 2021. NIFA expects the 1890s to receive notification regarding FY 2021 funding in Spring of 2021.

Insert 8

Ms. ADAMS. Okay. Well, I strongly supported the inclusion of the Office of Urban Agriculture and Innovative Production in the farm bill, pushed for the funding. One of the provisions in the bill provided \$10 million in mandatory money through the Commodity Credit Corporation. I would expect that with funding already available for use, that those grants would be implemented expeditiously, so I am glad that you are going to look into it.

Do you have any updates on the implementation of the competitive grants, and of the office itself?

Secretary PERDUE. Yes, ma'am. I can't give you the definitive definition. I remember our staff mentioning that to me about where we were on it, but I would rather, since I can't be sure about it, I would rather tell you in a response in a QFR over where we are on those competitive grants.

To institutionalize support for urban farming, the 2018 Farm Bill directed USDA to stand up a new Office of Urban Agriculture and Innovative Production. It is led by NRCS and works in partnership with numerous USDA agencies that support urban agriculture.

The office is in the process of setting up a Federal Advisory Committee for the Secretary of Agriculture, as well as 10 new Urban and Suburban FSA County Committees. It recently provided grants and cooperative agreements through a competitive process.

On August 12, the Farm Service Agency announced the first five Urban and Suburban FSA County Committee locations and requested nominees as part of the election process. The first five are located in: Richmond, VA; Philadelphia, PA; Cleveland, OH; Portland, OR; and Albuquerque, NM. The remaining five locations will be announced later this fall.

The new committees will be fully stood-up in Fiscal Year 2021. Members will be local urban/suburban farmers who will help ensure fair and equitable administration of FSA farm programs in their county or multi-county jurisdiction.

FSA began accepting nominations for urban county committee members on September 8. Urban farmers who participate or cooperate in an FSA program in the county selected may either be nominated or nominate themselves or others as a candidate. Organizations also may nominate candidates. All nomination forms must be postmarked or received in the local FSA office by October 2. Election ballots will be mailed to eligible voters beginning October 23.

On August 25, the office announced the first-ever recipients of Urban Agriculture and Innovative Production Competitive Grants and Cooperative Agreements for Community Compost and Food Waste Reduction. These grants and projects were highly competitive. We received approximately 600 applications across both categories.

Title: Grants for Urban Agriculture and Innovative Production (Planning Projects)

Announced Availability: \$1 million
 Date of Announcement: 5/6/2020
 Application Close Date: 7/6/2020
 Ceiling: \$500,000
 Floor: \$100,000
 Cost-Share: None
 Grant Announcement Date: 8/25/2020
 Amount Awarded: Approximately \$1.14 million
 Number of Awards: 3

Title: Grants for Urban Agriculture and Innovative Production (Implementation Projects)

Announced Availability: \$2 million
 Date of Announcement: 5/6/2020
 Application Close Date: 7/6/2020
 Ceiling: \$500,000
 Floor: \$100,000
 Cost-Share: None
 Grant Announcement Date: 8/25/2020
 Amount Awarded: Approximately \$1.88 million
 Number of Awards: 7

Title: Cooperative Agreements for Community Compost and Food Waste Reduction

Announced Availability: \$900,000
 Date of Announcement: 5/11/2020
 Application Close Date: 6/26/2020
 Ceiling: \$90,000
 Floor: \$45,000
 Cost-Share: 25% non-Federal
 Grant Announcement Date: 8/25/2020
 Amount Awarded: Approximately \$1.09
 Number of Awards: 13

Insert 9

Mr. CARBAJAL. Thank you, and looping back to my initial question on SNAP, is California listed on the waiver list that you mentioned earlier?

Secretary PERDUE. Let me see, there are several waivers in California. Yes, sir, there are 17 labor market areas waived in California.

Mr. CARBAJAL. Are any of those San Luis Obispo and Santa Barbara County?

Secretary PERDUE. I think so.

Mr. CARBAJAL. Is that a think so or a yes?

Secretary PERDUE. I can't say for sure. I believe that you are listed on part of the area. I don't know what those 17 areas are specifically, but we have 17 labor market areas in California that waivers are issued.

Mr. CARBAJAL. Great. If we could loop back later on, can I get that? That would be great.

Secretary PERDUE. We will get that for you.

On February 28, 2020, the Food and Nutrition Service (FNS) approved California's request to waive the time limit for able-bodied adults without dependents (ABAWDs) in 17 Labor Market Areas (LMAs), not including San Luis Obispo or

Santa Barbara County. This request was approved under the waiver standards set to begin April 1, 2020, under the final rule, *Supplemental Nutrition Assistance Program: Requirements for Able-Bodied Adults Without Dependents* (84 FR 66782) published December 5, 2019.

On March 13, 2020, the United States District Court for the District of Columbia issued a stay pending judicial review of the December 5, 2019, final rule's provisions related to waivers. This preliminary injunction prevented California's waiver (the one approved on February 28, 2020) from taking effect. Therefore, California reverted to operating under the waiver in place since September 1, 2019, which relied on the waiver criteria used before the December 5, 2019, rule was published. This waiver included both San Luis Obispo County and Santa Barbara County and expired August 31, 2020.

Next, FNS approved California's request for a statewide waiver of the time limit, effective July 1, 2020. The approval replaced the approval effective since September 1, 2019. This approval was also based on the previous waiver authority (published in the January 17, 2001, final rule, *Food Stamp Program: Personal Responsibility Provisions of the Personal Responsibility and Work Opportunity Reconciliation Act of 1996* (66 FR 4438) because it was approved while the preliminary injunction was in effect. This statewide waiver remains in place.

Please note, on October 18, 2020, the United States District Court for the District of Columbia vacated the final rule. This did not impact the waiver currently in place in California since that waiver was already approved under the 2001 standards and not the standards of the vacated rule.

SUBMITTED QUESTIONS

Response from Hon. Sonny Perdue, Secretary, U.S. Department of Agriculture

Questions Submitted by Hon. Collin C. Peterson, a Representative in Congress from Minnesota

Question 1. There are several ag commodities, like wool and sheepskins, that have been hit hard by retaliatory tariffs but were not part of the USDA's Market Facilitation Program. Since the implementation of these tariffs, we've seen an 85% drop in wool exports by value and an even worse picture for sheepskin exports. As we head into this year's shearing season, wool warehouses across the country already sitting on 1 year's production and will soon have two marketing seasons of backlog. Tools like the Wool Loan Deficiency Program aren't working, without wool sales there is nothing to report. What is USDA doing to help bridge this gap and protect sheep producers from market conditions like we're currently seeing?

Answer. Marketing Assistance Loans (MALs) are available for shorn wool and Loan Deficiency Payments (LDPs) are available for both shorn wool and wool pelts, and neither program requires the commodity to be sold in order to participate in the programs. In the crop year of 2020, there were over \$2 million in LDP payments made to wool producers across 36 States. This represents the highest levels of LDP payments since 2011 and a substantial increase relative to last year's payments of \$6,159.88.

U.S wool producers also expressed an interest in adding wool as an eligible commodity to the Farm Storage Facility Loan (FSFL) program as a means of low-cost financing for producers to store, handle, and transport wool. The addition of wool as an eligible commodity for the FSFL program has been approved and will benefit wool producers nationwide.

Question 2. African Swine Fever continues to be a major concern for the domestic pork industry. Most industry leaders estimate that China has lost at least half of their hogs, though that number could be much higher.

How is USDA coordinating with counterparts in Asia and Europe to better prevent and respond to this disease?

Answer. The United States is a member of the World Organization for Animal Health (OIE), a global body dedicated to improving animal health worldwide through communication, collaboration, and setting standards for the international trade in animals and animal products among its 182 member states. In concert with OIE, the U.S. participates in international forums focused on animal diseases, and African Swine Fever (ASF) in particular, to discuss strategies to limit their spread.

USDA's Animal and Plant Health Inspection Service (APHIS) officials work with foreign governments directly to learn more about the spread of agricultural diseases and effective methods to reduce their transmission. The Agency has assisted foreign governments in controlling these diseases within their own boundaries, which re-

duces the threat of introduction to the U.S. As one example, APHIS is coordinating activities with Vietnamese animal health officials to improve their response activities to domestic ASF outbreaks. This year the Agency, in collaboration with the National Pork Board, the University of Maine Cooperative Extension, the Virginia Department of Environmental Quality, and the Swine Health Information Center, began a project in Vietnam to track ASF virus survival in carcasses undergoing composting and study ASF virus survival in swine slurry under field conditions. APHIS has also spent considerable time negotiating with Japan about mutual acceptance of zoning for various swine diseases.

The U.S. also works closely with the European Union and its Member States to track the prevalence of ASF and to assess the continent's capacity to limit its spread. APHIS regularly monitors the E.U.'s ASF zones and their level of restrictions. In a 2019 project, U.S. officials reviewed the swine health status of 13 E.U. Member States that were deemed to be representative of the trade union. APHIS concluded that the Member States have sufficient animal health programs that allows them to quickly detect ASF in wild boar and domestic swine populations, enabling a swift emergency response, as we saw recently in Germany. We also determined that they have traceability systems capable of differentiating the origin of live swine from ASF affected areas, which allows them to ensure that animals and products from ASF affected areas are not exported to the U.S., which further protects U.S. animal health.

USDA and the Department of Homeland Security's Science and Technology Directorate are collaborating on vaccine research and enhancing diagnostic technologies for ASF. In addition, USDA's Agricultural Research Service and APHIS formed a task force at the Plum Island Animal Disease Center to improve diagnostics and vaccines, so that pork producers can better protect their animals in the future. APHIS is also developing additional strategies to enhance diagnostic capabilities and enhance testing efficiencies.

APHIS has also increased the number of National Animal Health Laboratory Network laboratories approved for ASF testing to 47, more than quadrupling U.S. laboratory capacity for this disease. In addition, by approving the pooling of samples, we have increased testing capacity for ASF to 200,000 animals in 24 hours.

Question 2a. How is USDA working with the Department of Homeland Security and other government agencies to prevent the introduction of ASF including through imported products?

Answer. The Department of Homeland Security's Customs and Border Protection (CBP) is an invaluable partner in preventing the introduction of invasive diseases, like ASF, into the United States. CBP, in coordination with APHIS, is tasked with inspecting travelers and cargo arriving into the United States and enforcing APHIS regulations at ports of entry. In response to concerns about the increased international reports of ASF, APHIS is working with CBP to ensure it focuses additional attention on passengers traveling from affected countries and enhances its inspections of cargo for illegal pork and pork products.

In addition to the use of risk-based assessments, USDA-trained detector dogs are an essential tool for rooting out contraband pork products. Detector dog teams search for prohibited agricultural products at major U.S. ports of entry (airports and land border crossings), as well as mail and cargo facilities. APHIS is working with CBP to increase the number of beagle teams from 119 to 184, ensuring travelers who may be carrying agricultural products receive secondary inspection.

APHIS also works closely with state animal health officials to encourage farms to follow strict on-farm biosecurity protocols and best practices, and coordinates with states on response plans should a detection ever occur in the U.S. Along with long-term ASF planning, APHIS works with state and Federal partners to identify and investigate incidents involving sick or dead feral swine to determine if they should be tested for ASF or other foreign animal diseases.

Question 2b. What impacts do you expect this outbreak to continue to have on China's demand for soybeans as well as other animal proteins?

Answer. The impact of African swine fever (ASF) has driven China's demand for imported meat to record highs this year. USDA forecasts that China's pork, beef and chicken meat imports will all reach records in 2020 due to a more than 20 year low in pork production in China. U.S. pork exports to China have more than tripled this year while exports of U.S. beef and chicken meat have also made strong gains. China continues to rebuild its herd from ASF, and this is now driving a strong recovery in feed demand. USDA forecasts that China's soybean imports from the U.S. will rise 19 percent in marketing year 2019/20 and make further gains next year in large part due to anticipated rebuilding of the swine herd. China has also restricted imports of pork from Germany following its first confirmed case of ASF.

Germany is the number three supplier of China's pork imports this year after Spain and the United States. This action will likely result in increased pork exports from other major suppliers, including the United States. In 2020, the United States successfully opened new markets in China for U.S. producers of Timothy hay, alfalfa hay pellets and cubes, and barley, all of which are used in animal feed.

Question 2c. How are you working with partners in Canada and Mexico on a North American ASF prevention strategy?

Answer. The U.S., Canada, and Mexico work collaboratively and share technical information in an open and transparent manner that supports the timely detection and control of swine diseases including ASF in North America. In August 2019, the Chief Veterinary Officer (CVO) for the United States, along with the CVOs for Canada and Mexico, dedicated a special session of the 18th North American Animal Health Committee Meeting to discussing ASF, the actions we are taking to prevent its spread to North America, and how to minimize the impact of this disease should it be introduced into the region.

In addition to discussing ASF strategies at this meeting, the three countries established a Swine Health Working Group to address diseases of concern in North America, including ASF. This working group consists of government and private industry representatives and meets regularly.

As USDA continues its productive transnational dialog[ue], we will explore all viable opportunities to keep North America ASF-free.

Question 3. Chronic Wasting Disease threatens farmed and wild deer alike. How is USDA working with your counterparts at the Department of the Interior and other Federal agencies to get at a comprehensive plan to address this disease?

Answer. The Fiscal Year 2020 agriculture appropriations bill gave APHIS an additional \$5 million to coordinate chronic wasting disease (CWD) activities among state and Federal partners to address the disease. In May, APHIS and the Department of the Interior hosted a summit with key stakeholders, state departments of agriculture and natural resources, and Native American Tribal representatives to determine a set of coordinated priorities to help determine funding priorities. The summit focused on identifying CWD management priorities and knowledge gaps, as well as possible methods to implement prevention and control strategies, how to evaluate their efficacy, and the development of tools needed to do so. The agreed priorities were:

- A. improving CWD management of affected farmed herds and free ranging endemic populations
- B. improving CWD management of affected areas or premises
- [C]. conducting additional research on amplification assays
- [D]. conducting additional research on predictive genetics
- [E]. developing and/or delivering educational outreach materials or programs

In July, APHIS announced the availability of funding for projects aligned with the priorities from this summit. APHIS solicited project proposals from states and tribal nations and evaluated them based upon these coordinated priorities. The proposals were reviewed by subject matter experts from APHIS, Agricultural Research Service, and U.S. Forest Service, as well as from agencies in the Department of the Interior. APHIS is in the process of awarding these cooperative agreements. The projects selected will build upon the connections USDA has with state and Federal partners as we work toward our shared goal of reducing the CWD's impact and spread.

APHIS also participates in the Department of the Interior Task Force on CWD to discuss the status of current CWD projects, as well as further ways the two departments can collaborate on CWD control and research.

Question 4. How is USDA incorporating the China Agreement commitments into its commodity forecast reports?

Answer. Since February, publicly available information and data pertaining to the China Agreement has been reflected in USDA's World Agricultural Supply and Demand Estimates (WASDE) and related reports such as the Outlook for U.S. Agricultural Trade. USDA's trade forecasts continue to incorporate actual export sales and market conditions, and as part of a broader estimation of supply and demand for major commodities, these forecasts also reflect analysis of a wide range of economic and market variables in the United States in other countries. More details on how the China Agreement is incorporated into USDA's trade forecasts may be found in the 2020 U.S.-China Trade Agreement report: <https://www.usda.gov/sites/default/files/documents/usda-trade-forecasts-us-china-agreement.pdf>. [See Attachment 2].

Question 5. The issue of establishing separate enterprise units for crops under the Federal Crop Insurance Program has emerged in several regions of the country. In North Dakota and Montana, producers have single enterprise units covering both Spring Wheat and Durum. Yet, those are two different crops with different loss ratios and growing histories. Combining them into one enterprise unit adversely affects the production history of one crop over another, which in turn lowers a producer's insurance guarantee and any indemnity that may occur. What is the status of RMA's efforts to review and set in motion the development of separate enterprise units for Spring Wheat and Durum?

Answer. RMA is planning to implement changes to allow separate enterprise units for Spring and Durum wheat. RMA plans to have this change implemented as early as the 2022 crop year.

Questions Submitted by Hon. David Scott, a Representative in Congress from Georgia

1890s

Question 1. Secretary Perdue, as you know 1890s Land-Grant Universities and Colleges produce some of the most qualified leaders and workers within the agriculture industry. These individuals not only diversify the workforce but also graduate leaders within science, technology, engineering, agriculture, and mathematic related fields. I myself am a graduate of Florida A&M University and recognize the economic importance of these institutions. However, several actions from the U.S. Department of Agriculture (USDA) have slowed the much-needed collaboration between USDA and the 1890s institutions.

Without Congressional approval, USDA continued efforts to relocate essential USDA offices including the Economic Research Service (ERS) and the National Institute of Food and Agriculture (NIFA) to Kansas City, Missouri. This relocation would remove essential offices from the nation's capitol that helps inform key policy decisions related to the 1890s. In fact, key NIFA and ERS employees have left their role at USDA, drastically slowing down assistance to 1890s in receiving grant awards or impactful assistance in the management of Federal grant programs.

What are your plans to ensure NIFA and ERS are providing grant funds and other essential services to 1890s Land-Grant Universities and Colleges given your plans to relocate ERS and NIFA to Kansas City? Has USDA replaced the individuals who left their roles in NIFA and ERS?

Answer. ERS produces and disseminates objective policy-relevant research, market outlook official statistics and data on agriculture, food, natural resources, and rural America. This work is accomplished through internal economists and research economists and also includes collaboration with stakeholders, including the 1890 land-grant universities. Since relocation to Kansas City in September 2019, the agency's essential work continues. The move allows the Agency the ability to identify new opportunities to engage with regional and national 1890 institutions.

When NIFA relocated to Kansas City in September 2019, the agency retained essential staff associated with the 1890 programs to assist with providing grant funds and other essential services to the 1890 Land-Grant Universities and Colleges. The retained 1890 program staff were able to launch two new Farm Bill programs, i.e., Scholarships for Students at 1890 Institutions and the Centers of Excellence at 1890 Institutions; meet with visitors and/or provide services to the Universities; and help recruit and train new staff with experience and/or knowledge of the 1890s. NIFA has recruited new staff and assembled an 1890 program team in Kansas City with knowledge of and experience to serve the 1890 land-grant universities. NIFA is committed to continue to inform key policy decisions and provide excellence in customer service to the 1890 community.

As of the end of August, NIFA has hired 124 new employees in Kansas City and plans to bring new employees on board every pay period. The Agency currently has 82 total recruitments in process including those in the pre-announcement phase, post-announcement phase and posted on [USAJobs.gov](https://www.usajobs.gov).

Question 2. Secretary Perdue, as you know, under the Obama Administration, a memorandum of understanding (MOU) was signed by USDA Secretary Thomas J. Vilsack, and the previous Chairman of the Council of 1890s Universities, Dr. Juliette B. Bell. This MOU was signed in May 2015 and is set to expire in May 2020. The MOU set parameters for continued collaboration and coordination between the 1890s institutions and USDA so that these institutions, and the students they serve, can thrive. However, collaborative efforts between USDA and the 1890s have been minimal. In fact, one of the first convenings between USDA and the 1890s was during my commemorative event, in June 2019, celebrating the passage of the 1890s Agriculture Scholarship Program passed into law via the Agriculture Improvement

Act of 2018 (P.L. 115–334). In this meeting, the 1890s Council asked for continued collaboration between USDA and the institutions.

Given that the MOU signed by the Obama Administration is set to expire in a few months, what are your plans to meet with the 1890s Council?

Question 2a. Are there any efforts to update the MOU before it is set to expire? In these plans, are there plans to expand 1890s collaboration beyond NIFA? What are your efforts to create and sign a new MOU to continue and advance collaboration between 1890s institutions and USDA? To what extent have you reached out to the 1890s council to update and modernize the MOU?

Answer 2–2a. USDA-National Institute of Food and Agriculture (NIFA) collaborates with the 1890 Universities to administer six base programs with approximately \$190 Million in funding. These programs support internships, training, faculty exchange opportunities, mentoring, investments in facilities and equipment and other collaborative mission relevant activities. NIFA held several outreach activities to seek and utilize input from 1890s to develop the new 1890s Agriculture Scholarship Program and the 1890 Centers of Excellence Program. In addition, NIFA organized a listening session in June for the 1890s to provide feedback on collaboration with NIFA; and meets regularly with the 1890 Association of Research Directors and the 1890 Association of Extension Administrators. We also met with the 1890 Presidents at the November 2019 Association of Public and Land Grant Universities, and have for at least the last two years.

On December 19, 2019, Secretary Sonny Perdue announced the reestablishment of the United States Department of Agriculture (USDA)—1890 Task Force partnership with the 1890 Council of Presidents. The Task Force serves as a principal working group for the Secretary and his or her designees to explore mutual beneficial and short and long term goals. On March 11, 2020, the 1890 Task Force Committee Members participated in a joint meeting with other minority serving institutions and USDA, discussing the needs, issues and assets of the 1890 Institutions, the communities they serve and USDA programs and opportunities available to assist. USDA is committed to ensuring equitable partnerships and opportunities to maximize outcomes for the 1890 Institutions and the communities they serve. The next meeting was tentatively scheduled for October. The Office of Partnerships and Public Engagement (OPPE) has been in constant communication with the 1890 Task Force Leadership. Due to strain of COVID-19 on 1890 Institutions of Higher Learning, as well as the Nation, the 1890 Task Force Leadership and OPPE agreed to reschedule the meeting at a later date. The date is to be determined, in collaboration with the 1890 Task Force Leadership.

Rural Broadband

Question 3. According to the Georgia Broadband initiative, in 2014, almost 1.6 million Georgians lacked access to broadband. While the state of Georgia has made great strides at the state level, under-served and rural communities still lack significant access to broadband services. I applaud your commitment to awarding up to \$550 million to expand broadband infrastructure and services in rural America via the ReConnect program offered through USDA's Rural Utilities Services (RUS). It is essential that we provide these funds to the communities who need it the most and avoid duplicative efforts.

Are you aware of any additional steps that RUS can take, such as coordinating more closely with other Federal agencies, like the Federal Communications Commission, that track broadband availability and also award broadband funding to avoid duplicative spending or overbuilding in places that already have broadband?

Answer. The Agency uses all available information, along with our own independent assessment, to ensure our funding goes to the most rural unserved communities. We use the information submitted by applicants and existing service providers along with any other available resources, such as state maps of broadband service and information from the FCC and NTIA to independently validate whether broadband service is available at the household level. This validation often involves the Agency putting “boots on the ground,” sending staff or contractors out to assess the facilities in the area and talk with local residents, government agencies, and businesses to help confirm whether sufficient access to broadband service is available.

Many states are also engaged with mapping of broadband access in their state, and we are working closely with those states to incorporate their information into our validation process. Similarly, we are working with the Department of Commerce to integrate the National Broadband Map that they have developed and continue to refine into our overall review process. We are also working with our partners at the FCC to provide updates on where our program dollars are going to avoid duplicative spending and overbuilding.

EQIP

Question 6. It is estimated that by 2050, the global demand for food will be 60 percent higher than it is today. To meet this daunting challenge, it is essential that growers have access to technologies that will help growers produce more with less, while preserving water and other natural resources. Our farm conservation programs are intended to help growers access these technologies.

Cloud-based remote telemetry data systems for irrigation scheduling help growers maximize efficiency and increase productivity in a scalable and cost-effective manner. For example, in field trials Omaha-based Lindsay Corporation found that remote telemetry with cloud-based irrigation scheduling allowed growers to realize:

- A 3% increase in corn *yield* (driving profit of \$25 per acre);
- A 17% reduction in *water usage* (saving more than 9.25 million gallons on a 130 acre field);
- A \$10/acre reduction in *energy costs*; and
- A 75% reduction in *time* spent going back and forth to the fields (another \$5/acre saved).

The 2018 Farm Bill states that USDA may provide EQIP payments for water conservation scheduling. The accompanying report goes on to state that USDA should recognize remote telemetry data systems for irrigation scheduling as a best management practice. I sincerely hope that NRCS' irrigation efficiency conservation practice standard is updated to incorporate this important water and energy saving tool.

What is NRCS' timeframe for updating its conservation practice standards?

Answer. On August 19, 2020 NRCS Conservation Practice Standard (CPS) Irrigation Water Management (Code 449) was updated to include the use of remote telemetry data systems with cloud-based irrigation scheduling capabilities as a best management practice.

Question 6a. How does NRCS plan to educate states and growers about changes to its conservation practice standards and about the benefits of technology such as cloud-based remote telemetry data systems for irrigation scheduling?

Answer. NRCS State offices have received notification on the update of our national standards and will be incorporating those changes into state level standards. NRCS provides training to field staff on standards updates as a normal operating procedure and is determined by typical field office workload needs. NRCS publishes standard updates on a national webpage and distributes press releases providing public notice of standard revisions. Field staff provide information to producers that they work with on available conservation practices to address resource concerns.

Question 6b. Is NRCS working to incorporate water conservation scheduling payments for technology such as cloud-based irrigation scheduling tools into its EQIP regulations?

Answer. NRCS currently offers financial assistance for the implementation and utilization of cloud-based irrigation scheduling tools as well as other technologies through the Environmental Quality Incentives Program (EQIP), Conservation Stewardship Program (CSP), and Agricultural Management Assistance (AMA) Farm Bill conservation programs.

Questions Submitted by Hon. Jim Costa, a Representative in Congress from California

Question 1. How are you evaluating the success of the trade assistance packages? What kind of analysis is being conducted to estimate the impacts of these programs in the short and long runs?

Answer. The most recent ERS farm income release from September 2020, lets us examine the effect of the Market Facilitation Programs on the farm sector, particularly, the impact on income and liquidity. Payments from the Market Facilitation Programs totaled \$5.1 billion in 2018, \$14.2 billion in 2019, and \$3.8 billion in 2020. Net farm income is estimated at \$83.7 billion for 2019. Without MFP, net farm income in 2019 would have been 17 percent lower. Looking at liquidity, producers' debt repayment capacity—(Interest Expenses)/(Net Farm Income + Interest Expenses)—was 19 percent in 2019, in the absence of MFP debt repayment capacity would have been 22 percent. Improving liquidity in one year can have an impact on solvency risk in future years.

Farmers' exposure to debt is not forecasted to increase dramatically for 2020, in part due to Federal commodity support, including MFP. The agricultural sector's risk of insolvency, as measured by the debt-to-equity ratio, is forecasted for 2020 to be at its highest level since 2002, at 16.2 percent. However, this rate is low by historic standards, and the likelihood of loan default across the ag sector remains historically low. The debt service ratio—a measure of the producer's share of produc-

tion used to cover current debt obligations, is projected to decrease in 2020, a consecutive decrease from the previous year, but the ratio is still close to the 10 year average.

Data on bank sector performance is lagging but is currently available to the end of quarter 1, 2020. According to the latest financial data from the Kansas City Fed, repayment rates for non-real estate farm loans in the first quarter of 2020 were largely unchanged over the previous quarter. The share of delinquent non-real estate farm loans at commercial banks at the end of Q1 2020 increased 15 percent over the previous quarter, to 1.68 percent. Delinquency rates at commercial banks have been increasing steadily since 2016 and the Q1 rate was the highest since Q2 of 2011. For agricultural banks, the rate of non-performance on loans—nonaccruing loans or loans past due by 90 days or more—generally held steady at the end of Q1 2020 relative to the previous quarter, but the share of such banks holding 2–5 percent of their loans as outstanding increased 22 percent in Q1 of 2020 relative to the previous quarter.

Question 2. It was reported that USDA was planning to detail some FAS staff to USTR for the purpose of helping review tariff exclusion requests. Did that occur and how did USDA compensate for the lost staff while trying to continue to promote U.S. ag products elsewhere?

Answer. To support the Administration’s initiative of creating a fair and equitable trading environment for Americans, USDA detailed three staff for roughly four months to USTR. These individuals assisted in reviewing tariff exclusion requests. Due to the short tenure of the detail, USDA was able to effectively manage workstreams by adjusting workflows, thereby ensuring that our mission of expanding U.S. agricultural exports was achieved.

Question 3. Given the need to implement the Market Facilitation Program, what field staff has USDA added to ensure this program didn’t exasperate existing workload challenges or delay other FSA work?

Answer. FSA utilized temporary employees to assist with program delivery of MFP and other standing programs.

Question 4. You announced that the initial 2018 round of trade assistance would provide up to \$12 billion in support. How much money actually went out the door in that first round? The second version of trade in 2019 was supposed to provide up to \$16 billion in support. To date, how much of that amount has actually gone out the door?

Answer. The 2018 MFP payments administered by FSA as of March 5, 2020, were \$8,638,965,831.00 and the 2019 MFP payments were \$14,368,831,387.51. As of September 25, 2020, the 2018 MFP payments were \$8,649,570,031.00 and the 2019 MFP payments were \$14,501,532,316.26.

As part of the short-term trade mitigation package announced by USDA on August 27, 2018, the Foreign Agricultural Service (FAS) was given responsibility for administering the Agricultural Trade Promotion Program (ATP), one of three new USDA programs created to provide assistance to U.S. farmers in response to trade damage from unjustified retaliation by foreign nations. In the initial 2018 round of trade assistance, the ATP was provided with \$200 million in funding. FAS allocated the entire \$200 million to ATP program participants on January 24, 2019. In the second version of trade assistance in 2019, the ATP was provided with an additional \$100 million in program funding. FAS allocated the entire \$100 million in additional ATP funding to program participants on July 18, 2019.

Question 5. What is the total amount of purchases that have been made through the Food Purchase and Distribution Program? How much more is planned? How are you working with recipient organizations to matches purchases with need while still having some impact with respect to trade damages?

Answer. Food Purchase and Distribution Program/Trade Mitigation. During the past two fiscal years of USDA’s trade mitigation purchase efforts, over \$2.3 billion in agricultural products has been purchased and distributed to food banks nationwide. An analysis by the Office of the Chief Economists provided the list of commodity groups and target amounts to be purchased. As with any USDA commodity purchased for The Emergency Food Assistance Program (TEFAP), food bank operators have the ability to order as much of a particular commodity as is available. During the design process for the trade mitigation program, staff from the Agricultural Marketing Service and Food and Nutrition Service collaborated to ensure product form and packaging met the needs of food bank recipients. Trade mitigation purchases were complete as of the end of FY20 with deliveries extending to calendar year 2021.

Question 6. Would you please outline how you see the National Agro and Bio-defense Facility working with but not duplicating USDA’s existing animal disease

prevention functions? How are the missions distinct and how do we make sure one effort doesn't cannibalize resources from the others?

Answer. NBAF will ultimately replace the existing Plum Island Animal Disease Center (PIADC) and all its essential functions. Furthermore, once NBAF becomes fully operational, it will provide several "firsts" for the U.S., including a maximum containment large animal Biosafety Level (BSL) 4 facility to study particularly dangerous zoonotic agents in large animals, and a Biologics Development Module (BDM) to enhance and expedite the transition from research to commercially viable countermeasures. This will place NBAF at the nexus of the biodefense and agro-defense domains and establish NBAF as a global leader among biocontainment laboratories.

ARS is responsible for research at NBAF. Part of the ARS mission is to provide APHIS with the scientific information and tools needed to prevent and control a foreign animal disease outbreak in livestock. NBAF will not duplicate the existing USDA animal disease prevention functions but rather function as a critical component of our biodefense infrastructure, consistent with the President's National Biodefense Strategy.

The research mission at NBAF will complement other ARS laboratories with a biodefense mission. For example, while NBAF focuses on foreign animal diseases of livestock, the National Poultry Research Center in Athens, Georgia, specializes on foreign animal diseases of poultry, such as highly pathogenic avian influenza and virulent Newcastle Disease. While NBAF will be able to research foreign animal diseases in small wildlife animal hosts such as bats, the National Animal Disease Center in Ames, Iowa, has unique high containment facilities that enables research on large wildlife animal species such as bison and elk, and focuses on primarily domestic diseases. Importantly, NBAF will fill important gaps in our existing biodefense research program and allow USDA for the first time to conduct research on especially dangerous biosafety level (BSL)-4 agents such as Nipah virus and Crimean-Congo Hemorrhagic Fever.

Question 7. Food for Progress has two principal objectives: to improve agricultural productivity and to expand trade of agricultural products. Why do you propose to eliminate this program in the recent budget request given the current need to open new markets?

Answer. The President's FY 2021 Budget proposes to eliminate the Food for Progress (FFPr) program because development expertise is concentrated in other agencies, most notably the U.S. Agency for International Development (USAID), which can administer development programs at a much lower cost than FFPr. The FFPr program provides for the donation of U.S. commodities to developing countries. U.S. agricultural commodities donated to recipient countries are sold in the local or third-country markets generally at a significant loss to U.S. taxpayers and the cash proceeds of those sales are used to fund programs that aim to improve agricultural productivity in the recipient country. International development programs are also better aligned with the USAID mission and expertise. The USAID mission highlights international development and humanitarian responses while the USDA mission highlights domestic agricultural production. In line with its mission, USAID seeks to use food aid to address humanitarian objectives.

Question 8. Recently, USDA announced a recommitment to reducing food waste by 50% in line with the United Nations Sustainable Development goals.

How did you establish the baseline we are using to measure progress?

Answer. To measure and describe progress against the goal, the following two different, but equally important, baselines were chosen for the 2030 Food Loss and Waste (FLW) reduction goal:

- i. For food waste in the United States, EPA's "*Advancing Sustainable Materials Management: Facts and Figures*" (<https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/advancing-sustainable-materials-management-0> [See Attachment 3]) provides an estimate of the amount of food going to landfills and combustion with energy recovery from residences, commercial establishments (e.g., grocery stores and restaurants), and institutional sources (e.g., school cafeterias). Pre-consumer food generated during the manufacturing and packaging of food products is not included in EPA's food waste estimates. Using the available data, 2010 was selected as a baseline at 218.9 pounds of food waste per person sent to landfills and combustion with energy recovery. The 2030 FLW reduction goal aims to reduce food waste going to landfills and combustion with energy recovery by 50 percent to 109.4 pounds per person.
- ii. For food loss in the United States, *USDA's Economic Research Service* (<https://www.ers.usda.gov/publications/pub-details/?pubid=43836> [See At-

tachment 4) has estimated the amount of available food supply that went uneaten at the retail and consumer levels. In the baseline year of 2010, food loss was 31 percent of the food supply, equaling 133 billion pounds and an estimated value of \$161.6 billion. The 2030 FLW reduction goal aims to cut food loss at the retail and consumer level in half, by approximately 66 billion pounds.

- iii. Neither estimate provides a comprehensive evaluation of food loss and waste in the United States. However, reductions in both these estimates will provide evidence of progress in reducing food loss and waste and the serious environmental impacts associated with landfilling food. A variety of other data collection efforts across the country will help provide information on other segments of the supply chain.

Question 8a. How do you intend to accomplish this goal? Will a more detailed plan for achieving this goal be discussed with stakeholders and/or published by the department? If yes, when?

Answer. The goal will be accomplished by a multifaceted approach, as reflected in the *Winning on Reducing Food Waste Initiative* (<https://www.usda.gov/foodlossandwaste/winning> [See *Attachment 5*]) (the Initiative), a collaborative effort announced in a joint agency formal agreement signed in October 2018 by USDA, EPA, and FDA. Through the Initiative, the agencies affirm their shared commitment to reduce food loss and waste. They also agree to coordinate action to leverage government resources to reduce food loss and waste, including action to educate Americans on the impacts and importance of reducing food loss and waste. To achieve the vision for the Initiative, the agencies developed an *Interagency strategy* (<https://www.usda.gov/sites/default/files/documents/interagency-strategy-on-reducing-food-waste.pdf> [See *Attachment 6*]) to prioritize and coordinate their efforts with six priority actions areas to reduce food waste:

- iv. **Priority Area 1:** Enhance Interagency Coordination
- v. **Priority Area 2:** Increase Consumer Education and Outreach Efforts
- vi. **Priority Area 3:** Improve Coordination and Guidance on Food Loss and Waste Measurement
- vii. **Priority Area 4:** Clarify and Communicate Information on Food Safety, Food Date Labels, and Food Donations
- viii. **Priority Area 5:** Collaborate with Private Industry to Reduce Food Loss and Waste Across the Supply Chain
- ix. **Priority Area 6:** Encourage Food Waste Reduction by Federal Agencies in their Respective Facilities

In developing that strategy, the agencies built on information from several sources, including, but not limited to:

- x. (1) Managing for Results: Key Considerations for Implementing Interagency Collaborative Mechanisms (U.S. Government Accountability Office),
- xi. (2) A Call to Action by Stakeholders: United States Food Loss and Waste Reduction Goal developed by EPA in consultation with USDA,
- xii. (3) A Roadmap to Reduce U.S. Food Waste (Rethink Food Waste through Economics and Data (ReFED)), and
- xiii. (4) Don't Waste, Donate: Enhancing Food Donations through Federal Policy (Harvard Food Law and Policy Clinic and Natural Resources Defense Council).

Activities in these six priority action areas will help reach the 2030 goal. In addition to the interagency collaborative effort, USDA, EPA and FDA each are spearheading their own activities to reduce food loss and waste. In February 2020, for example, USDA Secretary Perdue announced the *Agricultural Innovation Agenda* (<https://www.usda.gov/sites/default/files/documents/agriculture-innovation-agenda-vision-statement.pdf> [See *Attachment 7*]) (AIA), a department-wide effort to better align USDA's resources, programs, and research to provide farmers with the tools they need to be successful. The mission is to increase U.S. agricultural productivity to help meet future demand, while cutting the environmental footprint of U.S. agriculture in half, with specific goals on water quality, carbon sequestration, renewable energy, and reduction of food waste by 2050. The draft AIA report under development includes recommendations to further improve U.S. food loss and waste metrics. In March 2020, USDA hired a USDA Food Loss and Waste Liaison who is actively interacting with stakeholders and collaborating with Federal partners to reduce food waste.

Question 8b. Do you expect to promulgate any new regulations or issue any formal guidance related to food waste reduction?

Answer. There is no plan for new food waste regulation. Confusion over the meaning of dates applied to food products can result in consumers discarding wholesome food. Therefore, in April 2019, USDA issued a new fact sheet on *date labeling* (<https://www.fsis.usda.gov/wps/portal/fsis/topics/food-safety-education/get-answers/food-safety-fact-sheets/food-labeling/food-product-dating/food-product-dating>) [See *Attachment 8*] on food packages, which includes relevant labeling information and a recommendation encouraging food manufacturers and retailers that apply product dating to use the “Best if Used By” phrase to convey quality dates.

