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DROUGHT, FIRE, AND FREEZE: THE ECONOMICS OF DISASTERS FOR AMERICA'S AGRICULTURAL PRODUCERS

HEARING

BEFORE THE

COMMITTEE ON AGRICULTURE, NUTRITION AND FORESTRY

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DROUGHT, FIRE, AND FREEZE: THE ECONOMICS OF DISASTERS FOR AMERICA'S AGRICULTURAL PRODUCERS

Thursday, February 14, 2013

UNITED STATES SENATE,
COMMITTEE ON AGRICULTURE, NUTRITION AND FORESTRY,
Washington, DC

The committee met, pursuant to notice, at 9:39 a.m., in room 328A, Russell Senate Office Building, Hon. Debbie Stabenow, Chairwoman of the committee, presiding.

Present or submitting a statement: Senators Stabenow, Baucus, Brown, Klobuchar, Bennet, Donnelly, Heitkamp, Cowan, Cochran, Roberts, Chambliss, Boozman, Johanns, Grassley, and Thune.

STATEMENT OF HON. DEBBIE STABENOW, U.S. SENATOR FROM THE STATE OF MICHIGAN, CHAIRWOMAN, COMMITTEE ON AGRICULTURE, NUTRITION AND FORESTRY

Chairwoman STABENOW. So, good morning again, and it is, in fact, my pleasure to call to order this first meeting of the committee.

First of all, we do not see Senator Roberts here, but as Senator Roberts becomes Ranking Member of the Rules Committee and we wish him best in this new assignment, I am very pleased to welcome our new Ranking Member, Senator Cochran, who, frankly, is no stranger to this committee, who has sat in this chair, whose painting is on the wall. We appreciate that it must be an interesting feeling, to be as we have for a number of our members, Senator Chambliss, as well, to have served in a number of capacities. We are very pleased to have the expertise of Senator Cochran joining me as a partner in leading the committee. We appreciate your years of service and your insight.

We also are welcoming three new members to the committee, Senator Donnelly, Senator Heitkamp, Senator Cowan. We welcome all of you, and are looking forward to your hard work on the committee. We know you all are very interested and committed to agriculture. So it is great to have you with us.

Moving to the hearing topic, nobody feels the effect of weather disasters more than our nation's farmers and ranchers, as we all know, whose livelihoods depend on getting the right amount of rain, the right amount of sunshine, getting it all together the right way at the right time. All too frequently, an entire season's crop can be lost, as we know. Or an entire herd must be sent to slaughter due to the lack of feed.

The year 2012 was a year of unprecedented destruction, from drought, freezes, wildfires, hurricanes, and tornadoes, including the tornadoes that hit Mississippi and other parts of the South last weekend, and my heart goes out to all the survivors of those devastating storms. Our country experienced two of the most destructive hurricanes on record last year, Isaac and Sandy.

We experienced the warmest year on record ever in the contiguous United States, which, coupled with the historic drought, produced conditions that rivaled the Dust Bowl. Wildfires raged in the West. In the Upper Midwest and Northeast, warm weather in February and March caused trees to bloom early, resulting in total fruit destruction when temperatures dropped down to the 20s again in April, and we certainly were hit hard with that in Michigan. California and Arizona experienced a freeze just last month, threatening citrus, strawberries, lettuce, and avocados. We learned last week that our cattle herd inventories are the lowest in over six decades, which has had broad-ranging impacts, including job losses in rural communities as processing facilities and feedlots idle.

The drought has left many of our waterways with dangerously low water levels. Lake Michigan, Lake Huron have hit their all-time lowest water levels. Barge traffic on the Mississippi, our most vital waterway has nearly ground to a halt. We have seen major disruptions and increased transportation costs for commodities and fertilizers.

Today, we will hear from officials at the National Oceanic and Atmospheric Administration, NOAA, and the Department of Agriculture about the disasters we faced last year. We also will hear directly from those affected by these disasters.

Thanks to our successful Crop Insurance Program, many farmers will be able to recover their losses. For those farmers who did not have access to crop insurance or the other risk management tools we worked so hard to include in our Senate-passed farm bill, the future is less certain. Unfortunately, instead of a farm bill that gave those farmers certainty, we ended up with a partial extension that creates the haves and haven'ts. Low crop producers that participate in crop insurance not only get assistance from crop insurance, which is essential, but some will continue to receive direct payments, as well, regardless if they have a loss. Meanwhile, many livestock producers and specialty crop growers who suffered substantial losses will not receive any assistance.

We all know that farming is the riskiest business in the world and altogether employs 16 million Americans. This is important. Mother Nature certainly made sure that we did not forget the fact that it is the riskiest business last year.

We need—and we know because we are committed on this committee—we need to give producers the tools to manage the risks from those weather events and other risks. We need to give them certainty so they can make plans for their businesses. That is why we are committed to work together again to lead the way in passing a five-year farm bill.

This committee did not shrink from its responsibility last year nor will we this year. We did our work. We came together in a bipartisan way to pass a farm bill that gives certainty to rural America while reducing our deficit. We passed a bill that gave farmers

the risk management tools they need to protect against disasters, as well.

So I want to thank my colleagues on the committee for the work that we did last year. Working together, I am very confident that we will again come forward with a farm bill that provides certainty to rural America that is desperately needed.

I would now like to turn to my good friend and Ranking Member, Senator Cochran, for his opening remarks.