In addition, USDA posted FAQs on the Bill Emerson Good Samaritan Food Donation Act and is actively engaged in outreach to consumers and manufacturers to increase food donations.

Question 8c. The 2018 Farm Bill established a new Food Loss and Waste Reduction Liaison to coordinate the Department’s work on this subject. If reducing food waste is a priority for this Administration, why did the President’s budget request include no funds for this position?

Answer. USDA developed its budget request in coordination with the Office of Management and Budget. Reducing food waste is a priority for the Administration and we have looked for ways to balance that work and forward that agenda while operating within our means. Congress appropriated \$400,000 in the FY 2020 appropriations for this purpose and we have established a fulltime Food Loss and Waste Reduction Liaison for FY 2020. We will continue to work through our budget process to do our best to support the multiple unfunded requests by Congress in the 2018 Farm Bill while balancing our resources to successfully meet our funded obligations.

Submitted Question by Hon. Filemon Vela, a Representative in Congress from Texas

Question. With so many rural communities still on the wrong side of the digital divide, it is important that broadband programs focus on unserved areas. I understand that the RUS ReConnect program uses a “challenge process” to get input on which areas are served to avoid spending funds on places that already have broadband. But, it has come to my attention that RUS doesn’t release information about how challenges were resolved. Do you think that requiring RUS to make public how it resolved each challenge prior to awarding funding would improve program transparency?

Answer. Because of the restriction in Section 701 of the RE Act, RUS cannot publicly release information submitted by existing service providers under a Public Notice Response (PNR). Notwithstanding that restriction, however, RUS has been responding directly to PNR submitters as to whether or not the information they submitted against a ReConnect application was accepted or not, with detailed reasons for its decision in the response.

Submitted Question by Hon. T.J. Cox, a Representative in Congress from California

Question. In the 21st Congressional District of California we produce a substantial portion of the nation’s pulses, such as garbanzo and black-eyed peas. Pulses are an amazingly healthy superfood and by increasing consumption of pulses our nation has the opportunity to improve health and to reduce the future costs of public healthcare. The American Pulse Association has \$25 million (per year) authorized in the 2018 Farm Bill by means of the Pulse Crop Health Initiative (PCHI), which should be fully appropriated. The funds are for research into the health and nutritional aspects of pulses and the funding will go directly to ARS. In terms of return on investment this may well be our greatest opportunity to improve the eating habits of Americans. Given the proceeding, would there be any reason why the USDA would not find it useful to fund the PCHI (Pulse Crop Health Initiative) at \$25 million per year? The pulse crop is a great story for America, and it needs to be fully supported.

Answer. Pulses are a group of crops important to American agriculture, and increased dietary consumption of pulses could result in health benefits and substantial savings related to health care in the U.S. The Agriculture Research Service has many resources such breeding and processing expertise and the ability to conduct human feeding studies that can be leveraged in a collaborative approach. The current funding of the PCHI is supporting small clinical trials. Additional funding could allow for more robust trials that could provide information regarding pulse consumption.

Submitted Questions by Hon. Angie Craig, a Representative in Congress from Minnesota

Question 1. I appreciate the recognition in USDA's recent climate announcement that biofuels can play a significant role in reducing our greenhouse gas emissions. I recently led a letter to the House Select Committee on the Climate Crisis urging them to include biofuels in their upcoming recommendations. I encourage you to continue to push your colleagues in the Administration to administer the RFS according to Congressional intent—this will lead to greater carbon emission reductions. However, EPA's continued abuse on granting Small Refinery Exemptions makes it more difficult to reach these carbon reduction goals. Do you expect this Administration to cut back on the number of Small Refinery Exemptions they've been granting over the past few years?

Answer. We agree that the use of renewable fuels have significant benefits in reducing greenhouse gases. USDA continues to work closely with EPA to ensure that the statutory provisions of EISA are reflected in the annual RFS regulations. The proposed rule for the 2021 Renewable Volumetric Obligations is currently under review. Additionally, we note the 10th Circuit's decision on Small Refinery Exemptions, and assure you that USDA is closely monitoring the application process for small refinery exemptions.

Question 2. Is there an opportunity to extend ARC/PLC election to June 30th as was done in 2019? Are there any opportunities to extend general enrollment for CRP?

Answer. We actively monitor program sign ups across the country and would utilize registers and potential extensions of deadlines to best serve the needs of our customers.

Question 3. The President's budget included cuts to crop insurance. How can we look at cutting the subsidy to crop insurance there by increasing the cost of insurance to farmers at a time of financial stress in agriculture?

Answer. The President's Budget strikes a proper balance of providing a strong risk management tool for farmers and ranchers in the form of crop insurance while also protecting taxpayer interest.

Question 4. Many dairy farmers have expressed concern about the USDA's month cost of production figures. Do you feel this is an acceptable price for dairy farmers?

Answer. The U.S. dairy industry actively trades dairy products in the world market and the dairy prices in the United States are a function of world supply and demand of dairy products. USDA supports the dairy industry with risk management programs like DMC, DRP, and other programs and will continue to do so. In implementing the DMC program, USDA adjusted the feed equation to better reflect the price of premium alfalfa hay for dairy producers.

Question 5. Farmers have begun to express concern about data collection by privately owned companies. What is the Agency doing in partnership with other Federal agencies to protect farmer privacy from bad actors?

Answer. FSA only provides information that would be released in a FOIA request. If the privately owned company/entity has an MOU/MOA with the agency and are deemed a cooperator by the agency, they would be bound by the Privacy Act System of Record Notice and Section 1619 of the 2008 Farm Bill.

Question 6. Minnesota farm families often have one spouse who works off farm to bring home healthcare coverage. What is USDA doing through its new Rural Development leadership to increase access to rural healthcare?

Answer. Access to health care is vital to rural America and is a critical component for a prosperous and vibrant rural economy. Rural Development can help ensure access to quality health care facilities and services by providing loans and grants through its Community Facilities, Distance Learning and Telemedicine, and Business and Industry programs.

Last year, the Community Facilities programs invested more than \$365 million in 80 rural health care facilities and improved health care access for over 1.4 million rural residents. These investments included critical access hospitals, rural health clinics, assisted and skilled living facilities, mental and behavior health, memory care, and vocational and medical rehabilitation facilities.

USDA has hired a Rural Health Liaison, a provision included in the 2018 Farm Bill, to help promote awareness about and availability of USDA resources to support healthy and drug free communities. Rural Development is also partnering with other Federal agencies to ensure that we connect rural communities to resources that enable better provision of rural health care services.

Question 7. Farmers aren't the only ones feeling the pain of the farm economic downturn. What is your agency doing to protect the Main Streets that are suffering as a record number of farms file for bankruptcy?

Answer. FSA continues to provide income support, risk management, credit, and disaster assistance programs to support farmers and ranchers throughout the country.

Question 8. How will we hold China accountable for their commitments in the Phase One of the China deal?

Answer. Agricultural commitments for both specific reforms of non-tariff measures and purchase commitments are fully enforceable under the agreement. The Administration has used the consultation mechanisms in the agreement and other bilateral engagement to press for full implementation. This helps explain the strong compliance record on non-tariff measures, including key outcomes like lifting the ban on U.S. poultry, lifting the ban on hormone treated beef, lifting the ban on beef from animals over thirty months of age, lifting the ban on poultry and bovine ingredients in pet food, lifting the ban on many fruits and vegetables (including potatoes, blueberries, Hass avocados, nectarines, barley, and hay) and registering dairy, formula, fish, meat, poultry, feed, pet food and other products and facilities to export to China. Engagement with China has also helped spur Chinese buyers to sign significant contracts for bulk commodities in the last several months, including soybeans and corn.

Submitted Questions by Hon. Anthony Brindisi, a Representative in Congress from New York

Question 1. I appreciate your efforts to quickly implement the Dairy Margin Coverage program last year. Dairy farmers in my district and around the country continue to face market challenges and it's important that they have a workable safety net. Section 1401 of the farm bill required you to submit a report to this Committee evaluating the extent to which the feed cost formula used in Dairy Margin Coverage is representative of actual national average costs. This report was due 60 days after enactment of the farm bill but we haven't received it yet. It's important that the national estimate we are using for DMC is as accurate as it can be. When do you expect to submit this report to the Committee?

Answer. The DMC report required by Section 1401 of the Farm Bill was submitted to the Chairman and Ranking Member on Agriculture, Forestry, and Nutrition of the U.S. Senate, as well as the Chairman and Ranking Member of the House Committee on Agriculture on July 6, 2020 by Secretary Perdue (See *Attachment 9*).

Question 2. Thank you for meeting with me and other Members recently regarding the needs of hardwood producers. As we have discussed, hardwood lumber producers like Gutches Lumber in my district, have not been able to access market facilitation payments that other commodities received. Of all the agriculture commodities that are exported to China every year, U.S. hardwood lumber is second only to soybeans by value. And yet hardwood producers were not part of USDA's relief package despite the fact that hardwood sawmills help anchor many rural communities with good paying jobs. Mr. Secretary, can you explain your methodology for determining the commodities that are eligible and ineligible for payments under the Market Facilitation Program?

Answer. MFP provides support for marketing and inventory costs caused by disrupted markets resulting from the unfair retaliatory tariffs on raw agricultural commodities. I acknowledge that the hardwood lumber industry was also affected by these tariffs; however, the impacts were felt on processed hardwood lumber. USDA programs are intended to provide support at the farmgate on raw agricultural commodities and as a result hardwood lumber was not made eligible as a processed product.

Question 3. As we both know, fluid milk consumption has been declining in recent years, and this is hurting our dairy farmers across the country and rural economies. One bright spot has been the rise in other dairy products like cheese and yogurt. I want to encourage more demand for these products, which help our dairy farmers. One way we can do that is through the National School Lunch Program and School Breakfast Program. However, USDA does not credit high-protein Greek yogurt appropriately and Greek yogurt is not given credit for the protein it contributes when compared to other protein food alternatives, which have less protein. The FY20 government funding bill report directed USDA to review its decision to maintain the flawed crediting standard for high-protein yogurt. Is the USDA currently reviewing and considering an update to its protein standards when it comes to high-protein yogurt?

Answer. In the Child Nutrition Programs (CNP), crediting decisions are made based on overall nutrient profiles, not a single nutrient. For example, different varieties of meat (*e.g.*, lean beef, turkey, legumes) are not evaluated separately based on their protein content. Yogurts' contribution is based on its limitations at providing niacin and iron which are important contributions of the Meat/Meat Alternate component.

In December 2017, USDA solicited comments on the CNP crediting system through a Request for Information (RFI). USDA sought public input about specific foods, including yogurt, and asked for recommendations to make crediting more simple, fair, and transparent. The majority of commenters, including a variety of dairy and yogurt producers, associations, and federations, opposed nutrient-based menu planning, and opposed crediting high protein yogurt differently than other yogurts noting that it would overly complicate the meal pattern and protein is not a nutrient of concern.

After considering public comments, USDA is continuing to credit high protein yogurts, such as Greek yogurt, using the same crediting method as we do for other types of yogurts. This approach is consistent with food-based menu planning and is easier for program operators to implement. Crediting high-protein yogurt the same way as other types of yogurt, means that the amount of yogurt served is the same for all types of yogurt. Operators do not have to remember different portion sizes based upon the protein content found on the nutrition facts panel. It is also notable that the FDA has only one standard of identity for all yogurt varieties. The current serving size for yogurt in the CNP is reasonable and adequate based on the age/grade of the child.

Submitted Questions by Hon. Kim Schrier, a Representative in Congress from Washington

Origin of Livestock

Question 1. The Subcommittee on Biotechnology, Horticulture, and Research had two hearings last year focused on the organic industry. There was strong, bipartisan consensus that the National Organic Program should move forward with rule-making to support the organic dairy sector, including on the Origin of Livestock final rule. Additionally, in October 2018, USDA's National Organic Standards Board issued a resolution for USDA to finalize this rule. This rule would correct a loophole in the USDA organic regulations by clarifying requirements for transitioning conventional dairy animals to organic production. When can we expect to see USDA issue a final rule concerning Origin of Livestock?

Answer. While there is broad support for a final rule in the organic community, the topic involves a complex set of variables and legal questions. Public comments have also shown there are different perspectives and interdependencies between specific rule provisions. As AMS drafted the final rule, the specific legal questions and complexities became clearer, and the review of the final rule raised concerns that could jeopardize the agency's position.

USDA has considered a number of options and we have decided to develop a second proposed rule for public comment. This would allow us to propose specific provisions that we believe, based on agency experience, would make the rule more enforceable, and which would also allow the public to provide input. This rulemaking continues to be one of our highest priorities and we plan to publish as expeditiously as possible.

U.S. Mexico Agricultural Trade

Question 2. Mr. Secretary, U.S. fresh potatoes have fought a long battle to gain full market access to Mexico. As you know, the Mexican potato industry has sued their own government to block that access and the resulting legal cases have made their way to their Supreme Court. The outcome of a negative ruling could have consequences beyond just potatoes and could impair U.S.-Mexico ag trade broadly. What measures is USDA taking to support potato access to Mexico and how else are you working independently and with USTR to ensure that Mexico fully implements their obligations under USMCA?

Answer. Since my first day as Secretary of Agriculture, achieving full and unrestricted access for U.S. potatoes in Mexico has been among my top priorities. I have personally met with top-level Mexican officials many times to discuss resolving this issue, which could be resolved in Mexico's supreme court in the near future. This court case has my full attention, and USDA continues considering additional options to gain expanded Mexican market access for fresh potatoes.

USDA, alongside our Federal partners at the Office of the U.S. Trade Representative (USTR), continues to engage with Mexico to ensure it meets the obligations set out in the USMCA. USDA has engaged with high level Mexican government officials

to make our position clear. Rest assured that we will continue to support and stand with our farmers and ranchers as we work to promote free, fair, and reciprocal trade as a responsible global partner.

Mid-Contract Management

Question 3. Mr. Secretary, how are you interpreting Section 2207 of the farm bill regarding cost-share assistance for mid-contract management activities outside of grazing?

Answer. FSA's determination is that cost-share is not allowed for mid-management activities.

Submitted Questions by Hon. Jimmy Panetta, a Representative in Congress from California

Question 1. On January 9th, Pam Miller, Administrator of USDA's Food and Nutrition Service, testified before the U.S. House Committee on Veterans Affairs, Subcommittee on Economic Opportunity. At the hearing, Ms. Miller noted that USDA did not seek to understand how many veterans would be impacted by the various proposed changes to SNAP related to time limits for "Able-Bodied Adults Without Dependents" (ABAWDs), revising Broad-Based Categorical Eligibility, and state heating and cooling Standard Utility Allowances (SUAs).

Why did you choose not to understand the impact of these proposed changes on the veteran population?

Question 1a. Can you tell us today how many veterans will be kicked off SNAP as a result of USDA's proposed and finalized rule changes, and how USDA is coordinating with other agencies to ensure that those who wore our country's uniform do not suffer from hunger?

Answer 1-1a. FNS programs, such as SNAP, are not targeted to veterans specifically, but can make nutritious food available to veterans and their families when they face tough times. In order to minimize burden on all Americans seeking food assistance, USDA has kept the information it gathers during the application process to only that which is required by law and regulation for SNAP eligibility. Veteran status is not a requirement for SNAP eligibility. As a result, USDA does not have data to determine impacts on households with veterans, as veteran status does not impact eligibility and therefore is not captured in the caseload data that was used to analyze the rule.

FNS has a study underway, known as the Survey of SNAP and Work, which will gather employment data from a representative sample of nondisabled SNAP participants ages 18 to 69 in the 50 States and the District of Columbia. The survey includes a question regarding status as a veteran or active duty military member. When the study is completed, FNS will be able to provide a one-time statistic regarding the number of SNAP participants that are active duty military or veterans along with some basic demographic characteristics. We expect results in 2022.

The 2014 Farm Bill created the Military/Veteran Agricultural Liaison (MVAL) role at USDA. The MVAL reports to the Director of the USDA Office of Partnership and Public Engagement (OPPE) and is not located within FNS. FNS collaborates with the MVAL to ensure USDA assists the Veteran's Administration in advising on SNAP policy and providing additional resources for veterans.

FNS actively works with the Department's MVAL and staff from the Veterans Health Administration Homeless Programs Office at the Department of Veterans Affairs (VA) to make sure appropriate reference and resource materials are available where and when needed. State agencies work closely with partner organizations in their outreach efforts, and some of these groups may, as appropriate, create materials and provide services to specific populations, including veterans, to help them understand and apply for SNAP benefits.

FNS and VA's *Nutrition and Food Services* (<https://www.nutrition.va.gov/>) (NFS) are also working together to address Veterans' hunger and food insecurity. FNS collaborated with NFS to deliver a webinar on November 16, 2020, as continuing education for nurses and social workers working in the VA system. This webinar reviewed the basics of SNAP eligibility and provided specific information to screen veterans for food insecurity and provide application assistance for veterans interested in applying for SNAP.

Question 2. We all know that veterans often face unique challenges in securing full-time work and may require more than 3 months to secure employment.

Can you guarantee that there is a realistic and sustainable job and/or E&T slot available for every veteran who meets the ABAWD definition?

Question 2a. How are you ensuring that states are providing E&T opportunities for all veterans?

Answer 2–2a. Veterans receiving SNAP benefits may be eligible to participate in a State’s SNAP E&T program. All States are required by the Food and Nutrition Act to operate a SNAP E&T program, which assist SNAP recipients in gaining skills, training, or experience that will increase their ability to obtain work. States are ultimately responsible for administering the program and have tremendous flexibility in what services they provide, what populations they serve, and with whom they partner. FNS provides direct technical assistance and oversight to State SNAP agencies to help them expand and improve SNAP E&T programs to meet the needs of the participants, the employers, and the community.

USDA is committed to partnering with and empowering State agencies to best leverage their programs, and we have made it clear that expanding E&T is a priority for this Administration. USDA provides over \$100 million each year for States to operate E&T, and if a State invests their own money—or includes outside funding from any non-Federal source—to expand and enhance their E&T programs, the Federal government will match those funds, dollar for dollar, without limit. In addition, FNS also allocates \$20 million to States that pledge to provide a work or training opportunity to every able-bodied adult without dependents.

FNS has also invested considerable resources in helping States expand their SNAP E&T programs through the SNAP to Skills project. SNAP to Skills has provided direct technical assistance to over 27 States; developed tools and resources such as operations handbooks, policy briefs, and webinars; and, hosted SNAP E&T Learning Academies and State Institutes for State agencies, their partners, and other stakeholders to increase capacity and expertise about SNAP E&T. In 2020, the SNAP to Skills project has focused on helping States recruit and engage more SNAP recipients in SNAP E&T programs, including veterans.

Moreover, FNS is in the process of drafting a final rule implementing the employment and training provisions of the 2018 Farm Bill. The rules strengthens States accountability by requiring States to provide case management services and to ensure SNAP recipients are properly placed in an E&T component, and provides additional opportunities for SNAP recipients to meet their work requirements through participating in programs offered through the Department of Veteran’s Affairs.

Question 3. How is USDA addressing the SNAP participation gap among veterans?

Answer. While FNS’s 15 nutrition assistance programs are not targeted specifically to veterans, they are available and designed to provide benefits that veterans and their families may need, particularly when they face difficult economic circumstances.

FNS reimburses State SNAP agencies for 50 percent of allowable administrative costs, including costs of approved outreach activities. In FY 2020, 46 State SNAP agencies have approved outreach plans. Plans may be statewide or target specific geographic locations or populations, such as veterans. Several States partner with Veterans Service Organizations (VSOs) to provide SNAP outreach services.

Question 4. You have established a Military Veterans Agriculture Liaison at USDA.

What exactly is this position, and/or the agency, doing to address the gap between food insecurity and SNAP enrollment among veterans?

Answer. The 2014 Farm Bill created the Military/Veteran Agricultural Liaison (MVAL) role at USDA. The MVAL reports to the Director of the USDA Office of Partnership and Public Engagement (OPPE) and is not located within FNS. FNS collaborates with the MVAL to ensure USDA assists the Veteran’s Administration in advising on SNAP policy and providing additional resources for veterans.

The MVAL duties include:

- Providing information to returning veterans about beginning farmer training and agricultural vocational and rehabilitation programs, including assisting veterans in using Federal veteran educational benefits for purposes relating to beginning a farming or ranching career;
- Providing information to veterans about the availability and eligibility of requirements for participation in agricultural programs, with emphasis on beginning farmer and rancher programs;
- Serving as a resource for assisting veteran farmers and ranchers, and potential farmers and ranchers, in applying for participation in agricultural programs;
- Advocating on behalf of veterans in interactions with employees of the Department; and
- Consulting with and providing technical assistance to any Federal agency, including the Department of Defense, the Department of Veterans Affairs, the Small Business Administration, and the Department of Labor.

The current MVAL is a permanent government employee with 23 years of Naval service. He has proactively established relationships with Federal agencies including the Department of Labor, Department of Defense, Department of Veterans Affairs, Small Business Administration, as well as the National Association of State Departments of Agriculture, and Workforce Agencies as well as many Veteran Service Organizations and the Farmer Veteran Coalition.

FNS works with the Department of Veterans Affairs (VA) to communicate information on USDA nutrition assistance programs to be provided when to veterans they visit VA Hospitals or Clinics. USDA is working with VA on resources specifically designed for Veterans to help connect them with USDA nutrition programs when they visit VA hospitals or clinics, or otherwise engage with the VA health system.

Question 4a. What are the ways USDA is addressing the stigma and shame that is unfortunately often associated with Federal nutrition assistance programs?

Answer. SNAP outreach is the main effort to address misconceptions about SNAP. Through SNAP outreach efforts, States, often in partnership with community organizations, conduct activities to inform low-income households about SNAP availability and benefits, eligibility requirements, and application procedures. Outreach can also correct myths and misperceptions about SNAP. FNS reimburses State SNAP agencies for 50 percent of allowable administrative costs, including those for approved outreach activities. In FY 2020, 46 State SNAP agencies have approved outreach plans. Plans may be statewide or target specific geographic locations or populations, such as veterans. Several States partner with Veterans Service Organizations (VSOs) to provide SNAP outreach services. In addition to outreach, it is important to publicize the fact that benefits are now provided on SNAP EBT cards—which look like credit or debit cards—rather than actual food stamps that were issued previously, which has significantly reduced stigma surrounding SNAP over the years.

Question 4b. What is USDA doing to clarify for veterans that SNAP is an entitlement program, so their participation would not prevent someone else from getting the help they need?

Answer. SNAP Outreach activities and resources supports States in providing information about SNAP, supporting potentially eligible people, including veterans, in making an informed decision about whether or not to apply. State agencies set outreach goals and determine which services to provide in order to best address the needs identified by the State.

We understand from discussions with VA staff, that the Veterans Health Administration (VHA) screens veterans during their VHA medical appointments and refers them to appropriate clinical resources, which can include information on SNAP when appropriate.

Question Submitted by Hon. K. Michael Conaway, a Representative in Congress from Texas

Question. It has come to our attention that there is a lot of confusion surrounding the implementation of the TAP assistance program reaching back to damage from Hurricane Irma in September 2017. The confusion involves the definition used for qualifying nursery crops for assistance specifically “bush” and “ornamental.” Producers were approved at the state and local level and then determined to be ineligible at the Federal level because they did not meet the definition of an *eligible crop*.

Are nursery crops such as chrysanthemum, poinsettia, rose, fig, blackberry, hibiscus, and bougainvillea eligible for disaster assistance under the TAP program? If ineligible, provide the rationale why. In addition, a list of all eligible ornamentals and bushes under the TAP program is requested.

Answer. Yes, these crops would be eligible either as a listed commodity or under “nursery” field or “nursery” container. The Farm Service Agency does not maintain a list of eligible trees, bushes, or vines under the Tree Assistance Program (TAP). TAP provides definitions of what is eligible, and County Committees are empowered to make an eligibility determination. The definitions for TAP can be found at 7 CFR 1416.402, and in FSA handbook, 1–TAP, (Revision 4), *Exhibit 2*. With regards to a recent determination of ineligibility for chrysanthemums, the guidance was reversed at the national level on March 17, 2020, and subsequently communicated to the Florida FSA State office.

Question Submitted by Hon. Roger W. Marshall, a Representative in Congress from Kansas

Question. Last fall, several of my colleagues and I sent a letter requesting that you consider changes to the ReConnect program to make the application process less

burdensome so that more broadband providers could participate. I know that some changes were made in round two, but I would encourage you to continue to look at this situation, particularly in regard to the scope of information that companies have to submit for areas outside of the proposed service area. For companies that have a regional or even nationwide footprint, this extraneous information makes the application process much more burdensome, without any added benefit, and could lead to well-qualified companies with long history of broadband deployment deciding that the application process is just too burdensome to be worthwhile.

Is this something you can continue to work on for future rounds of ReConnect?
Answer. Yes, we will continue to implement new ways to streamline and improve the overall application process for future rounds of ReConnect. Considerations like these will be incorporated in the Final Rule which the agency expects to publish in the *Federal Register* for public comment by the end of 2020.

Question Submitted by Hon. Don Bacon, a Representative in Congress from Nebraska

Question. Last week in a letter to the President, my Governor, along with four others, highlighted the importance of new biotechnologies, such as gene editing, for maintaining the security and stability of the rural economy and nation's food supply. To that end they called on the Administration to move all agricultural application of biotechnology in animals for food use under USDA to better foster development of this technology for the public good.

Can you give us an update on Administration's thinking on this request? Will the Administration have a resolution on this in the next month or 2?

Answer. USDA believes that leveraging biotechnology and the advantages it provides to our producers is key to revitalizing the rural economy. We understand the need to stay on top of scientific progress and the need for tools such as gene editing and appropriate, science-based regulation at the Federal level. We know that animal biotechnology holds promise as a solution to some of the most pressing problems facing livestock production. Accordingly, modernizing animal agricultural biotechnology oversight continues to be a priority for us. We are continuing high-level discussions with our Federal partners and hope to have a resolution soon that will help this technology thrive.

Question Submitted by Hon. Neal P. Dunn, a Representative in Congress from Florida

Question. Many organic farmers are faced with growing disease and environmental pressures, and yet all too often lack approved organic crop protection tools to meet their needs. Breeding disease resistant cultivars can help, but in recent years, diseases like downy mildew, as one example, have evolved faster than breeders can keep up. However, new tools such as gene editing can enable plant breeders to quickly and precisely make edits to a plant's genome in ways that mimics natural adaptation or through traditional breeding. This could help to activate disease resistance, limit the use of organic-approved pesticides, improve drought tolerance, among other benefits.

Do you see certain sustainability-minded biotechnology applications such as these to potentially be consistent with the organic program?

Answer. USDA supports an ongoing and open, constructive dialogue about how agricultural innovation and new technologies might play a role in the future of organic production. Genetic modifications, including gene editing, are considered excluded methods and are currently prohibited in organic agriculture under the USDA organic regulations. This issue is not currently on the regulatory agenda for rule-making; however, the National Organic Standards Board regularly evaluates new technologies for potential inclusion in the organic standards. Public comments are an important part of this open and transparent evaluation process.

Question Submitted by Hon. Dusty Johnson, a Representative in Congress from South Dakota

Question. Saturated fats are found in nearly all food products, including olive oil, meat products, and dairy products. However, past dietary guidelines relied on older, epidemiological studies rather than newer systematic reviews and clinical trials. Recently, the *Annals of Internal Medicine* published a systematic review of the potential hazards surrounding red meat. The conclusion of the review found that there is not enough evidence to suggest that Americans change their consumption of red meat as a part of a healthy or balanced diet, representing a fairly significant shift from conventional wisdom. As recently as last month, a group of prominent researchers and doctors in the nutrition space, including three former Dietary Guidelines Advisory Committee Members, came together to discuss not only the changing

scientific landscape surrounding saturated fats, but the process by which saturated fats studies have gone through in previous versions of the guidelines.

Do you agree that any recommendation should have a basis in the preponderance of the best available science? Would you agree that evidence be examined even if it challenges preconceived notions about the benefits or hazards posed by any food or nutrient?

Answer. To briefly answer both of your questions—yes. USDA and HHS update the *Dietary Guidelines for Americans* every five years based on the preponderance of scientific and medical knowledge, and with each process to develop the *Dietary Guidelines* the Departments ensure that all relevant nutrition evidence is examined and reviewed—independent of preconceived notions or even trending fad diets.

The Nutrition Evidence Systematic Review (NESR) method, which has been used by the past few Dietary Guidelines Advisory Committees, is designed to identify and use all relevant evidence to draw conclusions—regardless of the outcomes or results it reported, and whether or not it supported or opposed prior advice. For each systematic review—before the scientific literature is searched and the evidence is reviewed—a protocol or a plan is established for a specific scientific question. This protocol describes how the Committee plans to conduct its review and sets the criteria for what studies would be considered. Developing this protocol up front before any articles are searched and any evidence is reviewed is critical to ensuring the process remains unbiased. The protocols for the 2020 Dietary Guidelines Advisory Committee (the 2020 Committee) were posted online for the public to view and comment on, and the 2020 Committee considered these comments as they moved forward in examining the evidence.

Specific to examining the evidence on saturated fat, the 2020 Committee recently reviewed the scientific landscape. The 2020 Committee was an independent group of nationally recognized nutrition experts, and they conducted a robust systematic review on dietary fats and the risk of cardiovascular disease by examining the evidence from 2010 to 2019. It is important to note that the work of the 2020 Committee builds upon the work on this topic from the 2015 Committee. The extensive review by the 2015 Committee on saturated fats included literature dating back to the 1960s. The 2020 Committee concluded that strong and consistent evidence from randomized controlled trials shows that replacing saturated fat with unsaturated fats, especially polyunsaturated fat, significantly reduces total and LDL-cholesterol in adults. LDL-cholesterol is a validated biomarker for cardiovascular disease. Additionally, the 2020 Committee found strong evidence demonstrating that replacing saturated fat with polyunsaturated fat in adults reduces the risk of coronary heart disease events and CVD mortality. The 2020 Committee also reviewed literature published between 1990 and 2019 on intake during childhood and found strong evidence for a link between diets lower in saturated fat and total and LDL-cholesterol. Therefore, the preponderance of evidence from the present dating back to the 1960s on saturated fat indicates that lower saturated fat intake leads to better health outcomes.

Questions Submitted by Hon. James R. Baird, a Representative in Congress from Indiana

Question 1. As you know, rural America is a diverse place. Some small towns and cities are doing well, while others have been struggling in recent years. Many constituents of mine in the more hard-hit towns have repeatedly asked “What programs are there to help us?” As you know, the USDA has a myriad of rural economic development programs. It seems to me that many people just don’t know what’s available to help.

What efforts are the USDA undertaking to inform and educate people about its rural development programs? What state and local groups do you work with to get the word out about these programs?

Answer. Rural Development has 477 field offices across the country and our staff work with local leaders, lenders, and businesses to inform the community about our programs. A few ways our staff does this is by hosting and attending roundtables, providing technical assistance to prospective applicants, and updating our webpage to include current fact sheets, guidance documents, and notices. Communication with our customers and those who need assistance is a priority for Rural Development. For example, during the third quarter of 2020 RD hosted 32 COVID-related webinars, 24 non-COVID webinars, and participated in webinars hosted by others in the Federal family, including HHS, HUD, and SBA. This outreach has helped us connect with nearly 3.5 million people.

Question 2. The overall American economy has been kicked into high gear by the President’s agenda. Unfortunately, due to low crop prices and rough weather, the ag economy has faced challenges. Many in my district have talked to me about the

need for economic diversity where they live. Simply put, agriculture alone is not enough to sustain some of these communities anymore; more economic growth is needed to generate the economic diversity that will bring more sustainable economic growth.

What has USDA been doing to ensure that rural communities can develop other robust industries alongside agriculture?

Answer. The Rural Business Cooperative Service (RBCS) fosters a direct engagement with specific industries such as renewable energy, local and regional food, forestry, aquaculture, biofuels, biobased products and others to connect a variety of businesses to our programs. RBCS provides rural businesses and communities the necessary capital to expand and grow and has an extensive working relationship with the rural lender community, credit unions, community development financial institutions (CDFIs), and others lender associations to create an awareness of access to capital opportunities. Additionally, our Community Facilities program can be utilized by rural hospitals, schools, and adult and childcare centers which can help increase the competitiveness of rural communities in attracting and retaining businesses.

Questions Submitted by Hon. Jim Hagedorn, a Representative in Congress from Minnesota

Question 1. While this may be outside of USDA's purview, Minnesota dairy farmers have asked my office to get clarification on the use of the term "dairy product" when it is in fact a "dairy imitation," such as Almond Milk. Many Members of this Committee have urged the Food and Drug Administration to enforce existing "dairy product standards of identity." Groups like the American Academy of Pediatrics have voiced concerns about nutritional levels of such products for children.

Have you had any conversations with your counterparts at the FDA about this issue?

Answer. USDA respectfully encourages the Congressman to direct questions related to this topic to the FDA.

Question 2. Thank you for leading USDA's effort in preventing African Swine Fever (ASF) from reaching our country. APHIS, along with CBP at the Department of Homeland Security, have also done remarkable work in coordinating with state veterinarian officers, industry leaders and international partners. One concern I hear from the hog producers in my district is a lack of clarity on how to prevent the spread of ASF from infected premises.

While we were pleased to see the March 6, 2020 announcement from USDA on APHIS's action plan in case of an ASF outbreak, can we get more information on how "USDA will work proactively with industry and states to ensure producers have heard plans to deal with carcass disposal in line with regional and local requirements, supporting composting and burial in place as preferred options?" Additionally, will these efforts require a cost-share agreement with the states?

Answer. USDA's Animal and Plant Health Inspection Service (APHIS) has created a Carcass Management Dashboard that assists producers with planning for the proper disposal of carcasses safely and in coordination with state and local environmental officials. This online tool provides information on a range of disposal methods, as well as resources on coordinating with state and Federal agencies to ensure compliance with all applicable laws and regulations.

APHIS is also evaluating several carcass-disposal projects submitted by states and other entities as part of the National Animal Disease Preparedness and Response Program. The program, which was created in the 2018 Farm Bill, allows APHIS to fund projects that advance animal health, and depopulation and disposal projects are at the top of our funding priorities. Last year, six projects were selected to train animal disease outbreak responders to perform depopulation, disposal, and infection, including a project to "train the trainers" on carcass management, which is a critical step toward nationwide preparedness. APHIS plans to announce the final FY 2020 projects under this program by the end of the year.

During previous outbreaks, such as highly pathogenic avian influenza in 2015, USDA paid for disposal of carcasses directly through contractors or reimbursed producers for the costs, and we anticipate a similar response for ASF.

Question 2a. As a follow up, a potential ASF outbreak will require many boots on the ground, as well as virtual deployments, to coordinate testing. With a shortage of veterinarians in the U.S., have there been any conversations with state animal health boards and industry on how to speed up training or how to bring on additional staff?

Answer. APHIS is not currently experiencing a shortage of veterinarians, with approximately 95% of positions filled. We are proactive in our hiring efforts to find the most talented employees to fill our workforce. In particular, we have a Veteri-

nary Medical Officer Career Program to bring in entry-level and graduating veterinarians by offering training and a full-time position to successful applicants, and we have internship programs to introduce veterinary students to a career with APHIS while they are still completing their education and can lead to a permanent appointment. After the 2014–2015 outbreak of highly pathogenic avian influenza, APHIS requested additional funds to increase the number of personnel focused on animal health issues to help with potential outbreaks in the future. We appreciate Congress' willingness to fund those positions.

In addition to seeking the most qualified veterinary candidates to directly work on our mission of promoting animal health, APHIS supports the National Veterinary Accreditation Program (NVAP), which authorizes private practitioners, as well as academic, corporate, military, research, and government veterinarians, to perform official regulatory functions and to work cooperatively with state animal health officials. NVAP develops training programs for Accredited Veterinarians and lay personnel on sample collection and submission and on recognizing diseases. These training opportunities are developed in conjunction with APHIS, state regulatory officials, and academia, with much support from the funding and programs provided by the farm bill and cooperative agreements with stakeholders. Collectively, NVAP is essential to ensuring the nation has a cadre of veterinarians responsible for animal health, disease prevention, and preparedness issues of the future.

In the case of an animal disease emergency, APHIS also has the ability to add additional veterinarians to its workforce. For example, during the 2014–2015 HPAI outbreak APHIS utilized the National Animal Health Emergency Response Corps to supplement the agency's veterinary workforce. We also have an agreement with the Department of Defense, in which APHIS can request veterinarians from the Army Veterinary Corps for an emergency response to an animal disease outbreak. Furthermore, we are member to a multilateral agreement with Australia, Canada, Ireland, New Zealand, and the United Kingdom, where we can request another country to participate in an emergency response to an animal disease outbreak. APHIS continues to explore various strategies to engage the nation's veterinarians in preparation for a possible serious animal disease outbreak.

Question 3. Regarding staff shortages at the local Farm Service Agency (FSA) offices, I agree that a robust economy and record low unemployment makes it harder to fill these positions.

Has USDA discussed with the Office of Personal Management about streamlining hiring process?

Question 3a. As follow-up, I understand the Agricultural Marketing Service has used direct hiring authorities to hire fruit graders during peak seasons. Is it possible for FSA to use this authority to hire staff during peak periods?

Answer 3–3a. FSA utilized a variety of stream-lined processes for county office hiring and nearly every tool in our toolbox through FY 2020. In December 2019, FSA obtained Office of Personnel Management direct hire authority for 75 permanent Farm Loan Program Technicians and 78 permanent Farm Loan Officer Trainees and filled all those positions on September 2, 2020. We brought back reemployed annuitants who have the knowledge and experience to get up to speed on program delivery quickly.

Question 4. Thank you for your comments on February 20, 2020 on a possible MOU with the Food and Drug Administration regarding animal biotech regulations. It is no secret that many farmers, ranchers, producers and agribusinesses are frustrated with FDA's approach to this game changing technology. As the proud representative of a top pork producing district, capitalizing on new animal biotech technologies will show the world that the U.S. is the leader in agriculture innovations.

While product safety is the number one priority, what is USDA doing to modernize safety protocols at ARS/ERS research labs, as well as APHIS regulations, in order to be ready for a possible MOU?

Answer. USDA believes that spurring innovation is key to revitalizing the rural economy, and a thriving biotechnology industry is essential to those efforts. We understand the need to encourage scientific progress with tools like gene editing, as well as the importance of science-based regulation at the Federal level. Animal biotechnology holds promise as part of a solution to some of the most pressing problems facing livestock production. Accordingly, modernizing animal agricultural biotechnology oversight continues to be a priority for us. We are continuing high-level discussions with our Federal partners and hope to have a resolution soon that will help this technology thrive. As we continue to weigh our next steps with regards to a possible MOU with FDA, we will take all appropriate actions to ensure all of USDA is ready.



Trade Damage Estimation for the 2019 Market Facilitation Program and Food Purchase and Distribution Program



U.S. Department of Agriculture, Office of the Chief Economist
August 22, 2019

Executive Summary

This paper outlines the methodology USDA employed to estimate the level of gross trade damage caused by retaliatory tariffs to U.S. agricultural exports by commodity. Those estimates were used to determine the 2019 Market Facilitation Program (MFP) payment rates and the value of commodities to be targeted for purchase under the 2019 Food Purchase and Distribution Program (FPDP). The paper also outlines the formulas employed to calculate MFP county rates for non-specialty crops, as well as national MFP rates for specialty crops, hogs, and milk. USDA announced details on those programs on July 25, 2019. For more details about the trade mitigation programs, visit <https://www.farmers.gov/manage/mfp>. Rule-making and related documents, including the Cost Benefit Analysis (CBA), for trade mitigation programs can be found at <https://www.regulations.gov/docket?D=CCC-2019-0003>.

Trade Damage Estimation for the 2019 Market Facilitation Program (MFP) and Purchase Targets for the Food Purchase and Distribution Program (FPDP)

On May 23, 2019, the Secretary of Agriculture announced (<https://www.usda.gov/media/press-releases/2019/05/23/usda-announces-support-farmers-impacted-unjustified-retaliation-and>) that USDA would take several actions to assist farmers in response to continued retaliation and trade disruption. President Trump authorized USDA to provide up to \$16 billion in programs, in line with the estimated impacts of retaliatory tariffs on U.S. agricultural producers and other trade disruptions. Further details of the 2019 trade mitigation program were announced (<https://www.usda.gov/media/press-releases/2019/07/25/usda-announces-details-support-package-farmers>) on July 25, 2019.

In 2018, USDA developed an estimate of gross trade damages for U.S. commodities affected by retaliatory tariffs to establish commodity payment rates for the Market Facilitation Program (MFP) and purchase targets for the Food Purchase and Distribution Program (FPDP). On September 13, 2018, USDA provided a detailed accounting of how those gross damage estimates were calculated.¹

For the 2018 and the 2019 trade mitigation programs, USDA defined economic losses due to the trade actions in terms of gross trade damages. Gross trade damages were defined as the total amount of expected export sales lost to the retaliatory partner due to the additional tariffs. This metric provides one assessment of economic loss, and there are other forms of economic injury that could be measured. Gross trade damage contributes to the economic cost to the producer to adjust to the disrupted markets, manage surplus commodities, and expand and develop new markets, consistent with the design of the MFP. Further, export sale losses provide the most direct link to the retaliatory action(s) and is the single estimate that most comprehensively accounts for the full scale of trade impacts. In part due to these reasons, it is often employed in World Trade Organization (WTO) arbitrations assessing the level of nullification or impairment resulting from a measure found to be WTO-inconsistent and is the approach applied here.

For the 2019 program, USDA employed the same methodology to estimate gross trade damages, using the same trade model (Global Simulation Analysis of Industry-Level Trade Policy) documented in 2018. That model simulates the expected reduction in U.S. exports to the retaliatory partner market. Gross trade damages are calculated as the difference in bilateral trade with the tariff and the baseline (without the tariff).

As with the 2018 trade mitigation programs, the gross trade damage estimate is the basis for developing the 2019 MFP payment rates, which are detailed in this paper, as well as FPDP purchase targets. The 2019 programs are designed to aid producers in the disposition of surplus commodities; to aid in the expansion of domestic markets; or to aid in the development of new and additional markets and uses. Those programs are intended for crops or commodities that are negatively impacted by trade actions of foreign governments. Specifically, the 2019 MFP payments may provide producers with an opportunity to adjust to delays in the marketing of their crops and to costs associated with reorienting their sales to new and additional markets.

Changes in Retaliatory Tariffs

The gross trade damage estimate for 2019 takes into account changes in retaliatory tariffs since the original damage estimate used for the 2018 trade mitigation programs. There have been five changes to the retaliatory tariffs applied to U.S. agricultural products since the 2018 damages were calculated:

- (a) On September 24, 2018, China imposed additional tariffs ranging from 5 to 10 percent on U.S. goods, which were applied to \$3 billion of agricultural products not previously impacted by China's retaliatory tariffs. Given the timing of China's action, these tariffs were not included in the trade damage analysis for the 2018 trade mitigation programs.
- (b) On May 17, 2019, Mexico and Canada agreed to lift all retaliatory tariffs related to the U.S.-imposed Section 232 steel and aluminum tariffs. These tariffs covered a broad range of agricultural and food products, including U.S. pork and dairy.
- (c) On May 21, 2019, Turkey reduced retaliatory tariffs assessed on U.S. products by half in response to changes in U.S.-imposed Section 232 tariffs on steel and aluminum from Turkey. Turkey's retaliatory tariffs include some U.S. tree nuts and rice.
- (d) On June 1, 2019, China increased retaliatory tariffs assessed on the U.S. on almost \$2 billion of agricultural goods by an additional 5 to 15 percent. This new list includes many U.S. horticultural and specialty products.
- (e) On June 16, 2019, India imposed retaliatory tariffs ranging from 2 to 25 percent on U.S. apples, rice, almonds, chickpeas, and other commodities. India had announced retaliatory tariffs on U.S. goods in July 2018 but delayed implementation until June 2019.

The model commodity coverage was expanded to include the broader range of U.S. agricultural products affected by retaliation, as well as the increase in (China) or implementation of (India) retaliatory tariffs. The model scenarios were also revised

¹For details see: https://www.usda.gov/oce/trade/USDA_Trade_Methodology_Report.pdf.

to remove the retaliatory tariffs that Canada and Mexico lifted, as well as the reduction in Turkey's tariffs.

Base Year Changes Account for Long-Standing Distortionary Policies and Longer-Term Impacts

For the 2018 trade mitigation programs, USDA employed 2017 trade data as the base year for projecting trade damages. 2017 was used as the 2018 programs' base year because it was the most recent full year of trade data available and reflected trade levels prior to the imposition of retaliatory tariffs starting in April 2018 for some agricultural products.²

For the 2019 trade mitigation programs, USDA employed a longer time-series to estimate gross trade damages, by surveying trends in U.S. bilateral trade over a 10 year period (2009–2018). For some of the commodities affected by tariffs, 2017 was not the most representative base year on which to conduct the trade damage analysis. The 10 year period for determining a basis for the evaluating the tariff allows estimates to account for other contributing variables, such as longstanding trade barriers imposed by China and other countries that have affected U.S. exports, as well as the longer-term impact of prolonged retaliatory tariffs.³

We included 2018 in this time-series, given that for some commodities, new market access had only just begun prior to the implementation of retaliatory tariffs. For example, in mid-2017, China and the United States agreed to improve market access for U.S. beef exports to China.⁴ U.S. beef exports began to increase in late 2017 through the first half of 2018 before declining and leveling-off. U.S. beef had been banned from China since 2003, and prior to that ban, the United States was the country's largest beef supplier. Therefore, it is reasonable to expect that, but for the retaliatory tariffs that China imposed on U.S. beef in July 2018, U.S. beef exports to China would have continued to increase at a similar (if not higher) level as observed in the first half of 2018. Using 2017 as a base year does not fully capture the new market access opportunities for U.S. beef.

Other commodities have faced multi-year market access barriers into China and other countries that have implemented retaliatory tariffs. In recent years, unwarranted regulatory and trade-distorting measures have hindered U.S. corn exports to some of these markets, making the 2017 base year less representative of U.S. export levels.⁵ Moreover, products made from corn, such as distillers dried grains and solubles (DDGS) and ethanol have been adversely impacted by China's earlier decisions to unilaterally increase tariffs (ethanol) and impose anti-dumping and countervailing duties (DDGS).⁶ Other products facing multi-year market access barriers include poultry, rice, and wheat.

2019 MFP Payments and Payment Rates for Non-Specialty Crops

Given the timing of the 2019 Market Facilitation Program (MFP) during the crop year, USDA developed a single rate per acre in each county for MFP-eligible non-specialty crops, which include select nonspecialty commodities both directly and indirectly affected by the trade dispute, in order to minimize potential distortions.

Payments to each producer are limited to:

- 2018 Farm Service Agency-certified planted acres;
- 2018 Farm Service Agency-certified prevented from planting acres (of non-specialty crops); and
- 2018 expiring Conservation Reserve Program acreage.

The specific commodity rates that form the basis of the county rate are derived from the gross trade damage estimates. Commodity rates are set as the estimated

²In April 2018, China was the first trading partner to impose retaliatory tariffs on U.S. agriculture in response to Section 232 tariffs on aluminum and steel. Nearly all retaliatory tariffs—including those imposed by China in response to actions under Section 301 and Section 232, as well as those imposed by the EU, Canada, Mexico, and Turkey in response to actions under Section 232, were in place by July 2018. India was the only country that announced but did not immediately apply retaliatory tariffs on U.S. agricultural products in 2018.

³To be clear, the model estimates the impact of the retaliatory tariff(s) on a given commodity.

⁴On June 12, 2017, USDA announced that it had reached an agreement with Chinese officials on the final details of a protocol to allow the United States to begin exporting beef to China. See <https://www.usda.gov/media/press-releases/2017/06/12/us-china-finalize-details-send-us-beef-china>.

⁵See the USTR Foreign Trade Barriers Reports and the USTR Trade Policy Agenda and Annual Reports for more details. The most recent reports can be accessed at <https://ustr.gov/about-us/policy-offices/press-office/reports-and-publications/2019>.

⁶*Ibid.*

trade damages divided by the average volume of production for 2015–17 reported by NASS.

The county payment rates⁷ were based on historical fixed average area and yields as discussed below. The total potential payment amount for non-specialty crops is the eligible area multiplied by the nonspecialty county rate per acre. This total payment amount is subject to limitations further discussed under the “Total MFP Payments” heading, beginning on page 7 of the report.

Non-specialty crops commodity rates

Non-specialty crops	Commodity Rate	Units
Soybeans	\$2.05	BU
Cotton	\$0.26	LB
Sorghum	\$1.69	BU
Corn	\$0.14	BU
Wheat	\$0.41	BU
Rice	\$0.63	CWT
Peanuts	\$0.01	LB
Lentils	\$3.99	CWT
Peas	\$0.85	CWT
Alfalfa Hay	\$2.81	TONS
Dried Beans	\$8.22	CWT
Chickpeas	\$1.48	CWT

Example of non-specialty crop county rate calculation

County A has planted an average of 20,000 acres of corn, 10,000 acres of soybeans, and 1,000 acres of barley. The historical average county yield is 180 bu/acre for corn, 60 bu/acre for soybeans, and 50 bu/acre for barley. The commodity rates under the 2019 MFP for corn and soybeans are \$0.14/bu and \$2.05/bu, respectively. Since there are no retaliatory tariffs on U.S. barley, the payment rate for barley is \$0.00/bu.

County A's payment rate is calculated as follows:

Step 1: For each crop in a county, multiply fixed historical acres, fixed historical yields, and the payment rate per unit for each eligible non-specialty MFP crop

- County A Corn Damage: 20,000 acres × 180 bu/acre × \$0.14/bu = \$504,000
- County A Soybeans Damage: 10,000 acres × 60 bu/acre × \$2.05/bu = \$1,230,000
- County A Barley Damage: 1,000 acres × 50 bu/acre × \$0.00/bu = \$0

Step 2: Sum all calculated values from Step 1

- \$504,000 + \$1,230,000 + \$0 = \$1,734,000 in total non-specialty crop damage

Step 3: Sum the acres across all eligible non-specialty MFP crops

- 20,000 + 10,000 + 1,000 = 31,000 acres

Step 4: Calculate the county payment rate per acre by dividing the result of Step 2 by the result of Step 3

- \$1,734,000/31,000 = \$56/acre non-specialty crop county payment

Acres reported to the Farm Service Agency between 2015–2018 are used to calculate the historical fixed acres for each crop within a county. The 2015–2017 historical fixed county yield is calculated using the following cascade:

1. RMA county yield,
2. NASS county yield, if the RMA county yield is unavailable,
3. RMA T-yield, if the both the RMA county yield and NASS county yield are unavailable,
4. NASS state yield, if (1)–(3) are unavailable, and
5. NASS national yield, if (1)–(4) are unavailable.

⁷ See <https://www.farmers.gov/manage/mfp> for rates by county.

Prevent Plant

2019 planting was characterized by substantial rainfall and cool weather that delayed planting of crops across the United States. Producers prevented from planting a 2019 non-specialty crop, but who planted a CCC-approved cover crop, with the potential to be harvested, qualify for a \$15 per acre payment.⁸

Cups and Caps

The county payment rates per acre are cupped and capped at \$15 per acre and \$150 per acre, respectively.

2019 MFP Payments and Payment Rates for Hogs and Milk

Hogs: 2019 MFP payments for hog producers are based on live hog inventory on a day selected by the applicant between April 1, 2019 and May 15, 2019. Eligibility for 2019 MFP payments is again based upon independent ownership of the hogs; persons/legal entities that are contracted to grow hogs are not eligible for 2019 MFP.

Calculate the per unit payment rate for hogs:

- Step 1: Calculate the gross trade damage estimate
- Step 2: Subtract the FPDP purchase amount from the gross trade damage estimate to calculate the portion not covered by FPDP
- Step 3: Divide the value from Step 2 by the number of hogs reported in the 2019 March inventory report to calculate the MFP payment rate per hog

Milk: 2019 MFP payments for dairy producers are based on historical production, the same as what was reported for participation in the USDA Dairy Margin Coverage Program or its predecessor, the Margin Protection Program for Dairy. The ownership share for milk will be as reported to FSA for the aforementioned programs for dairy operations that were in business as of June 1, 2019. Dairy operations that were not in business as of June 1, 2019, are ineligible for MFP.

Calculate the per unit payment rate for milk:

- Step 1: Calculate the gross trade damage estimate
- Step 2: Subtract the FPDP purchase amount from the gross trade damage estimate to calculate the portion not covered by FPDP
- Step 3: Divide the value from Step 2 by 2017 MPP production to get the MFP payment rate per cwt of milk

Hog and Milk MFP Rates

Product	Trade Damage estimate minus FPDP2 targeted purchase amount	Units	Production	MFP rate
	<i>(in million \$)</i>	<i>units</i>	<i>(in million units)</i>	<i>\$/units</i>
Hogs	\$831	head	74	\$11
Dairy	\$354	cwt	1,761	\$0.20

2019 MFP Payments and Payment Rates for Specialty Crops

Similar to the 2018 MFP, producers of an expanded list of specialty crops will be eligible for program payments. 2019 MFP payments for specialty crops are based on 2019 acres of fruit or nut bearing plants. For specialty fruits and ginseng, the payment rate is multiplied by the average yields listed on <https://www.farmers.gov/manage/mfp>.

Calculate the payment rate for specialty tree nuts:

- Step 1: Calculate and sum all gross trade damage estimates for all specialty tree nuts
- Step 2: Sum bearing acres for all eligible tree nuts using NASS Census data for 2017
- Step 3: Divide total gross trade damages from Step 1 by total acres from Step 2 to get the national tree nut rate (\$/acre)

⁸ <https://www.usda.gov/media/press-releases/2019/07/25/usda-announces-details-support-package-farmers>. USDA is not legally authorized to make Market Facilitation Program payments to producers for acreage that is not planted. However, cover crops planned with the purpose

Calculate the payment rate for *specialty fruits*:

- Step 1: For each specialty fruit, calculate the gross trade damage estimate
- Step 2: Calculate total production of the fruit crop using 2017 Census acreage and RMA yields
- Step 3: Divide the trade damage estimate from Step 1 by average production from Step 2 to get the per unit payment rate (\$/lb)

Calculate the payment rate for *ginseng*:

- Step 1: Calculate the gross trade damage estimate
- Step 2: Calculate estimated ginseng production using 2017 Census data on ginseng acreage and USDA estimate of average yields using industry and academic sources
- Step 3: Divide the trade damage estimate from Step 1 by estimated production from Step 2 to get the per unit payment rate (\$/lb)

Specialty Crop MFP Rates

Specialty Products	Trade Damage Estimate (in million \$)	MFP Rates
Tree Nuts*	\$318	\$146/acre
Sweet Cherries (fresh)	\$111	\$0.17/lb
Grapes (fresh)	\$70	\$0.03/lb
Cranberries	\$28	\$0.03/lb
Ginseng	\$6	\$2.85/lb

* Pistachios, almonds, walnuts, pecans, hazelnuts, and macadamia nuts.

Total MFP Payments

The total payments to producers are subject to payment limitations, AGI eligibility criteria, and adjustments to the payment structure.

2019 MFP payments will be provided in up to 3 installments. The first payment will be guaranteed, and is the higher of 50 percent of the total calculated payment or \$15 per acre. If CCC determines that a second payment is warranted, it will be up to 75 percent of the total calculated payment less the amount received in the first payment and the second payment period will begin in November 2019. If CCC determines that a final payment is warranted, it will be for the remaining amount of the total calculated payment, unless otherwise adjusted by CCC, and the last payment period will begin in January 2020.

For 2019 MFP payments, there will be 3 separate payment limitations for each person or legal entity:⁹

1. \$250,000 for eligible non-specialty crops;
2. \$250,000 for eligible specialty crops; and
3. \$250,000 for hogs and milk.
4. No person or legal entity can receive more than \$500,000 under 2019 MFP.

Lastly, if the average adjusted gross income of a person or legal entity is greater than \$900,000, the person or entity is not eligible to receive a MFP payment unless at least 75 percent of the adjusted gross income of the person or entity is derived from farming, ranching, or forestry related activities. The relevant years used to calculate average AGI are the 3 consecutive tax years immediately preceding the year before the payment year, which will be the crop year, or the marketing year for livestock or dairy. For example, for 2019 the relevant years to calculate AGI are the 2015, 2016 and 2017 tax years.

For more information on the MFP program, please go to <https://www.farmers.gov/manage/mfp>. Rulemaking and related documents, including the Cost-Benefit Analysis (CBA), for trade mitigation programs can be found at <https://www.regulations.gov/docket?D=CCC-2019-0003>.

⁹This excludes a joint venture or general partnership, as defined and determined under 7 CFR part 1400.



***Agricultural Provisions of The U.S.-China Economic and Trade Agreement
and USDA Trade Forecasts***



U.S. Department of Agriculture, Office of the Chief Economist
February 6, 2020

Executive Summary

This paper provides an overview of the agricultural provisions of the U.S.-China Economic and Trade Agreement (Agreement) and discusses how those provisions will be reflected in upcoming USDA commodity trade forecasts. USDA publishes trade forecasts for U.S. and global commodity markets as part of the Department's broader commodity supply and demand estimates. Consistent with past practice, USDA supply and demand forecasts reflect trade and other policies in effect at the time of the release of the forecast. The Agreement was signed on January 15, 2020 and will enter into force no later than February 14, 2020. The agricultural provisions of the Agreement include commitments by China to enact specific economic and regulatory reforms to facilitate agricultural trade, as well as commitments for China to purchase specific values of U.S. agricultural, food, and seafood products in calendar years (January–December) 2020 and 2021. The Agreement includes provisions that China will make such purchases on a commercial basis at market prices and that the purchases may reflect seasonal marketing patterns.

Publicly available information and data pertaining to the Agreement will be reflected in USDA's World Agricultural Supply and Demand Estimates (WASDE) report beginning in February 2020 and will also be reflected in subsequent and related reports such as the Outlook for U.S. Agricultural Trade. It is important to note key differences between the scope of the Agreement and USDA forecasts. USDA forecasts only cover a subset of the commodities subject to the Agreement's purchase commitments, and those commitments are expressed in value terms on a calendar year basis. The WASDE forecasts report global trade volumes on a marketing year basis, but do not report bilateral trade (volumes or values) between individual countries.

Moreover, while the Agreement may contain specific purchase commitments for individual commodities, the Office of the U.S. Trade Representative (USTR) has not released that information publicly, and it therefore plays no direct role in USDA's market analysis and forecasts. As actual export sales accrue over time and market conditions evolve, USDA's trade forecasts will be updated to reflect the timing and composition of China's purchases of U.S. agricultural products throughout the relevant marketing (or fiscal) year. However, USDA's trade forecasts are part of a broader estimation of supply and demand for major commodities, and therefore reflect analysis of a wide range of economic and market variables that affect prices, planting, yields, production, inventories, stocks, and use for specific commodities and sectors in the United States and in other countries.

USDA Trade Forecasts

USDA forecasts on a monthly, quarterly and yearly basis for U.S. and global commodity markets as part of the Department's broader commodity supply and demand estimates. The World Agricultural Supply and Demand Estimates (WASDE (<https://www.usda.gov/oce/commodity/wasde/wasde0120.pdf>)) report is published monthly and provides official USDA forecasts for U.S. and global supply and demand for major crops (wheat, rice, coarse grains, oilseeds, and cotton), U.S. and Mexican sugar supply and demand, and U.S. livestock, poultry, and dairy supply and demand.¹ These forecasts are reported on a marketing year basis.² The trade forecasts are reported on a global basis, meaning that the WASDE reports total U.S. exports of a specific commodity to the world, or total Chinese imports of a specific commodity from the world. It does not report bilateral trade.

Other USDA reports related to the WASDE include the Foreign Agricultural Service (FAS) World Agricultural Production reports, FAS World Markets and Trade reports, and the Economic Research Service (ERS) Situation and Outlook reports. The FAS World Markets and Trade reports and ERS Situation and Outlook reports cover a broader scope of commodities (*e.g.*, citrus, tree nuts, fresh deciduous fruit) and are published monthly or semi-regularly.³

The *Outlook for U.S. Agricultural Trade* (<https://www.ers.usda.gov/publications/pub-details/?pubid=95473>) provides quarterly USDA forecasts for agricultural trade (exports and imports) on a fiscal year (FY) basis (October 1 to September 30). Each quarterly report is based on the most recent WASDE report (February, May, August, November). This report includes forecasts for U.S. agricultural exports and imports by commodity on a value basis, and on volume terms for certain commodities. The report also includes forecasts for U.S. total agricultural exports to specific regions and countries, as well as total U.S. agricultural imports from primary suppliers, in value terms. This report does not provide specific bilateral commodity trade between the United States and its trading partners (*e.g.*, U.S. soybean exports to China).

The *USDA Long-Term Agricultural Projections* (<https://www.usda.gov/oce/commodity/projections/index.htm>) report is released annually, generally in February.⁴ These projections are a departmental consensus on a long-run representative scenario for the agricultural sector for the next decade. Projections cover production, trade, and aggregate indicators such as farm income. The October WASDE is the starting point for these long-term projections, which are also reported on a marketing year basis, while the long-term forecast for U.S. agricultural trade in value terms is on a fiscal year basis. As with the WASDE, the long-term agricultural trade projections are for global, not bilateral trade.

The USDA WASDE and long-term baseline trade forecasts are developed through an intradepartmental process that is chaired by the World Agricultural Outlook Board (WAOB), and reflects input from several USDA agencies, including FAS,

¹The WASDE is one of USDA's Principal Federal Economic Indicators (https://www.whitehouse.gov/wp-content/uploads/2019/09/pfei_schedule_release_dates_2020.pdf).

²Marketing years vary by commodity and country, but generally reflect the 12 month period in which a commodity is produced and marketed. In the case of livestock, production occurs continuously, so estimates and forecasts are reported on a calendar year basis.

³The FAS World Agricultural Production Report is released the same day as the WASDE and is also a Principal Federal Economic Indicator. The FAS World Market and Trade reports are also published on the same day as the WASDE, while ERS Situation and Outlook reports are generally published a few days after. Some reports are published monthly (grains, oilseeds, sweeteners, and livestock), while others are semi-regular (tree nuts, fruits, vegetables, cotton). See <https://apps.fas.usda.gov/psdonline/app/index.html#/app/downloads> for a list of release dates for 2020 for FAS reports and <https://www.ers.usda.gov/calendar/> for the publication schedule for ERS 2020 Situation and Outlook reports.

⁴Early release tables on U.S. commodity projections and assumptions on U.S. macroeconomic growth, global real GDP growth, and global population growth are generally made public in November in the year prior to the release of the full report.

ERS, National Agricultural Statistics Service (NASS), Agricultural Marketing Service (AMS), and the Farm Service Agency (FSA).⁵ ERS and FAS coordinate the U.S. Agricultural Trade Outlook, which is approved by the WAOB.

How USDA Trade Projections are Developed

USDA agricultural trade analyses and forecasts are based on a range of trade data, market, and policy information including reporting by FAS overseas offices through the Global Agricultural Information Network (GAIN) reports on key commodities and policy developments for their country or region.⁶ U.S. trade data from the U.S. Census, as well as official trade data published by other countries, are also analyzed. FAS Export Sales Reporting (ESR) and other USDA trade-related data are also utilized.⁷ Trade forecasts contained in the WASDE and USDA's Production, Supply and Distribution Database (PSD) are part of the forecast of supply and demand for a specific commodity.⁸ Those commodity balances include separate estimates for supply (beginning stocks, imports, and production) and demand (domestic use, exports, and ending stocks). A wide range of market information and data inform these commodity supply and demand estimates. The Outlook for U.S. Agricultural Trade, which is based on the most recent WASDE, forecasts U.S. agricultural exports and imports but covers a broader range of commodities than WASDE and PSD (see table on p. 7 below for more detail on commodity coverage).

The established practice for incorporating policy variables into USDA market forecasts is to include in the analysis all policies that are in place at the time the forecast. Further, until a formal end date is specified, the policy continues to be incorporated into the analysis throughout the time period covered by those forecasts. The long-term 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 projections contained in the forthcoming February 2020 long-term baseline report are based on analysis that was prepared during August through October 2019.

On December 13, 2019, USTR announced that the United States and China had reached agreement on a trade deal, under which China committed to implement certain economic and structural reforms and make additional purchases of U.S. goods and services. That Agreement ([https://ustr.gov/sites/default/files/files/agreements/phase%20one%20agreement/Economic And Trade Agreement Between The United States And China Text.pdf](https://ustr.gov/sites/default/files/files/agreements/phase%20one%20agreement/Economic%20And%20Trade%20Agreement%20Between%20The%20United%20States%20And%20China%20Text.pdf)) was signed on January 15, 2020 and enters into force no later than 30 days after signature (February 14, 2020).

USTR released a series of *fact sheets* (<https://ustr.gov/countries-regions/china-mongolia-taiwan/peoples-republic-china/phase-one-trade-agreement/fact-sheets>) that summarize the Agreement. Key agricultural provisions include:

- Reforms to China's regulatory process for evaluating and authorizing certain products of agricultural biotechnology.
- Compliance with World Trade Organization (WTO) obligations on tariff-rate quotas (TRQs) for wheat, corn, and rice, including specific improvements to TRQ administration.
- Commitment that food safety regulations are science- and risk-based and only applied to the extent necessary to protect human life or health.
- Established timeframes for regulatory actions to facilitate trade for a broad range of products, including meat and poultry, dairy, seafood, fruits and vegetables, animal feed ingredients and pet foods.
- Stronger protection for intellectual property, including for agriculture, and a commitment to ensure that requests for geographical indication protection as part of international agreements do not undermine market access for U.S. exports to China.

In addition, China committed to purchase and import, on average, \$40 billion annually of U.S. food, agricultural, and seafood products, for a total of at least \$80 billion over the next two years. The Agreement also provides that China will "strive"

⁵The long-term baseline projection analysis also reflects input from the Office of the Chief Economist (OCE), the Office of Budget and Program Analysis (OBPA), the Risk Management Agency (RMA), the Natural Resources Conservation Service (NRCS), and the National Institute for Food and Agriculture (NIFA). ERS has the lead role in preparing the USDA long-term projections report.

⁶See <https://gain.fas.usda.gov/#/>.

⁷See <https://apps.fas.usda.gov/esrquery/> for Export Sales Reports. Other sources of data include inspections for export of certain grains and oilseeds that the Federal Grain Inspection Service publishes. See <https://www.ams.usda.gov/resources/fgis-data-and-statistics>.

⁸See <https://apps.fas.usda.gov/psdonline/app/index.html#/app/home>.

to import an additional \$5 billion per year over the next two years. The Agreement recognizes that such purchases will be made at market prices based on commercial considerations, and that market conditions may determine the timing for which agricultural purchases are made in a given year.

The purchase commitments cover the calendar years (January–December) for 2020 and 2021. For agricultural products identified in Annex 6.1 to the Agreement, which is reproduced at the end of this report, China committed to purchase and import:

- No less than \$12.5 billion above the 2017 baseline amount in calendar year 2020 (\$17.5 billion if the extra \$5 billion is achieved), and
- No less than \$19.5 billion above the 2017 baseline amount in calendar year 2021 (\$24.5 billion if the extra \$5 billion is achieved).

The Agreement does not identify the 2017 baseline amount, nor does it expressly address China's existing retaliatory tariffs that are currently in place on U.S. exports. The United States and China will use official Chinese and U.S. trade data to determine whether the purchase commitments by China have been met. As of the date of publication, China had not publicly announced any actions to reduce or eliminate retaliatory tariffs on U.S. agricultural products to be purchased pursuant to the Agreement. In December 2019, the Chinese Finance Ministry announced that some Chinese companies would be permitted to import U.S. soybeans, pork, and other agricultural goods and the retaliatory tariff would be waived.⁹ To what extent the Chinese government will take similar actions for the 2020 and 2021 purchases under the Agreement is not yet clear, but is being closely monitored.

Beyond December 2021, there are no specific purchase levels. However, the Agreement provides that the two sides “project that the trajectory of increases” in the commodities imported into China will continue in calendar years 2022 through 2025. The Agreement also provides that the United States and China shall specify increases in purchase for the subcategories listed in Annex 6.1 as appropriate. The agriculture subcategories listed in Annex 6.1 are: oilseeds, meat, cereals, cotton, other agricultural commodities, and seafood.¹⁰ The attachment to Annex 6.1 includes the Harmonized System (HS) trade codes for each subcategory and is reproduced at the end of this report. However, to date, USTR has not released any information publicly on specific purchase commitments for each subcategory.¹¹

How will the U.S.-China Economic and Trade Agreement be Incorporated into USDA Trade Forecasts?

As previously explained, USDA commodity forecasts consider those trade actions which are in place or have had formal announcement of effective dates as of the time of publication. For the Agreement, the annual aggregate purchase levels in value terms, and which agricultural commodities are covered, is known for calendar years 2020 and 2021, and the Agreement states that China's purchases will be made at market prices based on commercial considerations, taking into account seasonal marketing patterns. What is not known is whether retaliatory tariffs will apply to those purchases or the timing of those purchases in a given calendar year. Moreover, commodity-specific commitments are not publicly available and are therefore not considered in the published forecasts.

USDA trade forecasts prior to February 2020 do not reflect the specific provisions of the Agreement with China, since the details of the Agreement were not known until after the January WASDE was released. However, over past months, WASDE forecasts have routinely been updated to reflect trade and market conditions, including actual and anticipated sales to China. Beginning in February 2020, USDA trade projections for 2019/20 (and FY 2020) will fully consider all publicly available infor-

⁹“China reduces ag tariffs,” DTN, December 6, 2019, accessed on January 22 at <https://www.dtnpf.com/agriculture/web/ag/news/article/2019/12/06/chinese-officials-agree-waive-pork>.

¹⁰According to footnote c to the table in Annex 6.1, other agricultural products “[i]ncludes all other agricultural products, including alfalfa, citrus, dairy, dietary supplements, distilled spirits, dried distiller grains, essential oils, ethanol, fresh baby carrots, fruits and vegetables, ginseng, pet food, processed foods, tree nuts, and wine.” Footnote d indicates that seafood includes lobster.

¹¹The U.S. Trade Representative and senior USTR officials have stated that the Agreement includes specific commodity purchase commitments that will not be made public. See Ambassador Greg Doud's response to the second question in <https://www.agweek.com/opinion/columns/4696669-ustrs-ag-negotiator-shares-more-trade-deal-china>: “It has to be an economic purchase, obviously, but this is a commitment overall in agriculture. Are there specific commitments for specific commodities within that? The answer is yes, but those numbers will not be made public.”

mation on the Agreement, as well as any new market or policy developments that would affect those forecasts.¹²

USDA releases an initial set of supply and demand forecasts for the upcoming crop year (*e.g.*, 2020/21) at the annual USDA Agricultural Outlook Forum. These forecasts cover the major crop commodities and are based on several assumptions including “normal” weather, trend yields, and no change to agricultural and trade policies throughout the forecast period. The first official commodity supply and demand forecasts for the upcoming crop year are released with the May WASDE, which incorporates the latest market developments along with acreage forecasts based on the USDA/NASS Prospective Planting survey. Both the initial forecasts released in February and the official May WASDE 2020/21 forecasts will incorporate the Agreement into the underlying analysis, along with all other relevant market and policy variables. As more information and data become available regarding the timing, volume and content of China’s commodity purchases, USDA commodity forecasts will be updated to reflect that new information.

It is important to contrast the Agreement’s agricultural purchase provisions with how USDA forecasts agricultural trade (see table below). First, the Agreement’s definition of agricultural products in Annex 6.1 is much broader than the scope of commodities covered by the WASDE and PSD data. While the U.S. Agricultural Trade Outlook forecast covers more products than WASDE and PSD, the Agreement includes certain product groups, such as fish, seafood, spirits, biofuels, and tobacco products, which are not included in the USDA definition of agricultural products.¹³ Second, WASDE and PSD trade forecasts are reported on a volume basis (*e.g.*, metric tons), while the U.S. agricultural trade outlook forecast is based on values, although volumes are included for some commodities.

Third, WASDE and PSD trade forecasts reflect global trade, that is, total U.S. soybean exports to all markets, not just to China (or total Chinese imports of soybeans from all suppliers). While U.S. soybean exports to China are a component of the U.S. soybean export forecast, the forecast must also account for U.S. soybean exports to other markets (or China’s imports from other suppliers). Therefore, increased U.S. sales of any particular commodity to China is likely to shift global trade flows and lead to some rebalancing of markets, including the possibility of reduced sales to China of that commodity by other countries, and/or reduced U.S. exports of the commodity to non-China markets. These bilateral trade shifts are generally not visible in data reported in terms of global trade. The U.S. agricultural trade outlook includes U.S. bilateral export forecasts on a value basis, but only for the total value of agricultural commodities listed in the table below, which excludes certain products that are covered by the Agreement.

Lastly, WASDE and PSD forecasts are on a marketing year basis, which is a 12 month period over which a crop is first harvested, and then sold prior to the next year’s harvest (*e.g.*, 2019/20).¹⁴ For example, the marketing year for U.S. soybeans is September to August, while the marketing year for U.S. cotton exports is August to July and for U.S. wheat is June to May. The U.S. agricultural trade forecast is on a fiscal year (October to September) basis. Given the seasonality of marketing patterns, which is recognized in the Agreement, China’s purchases will likely be captured over multiple forecast years, depending on the commodity.

¹²The long-term projections will not be revised prior to publication in February and will not reflect the Agreement.

¹³USDA defines distilled spirits, ethanol, biodiesel, forest products and fish products as “agricultural-related” products and are not included in the USDA FY trade forecast. The Agreement includes distilled spirits, ethanol, and fish products in the agricultural purchase category.

¹⁴Livestock, poultry, and dairy products are reported on a calendar year basis.

Summary Table

	WASDE	PSD	U.S. Ag Trade Outlook	U.S.-China Economic and Trade Agreement
Commodities/regions covered	U.S. and global: Wheat Rice Corn Barley Sorghum Oats Oilseeds and products (soybeans, rapeseed, palm), and cotton U.S. and Mexico: Sugar U.S. only: Beef Pork Poultry Eggs Milk	Same as WASDE plus U.S. and global estimates for: Cattle Swine Beef Pork Poultry Dairy Tree nuts Citrus (including orange juice) Deciduous fruit (including raisins) Additional oilseeds (copra, cotton, peanut, sunflowerseed) Coffee	Same as PSD plus: All other live animals, meat, and related products All other grains and processed grain products (flour, pasta, etc.) Pulses and legumes Animal feed (including distiller dried grains) All other oilseeds and products All other fresh and processed fruits and vegetables, including juices Nursery products Planting seeds Processed food Wine Beer Unmanufactured tobacco Cocoa and products All other sweeteners Tea Spices Planting seeds Essential oils Raw rubber Raw animal hides and skins Raw furskins Raw silk Raw flax Raw hemp Wool and animal hair	Same as USDA plus: Distilled spirits Ethanol Manufactured tobacco products Fish and seafood
Basis (volume or value)	Volume	Volume	Value for all commodities, volume for certain commodities	Value
Global or bilateral trade	Global trade	Global trade	U.S. global trade by commodity; U.S. bilateral trade for total agricultural and food products	China's imports of U.S. agricultural products
Time frame/most recent forecast	Marketing years (2019/20)	Marketing years (2019/20)	Fiscal year (FY 2020)	2020 and 2021 calendar years
Reporting frequency	Monthly	Monthly for some commodities, semi-regular for others	Quarterly (February, May, August, November)	Not applicable

Table: Attachment to Annex 6.2 of the U.S.-China Economic and Trade Agreement

2.		Agriculture	
9	Oilseeds		
	HS Code	Product Description	
	1201	Soybeans, whether or not broken	
10	Meat		
	HS Code	Product Description	
	0201	Meat of bovine animals, fresh or chilled	
	0202	Meat of bovine animals, frozen	
	0203	Meat of swine, fresh, chilled, or frozen	
	0204	Meat of sheep or goats, fresh, chilled or frozen	
	0206	Edible offal of bovine animals, swine, sheep, goats, horses, asses, mules or hinnies, fresh, chilled or frozen	
	0207	Meat and edible offal, of the poultry of heading 0105, fresh, chilled or frozen	
	0208	Other meat and edible meat offal, fresh, chilled or frozen	
	0209	Pig fat, free of lean meat, and poultry fat, not rendered or otherwise extracted, fresh, chilled, frozen, salted, in brine, dried or smoked	
	0210	Meat and edible meat offal, salted, in brine, dried or smoked; edible flours and meals of meat or meat offal	
1601	Sausages and similar products, of meat, meat offal or blood; food preparations based on these products		
1602	Other prepared or preserved meat, meat offal or blood		
1603	Extracts and juices of meat (not related to fish or crustaceans, molluscs or other aquatic invertebrates)		
11	Cereals		
	HS Code	Product Description	
	1001 1003	Wheat and meslin Barley	

Table: Attachment to Annex 6.2 of the U.S.-China Economic and Trade Agreement—Continued

	1004	Oats
	1005	Corn (maize)
	1006	Rice
	1007	Grain sorghum
	1008	Buckwheat, millet and canary seeds; other cereals (including wild rice)
	1101	Wheat or meslin flour
	1102	Cereal flours other than of wheat or meslin
	1103	Cereal groats, meal and pellets
	1104	Cereal grains, otherwise worked (hulled, rolled etc.), except rice (heading 1006); germ of cereals, whole, rolled, flaked or ground
	1105	Flour, meal flakes, granules and pellets of potatoes
	1106	Flour and meal of dried leguminous vegetables (hd. 0713), of sago or roots etc. (hd. 0714); flour, meal and powder of fruit and nuts <i>etc.</i> (ch. 8)
	1107	Malt, whether or not roasted
	1108	Starches; inulin
	1109	Wheat gluten, whether or not dried
12	Cotton	
	HS Code	Product Description
	5201	Cotton, not carded or combed
	5202	Cotton waste (including yarn waste and garnetted stock)
	5203	Cotton, carded or combed
13	Other agricultural commodities	
	HS Code	Product Description
	0101	Horses, asses, mules and hinnies, live
	0102	Bovine animals, live
	0103	Swine, live
	0104	Sheep and goats, live
	0105	Poultry, live; chickens, ducks, geese, turkeys and guineas
	0106	Animals, live, nesoi
	0205	Meat of horses, asses, mules or hinnies, fresh, chilled or frozen
	0401	Milk and cream, not concentrated nor containing added sweetening
	0402	Milk and cream, concentrated or containing added sweetening
	0403	Buttermilk, curdled milk and cream, yogurt, kephir etc., whether or not flavored etc. or containing added fruit or cocoa
	0404	Whey and other products consisting of natural milk constituents, whether or not concentrated or sweetened, nesoi
	0405	Butter and other fats and oils derived from milk
	0406	Cheese and curd
	0407	Birds' eggs, in shell, fresh, preserved or cooked
	0408	Birds' eggs, not in shell and egg yolks, fresh, dried, cooked by steam etc., molded, frozen or otherwise preserved, sweetened or not
	0409	Honey, natural
	0410	Edible products of animal origin, nesoi
	0501	Human hair, unworked, whether or not washed or scoured; waste of human hair
	0502	Pigs', hogs' or boars' bristles and hair; badger and other brushmaking hair; waste of such bristles or hair
	0504	Animal guts, bladders and stomachs (other than fish), whole and pieces thereof, fresh, chilled, frozen, salted, in brine, dried or smoked
	0505	Bird skins and other feathered parts of birds, feathers and parts of feathers and down, not further worked than cleaned <i>etc.</i>
	0506	Bones and horn—cores, unworked, defatted, simply prepared (not cut to shape), treated with acid <i>etc.</i> ; powder and waste of these products
	0507	Ivory, tortoise—shell, whalebone and whalebone hair, horns, hooves, claws etc., unworked or simply prepared, not cut to shape
	0510	Ambergris, castoreum, civet and musk; cantharides; bile; glands and other animal products for use in pharmaceutical products, fresh, frozen, <i>etc.</i>
	0601	Bulbs, tubers, tuberous roots, corms <i>etc.</i> , dormant, in growth or in flower; chicory plants and roots for planting
	0602	Live plants nesoi (including their roots), cuttings and slips; mushroom spawn
	0603	Cut flowers and buds suitable for bouquets or ornamental purposes, fresh, dried, dyed, bleached, impregnated or otherwise prepared
	0604	Foliage, branches, grasses, mosses <i>etc.</i> (no flowers or buds), for bouquets or ornamental purposes, fresh, dried, dyed, bleached <i>etc.</i>
	0701	Potatoes (other than sweet potatoes), fresh or chilled
	0702	Tomatoes, fresh or chilled
	0703	Onions, shallots, garlic, leeks and other alliaceous vegetables, fresh or chilled
	0704	Cabbages, cauliflower, kohlrabi, kale and similar edible brassicas, fresh or chilled
	0705	Lettuce (<i>lactuca sativa</i>) and chicory (<i>cichorium spp.</i>), fresh or chilled

Table: Attachment to Annex 6.2 of the U.S.-China Economic and Trade Agreement—Continued

0706	Carrots, turnips, salad beets, salsify, radishes and similar edible roots, fresh or chilled
0707	Cucumbers and gherkins, fresh or chilled
0708	Leguminous vegetables, shelled or unshelled, fresh or chilled
0709	Vegetables nesoi, fresh or chilled
0710	Vegetables (uncooked or cooked by steam or boiling water), frozen
0711	Vegetables provisionally preserved (by sulfur dioxide gas, in brine etc.), but unsuitable in that state for immediate consumption
0712	Vegetables, dried, whole, cut, sliced, broken or in powder, but not further prepared
0713	Leguminous vegetables, dried shelled
0714	Cassava (manioc), arrowroot, salep, jerusalem artichokes, sweet potatoes and similar roots etc. (high starch etc. content), fresh or dried; sago pith
0801	Coconuts, brazil nuts and cashew nuts, fresh or dried
0802	Nuts nesoi, fresh or dried
0803	Bananas, including plantains, fresh or dried
0804	Dates, figs, pineapples, avocados, guavas, mangoes and mangosteens, fresh or dried
0805	Citrus fruit, fresh or dried
0806	Grapes, fresh or dried
0807	Melons (including watermelons) and papayas (papaws), fresh
0808	Apples, pears and quinces, fresh
0809	Apricots, cherries, peaches (including nectarines), plums (including prune plums) and sloes, fresh
0810	Fruit nesoi, fresh
0811	Fruit and nuts (uncooked or cooked by steam or boiling water), whether not sweetened, frozen
0812	Fruit and nuts provisionally preserved (by sulfur dioxide gas, in brine etc.), but unsuitable in that state for immediate consumption
0813	Fruit, dried, nesoi (other than those of headings 0801 to 0806); mixtures of nuts or dried fruits of this chapter
0814	Peel of citrus fruit or melons (including watermelons), fresh, frozen, dried or provisionally preserved
0901	Coffee, whether or not roasted or decaffeinated; coffee husks and skins; coffee substitutes containing coffee
0902	Tea, whether or not flavored
0903	Mate
0904	Pepper of the genus piper; fruits of the genus capsicum (peppers) or of the genus pimenta, dried, crushed or ground
0905	Vanilla
0906	Cinnamon and cinnamon—tree flowers
0907	Cloves (whole fruit, cloves and stems)
0908	Nutmeg, mace and cardamons
0909	Seeds of anise, badian, fennel, coriander, cumin or caraway; juniper berries
0910	Ginger, saffron, tumeric (curcuma), thyme, bay leaves, curry and other spices
1002	Rye
1202	Peanuts (ground-nuts), not roasted or otherwise cooked, whether or not shelled or broken
1203	Copra
1204	Flaxseed (linseed), whether or not broken
1205	Rape or colza seeds, whether or not broken
1206	Sunflower seeds, whether or not broken
1207	Oil seeds and oleaginous fruits nesoi, whether or not broken
1208	Flours and meals of oil seeds or oleaginous fruits, other than those of mustard
1209	Seeds, fruit and spores, of a kind used for sowing
1210	Hop cones, fresh or dried, whether or not ground, powdered or in the form of pellets; lupulin
1211	Plants and parts of plants (including seeds and fruits), used in perfumery, pharmacy, or for insecticidal or similar purposes, fresh or dried
1212	Locust beans, seaweeds etc., sugar beet and sugar cane; fruit stones and kernels and other vegetable products used for human consumption, nesoi
1213	Cereal straw and husks, unprepared, whether or not chopped, ground, pressed or in the form of pellets
1214	Rutabagas (swedes), mangolds, hay, alfalfa (lucerne), clover, forage kale, lupines and similar forage products, whether or not in the form of pellets
1301	Lac; natural gums, resins, gum—resins and balsams
1302	Vegetable saps and extracts; pectic substances, pectinates and pectates; agar—agar and other mucilages and thickeners, derived from vegetable products
1401	Vegetable materials used primarily for plaiting, including bamboos, rattans, reeds, rushes, osier, raffia, processed cereal straw and lime bark
1404	Vegetable products, nesoi
1501	Pig fat (including lard) and poultry fat, other than of heading 0209 or 1503
1502	Fats of bovine animals, sheep or goats, other than those of heading 1503
1503	Lard stearin, lard oil, oleostearin, oleo—oil and tallow oil, not emulsified or mixed or otherwise prepared

Table: Attachment to Annex 6.2 of the U.S.-China Economic and Trade Agreement—Continued

1505	Wool grease and fatty substances derived therefrom, including lanolin
1506	Animal fats and oils and their fractions, nesoi, whether or not refined, but not chemically modified
1507	Soybean oil and its fractions, whether or not refined, but not chemically modified
1508	Peanut (ground-nut) oil and its fractions, whether or not refined, but not chemically modified
1509	Olive oil and its fractions, whether or not refined, but not chemically modified
1510	Olive—residue oil and blends of olive oil and oil—residue oil, not chemically modified
1511	Palm oil and its fractions, whether or not refined, but not chemically modified
1512	Sunflower—seed, safflower or cottonseed oil, and their fractions, whether or not refined, but not chemically modified
1513	Coconut (copra), palm kernel or babassu oil and their fractions, whether or not refined, but not chemically modified
1514	Rapeseed, colza or mustard oil and their fractions, whether or not refined, but not chemically modified
1515	Fixed vegetable fats and oils (including jojoba oil) and their fractions, whether or not refined, but not chemically modified
1516	Animal or vegetable fats and oils and their fractions, partly or wholly hydrogenated <i>etc.</i> , whether or not refined, but not further prepared
1517	Margarine; edible mixtures or preparations of animal or vegetable fats or oils or of fractions of different specified fats and oils
1518	Animal or vegetable fats, oils and their fractions, boiled, oxidized, <i>etc.</i> ; inedible mixtures or preparations of animal or vegetable fats and oils, nesoi
1520	Glycerol (glycerine), whether or not pure; glycerol waters and glycerol lyes
1521	Vegetable waxes (other than triglycerides), beeswax, other insect waxes and spermaceti, whether or not refined or colored
1522	Degras; residues resulting from the treatment of fatty substances or animal or vegetable waxes
1701	Cane or beet sugar and chemically pure sucrose, in solid form
1702	Sugars nesoi, including chemically pure lactose, maltose, glucose and fructose in solid form; sugar syrups (plain); artificial honey; caramel
1703	Molasses resulting from the extraction or refining of sugar
1704	Sugar confectionary (including white chocolate), not containing cocoa
1801	Cocoa beans, whole or broken, raw or roasted
1802	Cocoa shells, husks, skins and other cocoa waste
1803	Cocoa paste, whether or not defatted
1804	Cocoa butter, fat and oil
1805	Cocoa powder, not containing added sugar or other sweetening matter
1806	Chocolate and other food preparations containing cocoa
1901	Malt extract; food preparations of flour, meal <i>etc.</i> containing under 40% cocoa nesoi; food preparations of milk <i>etc.</i> containing under 50% cocoa nesoi
1902	Pasta, whether or not cooked or stuffed or otherwise prepared, including spaghetti, lasagna, noodles <i>etc.</i> ; couscous, whether or not prepared
1903	Tapioca and substitutes therefor prepared from starch, in the form of flakes, grains, pearls, siftings or similar forms
1904	Prepared foods from swelling or roasting cereals or products; cereals (excluding corn), in grain form flakes or worked grain prepared nesoi
1905	Bread, pastry, cakes, biscuits and other bakers' wares; communion wafers, empty capsules for medicine <i>etc.</i> , sealing wafers, rice paper <i>etc.</i>
2001	Vegetables, fruit, nuts and other edible parts of plants, prepared or preserved by vinegar or acetic acid
2002	Tomatoes prepared or preserved otherwise than by vinegar or acetic acid
2003	Mushrooms and truffles, prepared or preserved otherwise than by vinegar or acetic acid
2004	Vegetables, other than tomatoes, mushrooms and truffles, prepared or preserved otherwise than by vinegar or acetic acid, frozen, excluding products of 2006
2005	Vegetables, other than tomatoes, mushrooms and truffles, prepared or preserved otherwise than by vinegar or acetic acid, not frozen excluding products of 2006
2006	Vegetables, fruit, nuts, fruit—peel and other parts of plants preserved by sugar (drained, glaze or crystallized)
2007	Jams, fruit jellies, marmalades, fruit or nut puree and fruit or nut pastes, being cooked preparations, whether or not containing added sweetening
2008	Fruit, nuts and other edible parts of plants, otherwise prepared or preserved, whether or not containing added sweetening or spirit, nesoi
2009	Fruit juices not fortified with vitamins or minerals (including grape must) & vegetable juices, unfermented & not containing added spirit, whether or not containing added sweetening
2101	Extracts, essences and concentrates of coffee, tea or mate and preparations thereof; roasted chicory <i>etc.</i> and its extracts, essences and concentrates
2102	Yeasts; other single-cell micro-organisms, dead (other than medicinal vaccines of heading 3002); prepared baking powders
2103	Sauces and preparations therefor; mixed condiments and mixed seasonings; mustard flour and meal and prepared mustard

Table: Attachment to Annex 6.2 of the U.S.-China Economic and Trade Agreement—Continued

2104	Soups and broths and preparations therefor; homogenized composite food preparations
2105	Ice cream and other edible ice, whether or not containing cocoa
2106	Food preparations not elsewhere specified or included
2203	Beer made from malt
2204	Wine of fresh grapes, including fortified wines; grape must other than that of heading 2009
2205	Vermouth and other wine of fresh grapes flavored with plants or aromatic substances
2206	Other fermented beverages (for example, cider, perry, mead, sake); mixtures of fermented beverages and mixtures of fermented beverages and non-alcoholic beverages, not elsewhere specified or included
2207	Undenatured ethyl alcohol of an alcoholic strength by volume of 80 percent vol. or higher; ethyl alcohol and other spirits, denatured, of any strength
2208	Undenatured ethyl alcohol of an alcoholic strength by volume of less than 80 percent vol.; spirits, liqueurs and other spirituous beverages
2209	Vinegar and substitutes for vinegar obtained from acetic acid
2301	Flours, meals and pellets, of meat or meat offal, of fish or of crustaceans, mollusks or other aquatic invertebrates, unfit for human consumption; greaves (cracklings)
2302	Bran, sharps and other residues (in pellets or not), derived from the sifting, milling or other working of cereals or leguminous plants
2303	Residues of starch manufacture and other residues and waste of sugar manufacture, brewing or distilling dregs and waste, whether or not in pellets
2304	Soybean oilcake and other solid residues resulting from the extraction of soy bean oil, whether or not ground or in the form of pellets
2305	Peanut (ground-nut) oilcake and other solid residues resulting from the extraction of peanut (ground-nut) oil, whether or not ground or in pellets
2306	Oilcake and other solid residues (in pellets or not), resulting from the extraction of vegetable fats or oils (except from soybeans or peanuts), nesoi
2307	Wine lees; argol
2308	Vegetable materials and waste, vegetable residues and by-products (in pellets or not), used in animal feeding, nesoi
2309	Preparations of a kind used in animal feeding
2401	Tobacco, unmanufactured (whether or not threshed or similarly processed); tobacco refuse
2402	Cigars, cheroots, cigarillos and cigarettes, of tobacco or of tobacco substitutes
2403	Tobacco and tobacco substitute manufactures, nesoi; homogenized or reconstituted tobacco; tobacco extracts and essences
290543/290544	Acyclic alcohols and their halogenated, sulfonated, nitrated or nitrosated derivatives
3301	Essential oils, concentrates and absolutes; resinoid; extracted oleoresins; concentrations of essential oils and terpenic byproducts; aqueous solutions etc. of essential oil
3302	Mixtures of odoriferous substances and mixtures (including alcoholic solutions) with a basis of one or more of these substances, of a kind used as raw materials in industry; other preparations based on odoriferous substances, of a kind used for the manufacture of beverages
3501	Casein, caseinates and other casein derivatives; casein glues
3502	Albumins (including concentrates with two or more whey proteins, containing by weight more than 80% whey proteins calculated on dry matter), albuminates & other albumin derivatives
3503	Gelatin (including gelatin in rectangular or square sheets) and gelatin derivatives; isinglass; other glue of animal origin (except casein glue) nesoi
3504	Peptones and derivatives; other proteins and derivatives, nesoi; hide powder, chromed or not
3505	Dextrins and other modified starches; glues based on starches, or on dextrins or other modified starches
380910	Finishing agents, dye carriers and other preparations (dressings, mordants etc.) used in the textile, paper, leather or like industries, nesoi
4101	Raw hides and skins of bovine or equine animals (fresh or preserved, but not tanned or further prepared), whether or not dehaired or split
4102	Raw skins of sheep or lambs, other than astrakhan, broadtail, caracul or similar skins (fresh or preserved, but not tanned or further prepared)
4103	Raw hides and skins nesoi (fresh or preserved, but not tanned or further prepared), whether or not dehaired or split
4301	Raw furskins nesoi (other than raw hides and skins usually used for leather), including heads, tails and pieces or cuttings suitable for furriers' use
5001	Silkworm cocoons suitable for reeling
5002	Raw silk (not thrown)
5003	Silk waste (including cocoons unsuitable for reeling, yarn waste and garnetted stock)
5101	Wool, not carded or combed
5102	Fine or coarse animal hair, not carded or combed
5103	Waste of wool or of fine or coarse animal hair, including yarn waste but excluding garnetted stock
5301	Flax, raw or processed but not spun; flax tow and waste (including yarn waste and garnetted stock)

Table: Attachment to Annex 6.2 of the U.S.-China Economic and Trade Agreement—Continued

	5302	True hemp (<i>cannabis sativa L.</i>), raw or processed but not spun; tow and waste of true hemp (including yarn waste and garnetted stock)
14	Seafood	
	HS Code	Product Description
	0301	Live fish
	0302	Fish, fresh or chilled, excluding fish fillets and other fish meat of heading 0304
	0303	Fish, frozen, excluding fish fillets and other fish meat of heading 0304
	0304	Fish fillets and other fish meat (whether or not minced), fresh, chilled or frozen
	0305	Fish, dried, salted or in brine; smoked fish, whether or not cooked before or during the smoking process; flours, meals and pellets of fish, fit for human consumption
	0306	Crustaceans, whether in shell or not, live, fresh, chilled, frozen, dried, salted or in brine; smoked crustaceans, whether in shell or not, whether or not cooked before or during the smoking process; crustaceans, in shell, cooked by steaming or by boiling in water, whether or not chilled, frozen, dried, salted or in brine; flours, meals and pellets of crustaceans, fit for human consumption
	0307	Molluscs, whether in shell or not, live, fresh, chilled, frozen, dried, salted or in brine; smoked molluscs, whether in shell or not, whether or not cooked before or during the smoking process; flours, meals and pellets of molluscs, fit for human consumption
	0308	Aquatic invertebrates other than crustaceans and molluscs, live, fresh, chilled, frozen, dried, salted or in brine; smoked aquatic invertebrates other than crustaceans and molluscs, whether or not cooked before or during the smoking process; flours, meals and pellets of aquatic invertebrates other than crustaceans and molluscs, fit for human consumption
1604	Prepared or preserved fish; caviar and caviar substitutes prepared from fish eggs	
1605	Crustaceans, molluscs and other aquatic invertebrates, prepared or preserved	

[ATTACHMENT 3]

**Advancing Sustainable Materials Management: Facts and Figures**

[Accessed December 11, 2020]

National Key Facts and Figures in the United States

Each year, EPA produces a report called Advancing Sustainable Materials Management: Fact Sheet, formerly called Municipal Solid Waste in the United States: Facts and Figures. It includes information on municipal solid waste (MSW) generation, recycling, combustion with energy recovery and landfilling. The fact sheet also includes information on Construction and Demolition Debris generation, which is outside of the scope of MSW.

- *Read the Advancing Sustainable Materials Management: Fact Sheet**¹

U.S. State and Local Waste and Materials Characterization Reports

EPA maintains a list of state and local waste characterization studies; reports are not available for all states. You can search for your state in the table below.

For additions, changes or updates, please send new reports to ORCRMeasurement@epa.gov. Most reports exit EPA's website. The following links exit the site *EXIT*²

State	Reports
Alabama	<i>Alabama: Economic Impact of Recycling in Alabama and Opportunities for Growth (2012) (PDF) (16 pp., 309 K)</i> http://www.adem.state.al.us/programs/land/landforms/CompleteEconomicsOfRecyclingAlabamaReport.pdf
Alaska	<i>Alaska: Fairbanks North Star Borough Recycling Plan & Analysis, June 12, 2015 (16 pp., 1.1 MB)</i> http://www.fnsb.us/Boards/Documents/PDCFfinalRecyclingReport.pdf

* **Editor's note:** Hyperlinks are set as footnotes. Hyperlinked pdfs, that are still extant, are retained in Committee file.

¹ <https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/advancing-sustainable-materials-management>.

² <https://www.epa.gov/home/exit-epa>.

State	Reports
Arizona	<i>Arizona: City of Phoenix Waste Characterization Study</i> (2015) (196 pp., 9.5 MB) https://www.phoenix.gov/publicworkssite/Documents/WasteCharacterizationStudyCombined2014-15.pdf
Arkansas	<i>State of Recycling in Arkansas</i> https://www.adeg.state.ar.us/poa/recycling/state.aspx
California	<i>Cal Recycle Waste Characterization Studies Listing</i> https://www2.calrecycle.ca.gov/WasteCharacterization/Study
Colorado	<i>2018 Colorado Waste Composition Study</i> (5 pp., 37.7 KB) https://environmentalrecords.colorado.gov/HPRMWebDrawerHM/RecordView/453419 <i>Colorado: Boulder County Waste Composition Study</i> (2019) (PDF) (62 pp., 3.8 MB) https://assets.bouldercounty.org/wp-content/uploads/2020/04/boulder-county-final-waste-composition-study-2019.pdf <i>Colorado: Larimer County 2016 Waste Composition and Characterization Analysis</i> (PDF) (58 pp., 6.0 MB) https://www.larimer.org/sites/default/files/uploads/2017/wastesort.pdf
Connecticut	<i>Connecticut: 2015 Statewide Waste Characterization Study</i> (PDF) (160 pp., 3.81 MB) https://portal.ct.gov/-/media/DEEP/waste_management_and_disposal/Solid_Waste_Management_Plan_CMMSFinal2015MSWCharacterizationStudy.pdf?fa=en
Delaware	<i>Delaware Solid Waste Authority Statewide Waste Characterization Study, FY 2016</i> (PDF) (68 pp., 1.45 MB) https://dstw.com/wp-content/uploads/2017/02/Final-Report-DSWA-Waste-Characterization-FY-2016-January-2017.pdf
District of Columbia	<i>Washington, DC Public Reports on Recycling</i> https://zerowaste.dc.gov/page/reports-1
Florida	<i>Florida Solid Waste and Recycling Annual Reporting</i> https://floridadep.gov/waste/waste-reduction/content/recycling
Georgia	<i>Georgia Statewide Waste Characterization Study</i> (2005) (PDF) (216 pp., 4.45 MB) https://epd.georgia.gov/sites/epd.georgia.gov/files/related_files/site_page/MSW_Study.pdf
Hawaii	<i>Hawaii: City and County of Honolulu Waste Characterization Study</i> (2006) (PDF) (58 pp., 227 K) http://www.opala.org/pdfs/solid_waste/2006_Final_Waste_Characterization_Report.pdf
Idaho	No Report Available
Illinois	<i>Illinois: Chicago Department of Environment Waste Characterization Study</i> (2010) (PDF) (340 pp., 3.21 MB) https://www.cityofchicago.org/content/dam/city/depts/dae/general/RecyclingAndWasteMgmt_PDFs/WasteAndDiversionStudy/WasteCharacterizationReport.pdf <i>Illinois: Commodity Waste Generation and Characterization Study</i> (2015) (PDF) (323 pp., 9.3 MB) http://www.illinoisrecycles.org/wp-content/uploads/2014/10/2015-Waste-Characterization-Update-FINAL.pdf
Indiana	<i>Indiana's new waste characterization study</i> (2012) (PDF) (165 pp., 5.78 MB) http://www.in.gov/idem/recycle/files/msw_characterization_study.pdf
Iowa	<i>Iowa: Statewide Waste Characterization Study</i> (2017) (PDF) (118 pp., 1.5 MB) http://www.iowadnr.gov/Portals/1/dnr/uploads/waste/wastecharacterization2017.pdf
Kansas	<i>Kansas: 2016 State Solid Waste Management Plan</i> (PDF) (40 pp., 2.0 MB) https://www.kdheks.gov/waste/reportspublications/stateplan16.pdf
Kentucky	<i>Kentucky: Division of Waste Management Fiscal Year 2018 Annual Report</i> (64 pp., 4.1 MB) https://eec.ky.gov/Environmental-Protection/Waste/Annual-Reports/DWM-Annual-Report-for-2018.pdf <i>Kentucky: Louisville Solid Waste Study Report January 2018</i> https://louisvilleky.gov/government/public-works/solid-waste-study-report-january-2018
Louisiana	No Report Available
Maine	<i>Maine: Residential Waste Characterization Study</i> (2011) (PDF) (30 pp., 463 K) https://umaine.edu/wp-content/uploads/sites/2/2017/04/2011-Maine-Residential-Waste-Characterization-Study.pdf <i>Maine Solid Waste Generation and Disposal Capacity Report: Calendar Year 2014</i> (32 pp., 483 K) https://www1.maine.gov/dep/ftp/Juniper-Ridge/additional_documents/Maine_Solid_Waste_Generation_and_Disposal_Capacity_Report_Calendar_Year_2014.pdf
Maryland	<i>Maryland Solid Waste Management and Diversion Report—2017</i> (for 2016 Data) (PDF) (83 pp., 2.98 MB) https://mde.maryland.gov/programs/LAND/SolidWaste/Documents/MSWMR%2717.pdf
Massachusetts	<i>Massachusetts: Waste Characterization Data Summary</i> (2011) https://www.mass.gov/files/documents/2016/08/oc/wcsmater.pdf <i>Recycling & Solid Waste Data for Massachusetts Cities & Towns</i> https://www.mass.gov/lists/recycling-solid-waste-data-for-massachusetts-cities-towns
Michigan	<i>Michigan: Economic Impact Potential and Characterization of Municipal Solid Waste in Michigan</i> (202 pp., 3.9 MB) https://www.michigan.gov/documents/deq/480236-14_WMSBF_waste_characterization_report_521920_7.PDF
Minnesota	<i>Minnesota: City of Red Wing Solid Waste Composition Study: Solid Waste Boiler Facility</i> (2009) (PDF) (61 pp., 5.32 MB) https://www.pca.state.mn.us/sites/default/files/wastesort-redwing2009.pdf <i>Minnesota: Perham Resource Recovery Facility: Solid Waste Composition Study</i> (2012) (PDF) (62 pp., 4.5 Mb) https://www.pca.state.mn.us/sites/default/files/wastesort-perham2012.pdf <i>Minnesota: Solid Waste Composition Study: Covanta Hennepin Energy Resource Company</i> (2012) (PDF) (27 pp., 685 Kb Mb) https://www.pca.state.mn.us/sites/default/files/wastesort-hennepin2012.pdf <i>Minnesota Statewide Waste Characterization Study</i> (2013) (PDF) (59 pp., 1.66 Mb) https://www.pca.state.mn.us/sites/default/files/w-sw1-60.pdf <i>Broader Information on the Minnesota MSW Composition Study</i> https://www.pca.state.mn.us/waste/minnesota-msw-composition-study
Mississippi	<i>Mississippi: Status Report on Solid Waste Management Facilities and Activities</i> (2017) (PDF) (66 pp., 13.8 MB) https://www.mdeq.ms.gov/wp-content/uploads/2019/01/2017-Status-Report-Final.pdf
Missouri	<i>Missouri: 2016-2017 Waste Composition Study</i> http://dnr.mo.gov/env/swmp/specialprojects.htm
Montana	<i>Montana: 2018 Integrated Waste Management Plan</i> (37 pp., 942 K) https://deq.mt.gov/Portals/112/Land/Recycle/Documents/pdf/IWMPFinal2018.pdf?ver=2019-10-30-091908-783&timestamp=1572449157973 <i>Montana: Recycling Statistics</i> http://deq.mt.gov/Land/recycle/recycling_statistics_page
Nebraska	<i>Nebraska: State Waste Characterization Study</i> (2009) (PDF) (2175 pp., 6.41 MB) http://www.deq.state.ne.us/Publica.nsf/23e5c39594e064ee852564ae004fa010/e3b876e52786f1a6862575c900733cca/\$FILE/Waste_Study_Portfolio.pdf
Nevada	<i>State of Nevada Solid Waste Management Plan 2017</i> (50 pp., 953 K) https://ndep.nv.gov/uploads/land-waste-solid-ump-docs/swmp2017-final-8-17.pdf

State	Reports
New Hampshire	<i>Biennial Solid Waste Report, October 2019</i> (23 pp., 509 K) https://www.des.nh.gov/organization/commissioner/pip/publications/documents/r-wmd-19-02.pdf
New Jersey	No Report Available
New Mexico	<i>Solid Waste Management Plan</i> (2015) (34 pp., 1.5 MB) https://www.env.nm.gov/wp-content/uploads/sites/24/2018/04/SolidWasteManagementPlan.pdf
New York	<i>State Solid Waste Management Plan</i> (2010) https://www.dec.ny.gov/chemical/41831.html <i>New York: NYC Residential, School, and NYCHA Waste Characterization Study</i> (PDF) (68 pp., 11.1 MB) https://dsny.cityofnewyork.us/wp-content/uploads/2018/04/2017-Waste-Characterization-Study.pdf
North Carolina	<i>North Carolina: Solid Waste Management Annual Reports</i> https://deq.nc.gov/about/divisions/waste-management/sw/data/annual-reports <i>North Carolina: Orange County Waste Sort Data</i> http://www.co.orange.nc.us/1146/Waste-Sort-Data <i>North Carolina: Orange County Waste Composition Study</i> (2017) http://www.co.orange.nc.us/DocumentCenter/View/2826/2017-Orange-County-Waste-Characterization-Study-Final-Report-PDF
North Dakota	No Report Available
Ohio	<i>Ohio: Economic Impact Potential of Recycling in Ohio, 2019</i> (76 pp., 4.3 MB) https://www.epa.state.oh.us/Portals/41/OMM/Ohio-Waste-Characterization-Recycling-Economics-Report.pdf?ver=2019-08-29-123006-543 <i>Ohio: Hamilton County Waste Composition Study, 2018</i> http://www.hamiltoncountyclecycling.org/UserFiles/Servers/Server_3788196/File/EnvironmentalServices/SolidWaste/About/Hamilton%20County%20WCS%202018%20Final%20Report.pdf <i>Ohio Waste Characterization Study</i> (2004) (PDF) (319 pp., 1.64 MB) https://epa.ohio.gov/Portals/41/recycling/OhioWasteCharacterizationStudy.pdf
Oklahoma	<i>Oklahoma: Annual Solid Waste Tonnage Report</i> (2019) (2 pp., 93 K) https://www.deq.ok.gov/wp-content/uploads/land-division/2015-19_Annual_Tonnage_Reported.pdf
Oregon	<i>Oregon: Recycling Characterization and Composition Study 2016/2017</i> https://www.oregon.gov/deq/mm/Pages/Waste-Composition-Study.aspx
Pennsylvania	<i>Pennsylvania: 2016 County Recycled Materials Report</i> (PDF) (17 pp., 816 K) http://files.dep.state.pa.us/Waste/Recycling/RecyclingPortalFiles/Documents/2016_Recycling_Report.pdf <i>Pennsylvania: Statewide Waste Composition Study</i> (2003) (PDF) (175 pp., 2.81 MB) http://files.dep.state.pa.us/Waste/Recycling/RecyclingPortalFiles/Documents/wastecompositionstudy.pdf
Rhode Island	<i>Rhode Island Solid Waste Characterization Study</i> (PDF) (58 pp., 2.05 MB) https://www.rirrc.org/sites/default/files/2017-02/Waste_Characterization_Study_2015.pdf
South Carolina	<i>South Carolina Solid Waste Management 2019 Report</i> (PDF) (102 pp., 4.72 MB) https://scedhec.gov/sites/default/files/media/document/2019_SC_Solid_Waste_Management_Annual_Report_OR-1988_4.pdf <i>The Economic Impact of the Recycling Industry in South Carolina</i> (PDF) (12 pp., 1.13 MB) https://scedhec.gov/sites/default/files/Library/CR-011380.pdf
South Dakota	<i>State of South Dakota Recycling/Diversion Report 2011</i> (17 pp., 673 K) https://denr.sd.gov/des/wm/recycle/documents/StateofSouthDakotaRecyclingReport2011.pdf
Tennessee	<i>Tennessee: Waste Characterization Study</i> (2008) https://www.epa.gov/smm/study-characterizing-waste-tennessee <i>Tennessee: Analysis of Tennessee's Household Generated Waste</i> (2015) (23 pp., 1.0 MB) https://www.serdc.org/resources/TN-SF-Waste-Study.pdf
Texas	<i>Annual Summary of Municipal Solid Waste Management in Texas</i> https://www.tceq.texas.gov/permitting/waste_permits/waste_planning/wp_swasteplan.html
Utah	No Report Available
Vermont	<i>Vermont Waste Characterization</i> (2018) (PDF) (53 pp., 1.31 MB) https://dec.vermont.gov/sites/dec/files/wmp/SolidWaste/Documents/2018-VT-Waste-Characterization.pdf <i>Vermont: Waste Composition Study</i> (2013) (PDF) (44 pp., 1.47 MB) http://dec.vermont.gov/sites/dec/files/wmp/SolidWaste/Documents/finalreportvermontwastecomposition13may2013.pdf
Virginia	<i>Virginia Annual Recycling Summary Report 2017</i> (PDF) (10 pp., 546 K) https://www.deq.virginia.gov/Portals/0/DEQ/Land/RecyclingPrograms/CY2017RecycleRateReport.pdf
Washington	<i>Washington: Seattle Waste Composition Studies</i> http://www.seattle.gov/utilities/documents/reports/solid-waste-reports/composition-studies <i>Washington: Statewide Waste Characterization Study</i> (2015-2016) (PDF) (157 pp., 2.3 MB) https://fortress.wa.gov/ecy/publications/documents/1607032.pdf <i>Washington: Statewide Waste Characterization Study</i> (2015-2016) (PDF) (157 pp., 2.3 MB) https://fortress.wa.gov/ecy/publications/documents/1607032.pdf <i>Washington: Thurston County Waste Composition Study</i> (2013-2014) (PDF) (145 pp., 1.4 MB) https://www.co.thurston.wa.us/solidwaste/regulations/docs/ThurstonCountyWasteComp2014.pdf <i>Washington: Seattle Public Utilities Waste Composition Studies</i> https://www.seattle.gov/utilities/documents/reports/solid-waste-reports/composition-studies <i>Washington: King County Resident/Local Curbside Characterization, October 2018</i> (PDF) (89 pp., 1.3 MB) https://kingcounty.gov/-/media/depts/dnpr/solid-waste/about/documents/waste-characterization-study-2018.ashx?la=en
West Virginia	<i>West Virginia Solid Waste Management Plan 2019</i> (PDF) (212 pp., 5.43 MB) http://www.state.wv.us/swmb/StatePlans/2019%20Complete%20State%20Plan.pdf
Wisconsin	<i>Wisconsin: State-wide Waste Characterization Study</i> (2009) (PDF) (112 pp., 220 MB About PDF) http://dnr.wi.gov/topic/Recycling/documents/WI_WCS_Final_Report_June-30-2010.pdf <i>Wisconsin: Statewide Waste Characterization Study</i> (2003) (PDF) (114 pp., 738 K About PDF) http://dnr.wi.gov/topic/Recycling/documents/wrws-finalrpt.pdf <i>Wisconsin: Waste Characterization and Management Study Update</i> (2002) (PDF) (47 pp., 182 K) http://dnr.wi.gov/files/PDF/pubs/wa/WA418.pdf
Wyoming	<i>Wyoming Solid Waste Diversion Study, January 3, 2013</i> (179 pp., 4.3 MB) http://deq.wyoming.gov/media/attachments/Solid%26%20Hazardous%20Waste/Solid%20Waste/Studies%26%20Assessments/SHWD_Solid-Waste-Recycling-Wyoming-Diversion-Study_2013-0128.pdf
International Reports	<i>Canada—Metro Vancouver 2015 Waste Composition Monitoring Program</i> (PDF) (71 pp., 8.2 MB) http://www.metrovancouver.org/services/solid-waste/SolidWastePublications/2015_Waste_Composition_Report.pdf

Contact Us (<https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/forms/contact-us-about-facts-and-figures-about>) to ask a question, provide feedback, or report a problem.



United States Department of Agriculture

Economic Research Service
Economic Information Bulletin
Number 121
February 2014

The Estimated Amount, Value, and Calories of Postharvest Food Losses at the Retail and Consumer Levels in the United States



Cover image: Shutterstock.

Use of commercial and trade names does not imply approval or constitute endorsement by USDA.

JEAN C. BUZBY, HODAN F. WELLS, AND JEFFREY HYMAN

Access this report online: www.ers.usda.gov/publications/eib-economic-information-bulletin/eib-xxx.aspx.

Download the charts contained in this report:

- Go to the report's index page www.ers.usda.gov/publications/eib-economic-information-bulletin/eib121.aspx
- Click on the bulleted item "Download eib121.zip"
- Open the chart you want, then save it to your computer

Recommended citation format for this publication: Buzby, Jean C., Hodan F. Wells, and Jeffrey Hyman. *The Estimated Amount, Value, and Calories of Postharvest Food Losses at the Retail and Consumer Levels in the United States*, EIB-121, U.S. Department of Agriculture, Economic Research Service, February 2014.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, dis-

ability, and, where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, *etc.*) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

To file a complaint of discrimination write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Abstract

This report provides the latest estimates by USDA's Economic Research Service (ERS) on the amount and value of food loss in the United States. These estimates are for more than 200 individual foods using ERS's Loss-Adjusted Food Availability data. In 2010, an estimated 31 percent or 133 billion pounds of the 430 billion pounds of food produced was not available for human consumption at the retail and consumer levels. This amount of loss totaled an estimated \$161.6 billion, as purchased at retail prices. For the first time, ERS estimates of the calories associated with food loss are presented in this report. An estimated 141 trillion calories per year, or 1,249 calories per capita per day, in the food supply in 2010 went uneaten. The top three food groups in terms of share of total value of food loss are meat, poultry, and fish (30 percent); vegetables (19 percent); and dairy products (17 percent). The report also provides a brief discussion of the economic issues behind postharvest food loss.

Keywords: Food consumption, food loss, food recovery, food waste, foodservice, recycling, plate waste, processing.

Acknowledgments

The authors gratefully acknowledge Kevin Hall (National Institutes of Health), Ephraim Leibtag (ERS), Hayden Stewart (ERS), Jay Variyam (ERS), and Gregory Ziegler (Pennsylvania State University) for their reviews of the report. Thanks also to ERS editor Dale Simms and designer Cynthia A. Ray.

Contents

- Summary
- Background
- Economics of Food Loss
- Data and Methods
- Results
- Amount
- Value
- Calories
- Discussion
- Appendix: The ERS Loss-Adjusted Food Availability Data and Methods for Estimating the Amount and Value of Postharvest Food Loss
- References

Errata

On June 27, 2014, *Tables 2, 3, and 5* were updated to correct some incorrect values. The errors did not affect summary totals in the tables or report findings.

*A report summary from the Economic Research Service**

February 2014

What Is the Issue?

"Food loss" represents the amount of edible food, postharvest, that is available for human consumption but is not consumed for any reason; it includes cooking loss and natural shrinkage (*e.g.*, moisture loss); loss from mold, pests, or inadequate climate control; and plate waste. "Food waste" is a component of food loss and occurs when an edible item goes unconsumed, such as food discarded by retailers due to undesirable color or blemishes and plate waste discarded by consumers. Food loss (particu-

*Find the full report at www.ers.usda.gov/publications/eibeconomic-informationbulletin/EIB-121.aspx.

ERS is a primary source of economic research and analysis from the U.S. Department of Agriculture, providing timely information on economic and policy issues related to agriculture, food, the environment, and rural America.

larly the food waste component) is becoming an increasingly important topic both domestically and internationally. Better estimates of the amount and value of food loss, including food waste, could help serve as quantitative baselines for policymakers and the food industry to set targets and develop initiatives, legislation, or policies to minimize food waste, conserve resources, and improve human nutrition. Reducing food loss would likely reduce food prices in the United States and the rest of the world, though the effects depend on the nature of supply, including import and export considerations.

What Did the Study Find?

In the United States, 31 percent—or 133 billion pounds—of the 430 billion pounds of the available food supply at the retail and consumer levels in 2010 went uneaten. Retail-level losses represented 10 percent (43 billion pounds) and consumer-level losses 21 percent (90 billion pounds) of the available food supply. (Losses on the farm and between the farm and retailer were not estimated due to data limitations for some of the food groups.)

The estimated total value of food loss at the retail and consumer levels in the United States was \$161.6 billion in 2010. The top three food groups in terms of share of total value of food loss were meat, poultry, and fish (30 percent, \$48 billion); vegetables (19 percent, \$30 billion); and dairy products (17 percent, \$27 billion). The total amount of food loss represents 387 billion calories (technically, we mean *Calorie* or kcal *hereafter*) of food not available for human consumption per day in 2010, or 1,249 out of 3,796 calories available per American per day. Recovery costs, food safety considerations, and other factors would reduce the amount of food that could actually be recovered for human consumption.

The study also reviewed the literature and found that food loss is economically efficient in some cases. There is a practical limit to how much food loss the United States or any other country could realistically prevent, reduce, or recover for human consumption given: (1) technical factors (*e.g.*, the perishable nature of most foods, food safety, storage, and temperature considerations); (2) temporal and spatial factors (*e.g.*, the time needed to deliver food to a new destination, and the dispersion of food loss among millions of households, food processing plants, and foodservice locations); (3) individual consumers' tastes, preferences, and food habits (*e.g.*, throwing out milk left over in a bowl of cereal); and (4) economic factors (*e.g.*, costs to recover and redirect uneaten food to another use).

How Was the Study Conducted?

This report uses data from ERS's Loss-Adjusted Food Availability (LAFA) data series. This data series is ERS's core Food Availability data series, adjusted for spoilage, plate waste, and other food losses and converted to daily per capita amounts, calories, and *food pattern equivalents* (previously called servings and *MyPyramid equivalents*). Here, the LAFA data series' underlying loss assumptions are used to estimate food loss at the retail and consumer levels. The LAFA data series is considered to be preliminary because ERS continues to improve the underlying loss assumptions and the documentation of the data series. In August 2012, new estimates for consumer-level loss were incorporated into the data series. Therefore, the relative contribution of the different food groups out of total food loss has changed from previous ERS publications on food loss. The analysis is an extrapolation from the data as of September 2012 and is not based on an equilibrium model. For each food group covered here, we calculated the amount, value, and representative calories of food loss at the retail and consumer levels in the United States in 2010. The value estimates are based on retail prices.

Background

In 1977, a *Report to Congress* by the General Accounting Office (GAO) titled "Food Waste: An Opportunity To Improve Resource Use" (GAO, 1977) discussed the U.S. Department of Agriculture's activities related to food loss in the United States, warning that:

"The United States can no longer be lulled by past agricultural surpluses and must consider a future that may contain a world shortage of food. In an environment of plenty, the United States has not historically been concerned with food losses. Although some attention has been focused on the subject in the agricultural research community, in many instances, plentiful food and low prices did not justify the economic expenditure necessary to reduce loss. In an era of

potential scarcity, however, it may be necessary to re-examine the present position on losses.” (p. 1)¹

Today, there is a renewed interest in the issues related to food loss, both domestically and internationally. For example, USDA and the U.S. Environmental Protection Agency (EPA) launched the U.S. Food Waste Challenge on June 4, 2013, and the United Nations’ Environment Programme’s (UNEP) World Environment Day’s major theme in June 2013 was food waste. Some findings from the 1977 GAO report are still relevant today, given the resources used in the production of uneaten food, the negative externalities associated with food loss (*e.g.*, pollution created during food production), and the growing pressures on the global food supply (see box, “Three Reasons for a Growing Interest in Food Loss”). Therefore, it may become increasingly important to estimate the amount and value of food loss, including food waste, as a quantitative baseline for policymakers and the food industry to set targets and develop initiatives, legislation, or policies to minimize food waste, conserve resources, and improve human nutrition (Buzby and Hyman, 2012).

“Food loss” represents the amount of edible food, postharvest, that is available for human consumption but is not consumed for any reason. It includes cooking loss and natural shrinkage (*e.g.*, moisture loss); loss from mold, pests, or inadequate climate control; plate waste; and other causes.² “Food waste” is a component of food loss and occurs when an edible item goes unconsumed, such as food discarded by retailers due to blemishes or plate waste discarded by consumers. This report calculates the amount and value of food loss in the United States. It does not calculate the amount and value of food waste or the other subcomponents of food loss. Data are unavailable on the portion of food loss that is food waste. The estimates of food loss provided here have had the inedible portions removed (*e.g.*, bones, peach pits, and asparagus stalks). For example, the food loss estimates for meat, poultry, and fish provided are in boneless weight.

Three Reasons for a Growing Interest in Food Loss

(1) Food loss means a loss of money and other resources

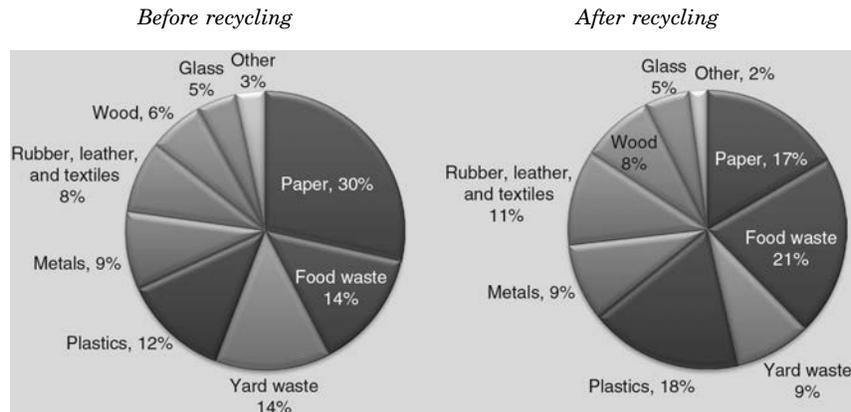
Food loss represents significant amounts of money and other resources invested in food production, including land, fresh water, labor, energy, agricultural chemicals (*e.g.*, fertilizer, pesticides), and other inputs to produce food that does not ultimately meet its intended purpose of feeding people (Buzby, *et al.*, 2011). For example, Webber (2012) estimates that food waste represents 2.5 percent of U.S. energy consumption per year, and Hall, *et al.* (2009) estimate that the production of this wasted food required the expenditure of around 300 million barrels of oil and over 25 percent of the total freshwater consumed by agriculture in the United States. A more detailed understanding of the resource implications of food loss in the United States, including estimates of the land used to produce wasted food, is not available.

According to the U.S. Environmental Protection Agency (EPA), food waste accounted for 34 million tons (almost 14 percent) out of the 250 million tons of municipal solid waste in the United States in 2010 as measured before recycling (EPA, 2011) (see figure). Less than 3 percent of this food waste was recovered and recycled, with the remainder going to landfills or incinerators (EPA, 2011). In 2010, food waste cost roughly \$1.3 billion to landfill (Schwab, 2013). After recycling some materials, such as paper and paperboard, food waste was the single largest amount of municipal solid waste categorized by EPA in 2010, with 21 percent of the total (see figure).

¹The 1977 report also concluded that “at present, loss represents a large misallocation of resources. For 1974, about 66 million acres of land and 9 million tons of fertilizer were used to produce food ultimately lost. In energy, about 461 million equivalent barrels of oil were used to produce food ultimately lost” (GAO, 1977). This amount of loss represents about 23 percent of all food produced for direct human consumption in 1974.

²The term “postharvest food loss” simply refers to food loss after the food is harvested. Definitions of food waste and food loss vary worldwide (*e.g.*, inedible portions are included in some food waste definitions).

Total municipal solid waste generation by material before (250 million tons) and after recycling (161 million tons), 2010



Source: EPA, as of September 17, 2012: <http://www.epa.gov/wastes/conserve/materials/organics/food/fd-basic.htm>.

(2) *Food loss means that negative externalities were created throughout the supply chain*

Negative externalities can arise throughout the entire food supply chain from the food's production to the disposal of any uneaten food. *Negative externalities* are transaction costs that spill over from an action (e.g., food production or disposal) that can adversely affect society and the environment and that are not incorporated in market prices (e.g., the price of food). In general, food that is produced, regardless of whether it is consumed or wasted, contributes to pressure on the availability of fresh water and other natural resources (Lundqvist, *et al.*, 2008), including land needed for urbanization, forests, and protected areas, some of which is necessary for biodiversity and wildlife. Some of these pressures on water, land, and other resources are not fully internalized in prices (e.g., value of wildlife diversity in land prices). A few examples of these externalities include: (1) greenhouse gas emissions from cattle production (Lundqvist *et al.*, 2008); (2) air pollution caused by farm machinery and trucks that transport food; (3) water pollution and damage to marine and freshwater fisheries from agricultural chemical and nutrient runoff during crop and livestock production (Aillery, *et al.*, 2005; Ribaud, *et al.*, 2011); and (4) soil erosion, salinization, and nutrient depletion that arise from unsustainable production and irrigation practices (Hansen and Ribaud, 2008; Sullivan, *et al.*, 2004).

Additionally, incinerating food waste creates emissions that harm the environment and landfilling food waste generates methane gas when food waste decomposes anaerobically. Methane is 21 times more powerful in accelerating global warming than carbon dioxide (EPA, 2011). Landfills account for 34 percent of all human-related methane emissions in the United States (EPA, 2011). In addition to methane, landfills produce leachate (a mixture of liquid waste, organic degradation byproducts, and rainwater), which may contaminate groundwater if the landfills are not properly maintained. These negative consequences are offset to some extent when energy is generated from incinerating or landfilling food (e.g., tapping the methane gas).

(3) *The world population is growing, so more food will be needed to feed people*

Reducing food waste will become an increasingly important strategy in the future to help feed a growing human population. It would help by increasing the amount of food available for consumption (particularly food for subsistence households in developing countries) and by lowering prices. The United Nations predicts that the world population will reach 9.3 billion by 2050 (United Nations, 2011), and this will require a 70-percent increase in food production, net of crops used for biofuels (FAO, 2009). Currently, according to an ERS report, the number of food-insecure people reached 802 million in 2012 (Rosen *et al.*, 2012). Low incomes have an important role in this level of food insecurity. Although most of this population growth will occur in developing countries, devel-

oped countries like the United States also face issues of hunger and food insecurity.

In 2012, 49 million people lived in food-insecure households in the United States (Coleman-Jensen, *et al.*, 2013) out of a total population of over 305 million. Food insecurity is when the food intake of one or more household members is reduced and eating patterns are disrupted at times during the year because the household lacks money and other resources for food. Food-insecure households accounted for 14.5 percent of U.S. households: 9.2 percent had low food security and 5.7 percent had very low food security (see figure).

Some food loss is inevitable because food is inherently perishable and some food needs to be discarded to ensure food safety. For example, some unsold or uneaten food at restaurants, supermarkets, or in homes is not suitable for consumption. Some losses—like the discard of moldy fruit from the produce shelf at the supermarket and the condemnation of diseased animals at the slaughtering house—are necessary to ensure the safety and wholesomeness of the food supply. Such foods are not recoverable for human use. Likewise at restaurants, plate scraps not taken home by patrons are appropriately discarded out of health considerations. Legal liability and strict food safety rules, such as those in the wake of the mad cow disease scare, inhibit food recovery and redistribution in some cases. Discarding unsafe food and food suspected of being unsafe reduces the individual and societal costs of foodborne illness and, in some cases, the potential legal liability.

Many causes of food loss can occur across the entire food supply chain in developed countries (see box, “Causes of Food Loss and Waste at the Farm, Farm-to-Retail, Retail, and Consumer Levels”). The share of total food loss due to each of these causes is unknown.

This report estimates the amount, value, and calories of food loss at the retail and consumer levels in the United States, both in total and per capita by major food group.³ No adjustments are made for changes in the demographic makeup of the population. Given the recent and growing interest in food loss and waste domestically, up-to-date estimates on the magnitude of food loss in the United States are timely. This report updates and extends previous ERS publications on food loss in several important ways:

1. The report updates previous ERS estimates of the amount and value of food loss for foods at the retail and consumer levels in the United States in 2010 using data as of September 2012. Previous ERS food loss estimates for 2008 are available in Buzby and Hyman (2012) (amount and value for all commodities), Buzby, *et al.* (2011) (value provided only for fruits and vegetables), and Hodges, *et al.* (2010) (amount estimates in tonnes).
2. The estimates in this report incorporate new consumer-level loss assumptions, which were introduced into the Loss-Adjusted Food Availability (LAFA) data series in August 2012 (see documentation: [http://www.ers.usda.gov/data-products/food-availability-\(per-capita\)-data-system/loss-adjusted-food-availability-documentation.aspx](http://www.ers.usda.gov/data-products/food-availability-(per-capita)-data-system/loss-adjusted-food-availability-documentation.aspx)) and which were not used in the aforementioned studies.
3. This report discusses the economics of food loss in greater depth than in previous ERS reports.
4. This report provides ERS’s first estimates of the amount of food loss in terms of calories.
5. The LAFA data series is part of the Food Availability Data System, which now faces important data challenges in terms of temporarily suspended or unavailable data for some commodities (ERS, 2011). This means that the 2010 estimates provided in this report may be the last complete year for some time whereby all commodities and food groups are represented in the FADS. This emphasizes the importance of providing the 2010 food loss estimates with detailed information and documentation about the estimates. This documentation will change as new data and information are included in the FADS and if there is a change in the methodology of how the food loss estimates are calculated.

³Here, this report uses the term “calories” to represent “Calories” (*i.e.*, with capital “C”) or kilocalories because “calories” is the commonly used spelling in the media and informal publications. Wikipedia provides more information on this distinction (<http://en.wikipedia.org/wiki/Calorie>).

Causes of Food Loss and Waste at the Farm, Farm-to-Retail, Retail, and Consumer Levels

(Farm Level (not measured in this report))

- Consumption or damage by insects, rodents, birds, or microbes (*e.g.*, molds, bacteria),^a and damage by unfavorable or extreme weather (*e.g.*, droughts, floods, hurricanes, and freezes).
- Diminishing returns when harvesting additional increments of production and other factors leading to leaving some edible crops unharvested.
- Overplanting or overpreparing due to difficulty predicting number of buyers/customers.

Farm-to-Retail Level (not measured in this report)

- Rejection of some products for human consumption due to industry or government food safety regulations or standards (*e.g.*, livestock condemned at slaughter for food safety reasons).
- Byproducts from food processing landfilled or incinerated (*i.e.*, not diverted to other food uses such as for ingredients in mixed foods).
- Outgrading of blemished, misshapen, or wrong-sized foods due to minimum quality standards by buyers, which are the result of consumer demand for high-quality, cosmetically appealing, and convenient foods.
- Spillage and damage, such as by equipment malfunction (*e.g.*, faulty cold or cool storage) or inefficiencies during harvesting, drying, milling, transporting, or processing.

Retail Level

- Dented cans and damaged packaging. Inappropriate packaging that damages produce.^b
- Unpurchased holiday foods.
- Spillages, abrasion, bruising, excessive trimming, excessive or insufficient heat, inadequate storage, technical malfunction.^a
- Overstocking or overpreparing due to difficulty predicting number of customers.
- Culling blemished, misshapen, or wrong-sized foods in an attempt to meet consumer demand.

Consumer Level

- Spillages, abrasion, bruising, excessive trimming, excessive or insufficient heat, inadequate storage, technical malfunction.^a
- Sprouting of grains and tubers, biological aging in fruit.^a
- Consumers becoming confused over “use-by” and “best before” dates so that food is discarded while still safe to eat.^b
- Lack of knowledge about preparation and appropriate portion sizes. For example, lack of consumer knowledge of when a papaya is ripe, how to prepare it, and how to use it as an ingredient are reasons for high papaya loss.^c
- Industry or government standards may cause some products to be rejected for human consumption (*e.g.*, plate waste can’t be re-used at restaurants).
- Psychological tastes, attitudes, and preferences leading to plate waste/scrapings (*e.g.*, human aversion, such as “I don’t eat that,” or refusal to eat a food for religious reasons).^a Consumer demand for high cosmetic standards.
- Seasonal factors: more food is wasted in summer.^d
- Uneaten or leftover holiday foods.

Sources:

^aZeigler and Floros (2011).

^bParfitt, *et al.* (2010).

^cBuzby, *et al.* (2009).

^dGallo (1980)

The remainder was constructed by the authors, 2012. A previous version of this table was published in Buzby and Hyman (2012). Some of these examples of causes may occur at more than one level (*e.g.*, spillage).

Although ERS adjusts for farm-to-retail level losses for some of the included commodities (*e.g.*, canned fruit and vegetables), ERS does not provide summary estimates of food loss at the farm-to-retail levels because of the lack of comparable data for each individual food in the LAFA data series.

The food loss estimates provided in this report at the retail and consumer levels are greater than the amounts of food that could be recovered and diverted to feed people. As previously mentioned, some uneaten food cannot be efficiently and effectively diverted due to the perishability of most foods, high transportation and distribution costs, and other challenges, such as the need to ensure food safety.

On the other hand, the per capita estimates of the total amount of food available for consumption (*i.e.*, the primary reason why this data series was created) using data from the LAFA data series are high,⁴ suggesting that underlying food loss assumptions and resulting food loss estimates for all included commodities and food groups presented here are, on average, understated. In 2010, the estimated calories available per capita per day was 2,547, which is high, even given the current obesity epidemic.⁵ If a person with caloric needs of 2,100 calories per day actually consumed 2,547 calories per day, he/she would gain an implausible and unsustainable amount of weight per year or over a lifetime. In other words, if the underlying food loss assumptions were higher, then more food (*i.e.*, associated with the loss) would be subtracted from the unadjusted amounts of food available for consumption and the estimated loss-adjusted amount of calories per capita per day would be lower than the current estimate of 2,547 calories per day and thus more realistic.

Economics of Food Loss

There is a practical limit to how much food loss the United States could realistically prevent, reduce, or recover for human consumption given:

1. technical factors (*e.g.*, the perishable nature of most foods; food safety, storage, and temperature considerations);
2. temporal and spatial factors (*e.g.*, the time needed to deliver food to a new destination, and the dispersion of food loss among millions of U.S. households, food processing plants, and foodservice locations);
3. individual consumers' tastes, preferences, and food habits (*e.g.*, a child's distaste for bread crusts, the habit of throwing out milk left over in a bowl of cereal); and
4. economic factors (*e.g.*, cost and other resource constraints, such as to recover and redirect uneaten food to another use). These economic factors are often entwined with the technical, temporal, and spatial factors.

Therefore, it is unrealistic to think that the United States or any other country will ever entirely eliminate food waste. GAO's 1977 *Report to Congress* (p. 44) considers the question of whether losses are economically justifiable:

"From a business standpoint, the value of food product saved for human use should be equal to, or greater than, the cost of saving it. To the extent that the costs exceed value, good business judgment dictates that the loss is an acceptable cost. In the course of preparing this report, no material has been found that would indicate that opportunities were knowingly overlooked by business owners to conserve food at an acceptable cost. The profit motive should dictate against such loss. The slowness of technology transfer, however, can serve to impede the implementation of loss-reducing techniques. It is, therefore, possible that opportunities to make loss physically and economically preventable are not being utilized. In sum, at this point, losses that have been identified are, for the most part, economically justifiable."

There really are two separate challenges in reducing food loss and its environmental and other impacts: (1) how to reduce the amount of uneaten food in the first

⁴The primary purpose of the LAFA data series is to estimate consumed amounts of food from the amount of food available in the U.S. food supply. This differs from approaches, such as the National Health and Nutrition Examination Survey (NHANES), that are based on 24 hour recalls and tend to be underestimates of actual consumption. The extent of underestimation is well documented (especially for calories) using doubly labeled water methods. The LAFA estimates of per capita availability are well above NHANES estimates, suggesting that the underlying food loss assumptions in the data series and the ERS food loss estimates provided here are conservative. The LAFA estimates are also higher than the energy requirements of many cohorts of the population as determined by the Institute of Medicine (IOM, 2005). This also suggests that the ERS food loss estimates are conservative.

⁵This 2,547 calories per capita per day is calculated from 3,796 total calories minus 1,249 calories of food loss (see *Table 6*).

place (*prevention*), and (2) what to do with uneaten food once it is generated (*disposal*). As the first challenge is met more fully, the second becomes less of an issue. The impact on food prices and markets of a reduction in food loss depends on if the loss was prevented in the first place or if what would be counted here as “food loss” is diverted to other economic uses. If uneaten food is simply diverted to other economic uses beyond human consumption (*e.g.*, animal feed or energy generation) so that domestic demand for food and domestic food production remains roughly the same, then there won’t be downward pressure on food prices and the agriculture and food industry’s business will remain roughly unchanged.

However, if food loss is prevented or reduced to the extent that less food is needed to feed people (*i.e.*, the demand for food decreases), then this would likely reduce food prices in the United States and the rest of the world. However the effects on food prices will depend on the relevant supply and demand elasticities (*i.e.*, economic measures of the responsiveness of supply and demand to a change in its price). For example, if more food is exported to offset the effect on food markets from domestic reductions in food loss, then food prices may not decrease as much as without the boost in exports. If the domestic demand for food decreases, then the demand for inputs like land, labor, and capital may decline as well. If per capita food loss is significantly reduced by increased food consumption by people already consuming above their energy needs, then the costs associated with increased obesity may grow. It is important to note that the value of food loss estimated in this report is for one snapshot in time and would change as retail prices change in response to supply and demand factors.

All of the loss assumptions used in the LAFA data series are currently available on the ERS website, and some of this commodity-specific information may be helpful when analyzing food loss for a particular commodity at the retail or consumer level (ERS, 2012a). Additional types of economic costs could be included in a benefit-cost analysis of a specific loss-reducing initiative. These costs could include the costs of disposing of unused food, the cost and value of food going to a lower value use (*e.g.*, animal feed), and the lost opportunity cost of resources wasted. Data are largely unavailable on exactly where, why, and how food losses and waste occur and the economic incentives to reduce these losses.

In some cases, the amount and value estimates in this report are likely too aggregated to provide helpful measures of the economic incentives for a specific food company to reduce food loss. A food company would need more tailored estimates to help inform its decision to reduce food loss, particularly if the decision involves multi-ingredient foods or commodities not covered in the LAFA data series (*e.g.*, LAFA provides data on commodities and whole foods such as eggs, beef, and fresh spinach). For example, a food company may weigh the costs of switching to more expensive packaging for fresh meat against the benefits of having that packaging extend the shelf life of the meat. In short, companies will adopt a loss-reducing practice if it is *economically justifiable*, that is, if the benefits outweigh the costs. This cost-benefit analysis may include consideration of consumer goodwill toward a firm, such as when a sandwich shop donates uneaten yet wholesome food to a community feeding organization at the end of each day.

More specific food loss estimates could help policymakers in designing food-loss-reducing regulations. Publicizing where and how much food goes uneaten and the value of this loss may help inform policymakers about the issue and help increase the efficiency of the farm-to-fork food system and food recovery efforts to feed the growing human population. Other policy issues related to food loss include sustainability, the impact on international trade, and government funding of research and development for loss-reducing technologies (*e.g.*, for food, food packaging, and food system practices).

Losses at the consumer level occur for many reasons, such as different tastes and preferences or consumers buying more than they need (see box, “Causes of Food Loss and Waste at the Farm, Farm-to-Retail, Retail, and Consumer Levels”). For many Americans, food purchases are a small component of all household spending, weakening incentives to reduce food loss on monetary grounds alone. The average American spent 11.2 percent of disposable income on food in 2010.⁶ Consumer food loss is widespread, so mitigating it will be challenging. There are an estimated 119 million households (U.S. civilian population), over a half a million dining establishments (*i.e.*, fullservice restaurants, fast-food outlets), and numerous other places where people eat (*e.g.*, schools, institutions, and prisons) across the United States.

This range of food loss combined with economies of scale suggest that large, industry-led initiatives or government-led policies, such as information campaigns and

⁶In 2010, the average American spent \$4,016 on food (both for at-home and away-from-home consumption) (ERS, 2012b) out of an average disposable income of \$36,016 in 2010 (BLS, 2012).

additional changes in Federal laws, may have the greatest potential to reduce food loss in the next decade. One example of a large initiative to reduce food waste is the Waste Resources Action Programme (WRAP). WRAP estimates that between 2007 and 2012, household food waste in the United Kingdom decreased 15 percent despite a 4-percent increase in the number of households (Goodwin, 2013). This is presumably due in part to its campaign to raise awareness of the issue by consumers, businesses, and local authorities (*e.g.*, *Love Food Hate Waste* launched in 2007).⁷ There have been other major campaigns launched to raise public awareness of food waste and to promote reduction, such as the Food Wise Hong Kong Campaign launched in December 2012. In the United States, there have been several laws (*e.g.*, Bill Emerson Good Samaritan Food Donation Act, Internal Revenue Code 170(e)(3), and the U.S. Federal Food Donation Act of 2008) that have encouraged food donation by providing liability protection to donors or tax incentives, though the full impact on food loss or food waste has not been measured.⁸

Currently, there is a growing list of participants in the U.S. Food Waste Challenge undertaking activities to reduce, recover, or recycle food waste, and these participants include six USDA agencies, major food companies, smaller private firms, universities and colleges, sports teams, and entertainment resorts, among others.⁹ Even a modest, yet economically feasible, decrease in food loss from small loss-reducing initiatives or newly adopted processing, packaging, and storage technologies could lessen the environmental impacts of food waste generation and disposal. And if wholesome food is recovered for human consumption in this process, it could reduce food insecurity by supplementing existing food assistance efforts and could potentially provide tax savings to farms, food retailers, and foodservice establishments that donate food. However, no single intervention would be a panacea and, as previously mentioned, food loss will never be entirely eliminated. Substantial inroads in reducing food loss would likely require a combination of approaches. Prior to the adoption of new initiatives, policies, or laws to reduce food loss, both the costs and benefits should be considered. For example, while redirecting edible and wholesome food to food banks takes advantage of food already available for consumption, food safety and transportation challenges and costs need to be considered.

In the end, economic incentives and consumer behavior will be paramount in reducing food loss, and these efforts must coexist with obtaining an acceptable return on investment by food industry members; protecting the environment and worker safety; and fulfilling consumer demand for food safety, quality, variety, and affordability.

Data and Methods

ERS's Loss-Adjusted Food Availability (LAFA) data are derived from ERS per capita Food Availability data adjusted to remove the inedible portions (*e.g.*, bones, pits, and peels) and to account for food spoilage, plate waste, and other losses (*e.g.*, cooking loss). The primary purpose of the LAFA data is to more closely estimate actual per capita intake. In addition to providing the estimated amount of pounds per capita ingested per year and per day, the data series also provides estimates of the loss-adjusted number of calories consumed daily (per capita) and daily *food pattern equivalents* (previously called servings and *MyPyramid equivalents*). Here, we use the underlying food loss assumptions in the LAFA data series as of September 2012 to estimate food loss for 2010 at the retail and consumer levels, both per capita and in total for the United States. The series currently covers more than 200 agricultural commodities from 1970 to the most recent year of data. The data for individual commodities are aggregated into food groups to facilitate comparison with Federal dietary recommendations.¹⁰

The appendix discusses the construction of the LAFA data series, provides a list of commodities covered (see appendix box, "Commodity Coverage in the 2010 Loss-Adjusted Food Availability Data," p. 26), and discusses some of the limitations of the data. The appendix also provides detail on the steps that we followed for estimating the amount, value (*i.e.*, using 2010 retail prices), and calories of food loss in the United States. This data series is considered to be *preliminary* because ERS continues to improve the underlying food loss assumptions and documentation (for details, see [http://www.ers.usda.gov/data-products/food-availability-\(per-capita\)-data-system/loss-adjusted-food-availability-documentation.aspx](http://www.ers.usda.gov/data-products/food-availability-(per-capita)-data-system/loss-adjusted-food-availability-documentation.aspx)). The LAFA data

⁷ For more information on WRAP, see Quedest and Parry (2011) and www.wrap.org.uk.

⁸ See <http://www.usda.gov/oc/foodwaste/resources/donations.htm> for more information.

⁹ See <http://www.usda.gov/oc/foodwaste/participants.htm> for details.

¹⁰ Currently, the series is calibrated for comparison against the 2005 *Dietary Guidelines for Americans*, but ERS has plans to update the LAFA data with the 2010 *Dietary Guidelines for Americans*.

can be accessed on the ERS website through Excel spreadsheets that provide all of the current loss assumptions and a largely consistent structure for the data series (*i.e.*, the sequence of steps by which the different types of losses are removed from the system) (ERS, 2012a).

Results

The results from our analysis of ERS' Loss-Adjusted Food Availability data pertain to the amount, value, and calories of food loss at the retail and consumer levels in the United States in 2010. Each subsection includes two tables (one for total and one for per capita estimates) and a figure that divides the total food loss estimate into shares by food group.

Amount

ERS estimates that 31 percent or 133 billion pounds of the 430 billion pounds of the edible and available food supply at the retail and consumer levels in the United States in 2010 went uneaten (*table 1*). Retail-level losses represented 10 percent (43 billion pounds) and consumer-level losses 21 percent (90 billion pounds) of the available food supply. Losses on the farm and between the farm and retailer were not estimated due to data limitations for some of the food groups. Had these losses been included, total postharvest loss in the United States would be over 31 percent of the food supply. For example, for fresh produce alone, an estimated 12 percent goes uneaten in developed countries from production to retail sites, with a range from 2 to 23 percent for individual commodities (Kader, 2005).

Our estimates are based on the current loss assumptions in the LAFA data series, which include retail-level loss estimates from Buzby *et al.* (2009). That study—comparing supplier shipment data with point-of-sale data from six large supermarket retailers—found that annual supermarket losses for 2005 and 2006 averaged 11.4 percent for fresh fruit, 9.7 percent for fresh vegetables, and 4.5 percent for fresh meat, poultry, and seafood. ERS is currently in the process of obtaining 2011 and 2012 retail-level food loss estimates for these commodities.¹¹ The loss assumptions for all other foods in the data series at the retail level have not been updated (*i.e.*, added fats and oils, added sugars and sweeteners, grains, dairy products, and processed fruit and vegetables (frozen, canned, dried, and juice)).¹²

New (2010) estimates of consumer-level loss for most commodities (Muth, *et al.*, 2011) were incorporated into the LAFA data series in August 2012 (see ERS (2012a) for details).¹³ This is the primary reason why the shares of loss by food group differ from other recent ERS publications, particularly the drop in share for the meat, poultry, and fish group (Buzby and Hyman, 2012; Buzby, *et al.*, 2011).

When the 133 billion pounds of food loss at the retail and consumer levels in 2010 is broken down by food group, the top three food groups in terms of loss are: (1) dairy products (25 billion pounds or 19 percent); (2) vegetables (25 billion pounds or 19 percent); and (3) grain products (18.5 billion pounds or 14 percent) (*fig. 1*).

Table 1: Estimated total food loss in the United States, 2010

Commodity	Losses from food supply ^b						
	Food Supply ^a	Retail level		Consumer level		Total retail and consumer level	
	Billion pounds	Billion pounds	Percent	Billion pounds	Percent	Billion pounds	Percent
Grain products	60.4	7.2	12	11.3	19	18.5	31
Fruit	64.3	6.0	9	12.5	19	18.4	29
Fresh	37.6	4.4	12	9.5	25	13.9	37
Processed	26.7	1.6	6	2.9	11	4.5	17
Vegetables	83.9	7.0	8	18.2	22	25.2	30

¹¹ Some data users have suggested that the total retail-level loss estimates of 10 percent and 43 billion pounds are high given modern packaging, cold-chain, and inventory tracking technologies and other business practices that are commonly used by retailers.

¹² The LAFA data series is based on individual commodities/foods, not processed products. The added fats and oils group includes foods that are typically added to other foods when eaten and do not include the naturally occurring fats in meat and dairy products, for example. Similarly, added sugars and syrups are caloric foods added to foods during processing or preparation. Added sugars and sweeteners do not include naturally occurring sugars, such as those found in milk and fruit. Non-caloric sweeteners are not included in the LAFA data series.

¹³ RTI International used a numerical estimation method to calculate consumer-level food loss estimates using Nielsen Homescan data and National Health and Nutrition Examination Survey (NHANES) data. ERS then analyzed how the LAFA per capita data would change if the proposed RTI estimates of consumer-level food loss were incorporated into the data series (Muth, *et al.*, 2011).

Table 1: Estimated total food loss in the United States, 2010—Continued

Commodity	Losses from food supply ^b						
	Food Supply ^a	Retail level		Consumer level		Total retail and consumer level	
	Billion pounds	Billion pounds	Percent	Billion pounds	Percent	Billion pounds	Percent
Fresh	53.5	5.2	10	12.8	24	18.0	34
Processed	30.4	1.8	6	5.3	18	7.1	24
Dairy products	83.0	9.3	11	16.2	20	25.4	31
Fluid milk	53.8	6.5	12	10.5	20	17.0	32
Other dairy products	29.1	2.8	10	5.7	19	8.5	29
Meat, poultry, and fish	58.4	2.7	5	12.7	22	15.3	26
Meat	31.6	1.4	4	7.2	23	8.6	27
Poultry	22.0	0.9	4	3.9	18	4.8	22
Fish and seafood	4.8	0.4	8	1.5	31	1.9	39
Eggs	9.8	0.7	7	2.1	21	2.8	28
Tree nuts and peanuts	3.5	0.2	6	0.3	9	0.5	15
Added sugar and sweeteners	40.8	4.5	11	12.3	30	16.7	41
Added fats and oils	26.0	5.4	21	4.5	17	9.9	38
Total	430.0	43.0	10	89.9	21	132.9	31

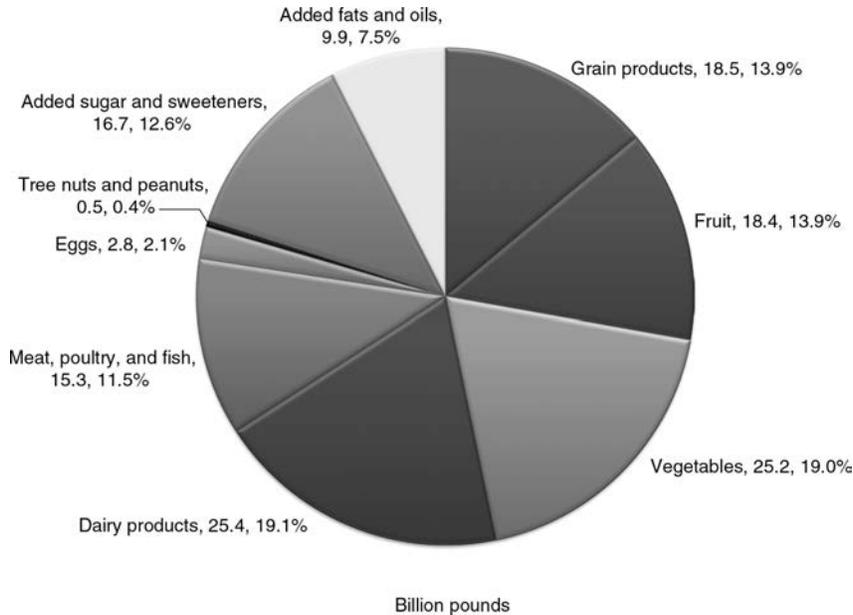
^a Food supply at the retail level, which is the foundation for the retail- and consumer-level loss stages in the loss-adjusted data series.

^b Totals may not add due to rounding.

Per capita losses at the retail and consumer levels for each commodity (not shown) were estimated by multiplying the quantity of that commodity available for consumption by the appropriate loss assumption. Individual loss estimates were then multiplied by the U.S. population and summed up into their respective food groups and retail or consumer levels.

Source: ERS (2012a) and the U.S. population on July 1, 2010 (309.75 million).

Figure 1: Estimated total amount of food loss in the United States by food group, 2010



Source: ERS (2012a).

In 2010, the average amount of food loss per American was 429 pounds, of which 139 pounds at the retail level and 290 pounds at the consumer level went uneaten (table 2). At the consumer level, 59 pounds of vegetables, 52 pounds of dairy products, and 41 pounds of meat, poultry, and fish per capita from the food supply in 2010 went uneaten.

Value

The total value of food loss at the retail and consumer levels was an estimated \$161.6 billion in 2010 (*table 3*). The two food groups with the highest value of losses were meat, poultry, and fish (\$48.5 billion) and vegetables (\$30 billion). These estimates are based on the value of foods as purchased at retail prices. The calculations are described more fully in the appendix.

When the total value of food loss at the consumer level in 2010 is broken down by food group, the meat, poultry, and fish group comprises almost a third (30 percent) of the total (*fig. 2*), a much greater share than by weight (12 percent in *figure 1*) because foods in this group tend to cost more per pound than many other foods.

Table 2: Estimated per capita amount of food loss in the United States, 2010

Commodity	Losses from food supply ^b						
	Food Supply ^a	Retail level		Consumer level		Total retail and consumer level	
	Pounds	Pounds	Percent	Pounds	Percent	Pounds	Percent
Grain products	195	23	12	36	19	60	31
Fruit	208	19	9	40	19	59	29
Fresh	121	14	12	31	25	45	37
Processed	86	5	6	9	11	15	17
Vegetables	271	23	8	59	22	81	30
Fresh	173	17	10	41	24	58	34
Processed	98	6	6	17	18	23	24
Dairy products	268	30	11	52	20	82	31
Fluid milk	174	21	12	34	20	55	32
Other dairy products	94	9	10	18	19	27	29
Meat, poultry, and fish	189	9	5	41	22	49	26
Meat	102	5	4	23	23	28	27
Poultry	71	3	4	13	18	15	22
Fish and seafood	16	1	8	5	31	6	39
Eggs	32	2	7	7	21	9	28
Tree nuts and peanuts	11	1	6	1	9	2	15
Added sugar and sweeteners	132	14	11	40	30	54	41
Added fats and oils	84	18	21	15	17	32	38
Total	1,388	139	10	290	21	429	31

^a Food supply at the retail level, which is the foundation for the retail- and consumer-level loss stages in the loss-adjusted data series.

^b Totals may not add due to rounding.

Per capita losses at the retail and consumer levels for each commodity (not shown) were estimated by multiplying the quantity of that commodity available for consumption by the appropriate loss assumption. Individual loss estimates were then multiplied by the U.S. population and summed up into their respective food groups and retail or consumer levels.

Source: ERS (2012a) and the U.S. population on July 1, 2010 (309.75 million).

Table 3: Estimated total value of food loss at the retail and consumer levels in the United States, 2010

Commodity	Losses from food supply ^b						
	Food Supply ^a	Retail level		Consumer level		Total retail and consumer level	
	Billion dollars	Billion dollars	Percent	Billion dollars	Percent	Billion dollars	Percent
Grain products	36.1	4.3	12	6.9	19	11.2	31
Fruit	62.2	5.8	9	14.1	23	19.8	32
Fresh	37.1	4.2	11	10.4	28	14.7	40
Processed	25.0	1.5	6	3.7	15	5.2	21
Vegetables	108.7	9.6	9	20.4	19	30.0	28
Fresh	62.1	6.9	11	13.2	21	20.1	32
Processed	46.6	2.8	6	7.2	15	10.0	21
Dairy products	91.5	8.3	9	18.6	20	27.0	29
Fluid milk	20.0	2.4	12	4.0	20	6.4	32
Other dairy products	71.5	5.9	8	14.6	20	20.5	29
Meat, poultry, and fish	181.9	8.8	5	39.7	22	48.5	27
Meat	83.4	3.8	5	19.3	23	23.2	28
Poultry	73.6	2.9	4	12.5	17	15.4	21
Fish and seafood	24.8	2.1	8	7.9	32	9.9	40
Eggs	10.9	0.8	7	2.3	21	3.1	28
Tree nuts and peanuts	12.1	0.7	6	1.3	11	2.1	17
Added sugar and sweeteners	16.4	1.8	11	4.8	29	6.6	40
Added fats and oils	34.2	6.6	19	6.8	20	13.4	39
Total	554.0	46.7	8	114.9	21	161.6	29

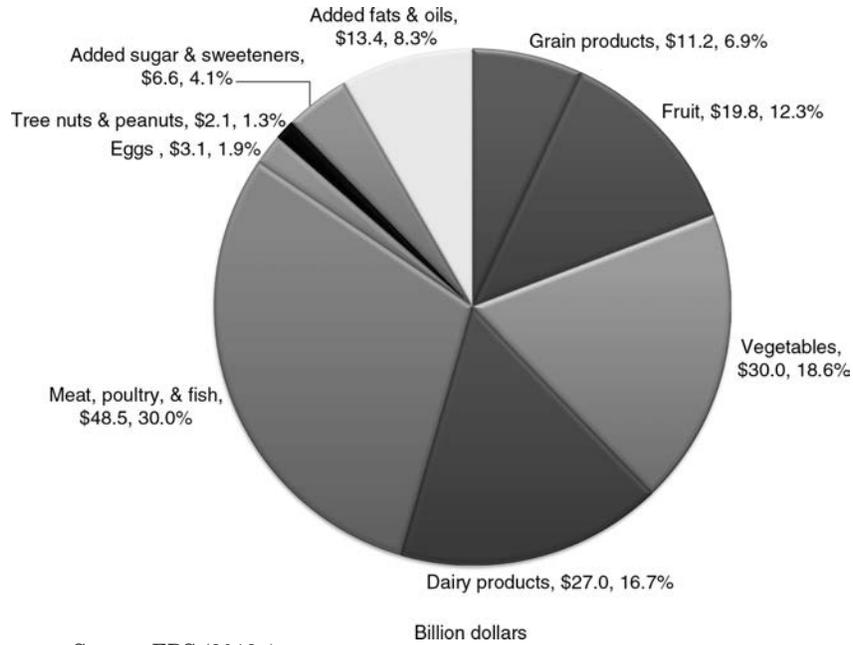
^a Food supply at the retail level, which is the foundation for the retail- and consumer-level loss stages in the loss-adjusted data series.

^b Totals may not add due to rounding.

Per capita losses at the retail and consumer levels for each commodity (not shown) were estimated by multiplying the quantity of that commodity available for consumption by the appropriate loss assumption. Individual loss estimates were then multiplied by the U.S. population and summed up into their respective food groups and retail or consumer levels.

Source: ERS (2012a) and the U.S. population on July 1, 2010 (309.75 million).

Figure 2: Estimated total value of food loss in the United States by food group, 2010



Source: ERS (2012a).

Per capita, food loss in 2010 totaled \$522 per year at retail prices: \$151 per year at the retail level and \$371 at the consumer level (table 4). The latter amounts to 9.2 percent of the average dollar value spent on food per consumer in 2010 (\$4,016) (ERS, 2012b) and 1 percent of the average disposable income (\$36,016) (BLS, 2012). The yearly total of 290 pounds (table 2) of food loss per capita in 2010 at the consumer level, at an estimated retail price of \$371, translates into 0.8 pound or roughly \$1 per day. This is slightly lower than the \$390 of food loss per capita in 2008 estimated in Buzby and Hyman (2012), largely because new consumer-level food loss estimates were adopted in the LAFA system in August 2012. At the consumer level, three food groups made up 68 percent of the total food loss: meat, poultry, and fish (\$128/year per capita); vegetables (\$66/year); and dairy products (\$60/year).

For comparison, another recently published study that used the same LAFA data but different assumptions and retail prices estimated that the economic and climate change impacts of food loss for 134 commodities in the United States cost \$198 billion in 2009 (Venkat, 2012). This translates into \$400 per person.

Table 4: Estimated per capita value of food loss at the retail and consumer levels in the United States, 2010

Commodity	Losses from food supply ^b						
	Food Supply ^a	Retail level		Consumer level		Total retail and consumer level	
	Dollars	Dollars	Percent	Dollars	Percent	Dollars	Percent
Grain products	117	14	12	22	19	36	31
Fruit	201	19	9	45	23	64	32
Fresh	120	14	11	34	28	47	40
Processed	81	5	6	12	15	17	21
Vegetables	351	31	9	66	19	97	28
Fresh	201	22	11	43	21	65	32

Table 4: Estimated per capita value of food loss at the retail and consumer levels in the United States, 2010—Continued

Commodity	Losses from food supply ^b						
	Food Supply ^a	Retail level		Consumer level		Total retail and consumer level	
	Dollars	Dollars	Percent	Dollars	Percent	Dollars	Percent
Processed	150	9	6	23	15	32	21
Dairy products	295	27	9	60	20	87	29
Fluid milk	65	8	12	13	20	21	32
Other dairy products	231	19	8	47	20	66	29
Meat, poultry, and fish	587	28	5	128	22	157	27
Meat	269	12	5	62	23	75	28
Poultry	238	9	4	40	17	50	21
Fish and seafood	80	7	8	25	32	32	40
Eggs	35	2	7	8	21	10	28
Tree nuts and peanuts	39	2	6	4	11	7	17
Added sugar and sweeteners	53	6	11	15	29	21	40
Added fats and oils	111	21	19	22	20	43	39
Total	1,788	151	8	371	21	522	29

^a Food supply at the retail level, which is the foundation for the retail- and consumer-level loss stages in the loss-adjusted data series.

^b Totals may not add due to rounding.

Per capita losses at the retail and consumer levels for each commodity (not shown) were estimated by multiplying the quantity of that commodity available for consumption by the appropriate loss assumption. Individual loss estimates were then multiplied by the U.S. population and summed up into their respective food groups and retail or consumer levels.

Source: ERS (2012a) and the U.S. population on July 1, 2010 (309.75 million).

Calories

This report provides ERS's first estimates of the number of calories of food loss at the retail and consumer levels in the United States to help put the magnitude of this food loss into perspective. In total, out of the entire U.S. food supply in 2010, an estimated 387 billion calories of food were available each day but were not consumed for any reason (*table 5*). This amount of food loss translates into 141 trillion calories per year. Of course, many factors would affect whether these foods could be diverted to feed people in real life, such as food safety considerations and storage and transportation costs. Additionally, this food loss estimate is based on calories alone and does not address the more complex nutritional needs of individual people, such as for specific vitamins and minerals.

Interestingly, the food group shares of total calories that went uneaten (*fig. 3*) are noticeably different than the shares for the amount (*fig. 1*) or value (*fig. 2*) of food loss. In particular, the shares for added fats and oils, added sugars and sweeteners, and grains are much higher for the calories figure, reflecting these foods' caloric density per pound.

Daily food loss for the average American totaled 1,249 calories (out of 3,796 calories available per capita per day), of which 460 calories occurred at the retail level and 789 calories occurred at the consumer level (*table 6*). At the consumer level, the average daily food loss per American included 187 calories of added sugar and sweeteners, 166 calories of grain products, and 154 calories of added fats and oils. In comparison, Kevin Hall and others at the National Institutes of Health used data from the Food and Agriculture Organization's (FAO) food balance sheets and a mathematical model of human energy expenditure to calculate the energy content of food waste in the United States. Hall, *et al.* (2009) estimated that food waste, on average, is equivalent to 1,400 calories per person per day or 150 trillion total calories per year *versus* ERS's estimate of 1,249 calories per person per day and 141 trillion total calories per year.

Table 5: Estimated total calories of food loss at the retail and consumer levels in the United States, 2010

Commodity	Losses from food supply ^b						
	Food Supply ^a	Retail level		Consumer level		Total retail and consumer level	
	Billion calories	Billion calories	Percent	Billion calories	Percent	Billion calories	Percent
Grain products	273.0	32.8	12	51.3	19	84.1	31
Fruit	37.1	3.1	8	8.8	24	11.9	32
Fresh	19.4	2.1	11	6.5	33	8.5	44
Processed	17.7	1.1	6	2.3	13	3.4	19
Vegetables	52.6	3.8	7	10.1	19	13.9	26

Table 5: Estimated total calories of food loss at the retail and consumer levels in the United States, 2010—Continued

Commodity	Losses from food supply ^b						
	Food Supply ^a	Retail level		Consumer level		Total retail and consumer level	
	Billion calories	Billion calories	Percent	Billion calories	Percent	Billion calories	Percent
Fresh	22.4	2.0	9	6.7	30	8.7	39
Processed	30.2	1.8	6	3.4	11	5.2	17
Dairy products	113.7	10.5	9	23.4	21	33.9	30
Fluid milk	33.7	4.0	12	6.8	20	10.8	32
Other dairy products	80.0	6.5	8	16.6	21	23.0	29
Meat, poultry, and fish	183.1	8.1	4	38.9	21	47.0	26
Meat	113.7	5.1	4	25.7	23	30.8	27
Poultry	62.2	2.4	4	10.9	18	13.3	21
Fish and seafood	7.2	0.6	8	2.2	31	2.8	39
Eggs	15.5	1.1	7	4.0	26	5.1	33
Tree nuts and peanuts	25.8	1.5	6	2.3	9	3.8	15
Added sugar and sweeteners	193.0	21.2	11	58.0	30	79.3	41
Added fats and oils	282.1	60.2	21	47.8	17	108.0	38
Total	1,175.8	142.3	12	244.5	21	386.9	33

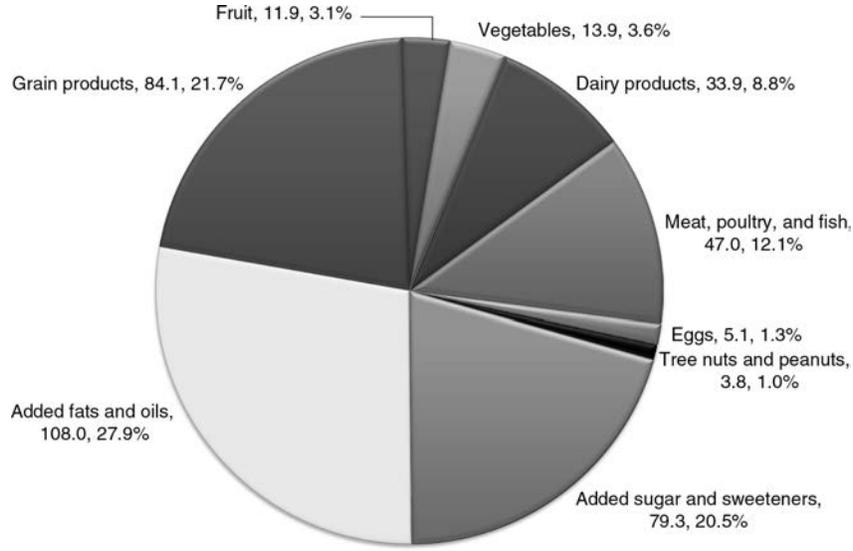
^a Food supply at the retail level, which is the foundation for the retail- and consumer-level loss stages in the loss-adjusted data series.

^b Totals may not add due to rounding.

Per capita losses at the retail and consumer levels for each commodity (not shown) were estimated by multiplying the quantity of that commodity available for consumption by the appropriate loss assumption. Individual loss estimates were then multiplied by the U.S. population and summed up into their respective food groups and retail or consumer levels.

Source: ERS (2012a) and the U.S. population on July 1, 2010 (309.75 million).

Figure 3: Estimated total number of calories of food loss in the United States per day by food group, 2010



Source: ERS (2012a).

Table 6: Estimated daily per capita calories of food loss at the retail and consumer levels in the United States, 2010

Commodity	Losses from food supply ^b						
	Food Supply ^a	Retail level		Consumer level		Total retail and consumer level	
	Calories	Calories	Percent	Calories	Percent	Calories	Percent
Grain products	881	106	12	166	19	271	31
Fruit	120	10	8	28	24	38	32
Fresh	63	7	11	21	33	28	44
Processed	57	3	6	7	13	11	19
Vegetables	170	12	7	33	19	45	26
Fresh	72	6	9	22	30	28	39
Processed	97	6	6	11	11	17	17
Dairy products	367	34	9	75	21	109	30
Fluid milk	109	13	12	22	20	35	32
Other dairy products	258	21	8	53	21	74	29
Meat, poultry, and fish	591	26	4	126	21	152	26
Meat	367	16	4	83	23	99	27
Poultry	201	8	4	35	18	43	21
Fish and seafood	23	2	8	7	31	9	39
Eggs	50	3	7	13	26	16	33
Tree nuts and peanuts	83	5	6	7	9	12	15
Added sugar and sweeteners	623	69	11	187	30	256	41
Added fats and oils	911	194	21	154	17	349	38
Total	3,796	460	12	789	21	1,249	33

^a Food supply at the retail level, which is the foundation for the retail- and consumer-level loss stages in the loss-adjusted data series.

^b Totals may not add due to rounding.

Per capita losses at the retail and consumer levels for each commodity (not shown) were estimated by multiplying the quantity of that commodity available for consumption by the appropriate loss assumption. Individual loss estimates were then multiplied by the U.S. population and summed up into their respective food groups and retail or consumer levels.

Source: ERS (2012a) and the U.S. population on July 1, 2010 (309.75 million).

Discussion

In 2010, an estimated 133 billion pounds of food at the retail and consumer levels in the United States went uneaten, and this amount is valued at \$161.6 billion using retail prices. This amount of food loss translates into 141 trillion calories in 2010. These estimates suggest that annual food loss in the United States is substantial.

As with any research with quantitative values, the resulting estimates produced here may be low or high. ERS food loss estimates could be low for various reasons. Many foods are not included in the system (*e.g.*, soybeans, soy milk, and coconut milk) and so losses for these foods are not counted. Additionally, the LAFA data series suggests that the average American consumed 2,547 calories per day in 2010, which is high even considering the prevalence of obesity in the United States, implying that the estimated food loss is low or that there are other issues. The LAFA estimates are also higher than the energy requirements of most age cohorts as determined by the Institute of Medicine (IOM, 2005), further suggesting that the ERS food loss estimates are conservative. Hall, *et al.* (2009) suggest that the loss estimates from the LAFA estimate are low and/or that the assumptions of a roughly constant proportion of food waste are becoming progressively worse over time (p. 3).¹⁴ Hall, *et al.* (2009), however, do not offer suggestions on how to obtain better estimates of food loss, and the study predates the incorporation of new consumer-level loss estimates from Muth, *et al.* (2011) into the LAFA data series in August 2012. Also, the estimated \$161.6 billion of food loss was calculated using retail prices. Had we used foodservice prices (which are typically higher), then the estimated value of food loss would have been higher.

There are several reasons why the ERS food loss estimates could be high. Some of the individual loss estimates may be high, particularly at the retail level. The ERS food loss estimates assume that food loss has no residual value or economic use. But in reality, there may be a residual use if the food loss is diverted to another

¹⁴Hall, ET AL. (2009) write that “food waste has progressively increased from about 30 percent of the available food supply in 1974 to almost 40 percent in recent years” using the Food and Agriculture Organization’s balance sheets. By contrast, what they call the ‘USDA’ food waste estimate (calculated by subtracting the USDA food availability data adjusted for spoilage and wastage from the FAO food supply data) is an approximately constant proportion of the total food supply. They conclude that “while the USDA estimate of food waste was within 5 percent of our calculation in 1974, it was -25 percent too low in 2003.”

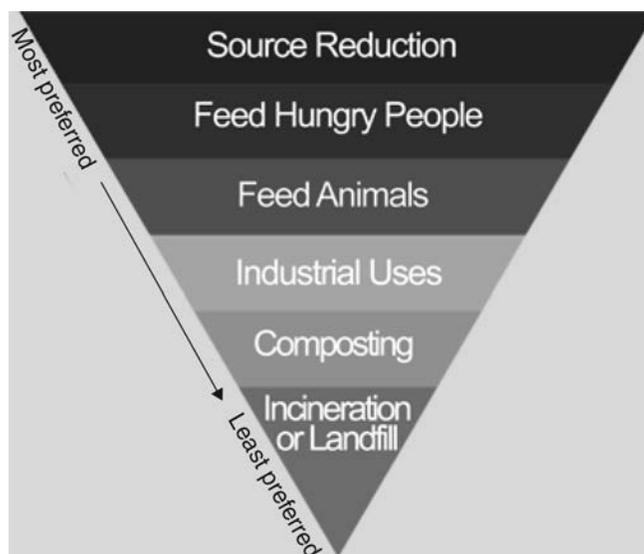
economic use, such as for animal feed or to create energy.¹⁵ That is, by redirecting food for use as energy inputs, for example, less food or other inputs would need to be purchased from other sources for these purposes. In essence, if data had been available on the amount of food diverted to lower value uses and on the economic value of these uses, then the ERS estimate of the total amount of food loss could have been adjusted downwards. However, data limitations preclude these refinements. The U.S. Environmental Protection Agency (EPA) has developed a food waste hierarchy of preferred uses for available food that goes unconsumed by people (see box, “EPA’s Food Recovery Hierarchy”). It is possible that some of the factors that might cause the estimates to be high or low could cancel each other out.

There is a practical limit to how much food loss the United States can prevent or reduce given technical and spatial factors; consumers’ tastes, preferences, and food habits; and economic factors. Therefore, the amount of food loss that could be prevented or reduced will be less than the ERS food loss estimates. Nevertheless, these updated estimates are a unique contribution to the literature and are useful in providing perspective to the issue of food loss in the United States.

EPA’s Food Recovery Hierarchy

The U.S. Environmental Protection Agency (EPA) endorses its food recovery hierarchy, where the ideal situation would be to reduce the production of food waste at the source. When food waste is generated, the first preference is to recover wholesome food from all points in the food production, marketing, and consumption chain to feed people who are food-insecure. Providing food for livestock, zoo animals, and pets would be the second best option, followed by recycling food and food waste for industrial purposes. These three options would help conserve resources and reduce food waste disposal costs. For example, the feasibility of anaerobic digesters that use feedstock, food and agricultural waste, and wastewater plant biosolids to produce biogas fuel and other valuable outputs (*e.g.*, compost material) is being explored in developed countries.

Food recovery hierarchy



Source: <http://www.epa.gov/osw/conservematerials/organics/food/fd-gener.htm#food-hier>.

Composting food to improve soil fertility is a relatively low-priority option, and its use is not widespread in the United States. However, some cities, counties, and State agencies are investigating the benefits of curbside collection of

¹⁵As an aside, these uses of the food waste may harm the environment less than landfilling or incinerating the food waste. Here, the creation of energy using food waste does not include corn used for ethanol, which was already removed as a direct industrial use of corn in the supply and disappearance (*i.e.*, use) balance sheets.

residential food waste (e.g., in bins or compostable kitchen bags) to compost with collected yard trimmings. According to the EPA (2009), there were around 3,510 community composting programs in operation in the United States in 2008, so expanding these to incorporate food waste might be a viable option. The last resort should be using landfills and incinerators to dispose of food waste because of the negative impacts on the environment. These impacts are partly offset if energy is created during incineration and landfilling (e.g., tapping the methane gas).

Appendix—The ERS Loss-Adjusted Food Availability Data and Calculation Details for the Amount and Value of Food Loss

Since 2005, the updated Food Availability (Per Capita) Data system has had three separate but related data series that each look differently at the food available for consumption in the United States. The first series, the Food Availability data, is the foundation for the other two series: (1) the Nutrient Availability data¹⁶ and (2) the Loss-Adjusted Food Availability (LAFA) data (formerly called the Food Guide Pyramid Servings data). This loss-adjusted series is the foundation of this report and is essentially the Food Availability data adjusted for food spoilage and other losses to more closely approximate actual per capita intake ([http://www.ers.usda.gov/data-products/food-availability-\(per-capita\)-data-system/loss-adjusted-food-availability-documentation.aspx](http://www.ers.usda.gov/data-products/food-availability-(per-capita)-data-system/loss-adjusted-food-availability-documentation.aspx)). The primary purpose of the LAFA data is to estimate daily per capita food intake and present this information in two forms: the number of calories consumed daily and the number of food pattern equivalents consumed daily.¹⁷ Here, we use the embedded food loss assumptions to estimate food loss at the retail and consumer levels for 2010 using the LAFA data as of September 2012.

Construction of the Core Food Availability Data

In essence, the Food Availability data measure the use of basic commodities—such as wheat, beef, and shell eggs—produced at the farm level or an early stage of processing and available for human consumption. They do not measure food use of highly processed foods—such as bakery products, frozen dinners, and soups—in their finished form. Ingredients of highly processed foods, however, are included as components of less processed foods such as sugar, flour, fresh vegetables, and meat.

The Food Availability data series is based on records of annual commodity flows from production to end uses. This involves the development of supply and disappearance (i.e., “supply and use”) balance sheets for each major commodity from which human foods are produced. In general, the total annual available supply of each commodity consists of the sum of production, imports, and beginning stocks. These three components are either directly measured or estimated by government agencies using sampling and statistical methods. From this total supply, exports, ending stocks, and total measurable nonfood uses are subtracted. For most commodity categories, measurable nonfood uses are farm inputs (feed and seed) and industrial uses. In a few cases, supplies for human food use are measured directly and one of the other use components becomes the residual. This is the case for wheat, in which flour production is measurable and available from manufacturers’ reports on flour milling and, therefore, use for livestock feed becomes the residual.

Per capita food availability is calculated by dividing the annual total food supply for a specific year by the U.S. total resident population plus Armed Forces overseas for that same year. Yearly population estimates are from the U.S. Census Bureau. For commodities not shipped overseas in substantial amounts, such as fluid milk and cream, ERS uses the resident population as the base. No adjustments are made for changes in the demographic makeup of the population.

Construction of the Loss-Adjusted Food Availability Data

The current ERS per capita Food Availability data were converted into daily per capita food pattern equivalents comparable to those identified in Federal dietary recommendations using a multistage process. Each commodity was assigned to one of five major food groups (fruit, vegetables, meat, dairy, and grains) or to one of two additional groups for discretionary added fats and oils and added sugar/sweeteners. The core Food Availability data were adjusted for spoilage and other losses by subtracting estimated losses from the “primary” weight reported in the data series to create the Loss-Adjusted Food Availability data series. Depending on the com-

¹⁶This nutrient series is compiled by USDA’s Center for Nutrition Policy and Promotion (CNPP) in what it calls the *Nutrient Content of the U.S. Food Supply* and is outside the scope of this report.

¹⁷These food pattern equivalents were formerly called the Food Guide Pyramid serving the 2005 *Dietary Guidelines for Americans* and its supporting *MyPyramid Plan* Food Guidance System.

modity, loss was estimated at up to three different stages in the marketing system (*i.e.*, farm-to-retail, retail, and consumer). ERS calculates summary estimates of food loss for each commodity in the Loss-Adjusted Food Availability data series at the retail and consumer levels. Although the data system also takes into account food losses between the farm and retailer, ERS cannot calculate summary estimates of food loss between the farm and retailer because of data limitations for some of the food groups. Onfarm or pre-harvest losses, such as from hail damage on a field crop, are not included in the system. Inedible portions of all foods—seeds, pits, and inedible peels—were also subtracted from the data, and thus the loss-adjusted food availability estimates and the food loss estimates do not include inedible parts. For example, estimates for meat, poultry, and fish are provided as boneless weight. The data were converted from pounds per capita per year to grams (or ounces) per capita per day to be comparable with Federal dietary recommendations.

Estimation Details for this Report

Given the recent and growing interest in food loss and waste domestically (*e.g.*, U.S. Food Waste Challenge), up-to-date estimates on the magnitude of food loss in the United States are timely. This report updates the ERS loss estimates to 2010 and extends previous ERS estimates and publications on food loss in several important ways, such as incorporating new consumer-level loss assumptions and providing calorie estimates for the first time.

We used prices consumers would have paid, on average, for foods if bought at retail. In total, we compiled estimates of the amount and value of food loss for more than 200 individual foods in the Loss-Adjusted Food Availability (LAFA) data and then aggregated these values to estimate the total value of food loss at both the retail and consumer levels in the United States in 2010 and the value by food group. The analytical method for calculating the amount, value, and calories of food loss for each commodity in the LAFA data consisted of five key steps.

First, we identified the individual commodities in the LAFA data for our analysis by each food group. In particular, we identified 62 fresh and processed fruit, 67 fresh and processed vegetables, and 86 other individual foods in the LAFA data for our analysis (see Appendix Box). The LAFA data can be accessed online through Excel spreadsheets that provide all of the current loss assumptions and the structure of the calculations for each food in the data series. More information on the LAFA data is summarized on the ERS website (ERS, 2011).

Second, we estimated national average retail prices in 2010 using Nielsen Homescan data for each individual commodity in the LAFA data series consumed at home in 2010. This method for determining average prices was used in previous research (*e.g.*, Reed, *et al.* (2004), Stewart, *et al.* (2011), Buzby, *et al.* (2011), and Buzby and Hyman (2012)). Members of the Homescan consumer panel in 60,648 households reported the foods they purchased, the quantities they bought, and the prices they paid. The data include purchases at retail outlets—such as supercenters, grocery stores, farmers’ markets, mass merchandisers, and drugstores—but not at restaurants or other foodservice outlets. This means that foods consumed away from home are not included in our estimated prices. Nielsen further provides projection factors that allow data users to estimate what all households across the United States paid for foods and the quantities they bought.

Commodity Coverage in the 2010 Loss-Adjusted Food Availability Data

The “Dairy” spreadsheet has **34** commodities—Plain whole milk, Plain 2-percent milk, Plain 1-percent milk, Skim milk, Whole flavored milk, Low-fat flavored milk, Buttermilk, Refrigerated yogurt, Cheddar cheese, Other American cheese, Provolone cheese, Romano cheese, Parmesan cheese, Mozzarella cheese, Ricotta cheese, Other Italian cheese, Swiss cheese, Brick cheese, Muenster cheese, Blue cheese, Other miscellaneous cheese, Regular cottage cheese, Low-fat cottage cheese, Regular ice cream, Low-fat ice cream (ice milk), Frozen yogurt and other miscellaneous frozen products, Evaporated and condensed canned whole milk, Evaporated and condensed bulk whole milk, Evaporated and condensed bulk and canned skim milk, Dry whole milk, Nonfat dry milk, Dry buttermilk, Dairy share of half-and-half, and Dairy share of eggnog.

The “Fats” spreadsheet has **15** commodities—Added fats and oils, Butter, Margarine, Lard, Edible beef tallow, Shortening, Salad and cooking oils, Other edible fats and oils, Dairy fats, Fat share of half and half, Light cream, Heavy cream, Sour cream, Cream cheese, and Fat share of eggnog.

The “Fruit” spreadsheet has **62** commodities—Fresh oranges, Fresh tangerines, Fresh grapefruit, Fresh lemons, Fresh limes, Fresh apples, Fresh apricots, Fresh avocados, Fresh bananas, Fresh blueberries, Fresh cantaloupe, Fresh cherries, Fresh cranberries, Fresh grapes, Fresh honeydew, Fresh

kiwifruit, Fresh mangoes, Fresh papaya, Fresh peaches, Fresh pears, Fresh pineapple, Fresh plums, Fresh strawberries, Fresh watermelon, Canned apples and applesauce, Canned apricots, Canned sweet cherries, Canned tart cherries, Canned peaches, Canned pears, Canned pineapple, Canned plums, Canned olives, Frozen blackberries, Frozen blueberries, Frozen raspberries, Frozen strawberries, Other frozen berries, Frozen apples, Frozen apricots, Frozen sweet cherries, Frozen tart cherries, Frozen peaches, Frozen plums and prunes, Other frozen fruit, Dried apples, Dried apricots, Dried dates, Dried figs, Dried peaches, Dried pears, Dried plums, Raisins, Grapefruit juice, Lemon juice, Lime juice, Orange juice, Apple juice, Cranberry juice, Grape juice, Pineapple juice, and Prune juice.

The “Grain” spreadsheet has **9** commodities—White and whole wheat flour, Durum flour, Rice, Rye flour, Corn flour and meal, Corn hominy and grits, Corn starch, Barley products, and Oat products.

The “Meat” spreadsheet has **24** commodities—Beef, Veal, Pork, Lamb, Chicken, Turkey, Fresh and frozen fish, Fresh and frozen shellfish, Canned salmon, Canned sardines, Canned tuna, Canned shellfish, Other canned fish, Cured fish, Eggs, Peanuts, Almonds, Hazelnuts (filberts), Pecans, Walnuts, Macadamia nuts, Pistachio nuts, Other tree nuts, and Coconut.

The “Sugar” spreadsheet has **6** commodities—Cane and beet sugar, High fructose corn sweetener, Glucose, Dextrose, Honey, and Edible syrups.

The “Vegetable” spreadsheet has **67** commodities—Fresh artichokes, Fresh asparagus, Fresh bell peppers, Fresh broccoli, Fresh Brussels sprouts, Fresh cabbage, Fresh carrots, Fresh cauliflower, Fresh celery, Fresh collard greens, Fresh sweet corn, Fresh cucumbers, Fresh eggplant, Fresh escarole and endive, Fresh garlic, Fresh kale, Fresh head lettuce, Fresh Romaine and leaf lettuce, Fresh lima beans, Fresh mushrooms, Fresh mustard greens, Fresh okra, Fresh onions, Fresh potatoes, Fresh pumpkin, Fresh radishes, Fresh snap beans, Fresh spinach, Fresh squash, Fresh sweet potatoes, Fresh tomatoes, Fresh turnip greens, Canned asparagus, Canned snap beans, Canned cabbage (sauerkraut), Canned carrots, Canned sweet corn, Canned cucumbers (pickles), Canned green peas, Canned mushrooms, Canned chile peppers, Canned potatoes, Canned tomatoes, Other canned vegetables, Frozen asparagus, Frozen snap beans, Frozen broccoli, Frozen carrots, Frozen cauliflower, Frozen sweet corn, Frozen green peas, Frozen lima beans, Frozen potatoes, Frozen spinach, Miscellaneous frozen vegetables, Dehydrated onions, Dehydrated potatoes, Potato chips and shoestring potatoes, Dry peas and lentils, Dry edible beans, Dry black beans, Dry great northern beans, Dry lima beans, Dry navy beans, Dry pinto beans, Dry red kidney beans, and Other dry beans.

Total: **215** commodity categories.* Some of these categories, such as “other frozen fruit,” include more than one commodity so there are more than 215 commodities in total represented in the Food Availability Data System.

Third, as a validation step, when our estimates fell outside of the expected range, we examined the data more closely to determine if there had been computational errors or outliers. Additionally, it is likely that some households made mistakes when reporting information to Nielsen or, because the recording process is time-consuming, failed to report some purchases. However, validation studies confirm the suitability of Homescan data. For example, Einav, *et al.* (2008) found that errors in the Homescan data are of the same order of magnitude as reporting errors in major government-collected data sets. Moreover, their findings suggest that errors in Homescan data are unlikely to affect estimates of average prices paid by all households.

Fourth, we multiplied the estimated price by the annual amount of food loss for each individual food in the LAFA data series at the retail and consumer levels. The amounts of loss for each type of commodity were calculated by multiplying per capita quantities available at each level by the corresponding food loss assumptions and by the U.S. population on July 1, 2010 (309.75 million). We then estimated the total value of losses by summing individual valuations over each commodity group in the LAFA data series.

Fifth, we estimated the number of calories representing food loss in 2010 for each commodity in the LAFA data series. One strength of this data series is that it estimates the calories available for each commodity in a given year. Using this informa-

*Two commodities (eggnog; half-and-half) were split into a dairy share and a fat share. To avoid double counting, we reduce the sum (217) of the above groups to 215.

Source: Computed by Jeanine Bentley, ERS, August 6, 2012.

tion with the retail- and consumer-level loss estimates, we were able to estimate the number of calories from the food supply at both levels that went uneaten.

We basically followed the same steps as used in Buzby and Hyman (2012) and Buzby, *et al.* (2011), with a few exceptions:

1. For five fresh vegetables, we used specific consumer price indexes (CPIs) to inflate the 2006 Nielsen fresh vegetable prices to 2010 prices [2006 was the most recent year available]. In particular, we used the lettuce CPI for fresh romaine and leaf lettuce. For fresh broccoli, sweet corn, cucumbers, and spinach, we used the CPI for “other fresh vegetables,” which is for fresh vegetables other than for potatoes, lettuce, and tomatoes. In the earlier two articles, we inflated the 2006 fresh prices with the CPI value for all fresh vegetables from the U.S. Bureau of Labor Statistics (BLS).
2. For fresh apricots, there were enough observations of fresh apricots in the 2010 Nielsen Homescan data that there was no need to adjust from an earlier price as in Buzby, *et al.* (2011).
3. For veal, Buzby and Hyman (2012) used fresh veal only from 2008 Nielsen data to estimate the 2008 price for veal. In this report, we used both fresh and frozen veal together.

Limitations of the Data

As with the basic Food Availability data, the Loss-Adjusted Food Availability data series does not measure actual consumption or the quantities ingested. This is because neither series is based on direct observations of individual intake. Therefore, data are not available by socioeconomic, demographic, and geographic (State, regional, or city) breakdowns, and in most cases, it is not known if such data exist. Detailed documentation is available on ERS’s website (ERS, 2012a).

The limited ability of researchers to measure food loss accurately suggests that actual loss rates may differ from the assumptions used in this data series. In general, the underlying estimates of farm-to-retail (not measured in this report), retail, and consumer-level food losses used in the Loss-Adjusted Food Availability data series may be understated or overstated due to limitations in the underlying published studies. Food loss, particularly at the consumer level, is by nature difficult to measure accurately. Participants in household surveys on food waste tend to be highly “reactive”—changing their behavior during the survey period instead of acknowledging how much food they typically discard—or misstating their true levels of product discard (Gallo, 1980). Studies that observe food loss by inspecting landfill garbage are also prone to errors. Such studies are not nationally representative and may not account for food fed to pets and other animals, put in garbage disposals, or composted at home (Gallo, 1980). Plate waste studies, such as for schoolchildren at lunchtime (Buzby and Guthrie, 2002), often target only a slice of the total U.S. population, and the findings cannot be easily or reliably extrapolated to other demographic categories.

Food loss for individual commodities, in particular, may vary over time. There are good reasons why food loss for a particular commodity could increase or decrease. On the one hand, new food technologies and food production/processing practices may reduce food losses over time (*e.g.*, improvements in the preservation of bread, nanotechnologies in food packaging to reduce spoilage) (Buzby, 2010). On the other hand, food loss for a particular commodity could increase, such as from greater trimming of food to cut down on fats. However, the ERS data currently do not capture most of these changes in food loss because for most commodity- and food-loss-level pairings, the same loss assumption is applied throughout the span of the data in the LAFA data series (*e.g.*, the retail-level loss estimate for fresh apples is the same 8.6 percent over 1970–2011). The exception is that the retail-level loss estimates for beef account for greater trimming of fat over time.

Additionally, ERS’s LAFA data series uses well-documented data for inedible loss assumptions, but these amounts are not consistently applied to the data series in the same step or level. In particular, the data series removes the inedible share for fresh fruits, fresh vegetables, and eggs at the consumer level while the inedible shares for meat, poultry, and fish are removed at the primary-to-retail level, so that these estimates in the LAFA data series are presented in boneless weight.¹⁸ What this means, in effect, is that for fresh fruits, fresh vegetables, and eggs, the inedible

¹⁸In the ERS Food Availability Data system, the weight at the primary distribution level is dictated for each commodity by the structure of the marketing system and data availability. In most cases, the primary weight is the farm weight. For meat and poultry, the primary weight is the carcass weight, which is then converted to a boneless weight when accounting for farm-to-retail losses.

share is included at the retail weight but then subtracted prior to the consumer weight.

Despite the limitations, both the per capita Food Availability data and the per capita Loss-Adjusted Food Availability data are useful for economic analyses because they serve as indirect measures of trends in food consumption and food loss. In other words, both data series provide an indication of whether Americans, on average, are consuming more or less of various foods over time. As we have seen in this report, the Loss-Adjusted Food Availability series also provides estimates of food loss by commodity, by food group, and in total.

References

- Aillery, M., N. Gollehon, R. Johansson, J. Kaplan, N. Key, and M. Ribaud. 2005. *Managing Manure to Improve Air and Water Quality*. Economic Research Service, U.S. Department of Agriculture, Economic Research Report No. 9 (Sept.). www.ers.usda.gov/publications/err-economic-research-report/err9.aspx.
- Bureau of Labor Statistics (BLS). 2012. *Table 4.10 Personal income, 1990, 2000, 2010, and projected 2020*. Washington, D.C.
- Buzby, J.C. 2010. "Nanotechnology for Food Applications: More Questions than Answers," *The Journal of Consumer Affairs*, 44, 528-545. <http://onlinelibrary.wiley.com/doi/10.1111/j.1745-6606.2010.01182.x/full>, accessed November 12, 2013.
- Buzby, J.C., and J.F. Guthrie. 2002. "Plate Waste in School Nutrition Programs: Final Report to Congress." E-FAN-02-009, Economic Research Service, U.S. Department of Agriculture. <http://webarchives.cdlib.org/iss117153/http://ers.usda.gov/Publications/efan02009/>.
- Buzby, J.C., and J. Hyman. 2012. "Total and Per Capita Value of Food Loss in the United States." *Food Policy*, 37, 561-570. <http://www.sciencedirect.com/science/article/pii/S0306919212000693>, accessed November 12, 2013.
- Buzby, J.C., J. Hyman, H. Stewart, and H.F. Wells. 2011. "The Value of Retail- and Consumer-Level Fruit and Vegetable Losses in the United States," *The Journal of Consumer Affairs* Fall, 492-515. <http://onlinelibrary.wiley.com/doi/10.1111/j.1745-6606.2011.01214.x/abstract>, accessed November 12, 2013.
- Buzby, J.C., H.F. Wells, B. Axtman, and J. Mickey. 2009. *Supermarket Loss Estimates for Fresh Fruit, Vegetables, Meat, Poultry, and Seafood and Their Use in the ERS Loss-Adjusted Food Availability Data*. EIB-44, March, Economic Research Service, U.S. Department of Agriculture. <http://www.ers.usda.gov/media/183501/eib44.pdf>.
- Coleman-Jensen, A., M. Nord, and A. Singh. 2013. *Household Food Security in the United States in 2012*. ERR-155, Economic Research Service, U.S. Department of Agriculture. <http://www.ers.usda.gov/publications/err-economic-research-report/err155.aspx>.
- Einav, L., E. Leibtag, and A. Nevo. 2008. *On the Accuracy of Nielsen Homescan Data*. ERR-69, Economic Research Service, U.S. Department of Agriculture. <http://www.ers.usda.gov/publications/err-economic-research-report/err69.aspx>, accessed November 12, 2013.
- Environmental Protection Agency (EPA). 2009. "Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures for 2008." Washington, D.C.
- Environmental Protection Agency (EPA). 2011. "Basic Information about Food Waste." Washington, D.C.
- Economic Research Service (ERS). 1989. *Major Statistical Series of the U.S. Department of Agriculture: Consumption and Utilization of Agricultural Products*, U.S. Department of Agriculture.
- Economic Research Service (ERS). 2011. *Loss-Adjusted Food Availability Documentation*, U.S. Dept. of Agriculture. [http://www.ers.usda.gov/data-products/food-availability-\(per-capita\)-data-system/loss-adjusted-food-availability-documentation.aspx](http://www.ers.usda.gov/data-products/food-availability-(per-capita)-data-system/loss-adjusted-food-availability-documentation.aspx).
- Economic Research Service (ERS). 2012a. *Loss-Adjusted Food Availability Data in the Food Availability (Per Capita) Data System*, U.S. Department of Agriculture. [http://www.ers.usda.gov/data-products/food-availability-\(per-capita\)-data-system.aspx](http://www.ers.usda.gov/data-products/food-availability-(per-capita)-data-system.aspx).
- Economic Research Service (ERS). 2012b. "Table 13—Per Capita Food Expenditures," <http://www.ers.usda.gov/data-products/food-expenditures.aspx#26636>.
- Food and Agriculture Organization (FAO). 2009. *How to Feed the World in 2050*. United Nations, Rome.
- Gallo, A.E. 1980. "Consumer Food Waste in the United States," *National Food Review*, Economic Research Service, U.S. Department of Agriculture.
- General Accounting Office (GAO). 1977. *Food Waste: An Opportunity to Improve Resource Use*. Comptroller General of the United States, Washington, D.C.
- Hansen, L., and M. Ribaud. 2008. *Economic Measures of Soil Conservation Benefits: Regional Values for Policy Assessment*, Economic Research Service, U.S. Department of Agriculture, Technical Bulletin No. 1922 (Sept.). www.ers.usda.gov/publications/tb-technical-bulletin/tb1922.aspx.
- Goodwin, L. 2013. "Inquiry into the EU's Contribution to Food Waste Prevention by the House of Lords European Union Committee (Sub-Committee D): Supplementary Memorandum by WRAP (the Waste & Resources Action Programme)." Oxon, United Kingdom.
- Hall, K.D., J. Guo, M. Dore, and C.C. Chow. 2009. "The Progressive Increase of Food Waste in America and its Environmental Impact." *PLoS ONE*, 4, 6.
- Hodges, R.J., J.C. Buzby, and B. Bennett. 2010. "Postharvest Losses and Waste in Developed and Developing Countries: Opportunities to Improve Resource Use," *Journal of Agricultural Science*, 1-9. Vol. 149, Supplement S1 (Nov.): 37-45. doi: 10.1017/S0021859610000936. <http://journals.cambridge.org/action/displayAbstract?fromPage=online&aid=8030717>, accessed November 12, 2013.
- Institutes of Medicine (IOM). 2005. *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids*. The National Academies Press, Washington, D.C.
- Kader, A.A. 2005. "Increasing Food Availability by Reducing Postharvest Losses of Fresh Produce," *Acta Horticulturae* 682: 2169-2176.
- Kantor, L.S. 1998. *A Dietary Assessment of the U.S. Food Supply: Comparing Per Capita Food Consumption with Food Guide Pyramid Serving Recommendations*. Economic Research Service, U.S. Department of Agriculture. <http://webarchives.cdlib.org/ssu12/6951w/http://www.ers.usda.gov/Publications/AER772/>.
- Kantor, L.S., K. Lipton, A. Manchester, and V. Oliveira. 1997. "Estimating and Addressing America's Food Losses," *FoodReview*, Economic Research Service (ERS), U.S. Dept. of Agriculture.
- Lundqvist, J., C. de Fraiture, and D. Molden. 2008. "Saving Water: From Field to Fork-Curbing Losses and Wastage in the Food Chain." Stockholm International Water Institute (SIWI) Policy Brief, Stockholm, Sweden.
- Muth, M.K., S.A. Karns, S.J. Nielsen, J.C. Buzby, and H.F. Wells. 2011. "Consumer-Level Food Loss Estimates and Their Use in the ERS Loss-Adjusted Food Availability Data." Economic Research Service, U.S. Department of Agriculture. Technical Bulletin No. (TB-1927), Jan. <http://www.ers.usda.gov/publications/tb-technical-bulletin/tb1927.aspx>, accessed November 12, 2013.
- Parfitt, J.P., M. Barthel, and S. Macnaughton. 2010. "Food Waste within Food Supply Chains: Quantification and Potential for Change to 2050." *Philosophical Transactions of the Royal Society Biological Sciences*, 365, 3065-3081.
- Quested, T., and A. Parry. 2011. "New Estimates for Household Food and Drink Waste in the UK." Oxon, Waste & Resources Action Programme (WRAP).
- Reed, J., E. Frazao, and R. Itskowitz. 2004. *How Much Do Americans Pay for Fruits and Vegetables?* Economic Research Service, U.S. Department of Agriculture, Agricultural Information Bulletin No. 790 (July).
- Ribaudo, M., Jorge Delgado, L. Hansen, M. Livingston, R. Mosheim, and J. Williamson. 2011. *Nitrogen in Agricultural Systems: Implications for Conservation Policy*. Economic Research Service, U.S. Department of Agriculture, Economic Research Report No. 127 (Sept.). www.ers.usda.gov/publications/err-economic-research-report/err127.aspx.
- Rosen, S., B. Meade, S. Shapouri, A. D'Souza, and N. Eada. 2012. *International Food Security Assessment, 2012-12*. Economic Research Service (ERS), U.S. Department of Agriculture.
- Schwab, J. 2013. Environmental Protection Agency. Personnel communication with J. Buzby, Washington, DC.
- Stewart, H., J. Hyman, J. Buzby, E. Frazao, and A. Carlson. 2011. *How Much do Fruits and Vegetables Cost?* Economic Research Service, U.S. Department of Agriculture. Economic Information Bulletin No. 71 (Feb.). <http://www.ers.usda.gov/publications/eib-economic-information-bulletin/eib71.aspx>.
- Sullivan, P., D. Hellerstein, L. Hansen, R. Johansson, S. Koenig, R. Lubowski, W. McBride, D. McGranahan, M. Roberts, S. Vogel, and S. Bucholtz. 2004. *The Conservation Reserve Program: Economic Implications for Rural America*. Economic Research Service, U.S. Department of Agriculture, Agricultural Economic Report No. 834 (Oct.). www.ers.usda.gov/publications/aer-agricultural-economic-report/aer834.aspx.
- United Nations (UN). 2011. *World Population Prospects, the 2010 Revision*. Department of Economic and Social Affairs, P.D., Population Estimates and Projections Section, ed., Rome, United Nations.
- Venkat, K. 2012. "The Climate Change and Economic Impacts of Food Waste in the United States," *International Journal on Food System Dynamics*, 2, 431-446.
- Webber, M.E. 2012. "More Food, Less Energy," *Scientific American*, pp. 74-79.
- Ziegler, G., and J.D. Floros. 2011. "A Future Perspective to Mitigate Food Losses: The Role of Food Science and Technology," IFT 2011 Annual Meeting & Food Expo (New Orleans, LA).

[ATTACHMENT 5]



U.S. DEPARTMENT OF AGRICULTURE



Winning on Reducing Food Waste

The initiative

The *Winning on Reducing Food Waste Initiative* (the Initiative) is a collaborative effort announced in a *joint agency formal agreement* (<https://www.usda.gov/sites/default/files/documents/usda-fda-epa-formal-agreement.pdf>) (PDF, 579 KB) signed in October 2018 by the U.S. Department of Agriculture (USDA), the U.S. Environmental Protection Agency (EPA), and the U.S. Food and Drug Administration (FDA).

Through the Initiative, the agencies affirm their shared commitment to reduce food loss and waste. They also agree to coordinate action to leverage government resources to reduce food loss and waste, including action to educate Americans on the impacts and importance of reducing food loss and waste.

Individually and collectively, these agencies contribute to the Initiative, encourage long-term reductions and work toward the goal of reducing food loss and waste in the United States. These actions include research, community investments, education and outreach, voluntary programs, public-private partnerships, tool development, technical assistance, event participation, and policy discussion.

FY 2019–2020 Federal Interagency Strategy

To achieve the vision for the Initiative, the agencies developed a strategy to prioritize and coordinate their efforts. In development of this strategy, the agencies built on information from several sources, including, but not limited to:

- *Managing for Results: Key Considerations for Implementing Interagency Collaborative Mechanisms* (<https://www.gao.gov/products/GAO-12-1022>) (U.S. Government Accountability Office). This report highlights two key elements for successful collaboration: (1) clarity of roles and responsibilities and (2) written guidance and agreements.
- *A Call to Action by Stakeholders: United States Food Loss and Waste Reduction Goal* (<https://www.epa.gov/sustainable-management-food/call-action-stakeholders-united-states-food-loss-waste-2030-reduction>) developed by the EPA in consultation with USDA. The key activities identified by stakeholders in this report include: seek prevention strategies and use the Food Recovery Hierarchy; increase public awareness; improve the data; forge new partnerships and expand the existing ones; clarify date labels and food safety; and build food loss and waste infrastructure.
- *A Roadmap to Reduce U.S. Food Waste by 20 Percent* (https://www.refed.com/downloads/ReFED_Report_2016.pdf) (PDF, 12 MB) (Rethink Food Waste through Economics and Data (ReFED)). The report finds that the most cost-effective solutions are: (1) standardized date labeling and (2) consumer education campaigns.
- *Don't Waste, Donate: Enhancing Food Donations through Federal Policy* (<https://www.nrdc.org/sites/default/files/dont-waste-donate-report.pdf>) (PDF, 3 MB) (Harvard Food Law and Policy Clinic and Natural Resources Defense Council). Recommendations in this report include: (1) enhance liability protections for food donations; (2) standardize and clarify expiration date labels; and (3) publish food safety guidance for food donations.

The strategy prioritizes six action areas:

Priority Area 1: Enhance Interagency Coordination

Improving interagency coordination will enable USDA, EPA and FDA to use government resources more efficiently and effectively. An interagency, collaborative mechanism will be established to reduce programmatic redundancies and leverage complimentary activities.

Priority Area 2: Increase Consumer Education and Outreach Efforts

Households are a major source of food loss and waste in the United States. Most consumers are unaware of the consequences of food loss and waste. A coordinated consumer education effort by USDA, EPA and FDA, in conjunction with public, private or nonprofit partners, has the potential to raise awareness, motivate consumers to take action and accelerate progress to reduce food loss and waste.

Priority Area 3: Improve Coordination and Guidance on Food Loss and Waste Measurement

Enhanced coordination and voluntary guidance regarding measurement of food loss and waste will reduce confusion and help establish clearer goals and

strategies. Improved and coordinated methodologies can identify missed opportunities and better communicate progress.

Priority Area 4: Clarify and Communicate Information on Food Safety, Food Date Labels, and Food Donations

Confusion about food safety guidelines, date labels and food donation results in food loss and waste at retailers and in homes across the country. Establishing and communicating clearer, coordinated voluntary guidance on food date labels and liability protection around food donation could help increase food recovery and lead to reductions in food waste and food insecurity.

Priority Area 5: Collaborate with Private Industry to Reduce Food Loss and Waste Across the Supply Chain

The food industry, including processors, manufacturers, distributors, retailers and foodservice establishments, has an important role in reducing food loss and waste. Showcasing and building partnerships through efforts such as the USDA/EPA U.S. Food Loss and Waste 2030 Champions, as well as connecting stakeholders with food waste reduction technologies, will help stimulate further efforts throughout the food supply chain.

Priority Area 6: Encourage Food Waste Reduction by Federal Agencies in their Respective Facilities

Federal facilities operate food service venues, including cafeterias and concessions, and manage events. Encouraging the reduction of food loss and waste at these facilities and events will demonstrate Federal leadership and implementation of the administration's priorities.

Winning on Reducing Food Waste FY 2019–2020 Federal Interagency Strategy (<https://www.usda.gov/sites/default/files/documents/interagency-strategy-on-reducing-food-waste.pdf>) (PDF, 364 KB)

Federal Interagency Strategy—inventory of initiative actions

USDA, EPA and FDA, in conjunction with public, private and nonprofit partners, have an *ongoing inventory of actions* (<https://www.usda.gov/sites/default/files/documents/usda-epa-fda-agency-inventory-priority-areas.pdf>) (PDF, 337 KB) in response to the initiative's six priority areas.

[ATTACHMENT 6]

Winning on Reducing Food Waste—FY 2019–2020 Federal Interagency Strategy

April 2019
EPA 530–F–19–1004



Overview



[A family shopping.]

In the United States, 30–40 percent of all available food goes uneaten through loss or waste. Food is the single largest type of waste in our daily trash. The Federal Government has a role to play in reducing food loss and waste because food loss and waste adversely impacts food security, the economy, our communities and the environment.

As a result, in October 2018, the U.S. Department of Agriculture (USDA), the U.S. Environmental Protection Agency (EPA) and the U.S. Food and Drug Administration (FDA) launched the *Winning on Reducing Food Waste Initiative* (the Initiative).

As part of the Initiative, the agencies affirm their shared commitment to work towards the national goal of reducing food loss and waste by 50 percent by 2030. The agencies agree to coordinate food loss and waste actions such as: education and outreach, research, community investments, voluntary programs, public-private partnerships, tool development, technical assistance, event participation and policy discussion on the impacts and importance of reducing food loss and waste.

To achieve the vision for the Initiative, the agencies developed a strategy to prioritize and coordinate their efforts. In development of this strategy, the agencies built on information from several sources, including, but not limited to:

- *Managing for Results: Key Considerations for Implementing Interagency Collaborative Mechanisms* (<https://www.gao.gov/products/GAO-12-1022>) (U.S. Government Accountability Office). This report highlights two key elements for successful collaboration: (1) clarity of roles and responsibilities and (2) written guidance and agreements.
- *A Call to Action by Stakeholders: United States Food Loss and Waste Reduction Goal* (<https://www.epa.gov/sustainable-management-food/call-action-stakeholders-united-states-food-loss-waste-2030-reduction>) developed by EPA in consultation with USDA. The key activities identified by stakeholders in this report include: (1) seek prevention strategies and use the Food Recovery Hierarchy; (2) increase public awareness; (3) improve the data; (4) forge new partnerships and expand the existing ones; (5) clarify date labels and food safety; and (6) build food loss and waste infrastructure.
- *A Roadmap to Reduce U.S. Food Waste* (https://www.refed.com/downloads/ReFED_Report_2016.pdf) (Rethink Food Waste through Economics and Data (ReFED)). The report finds that the most cost-effective solutions are: (1) standardized date labeling and (2) consumer education campaigns.
- *Don't Waste, Donate: Enhancing Food Donations through Federal Policy* (<https://www.nrdc.org/sites/default/files/dont-waste-donate-report.pdf>) (Harvard Food Law and Policy Clinic and Natural Resources Defense Council). Rec-

ommendations in this report include: (1) enhance liability protections for food donations; (2) standardize and clarify expiration date labels; and (3) publish food safety guidance for food donations.

The Strategy Prioritizes Six Action Areas:



Priority Area 1: Enhance Interagency Coordination

Improving interagency coordination will enable USDA, EPA and FDA to use government resources more efficiently and effectively. An interagency, collaborative mechanism will be established to reduce programmatic redundancies and leverage complementary activities.



Priority Area 2: Increase Consumer Education and Outreach Efforts

Households are a major source of food loss and waste in the United States. Most consumers are unaware of the consequences of food loss and waste. A coordinated consumer education effort by USDA, EPA and FDA, in conjunction with public, private, or nonprofit partners, has the potential to raise awareness, motivate consumers to take action and accelerate progress to reduce food loss and waste.



Priority Area 3: Improve Coordination and Guidance on Food Loss and Waste Measurement

Enhanced coordination and voluntary guidance regarding measurement of food loss and waste will reduce confusion and help establish clearer goals and strategies. Improved and coordinated methodologies can identify missed opportunities and better communicate progress.



Priority Area 4: Clarify and Communicate Information on Food Safety, Food Date Labels, and Food Donations

Confusion about food safety guidelines, date labels, and food donation results in food loss and waste at retailers and in homes across the country. Establishing and communicating clearer, coordinated voluntary guidance on food date labels and liability protection around food donation could help increase food recovery and lead to reductions in food waste and food insecurity.



Priority Area 5: Collaborate with Private Industry to Reduce Food Loss and Waste Across the Supply Chain

The food industry, including processors, manufacturers, distributors, retailers and food service establishments, has an important role in reducing food loss and waste. Showcasing and building partnerships through efforts such as the USDA/EPA U.S. Food Loss and Waste 2030 Champions, as well as connecting stakeholders with food waste reduction technologies, will help stimulate further efforts throughout the food supply chain.



Priority Area 6: Encourage Food Waste Reduction by Federal Agencies in their Respective Facilities

Federal facilities operate food service venues, including cafeterias and concessions, and manage events. Encouraging the reduction of food loss and waste at these facilities and events will demonstrate Federal leadership and implementation of the administration's priorities.



Agriculture Innovation as a Solution for Farmers, Consumers, and the Environment

February 2020

American agriculture is environmentally sound, economically viable, and consumer focused, and its success is due to the United States' open-arms approach to innovation. The Agriculture Innovation Agenda (AIA) is the United States Department of Agriculture's (USDA) commitment to the continued success of American farmers, ranchers, producers, and foresters in the face of future challenges. It is a department-wide effort to align USDA's resources, programs, and research to provide farmers with the tools they need and to position American Agriculture as a leader in the effort to meet the food, fiber, fuel, feed, and climate demands of the future. We will also continue working to modernize our regulatory framework so America's producers will have the benefit of modern technologies, such as biotechnology, necessary to meet these challenges. USDA will stimulate innovation so that American agriculture can achieve the goal of increasing U.S. agricultural production by 40 percent while cutting the environmental footprint of U.S. agriculture in half by 2050.

To help achieve this goal, USDA commits to:

I. Create a comprehensive U.S. agriculture innovation strategy to align public and private research efforts:

- Bold and transformative innovation is needed to meet future demands. We will seek input from the agricultural community on what innovative technologies and practices are needed to meet these demands. We will use that input to seek alignment between the research goals of the scientific and innovation communities with the demand for tangible and relevant outcomes.
- **Over the next year, USDA will:**
 - Utilize innovation breakthrough opportunities derived from the 2019 National Academies of Science report, *Science Breakthroughs to Advance Food and Agricultural Research by 2030*, to form the basis for a forthcoming USDA Request for Information (RFI) on the most important innovation opportunities to be addressed in the near and long-term. The focus will be on transformational innovation opportunities defining the next era of agriculture productivity and environmental conservation. We encourage stakeholders to provide input on how these exciting science and technology developments hold potential for agriculture in the future. USDA will offer technical assistance for workshops to gather this feedback.
 - Using input provided, identify common themes across the agriculture customer base to inform research and innovation efforts in the Department, the broader public-sector, and the private sector.

II. Integrate the latest innovative conservation technologies and practices into USDA programs:

There have been dramatic advances in efficiency and conservation performance over the past two decades. USDA can assist farmers in accessing and adopting new technologies and practices to help producers meet productivity and environmental goals. To accomplish this, the Department will focus on USDA program delivery to encourage rapid adoption of cutting-edge technologies and practices. USDA will also champion commercialization of innovative technologies in the private sector

- **Over the next year, USDA will:**

- Improve internal coordination in order to facilitate transmission of best approaches among USDA research and program agencies and identify, customize, and fast-track the best emerging innovative technologies to integrate and deliver to our customers through USDA programs.
- Develop standardized OneUSDA processes, including a “fast pass” process for immediate in-take and integration of proven technologies.
- Work with existing regional outreach networks and other partnerships to identify innovation opportunities in order to rapidly integrate the latest technologies into our programs and understand how those technologies can best serve our customers.
- Solicit and encourage development of the best “ready-to-go” innovative technology from the private sector.

III. Improve USDA Data Collection and Reporting:

USDA currently collects a wealth of data on commodity production, but information on how our food is produced and the conservation practices being employed is harder to come by. USDA intends to increase our understanding of the adoption of conservation practices and improve the timeliness and access to conservation information, delivering a powerful new tool to measure and track progress. Through improved reporting and access to conservation data, USDA and the public will be able to understand and monitor conservation and productivity trends and progress. Access to this information will also serve as a catalyst for innovation and improved conservation decision-making.

- **Over the next year, USDA will:**

- Review the array of data we’re collecting on conservation practices, and make improvements to conservation reporting systems to identify:
 - The most useful data for tracking progress towards goals;
 - Gaps in the data that USDA currently collects that prevent large-scale trend analysis in production and conservation adoption trends;
 - Improvements in data collection and reporting;
 - Trends in production and conservation adoption;
 - The effects of conservation on natural resources; and
 - The most useful data for tracking food loss and waste.
- USDA will recommend improvements to conservation reporting systems which will be regularly updated, leveraging data from existing USDA surveys. This new reporting will contain timely and detailed trend data on agricultural conservation adoption, as well as production, to track progress toward meeting our goals.
- **Hold Ourselves Accountable with Benchmarks:** USDA has outlined benchmarks to hold us accountable as we stimulate innovation so that American agriculture can achieve the goal of increasing U.S. agricultural production by 40 percent while cutting the environmental footprint of U.S. agriculture in half by 2050. This will be an on-going effort toward meeting the demands of the future.
- **Agricultural productivity:** Increase agricultural production by 40 percent by 2050 to do our part to meet estimated future demand.
- **Forest Management:** Build landscape resiliency by investing in active forest management and forest restoration through increased Shared Stewardship Agreements with States.
- **Food loss and waste:** Advance our work toward the United States’ goal to reduce food loss and waste by 50 percent in the United States by the year 2030, from the 2010 baseline.
- **Carbon Sequestration and Greenhouse Gas:** Enhance carbon sequestration through soil health and forestry, leverage the agricultural sector’s renewable energy benefits for the economy, and capitalize on innovative technologies and practices to achieve a net reduction of the agricultural sector’s current carbon footprint by 2050 without regulatory overreach.
 - Multiple pathways exist to achieve this goal, including promoting innovation and new technologies and practices to improve fertilizer and manure management, capturing biogas, improving livestock production efficiency, conserving sensitive and marginal lands to enhance carbon sinks, reforestation and responsible forest management to prevent wildfire, maximizing the benefits of

renewable energy through improved efficiency and carbon capture, and encouraging soil health practices such as no-till to sequester carbon.

- **Water Quality:** Reduce nutrient loss by 30 percent nationally by 2050.
 - Address the areas with the greatest needs.
 - Support existing watershed goals.
- **Renewable Energy:** Support renewable fuels, including ethanol, biodiesel, and biomass.
 - Increase biofuel feedstock production and biofuel production efficiency and competitiveness to achieve market-driven blend rates of E15 in 2030 and E30 in 2050. Achieve market-driven demand for biomass and biodiesel.

[ATTACHMENT 8]



U.S. DEPARTMENT OF AGRICULTURE

Food Safety Information

Food Product Dating

“Best if Used By” is a type of date you might find on a meat, poultry, or egg product label. Are dates required on these food products? Does it mean the product will be unsafe to use after that date? Here is some background information answering these and other questions about product dating.

What is Food Product Dating?

Two types of product dating may be shown on a product label. “Open Dating” is a calendar date applied to a food product by the manufacturer or retailer. The calendar date provides consumers with information on the estimated period of time for which the product will be of best quality and to help the store determine how long to display the product for sale. “Closed Dating” is a code that consists of a series of letters and/or numbers applied by manufacturers to identify the date and time of production.

Does Federal Law Require Food Product Dating?

Except for infant formula, product dating is not required by Federal regulations.¹ For meat, poultry, and egg products under the jurisdiction of the Food Safety and Inspection Service (FSIS), dates may be voluntarily applied provided they are labeled in a manner that is truthful and not misleading and in compliance with FSIS regulations.² To comply, a calendar date must express both the month and day of the month. In the case of shelf-stable and frozen products, the year must also be displayed. Additionally, immediately adjacent to the date must be a phrase explaining the meaning of that date such as “Best if Used By.”

Are Dates for Food Safety or Food Quality?

Manufacturers provide dating to help consumers and retailers decide when food is of best quality. Except for infant formula, dates are not an indicator of the product’s safety and are not required by Federal law.

How do Manufacturers Determine Quality Dates?

Factors including the length of time and the temperature at which a food is held during distribution and offered for sale, the characteristics of the food, and the type of packaging will affect how long a product will be of optimum quality. Manufacturers and retailers will consider these factors when determining the date for which the product will be of best quality.

For example, sausage formulated with certain ingredients used to preserve the quality of the product or fresh beef packaged in a modified atmosphere packaging system that helps ensure that the product will stay fresh for as long as possible.

¹The U.S. Food and Drug Administration requires a “use by” date on infant formula. The U.S. Department of Agriculture (USDA) does not require quality or food safety date labels for products under its purview. However, the USDA does require a “pack date” for poultry products and thermally processed, commercially sterile products to help identify product lots and facilitate trace-back activities in the event of an outbreak of foodborne illness (see 9 CFR 381.126 and 431.2(e), respectively).

²9 CFR 317.8, 381.129, and 590.411.

These products will typically maintain product quality for a longer period of time because of how the products are formulated or packaged.

The quality of perishable products may deteriorate after the date passes; however, such products should still be safe if handled properly. Consumers must evaluate the quality of the product prior to its consumption to determine if the product shows signs of spoilage.

What Types of Food are Dated?

Open dating is found on most foods including meat, poultry, egg and dairy products. “Closed or coded dates” are a series of letters and/or numbers and typically appear on shelf-stable products such as cans and boxes of food.

What Date-Labeling Phrases are Used?

There are no uniform or universally accepted descriptions used on food labels for open dating in the United States. As a result, there are a wide variety of phrases used on labels to describe quality dates.

Examples of commonly used phrases include:

- A “**Best if Used By/Before**” date indicates when a product will be of best flavor or quality. It is not a purchase or safety date.
- A “**Sell-By**” date tells the store how long to display the product for sale for inventory management. It is not a safety date.
- A “**Use-By**” date is the last date recommended for the use of the product while at peak quality. It is not a safety date except for when used on infant formula as described below.
- A “**Freeze-By**” date indicates when a product should be frozen to maintain peak quality. It is not a purchase or safety date.

What Date-Labeling Phrase does FSIS Recommend?

USDA estimates that 30 percent of the food supply is lost or wasted at the retail and consumer levels.³ One source of food waste arises from consumers or retailers throwing away wholesome food because of confusion about the meaning of dates displayed on the label. To reduce consumer confusion and wasted food, FSIS recommends that food manufacturers and retailers that apply product dating use a “Best if Used By” date. Research shows that this phrase conveys to consumers that the product will be of best quality if used by the calendar date shown. Foods not exhibiting signs of spoilage should be wholesome and may be sold, purchased, donated and consumed beyond the labeled “Best if Used By” date.

Are Foods Safe to Eat After the Date Passes?

With an exception of infant formula (described below), if the date passes during home storage, a product should still be safe and wholesome if handled properly until the time spoilage is evident (*Chill Refrigerate Promptly* (<https://www.foodsafety.gov/keep/basics/chill/index.html>)). Spoiled foods will develop an off odor, flavor or texture due to naturally occurring spoilage bacteria. If a food has developed such spoilage characteristics, it should not be eaten.

Microorganisms such as molds, yeasts, and bacteria can multiply and cause food to spoil. Viruses are not capable of growing in food and do not cause spoilage. There are two types of bacteria that can be found on food: pathogenic bacteria, which cause foodborne illness, and spoilage bacteria, which do not cause illness but do cause foods to deteriorate and develop unpleasant characteristics such as an undesirable taste or odor making the food not wholesome. When spoilage bacteria have nutrients (food), moisture, time, and favorable temperatures, these conditions will allow the bacteria to grow rapidly and affect the quality of the food. Food spoilage can occur much faster if food is not stored or handled properly. A change in the color of meat or poultry is not an indicator of spoilage (The Color of Meat and Poultry).

What are the Requirements for Dating Infant Formula?

Federal regulations require a “Use-By” date on the product label of infant formula under inspection of the U.S. Food and Drug Administration (FDA). Consumption by this date ensures the formula contains not less than the quantity of each nutrient as described on the label. Formula must maintain an acceptable quality to pass through an ordinary bottle nipple.

The “Use-By” date is selected by the manufacturer, packer or distributor of the product on the basis of product analysis throughout its shelf life, tests, or other in-

³ <http://www.usda.gov/oce/foodwaste/sources.htm>.

formation. It is also based on the conditions of handling, storage, preparation, and use printed on the label. Do not buy or use baby formula after its “Use-By” date.

What Do Can Codes Mean?

Can codes are a type of closed dating which enable the tracking of product in interstate commerce. These codes also enable manufacturers to rotate their stock and locate their products in the event of a recall.

Can codes appear as a series of letters and/or numbers and refer to the date the product was canned. The codes are not meant for the consumer to interpret as a “Best if Used By” date.

Cans must exhibit a code or the date of canning. Cans may also display “open” or calendar dates. Usually these are “Best if Used By” dates for peak quality. Discard cans that are dented, rusted, or swollen. High-acid canned foods (*e.g.*, tomatoes and fruits) will keep their best quality for 12 to 18 months. Whereas, low-acid canned foods (*e.g.*, meats and vegetables) will keep for two to five years. Additional information on food canning and the handling of canned foods may be found at *Shelf-Stable Food Safety* (http://www.fsis.usda.gov/wps/portal/fsis/topics/food-safety-education/get-answers/food-safety-fact-sheets/safe-food-handling/shelf-stable-food-safety/ct_index).

Can Food be Donated After the Date Passes?

Yes. The quality of perishable products may deteriorate after the date passes but the products should still be wholesome if not exhibiting signs of spoilage. Food banks, other charitable organizations, and consumers should evaluate the quality of the product prior to its distribution and consumption to determine whether there are noticeable changes in wholesomeness (*Food Donation Safety Tips* (<http://www.fda.gov/Food/ResourcesForYou/Consumers/ucm197835.htm>)).

What do the Dates on Egg Cartons Mean?

Use of either a “Sell-By” or “Expiration” (EXP) date is not a Federal regulation, but may be required, as defined by the egg laws in the state where the eggs are marketed. Some state egg laws do not allow the use of a “sell-by” date.

Many eggs reach stores only a few days after the hen lays them. Egg cartons with the USDA grade shield on them must display the “pack date” (the day that the eggs were washed, graded, and placed in the carton). This number is a three-digit code that represents the consecutive day of the year starting with January 1 as 001 and ending with December 31 as 365. When a “sell-by” date appears on a carton bearing the USDA grade shield, the code date may not exceed 30 days from the date of pack.

After purchasing eggs, it is recommended to refrigerate them in their original carton and place them in the coldest part of the refrigerator, not in the door due to loss of coolness from repeated opening of the door.

Why are there Bar Codes on Food Packages?

A Universal Product Code (UPC) is a type of barcode that appears on packages as black lines of varying widths above a series of numbers. They are not required by regulation, but manufacturers print them on most product labels because scanners at supermarkets can “read” them quickly to record the price at checkout. UPC codes are also used by stores and manufacturers for inventory purposes and marketing information. When read by a computer, a UPC can reveal such specific information as the manufacturer’s name, product name, size of product and price. The numbers are not used to identify recalled products.

A Stock Keeping Unit (SKU) code is a number assigned to a product by a company or retailer for stock-keeping purposes and internal operations. A particular product may have different SKUs if sold by different companies or retailers.

How does Date Labeling Impact Food Waste?

Confusion over the meaning of dates applied to food products can result in consumers discarding wholesome food.

In an effort to reduce food waste, it is important that consumers understand that the dates applied to food are for quality and not for safety. Food products are safe to consume past the date on the label, and regardless of the date, consumers should evaluate the quality of the food product prior to its consumption.

Where can I find Information on the Proper Handling of Food?

If foods are mishandled, before or after the date on the package, bacteria, including pathogenic bacteria that can cause foodborne illness, can quickly multiply. For example, if cold chicken salad is taken to a picnic and left out at temperatures higher than 40 °F (4.4 °C) for more than two hours (one hour if temperatures are 90 °F (32.2 °C) or higher), the product should not be consumed. Other examples of

potential mishandling are meat and poultry products that have been defrosted improperly or handled by people who don't practice good sanitation. Make sure to follow the handling and preparation instructions on the label to ensure top quality and safety. Additional information on safe food handling practices in the home can be found at *Check Your Steps: Food Safe Families* (<http://www.fsis.usda.gov/wps/portal/fsis/topics/food-safety-education/teach-others/fsis-educational-campaigns/check-your-steps>) and *The Big Thaw* (http://www.fsis.usda.gov/wps/portal/fsis/topics/food-safety-education/get-answers/food-safety-fact-sheets/safe-food-handling/the-big-thaw-safe-defrosting-methods-for-consumers/CT_Index).

Food Safety Questions?

Call the USDA Meat & Poultry Hotline toll-free at **1-888-MPHotline (1-888-674-6854)**

The Hotline is open year-round and can be reached from 10 a.m. to 6 p.m. (Eastern Time) Monday through Friday.

E-mail questions to MPHotline@usda.gov.

Consumers with food safety questions can also "Ask Karen", the FSIS virtual representative.

Available 24/7 at AskKaren.gov.

[ATTACHMENT 9]



July 6, 2020

Hon. COLLIN C. PETERSON,
Chairman,
 Committee on Agriculture,
 U.S. House of Representatives,
 Washington, D.C.

Dear Mr. Chairman:

Sections 1401 (a) and (b) of the Agriculture Improvement Act of 2018 provide that the U.S. Department of Agriculture (USDA) shall report on: (a) whether the average feed cost used by a dairy operation to produce a hundredweight of milk (as calculated by USDA monthly) is representative of actual dairy feed costs; and (b) the costs incurred by dairy operations in the use of corn silage as feed and the difference between the feed cost of corn silage and the feed cost of corn. As required by the statute, the enclosed report provides these analyses.

If you have questions, please have a member of your staff contact the Office of Congressional Relations at (202) 720-7095. A similar letter is being sent to Ranking Member K. Michael Conaway.

Sincerely,

A handwritten signature in cursive script that reads "Sonny Perdue".

SONNY PERDUE,
Secretary.

ENCLOSURE

Agriculture Improvement Act of 2018—Dairy Margin Coverage Section 1401 (a) and (b) Report to Congress

June 17, 2020
 U.S. Department of Agriculture

Table of Contents

Executive Summary
 Background

Sec. 1401(a): Does the DMC calculated average cost of feed reflect actual dairy feed costs?

Comparison of Alternative Dairy Feed Cost Estimates with the Statutory Formula-Based Estimate Published by FSA
University and State Department of Agriculture Budgets
Additional Perspective on Dairy Feed Costs

Sec. 1401(b): What are the costs incurred by dairy operations for use of corn silage for feed and what is the difference between the feed costs of corn silage and corn?

No Formal Market or Prices Exist for Corn Silage
Additional Corn Silage Background
The Difference Between Feed Costs of Corn and Corn Silage
Examining the “Homegrown” Component of Silage Costs

References

Appendix—Statutory Language from the Agriculture Improvement Act of 2018
Tables

Table 1: Comparison of Alternative Dairy Feed Cost Estimates with the Statutory Formula-Based Estimate Published by FSA

Table 2: University Extension and State Estimates of Dairy Feed Costs

Table 3: Feed Cost of Corn Silage and Corn as Estimated by USDA’s ARMS

Appendix: Component-Based Tabulation ARMS Estimates of Dairy Feed Costs, Measured in Dollars per Hundredweight of Milk Produced

Figures

Figure 1: Feed Cost Shares and Dairy Margin in Dollars per Hundredweight of Milk as Calculated Monthly by USDA for DMC (and formerly, MPP-Dairy)

Figure 2: U.S. Production of Corn Silage *vs.* Alfalfa Hay

Figure 3: Feed Prices of Main Dairy Cost Factors

Executive Summary

Section 1401 of the Agriculture Improvement Act of 2018 requires that the U.S. Department of Agriculture (USDA) evaluate: (1) whether the rate used in the Dairy Margin Coverage (DMC) program to represent an average dairy operation’s costs to produce a hundredweight of milk (as calculated by USDA monthly) is representative of actual dairy feed costs; (2) the costs incurred by dairy operations in the use of corn silage as feed; and (3) the difference between the feed cost of corn silage and the feed cost of corn. Key findings include:

For (1):

USDA’s Economic Research Service (ERS) publishes national *U.S. Milk Production Costs and Returns Estimates* based on dairy producer responses to questions asked in USDA’s Agricultural Resource Management Survey (ARMS). For 2016, the base year used in this report, the ERS published estimate indicates a national average feed cost of \$9.35 per hundredweight of milk produced. As an alternative, a feed component-specific tabulation of responses to questions in the ARMS was developed. This feed-component specific tabulation provides a cost estimate of \$9.20 per hundredweight for 2016.

The average monthly feed cost calculated for the DMC program using the required statutory formula was \$8.04 per hundredweight for calendar 2016. This rate was calculated as the simple average of the monthly prices of feed components published by USDA’s Farm Service Agency (FSA) on the DMC webpage for calendar 2016.

A 95-percent confidence interval around the published ERS estimate for 2016 provides a range of \$8.97 to \$9.73 per hundredweight; the 95-percent confidence interval for the component-specific ARMS result is similar, at \$8.83 to \$9.58 per hundredweight. The value generated from the statutory formula, \$8.04 per hundredweight, does not fall within either of these 95-percent confidence interval ranges.

Although not directly comparable to the ARMS data, twelve illustrative university and State Department of Agriculture budgets are also provided in the report. They are often prepared using a panel of producers, aim to be representative (but may skew toward producers who are better managers and more likely to participate in such panels), and are intended for producer use as a guide for planning and decision-making. They are also often used by bankers to benchmark individual producer’s cash flow. Unlike the ARMS estimates, they are typically neither statistically based nor do they reflect the United States as a whole and are thus are not sufficient for influencing national policymaking.

For (2) and (3):

- The corn silage market is regional and thinly traded and any prices that are available are not representative nationally. The vast majority of corn silage is fed on the farm where it is grown or on nearby operations. Unlike corn, it is a bulky product that is not amenable to long-distance transport.
- The difference between the feed cost of corn silage (which is valued as a source of forage and energy) and the feed cost of corn are a function of corn prices and alfalfa availability. Alfalfa production and use in rations has fallen for some time, while corn silage use has increased.
- In the current economic environment, when market prices of corn are low, the relative costs of using homegrown silage in the dairy ration are higher compared with operations that purchase feed. This was not always the case: when market prices were much higher (such as from 2008–13), operations using homegrown corn and silage had a relative cost advantage.

Background

The Agriculture Improvement Act of 2018 (the 2018 Farm Bill) authorized the Dairy Margin Coverage (DMC) program, a voluntary risk management program for dairy producers. DMC replaces the Margin Protection Program for Dairy (MPP-Dairy), which was authorized by the Agricultural Act of 2014 (the 2014 Farm Bill). DMC offers protection to dairy producers when the difference between the national all-milk price and the national average statutory formula-driven feed cost (the margin) falls below a certain dollar amount coverage level selected by the producer.¹ Individual producer margins may be above or below the statutory formula-driven margin.

Section 1401 of the 2018 Farm Bill DMC requires that USDA evaluate: (1) whether the rate used in the Dairy Margin Coverage (DMC) program to represent an average dairy operation's costs to produce a hundredweight of milk (as calculated by USDA monthly) is representative of actual dairy feed costs; (2) the costs incurred by dairy operations in the use of corn silage as feed; and (3) the difference between the feed cost of corn silage and the feed cost of corn.² This report addresses these issues.

Sec. 1401(a): Does the DMC calculated average cost of feed reflect actual dairy feed costs?

Every month, USDA uses a formula specified in the 2014 Farm Bill to calculate the average cost of feed used by a dairy operation to produce a hundredweight of milk for use in implementing the Farm Service Agency (FSA) dairy program (currently, DMC). This statutory formula was developed with input from the National Milk Producers Federation (NMPF) in conjunction with prominent animal scientists and dairy nutritionists (National Milk Producers Federation, 2010; Ishler, 2014). While the rations that dairy farmers feed cows vary across the United States depending on the availability and type of feed, the statutory formula includes only corn, alfalfa hay, and soybean meal. These feeds are the traditional mainstays of dairy rations, providing the main essential nutrients.

The statutory formula USDA uses to calculate the feed costs associated with producing a hundredweight (one hundred pounds) of milk monthly is:

$$\text{(Eqn. 1) } 1.0728 * \text{Corn Price (\$/bu.)} + 0.0137 * \text{Alfalfa Hay Price (\$/ton)} + 0.00735 * \text{Soybean Meal Price (\$/ton)}$$

rounded to the nearest cent. In developing this fixed-coefficient ration, Congress used a formula originally designed to reflect the feed costs on a 1,000-cow milking operation producing 56.39 pounds of milk per cow daily (National Milk Producers Federation, 2010; Ishler, 2014; Newton and Hutjens, 2015).³ Newton and Hutjens (2015) also note that Congress considered the cost of the program when determining the formula set forth in the 2014 Farm Bill to calculate feed costs for the Dairy Margin Protection Program (the precursor program to DMC).

The feed components and the coefficients of the formula were not changed in the 2018 Farm Bill with the introduction of DMC. However, USDA made one change

¹For details on the program and how it operates, see: <https://www.fsa.usda.gov/news-room/fact-sheets/index> (scroll to the dairy section for the DMC Fact Sheet).

²See *Appendix* for the statutory language.

³For 2019, U.S. milk production averaged 64.1 pounds per cow per day. Technological advancements and better management practices have improved the yield per cow steadily since 2015. However, the 64.1 pounds per day represents an average across all herd sizes with yields lower for smaller farms. Much of the increase in overall productivity is due to technological and management improvements and not greater feed use.

spondents did not answer questions about individual purchased feed components and those observations were dropped. Then, the observations were re-weighted to reflect both purchased and home-grown feed and encompass individual feed components—hay (alfalfa) and straw; corn silage; corn and other grains; protein supplements; and distillers or brewers’ grain. This tabulation uses 1,079 of the total 1,526 milk cost and returns observations in the 2016 survey. See *Appendix* table for details.

These estimates are compared against the statutory rate calculated using the formula shown in *Eqn. 1* and published on the FSA website at <https://www.fsa.usda.gov/programs-and-services/dairy-margin-coverage-program/index> in the “Final Feed Costs” column. The “Final Feed Costs” entries for each month of the year were summed for each calendar year and divided by twelve to obtain the average annual feed cost.

As shown in *Table 1*, the statutory formula rates posted by FSA are consistently lower than the ARMS-based estimates. A 95-percent confidence interval around the published ERS estimate for 2016 provides a range of \$8.97 to \$9.73 per hundredweight; the range for the component-specific ARMS result is similar, at \$8.83 to \$9.58 per hundredweight. The \$8.04 per hundredweight, using the statutory formula, does not fall within either of these 95-percent confidence interval ranges.

Table 1: Comparison of Alternative Dairy Feed Cost Estimates with the Statutory Formula-Based Estimate Published by FSA

	2016 \$/hundredweight	2017 ¹ \$/hundredweight	2018 ¹ \$/hundredweight
Published ERS <i>U.S. Milk Costs and Returns Estimates</i>	9.35	9.25	9.92
Unpublished ERS component-specific ARMS estimates	9.20	9.10	9.76
(3) Statutory formula rate published by FSA (shown in <i>Eqn. 1</i>)	8.04	7.92	8.64

¹NASS Agricultural Prices indexes for feed concentrates and hay and forage are used to extrapolate feed cost estimates for 2017 and 2018. See <https://www.ers.usda.gov/data-products/milk-cost-of-production-estimates.aspx>.

University and State Department of Agriculture Budgets

Although not directly comparable to the ARMS data, twelve illustrative university and State Department of Agriculture budgets are provided in *Table 2*.⁹ They are prepared by university extension economists and the California State Department of Food and Agriculture and are regional by nature. These budgets are often prepared using a panel of producers, aim to be representative (but may skew toward producers who are better managers and more likely to participate in such panels), and are intended for producer use as a guide for planning and decision-making. They are also often used by bankers to benchmark individual producer’s cash flow. Unlike the ARMS estimates, they are typically neither statistically based nor do they reflect the United States as a whole and are thus are not sufficient for influencing national policymaking.

Additional Perspective on Dairy Feed Costs

Figure 1 shows the monthly corn, alfalfa, and soybean meal costs as used to calculate the DMC (and earlier, the MPP-Dairy) margin (the difference between the monthly all-milk price and the calculated feed cost). For 2016–2019, total feed costs were in the \$7.50–\$9.00 range for many months, although they were slightly higher in 2019. (In 2019, the alfalfa hay category was modified to add premium and supreme hay.) Large variations in the DMC margin—as shown by the yellow line—are exclusively due to volatility in the all-milk price.

While dairy diets can differ by region and herd size, all diets use forage, grain, and protein as major feed components, along with salt and minerals. For example, a 2016 USDA study found that 92.0 percent of all U.S. dairy operations fed lactating or dry cows alfalfa hay/haylage; 89.4 percent fed corn silage; 76.9 percent fed soybeans (whole, meal, or hulls); and 90.3 percent fed corn (whole, meal, cracked or flaked) (USDA/APHIS). Similarly, Linn, *et al.* (2018) and *Dairy-Cattle.extension.org*

⁹These example budgets were selected to illustrate the variation in cost estimates available from State and university sources.

(2019) indicate that alfalfa hay is the main source of forage, corn is the dominant grain for dairy cows, and soybean meal is a major source of protein.

As the dairy sector is growing increasingly sophisticated, so too are the management practices used. The 2016 USDA/APHIS study indicates that about 70 percent of small and medium operators fed all of their lactating cows the same ration, while over half of large operations tailored their feed ration based on the stage of lactation. The use of an independent nutritionist to balance rations increased as herd size increased, as did the likelihood of the operation feeding cottonseed, wet brewers/distillers grains, canola, wheat, straw, or blood meal. Smaller operations were more likely to feed clover, soybeans, or oats. Overall, 20 percent of lactating cows and 34 percent of dry cows had some pasture access—which was considerably more common on small operations.

Regardless of the size or location of the operation, dairy producers shift product use within the forage, grain, and protein categories to achieve nutrient equivalence at least cost. Because they are nutritionally equivalent, the prices of like products in each category are closely related to the prices of alfalfa hay, corn, and soybean meal. For example, some farmers might not have access to alfalfa hay and, as a result, feed their cows substitutes such as corn silage or other haylage grown on their farms. Corn silage is a partial substitute for alfalfa hay and is an important source of energy; in practice, its economic value is typically expressed relative to corn used for grain.

Table 2: University Extension and State Estimates of Dairy Feed Costs (cost/cwt of milk)

Measure	Univ. of Idaho 2,500 Cow ¹	Univ. of Idaho 120 Jersey Cow ²	Univ. of Idaho 5,000 Cow ³	Univ. of Minnesota 223 Cow Farm ⁴
Year	2012	2014	2014	2018
Alfalfa Hay	2.28	2.51	2.09	0.70
Other Hay and Straw	0.71	0.46	0.55	0.54
All Silage and/or Haylage	1.33	1.30	1.55	1.27
Grain Feed	1.75	N/A	1.86	0.91
Protein Supplement	N/A	N/A	N/A	2.86
Other Feed Inputs	3.37	5.58	3.17	1.92
Total Feed Cost/Cwt	9.44	9.85	9.22	8.20
Measure	Iowa St. Univ. 120 Cow Farm ⁴	Iowa St. Univ. 120 Jersey Cows ⁴	CDFA 2,000 Cows ⁵	CDFA 2,000 Cows ⁵
Year	2016	2016	2016	2017
Alfalfa Hay	N/A	N/A	1.26	1.14
Other Hay and Straw	2.29	2.84	0.18	0.16
All Silage and/or Haylage	1.93	2.46	1.89	1.61
Grain Feed	1.33	1.36	1.24	1.28
Protein Supplement	0.44	0.38	3.45	3.43
Other Feed Inputs	1.56	1.77	1.00	1.03
Total Feed Cost/Cwt	7.55	8.80	9.01	8.65
Measure	Cornell NY State 775 avg. herd ⁶	Cornell NY State 811 avg. herd ⁶	Cornell NY State 853 avg. herd ⁶	Cornell NY State 901 avg. herd ⁶
Year	2014	2015	2016	2017
Dairy Grain and Concentrate	7.04	6.42	5.57	5.54
Dairy Roughage	0.40	0.35	0.38	0.38
Other Feed Inputs	1.63	1.54	1.33	1.28
Total Feed Cost/Cwt	9.07	8.31	7.28	7.20

¹Economic costs are used in the University of Idaho costs and returns estimates. All resources are valued based on market price or opportunity cost. The 365-day 3.5% fat-corrected milk for the year is 23,376 lb. per cow, which is the state average for 2012. Published September 6, 2013.

²365-day 3.5% fat-corrected milk for the year is 24,127 lb. per cow, which is the state average for 2014. Published May 2015.

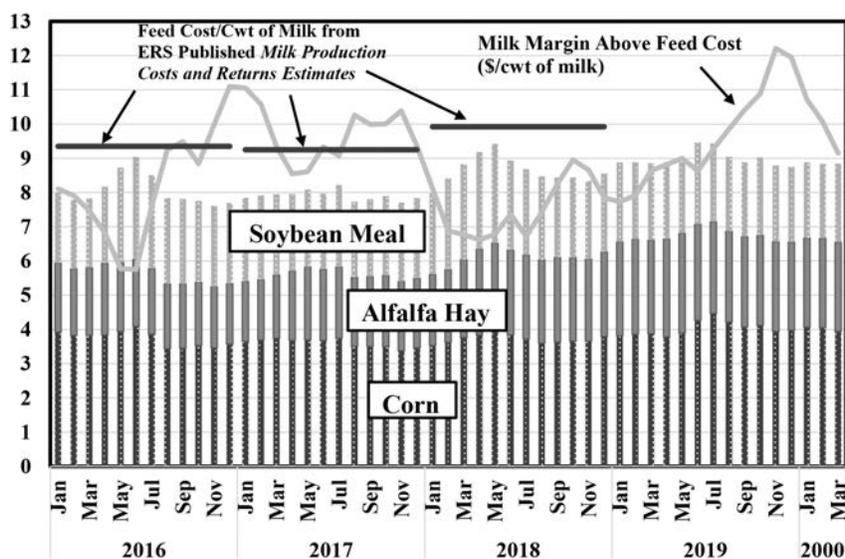
³The 365-day 4.7% fat-corrected milk for the year is 19,404 lb. per cow, which is the state average for 2012. Published July 6, 2015.

⁴Dairy feed cost estimates from University of Minnesota and Iowa State University are largely variable costs. University of Minnesota data were published in 2019; Iowa State data were published in 2016.

⁵The dairy feed cost estimates from the California Department of Food and Agriculture (CDFA) are available for the north and south valleys, which together account for about 90 percent of California dairy production. Dairy budget cost estimates from CDFA are largely variable costs. These data were published in 2017 and 2018, respectively.

⁶The Cornell University dairy feed cost estimates are based on the data from the same 128 farms that have participated in the Dairy Farm Business Summary and Analysis Project in New York State. These numbers do not represent the average for all dairy farms across New York and are from farms that are generally considered above average dairy farms in New York. All Cornell data were published in January 2018.

Figure 1: Feed Cost Shares and Dairy Margin in Dollars per Hundred-weight of Milk as Calculated Monthly by USDA for DMC (and formerly, MPP-Dairy)



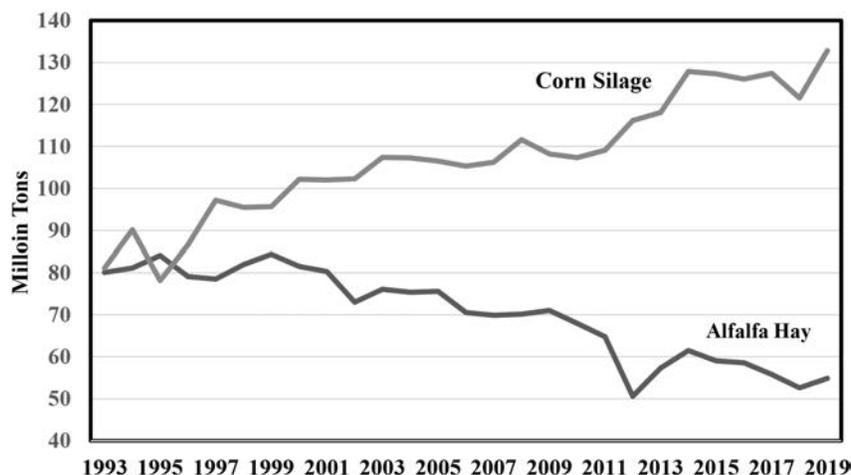
Source: U.S. Department of Agriculture, Farm Service Agency and ARMS.

Notes:

- The DMC margin is the difference between the all-milk price and calculated feed cost.
- MPP-Dairy was replaced by DMC in January 2019.
- MPP-Dairy used paired-month milk margin as calculated by taking the simple average of the milk margins that were calculated for the individual months in the pairing. The paired months were specified in the 2014 Farm Bill and were January–February, March–April, May–June, etc. The DMC program uses individual month's milk margin, rather than paired-months.
- The alfalfa hay price for all months in calendar 2019 is adjusted for the 50/50 split between alfalfa and premium/supreme alfalfa in calculating the alfalfa hay cost.
- Based on published ERS *Milk Production Costs and Returns Estimates*, the total feed cost for calendar years 2016, 2017 and 2018 were \$9.35, \$9.25, and \$9.92 per hundredweight, respectively, as indicated by the horizontal blue lines.

Sec. 1401(b): What are the costs incurred by dairy operations for use of corn silage for feed and what is the difference between the feed costs of corn silage and corn?

Over the last several years, corn silage has become much more important in dairy feeds as production has increased (*Figure 2*). In contrast, production of alfalfa hay has been trending down in most significant alfalfa producing States, including California, the largest milk producing State. Between 2000 and 2019, national production of corn silage has risen by nearly 31 million tons, or by 30 percent. Over the same period, national production of alfalfa hay has declined nearly 27 million tons, or by 33 percent.

Figure 2: U.S. Production of Corn Silage vs. Alfalfa Hay

Source: U.S. Department of Agriculture, National Agricultural Statistics Service, *QuickStats*.

A 2016 USDA/APHIS survey found that 89 percent of operations fed at least some corn silage in 2014. Corn silage is an important source of forage and supplies more energy than hay, plus it also provides a portion of the nutritional equivalence of corn in the dairy ration. Most corn silage is used for dairy feed, although it can also go to beef cattle such as calves or cows that require large amounts of energy. USDA provides production estimates for corn silage and alfalfa hay, but it does not estimate disappearance or consumption.

Much attention regarding the substitution of corn silage for alfalfa in dairy production has focused on California because of its status as the largest milk producer and traditionally the largest alfalfa-producing State. Its alfalfa production has trended down in part due to declining availability of irrigation water and its output has slipped below other States, including Montana and Idaho. In contrast, California corn silage production has been increasing—as is the situation for the United States as a whole. California ranks second only to Wisconsin currently in silage production and first surpassed New York, Pennsylvania, and Minnesota in silage output during the 1990s.

Corn silage is a critical dairy feed and is valued as a source of forage and energy. It is neither a perfect substitute for alfalfa nor for corn, but a very common part of balanced rations that reflect a recommended nutritional balance delivered at the least cost. In many cases where alfalfa use in rations has fallen, corn silage has increased, but increased use of silage is usually accompanied by increased use of other hay or roughage sources as well.

No Formal Market or Prices Exist for Corn Silage

The vast majority of corn silage is fed on the farm where it is grown or on nearby operations. It is a bulky product that is not amenable to long-distance transport. Thus, the corn silage market is regional and thinly traded and any prices that are available are not representative nationally. Alfalfa, in contrast, can be baled, pelletized, or otherwise processed and a considerable volume is shipped between States or exported overseas. As a result of these well-developed markets, prices for alfalfa are widely available and reported. For corn silage, there are no similar market prices, leading to the dilemma of how to value it or evaluate its costs. USDA's National Agricultural Statistics Service does not collect farm price data for corn silage nor does USDA's Agricultural Marketing Service report cash prices for silage as they each do for alfalfa hay. Most corn grower-dairyman silage contracts are based upon prices determined at some point during the growing season using Chicago Mercantile Exchange corn futures contracts (Lauer, 2019).

Additional Corn Silage Background

Production costs for silage tend to be higher than for corn due to higher fertility needs since virtually the entire above-ground plant is cut and chopped in the pro-

duction of corn silage, leaving fields essentially bare, with no stover remaining. Some additional costs may be incurred in the ensiling process and in storage; generally, management needs are greater in the production of corn silage than in producing corn for grain. Some producers may use inoculants to facilitate fermentation. Production of silage can have both indirect costs and benefits. One of the indirect costs is its lack of transportability due to its bulk and high moisture content; as a result, silage must be fed where produced or within a very short distance. One of the indirect benefits of silage is less weather risk as the crop has more flexible harvest dates and does not have to dry down in the field like corn for grain. Silage also has much lower field loss compared to hay.

Adjustments to the ration when feeding more corn silage and reducing alfalfa hay mainly involve the increased use of protein supplements (usually soybean meal) because alfalfa hay has more protein. Non-protein nitrogen (NPN) additives such as urea may also be used to increase the crude protein content of corn silage. Some rations may substitute barley or by-product feedstuffs for corn to raise the protein content. In addition, some additional limestone may be added as a buffer to adjust the pH level.

Variability in corn silage quality may also be an issue. The digestibility of neutral detergent fiber (NDF) and starch in corn silage is highly variable depending upon crop (individual hybrid) genetics, as well as environmental and management factors. Variation in concentration and digestibility of NDF and starch in corn silage provides management challenges in order to maximize energy intake and milk production (Allen). Some processing practices, such as dry rolling or steam rolling, grinding, and flaking can enhance the value of the silage. Generally, producers achieve nutrient equivalence at least cost through the guidance of a nutritionist or the use of computer software aimed at targeting least-cost feed formulations.

Because little silage is traded, no data are available to evaluate quality premiums or discounts. Much of the value of silage is inferred from local or regional markets for competing feed sources. As indicated elsewhere in this report, corn silage has steadily grown as a dairy feed over the last two decades while alfalfa has declined somewhat. One explanation is that producers have successfully used silage because it is cost effective. Dairy producers in the Northeast have long favored silage in part due to difficulties associated with producing high quality alfalfa in that area, especially compared with western regions. However, with dwindling water supplies for irrigated alfalfa, western dairy producers have also been increasing use of silage.

The Difference Between Feed Costs of Corn and Corn Silage

The standard approach in valuing corn silage is to base it off some factor relative to corn. As a result, any formal incorporation of silage value in the DMC calculations would not add much price information as its value would simply move with corn. A common rule of thumb is that one ton of silage in the field is worth 8 times the price of corn grain per bushel; for corn already ensiled, it is worth 10 times the price of corn grain. These are far from strict factors, however, with values reflecting local conditions related to quality and availability of both corn grain and silage, complicating any efforts to develop a nationally representative average.¹⁰

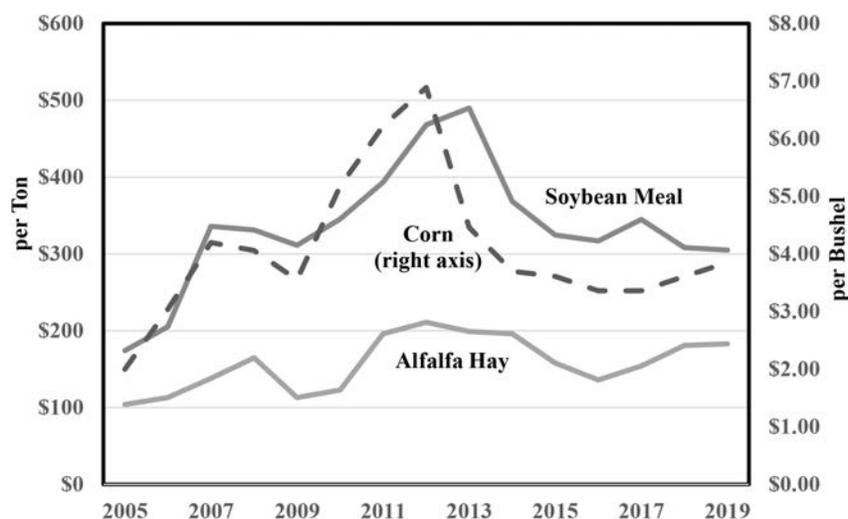
The quality dimension is an important component of pricing silage when transactions occur, such as in western dairy areas with large herds where much of the corn silage is purchased. While formal price information based on quality characteristics for alfalfa exists, that is not the case for corn silage.¹¹ Silage prices vary by quality factors such as moisture content, total digestible nutrients, or neutral detergent fiber, but these factors are not standardized; instead they are negotiated between buyer and seller.

Examining the “Homegrown” Component of Silage Costs

Because market prices for corn have fallen to low levels in recent years, milk producers who purchase grain have seen a reduction in costs (*Figure 3*). The average price of corn between 2014 and 2018 was \$3.53 per bushel compared with \$5.26 per bushel between 2009 and 2013. This has lowered their dairy production costs substantially.

¹⁰Cornell University has estimated the value of silage with a model that uses the price of alfalfa in addition to corn grain, all based on local markets in New York. Results for 3 years valued corn silage at 10 to 15 times the price of the corn, on the high end of the silage-to-corn ratio used by most extension sources.

¹¹USDA’s Agricultural Marketing Service offers an explicit quality value scale for alfalfa hay, including Supreme, Premium, Good, Fair, and Utility. These categories are specifically defined based on identifiable characteristics of growth stage, stem and leaf quality, color, damage, and presence of contaminants like mold and weeds. See <https://www.ams.usda.gov/sites/default/files/media/HayQualityGuidelines.pdf>.

Figure 3: Feed Prices of Main Dairy Cost Factors

Sources: U.S. Department of Agriculture, National Agricultural Statistics Service, *QuickStats* (for corn and alfalfa hay). U.S. Department of Agriculture, Agricultural Marketing Service, *Central Illinois Soybean Processor Report* (for soybean meal).

The cost of production for corn silage tends to be higher than the cost of production for grain. The magnitude of the difference varies, reflecting different estimates by location, assumptions about input use, and rotational practices such as whether corn is grown after corn or after soybeans. For example, crop budgets prepared for several states in recent years indicated that corn silage variable costs ranged from about 17 percent to as much as 40 percent higher than variable costs for corn grain.

The USDA ARMS survey provides some evidence that costs of purchased feeds have recently been steady while costs for homegrown feeds have increased. The ARMS questionnaire asks explicitly for expenditures on corn silage and corn grain by “homegrown” and “purchased” categories. According to the 2016 ARMS, the total expenditure on corn silage (purchased and homegrown) was \$1.38 (0.99 + 0.39) per hundredweight of milk (*Table 3*). Over 70 percent of that was expenditure on homegrown corn silage, confirming that most of the corn silage fed to dairy herds is grown onsite or locally. The expenditure on corn, based on ARMS 2016 data, was \$0.68 (0.37 + 0.31) per hundredweight of milk, roughly equally split between purchased and homegrown corn.

Table 3: Feed Cost of Corn Silage and Corn as Estimated by USDA’s ARMS

Measure	Dollars per Hundredweight of Milk Produced		
	2016 ¹	2017 ²	2018
Homegrown Corn Silage	0.99	N/A	N/A
Homegrown Corn	0.37	N/A	N/A
Homegrown Corn and Corn Silage	1.36	1.40	1.61
Purchased Corn Silage	0.39	N/A	N/A
Purchased Corn	0.31	N/A	N/A
Purchased Corn and Corn Silage	0.70	0.67	0.70

¹The data for calendar year 2016 is based on the ARMS dairy component survey.

²For 2017 and 2018, ERS’s *Milk Production Costs and Returns Estimates* are used to extrapolate 2016 ARMS data.

Note that the feed costs presented in *Table 3* are the estimated average costs incurred for corn and corn silage across all U.S. dairy producers based upon the 2016 ARMS dairy survey. Most producers either purchased or harvested corn, but few did both. This is also true for corn silage. Further, some producers did not report feed-

ing corn or corn silage. Since the estimated average costs presented in *Table 3* represent all U.S. dairy farms, farms with zero-cost for these feed components are included in the averages.

As in the prior section, the 2016 ARMS data were extrapolated to 2017 and 2018 consistent with ERS's *Milk Production Costs and Returns Estimates*. The costs associated with homegrown feed were extrapolated using ERS' *Milk Production Costs and Returns Estimates* index for homegrown feed, while the costs for purchased feed were extrapolated using ERS's *Milk Production Costs and Returns Estimates* index for purchased feed. To estimate the change in costs from 2016 to 2017 and 2018 in their *Milk Production Costs and Returns Estimates*, ERS uses the forage feed price index for homegrown feed and the feed grain price index for purchased feed, which are published by NASS.

On average across ARMS respondents in 2016, the cost of homegrown corn silage was \$0.99 per hundredweight of milk while \$0.39 per hundredweight of milk was spent to purchase corn silage. *Table 3* shows that costs for homegrown feed increased significantly from 2016 to 2018, while expenditures on purchased feed were essentially flat.

The cost increases associated with homegrown feed affected dairy producers differently depending on the shares of the commodities purchased. Dairies that predominantly purchased feed between 2016 and 2018 did not see expenditures increase. In contrast, dairies that relied predominantly on homegrown feed saw their costs increase significantly. According to ERS's *Milk Production Costs and Returns Estimates*, the expenditure on homegrown feed increased by about 18 percent from 2016 to 2018, while the expenditure on purchased feed remained unchanged.

In the current economic environment, when market prices of corn are low, the relative costs for homegrown corn and silage are higher compared with operations that purchase feed. Conversely, 6 or 7 years ago, when market prices were much higher, the operations using homegrown corn and silage had a relative cost advantage.

References

- Allen, Mike. *Maximizing Digestible Intake of Corn Silage-Based Diets: Part 1 and Part 2*. Michigan State University Extension. September 15, 2011.
- California Department of Food and Agriculture. *Dairy Cost of Production*. https://www.cdfa.ca.gov/dairy/dairycomp_annual.html.
- Iowa State University Extension and Outreach. *Dairy Budgets*. <https://www.extension.iastate.edu/dairyteam/content/iouso-dairy-budgets>.
- Ishler, Virginia A. *Getting a Handle on the Farm Bill and the Dairy Margin Protection Program*. Pennsylvania State University Extension. September 3, 2014. <https://extension.psu.edu/getting-a-handle-on-the-farm-bill-and-the-dairy-margin-protection-program>.
- Jones, Coleen M., Jud Heinrichs, Virginia A. Ishler, and Gregory W. Roth. *From Harvest to Feed: Understanding Silage Management*. Pennsylvania State University Extension. September 4, 2017.
- Jones, Dave. 2019. *Keep Rations Simple. Optimize Efficiency*. <https://www.agriking.com/keep-rations-simple/>.
- Karzesz, Jason. 2018. *Six Year Trend Analysis New York State Dairy Farms Selected Financial and Production Factors*. Cornell University. <https://ecommons.cornell.edu/handle/1813/66947>.
- Lauer, Joe. 2019. *Adjusting Corn Silage Contracts for the 2019 Season*. <http://corn.agronomy.wisc.edu/AA/pdfs/A133.pdf>.
- Linn, James, Michael Hutjens, Donald Otterby, W. Terry Howard, and Lee Kilmer. 2018. *Formulating Dairy Cow Rations*. <https://extension.umn.edu/dairy-nutrition/formulating-dairy-cow-rations#protein-and-non-protein-nitrogen-1680462>.
- National Milk Producers Federation. *Foundation for the Future: A New Direction for U.S. Dairy Policy*. June 2010. <https://www.nmpf.org/wp-content/uploads/file/Foundation-for-the-Future-061010.pdf>.
- Newton, J. and M. Hutjens. "One Safety Net, Two USDA Measures of Dairy Feed Costs." *Farmdoc daily* (5):99, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, May 29, 2015. <https://farmdocdaily.illinois.edu/2015/05/one-safety-net-two-usda-measures-dairy-feed-cost.html>.
- Pennsylvania State University. DAIREXNET 2019. *Managing Nutrition for Optimal Milk Components*. <https://dairy-cattle.extension.org/managing-nutrition-for-optimal-milk-components/>.
- University of Idaho. *Dairy Budgets*. <https://www.uidaho.edu/cals/idaho-agbiz/livestock-budgets>.
- U.S. Department of Agriculture, Agricultural Marketing Service. *Central Illinois Soybean Processor Report*. Various issues.
- U.S. Department of Agriculture, Agricultural Marketing Service. *Livestock, Poultry, and Grain Market News*. HAY QUALITY DESIGNATION GUIDELINES. <https://www.ams.usda.gov/sites/default/files/media/HayQualityGuidelines.pdf>.
- U.S. Department of Agriculture, Animal and Plant Health Inspection Service. National Animal Health Monitoring System. *Dairy 2014: Dairy Cattle Management Practices in the United States, 2014*. February 2016. Report 1. https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/monitoring-and-surveillance/nahms/dairy_studies.
- U.S. Department of Agriculture, Economic Research Service. *Milk Production Costs and Returns Estimates*. <https://www.ers.usda.gov/data-products/milk-cost-of-production-estimates.aspx>.
- U.S. Department of Agriculture, Farm Service Agency. *Dairy Margin Coverage Fact Sheet*. <https://www.fsa.usda.gov/news-room/fact-sheets/index> (scroll to the dairy section for the DMC Fact Sheet).
- U.S. Department of Agriculture, National Agricultural Statistics Service. *Agricultural Prices*. <https://usda.library.cornell.edu/concern/publications/c821g76b>.
- U.S. Department of Agriculture, National Agricultural Statistics Service. *QuickStats*. <https://quickstats.nass.usda.gov/>.
- University of Minnesota. *Livestock Enterprise Analysis, 2018*. <https://finbin.umn.edu/Output/354230.pdf>. Accessed December 2019

Appendix—Statutory Language from the Agriculture Improvement Act of 2018

Subtitle D—Dairy Margin Coverage and Other Dairy Related Provisions

Sec. 1401. Dairy Margin Coverage.

(a) REVIEW OF DATA USED IN CALCULATION OF AVERAGE FEED COST.—Not later than 60 days after the date of the enactment of this Act, the Secretary shall submit to the Committee on Agriculture of the House of Representatives and the Committee on Agriculture, Nutrition, and Forestry of the Senate a report evaluating the extent to which the average cost of feed used by a dairy operation to produce a hundredweight of milk calculated by the Secretary as required by section 1402(a) of the Agricultural Act of 2014 (7 U.S.C. 9052(a)) is representative of actual dairy feed costs.

(b) CORN SILAGE REPORT.—Not later than 1 year after the date of the enactment of this Act, the Secretary shall submit to the Committee on Agriculture of the House of Representatives and the Committee on Agriculture, Nutrition, and Forestry of the

Senate a report detailing the costs incurred by dairy operations in the use of corn silage as feed, and the difference between the feed cost of corn silage and the feed cost of corn.

Appendix Table: Component-Based Tabulation ARMS Estimates of Dairy Feed Costs, Measured in Dollars per Hundredweight of Milk Produced

	Dairy Feed Costs (National)
Measure	<i>Dollars per Hundredweight of Milk Produced</i>
Year	2016 ¹
Commercial/Custom Feed Mix	2.08
Alfalfa Hay	1.26
Other Hay and Straw	0.32
Corn Silage	1.37
Other Silage and/or Haylage	0.42
Corn	0.68
Other Grain	0.61
Distillers or Brewers Grain	0.22
Protein Supplements ²	0.54
Other Feed Inputs	1.70
Special Tabulation Total Feed Cost/Cwt of Milk from the ARMS	9.20
Average Number of Cows Milked	237
Number of Observations	1,079
Pounds of Milk Produced per Cow	21,463

¹ The data are based on the ARMS dairy component survey. The feed costs in ARMS are largely indicative of variable costs.

² The ARMS dairy survey does not explicitly list soybean meal as a feed type but captures this feed component in the "protein supplements" category. USDA/APHIS, Linn, *et al.* (2018), and *Dairy-Cattle.extension.org* site (2019) indicate that soybean meal is a major source of protein nationally for dairy cows.