STATEMENT OF HON. THAD COCHRAN, U.S. SENATOR FROM THE STATE OF MISSISSIPPI

Senator COCHRAN. Madam Chair, thank you very much. I again am pleased to join you in welcoming the members of our committee to our initial hearing and meeting today.

We are here to learn more about how we can respond to the drought and other disaster events of recent years. We would like to express appreciation to all the members of the committee and especially to the members of our staffs who are working to help prepare for hearings such as this and our meetings so that we can respond to the interests of American agriculture in an efficient, thoughtful, understanding and helpful way.

It is an honor to serve as the Ranking Member of this committee. It has a great tradition of service in its membership, from leaders of the Senate that go back all of my lifetime. The room is, of course, decorated with a lot of portraits around here. I did not know—I am glad that you do not have to be dead to get your picture on the wall. That is a nice touch.

[Laughter.]

Senator COCHRAN. But we are here to learn from our witnesses, and so I am going to ask that my full statement be printed in the record and express the hope, again, that our good work can result in a strong and robust safety net being created for our farmers. That is important to the United States economy. to our producers, and our exporters. We can gain from today's witnesses' ideas and suggestions about how we can improve our response to these needs, and I appreciate all of them being here to work with us in this regard.

Again, Madam Chair, I am looking forward to working with you and all the members of the committee as we move forward in the 113th Congress.

[The prepared statement of Senator Cochran can be found on page 45 in the appendix.]

Chairwoman STABENOW. Thank you very much.

We have a group of excellent panelists today, and I am going to ask that members' opening statements be submitted for the record. For our new members, we recognize Senators based on order of appearance at the committee, alternating sides.

But before I introduce the first panel, I would like to ask unanimous consent to enter two items into the record, first, testimony from the National Association of Conservation Districts, into the official record, and second, a letter from the U.S. Cattlemen's Association. If there is no objection, we would enter that into the record.

[The following information can be found on page 124-125 in the appendix.]

Chairwoman STABENOW. Thank you.

Welcome again. We ask that you keep, as you know, our two witnesses know, keep your comments to five minutes, but we welcome your extensive written testimony to be shared with us, as well, and we are very pleased to have two very important experts with us.

Our first panelist, Dr. Joe Glauber, is certainly no stranger to this committee. Dr. Glauber is the Chief Economist at the United States Department of Agriculture. Dr. Glauber served as Deputy Chief Economist at USDA from 1992 to 2007. In 2007, he was named the special Doha Agricultural Envoy and continues to serve as Chief Agricultural Negotiator in the Doha talks.

Our next witness is Dr. Roger Pulwarty. I will now turn to Senator Bennet to introduce him, as well.

Senator BENNET. Thank you, Madam Chair, and I want to just thank you on behalf of the people of Colorado for holding this incredibly important hearing. We have been afflicted by both drought and fire, so thank you for doing it.

I am very pleased to introduce Dr. Roger Pulwarty to the committee this morning. Dr. Pulwarty comes to us by way of Boulder, Colorado, where he works at the National Oceanic and Atmospheric Administration. There, he heads NOAA's National Integrated Drought Information System. He also serves as the Chief of the Climate and Societal Interactions Division of NOAA's Climate Division.

His past research and publications have focused on extreme weather events and disaster risk reduction in the Western United States, Latin America, and the Caribbean. Dr. Pulwarty has testified before Congress before. His past appearances have focused on climate change, water resources, and climate adaptation issues.

He received his Bachelor's degree from York University in Toronto and he received his Ph.D. in climatology from the University of Colorado at Boulder.

Madam Chair, thank you very much for allowing Dr. Pulwarty to testify today.

Chairwoman STABENOW. Thank you very much.

Before hearing from our two witnesses, I am going to turn to Senator Johanns, who I know is doing double duty on a couple of meetings and wants to recognize someone who is on our second panel. Senator Johanns.

Senator JOHANNS. Thank you, Madam Chair, for this courtesy. It means a lot to me, because I have a good friend and a great Nebraskan here and I think I am going to be gone during the second panel.

But I did want to recognize Ben Steffen, and Ben, if you could just stand so everybody can identify who you are. Thank you, Ben.

Ben is a successful farmer from Humboldt, Nebraska. He has a diversified operation. It includes dairy cattle, corn, soybeans, wheat, and hay. Ben and his wife, Paula Sue, and their family have been recognized for their good work by the Nebraska Farm Bureau and the Nebraska State Fair as Ag Family of the Day. They were one of five families chosen because of their contributions not only to agriculture, but to the community and to our great State.

Ben is a perfect example of someone who demonstrates the values of rural America. He is actively engaged in his community. In addition to the farming operation, Ben is involved with University of Nebraska's President's Advisory Board Committee and the State's County Extension Boards.

Given all of his experience, I think he is going to add valuable testimony, and I will just wrap up today and thank you and the Ranking Member for holding this very important hearing. Thank you.

Chairwoman STABENOW. Thank you very much.

We are actually going to start with Dr. Pulwarty today and ask you to share your perspective, and then we will turn to Dr. Glauber. Welcome.

STATEMENT OF ROGER PULWARTY, DIRECTOR, NATIONAL INTEGRATED DROUGHT INFORMATION SYSTEM, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, BOULDER, COLORADO

Mr. PULWARTY. Good morning. Thank you very much for allowing me to be here. Good morning, Chairwoman Stabenow and members of the committee. My name is Roger Pulwarty and I am Program Director of the National Integrated Drought Information System of NOAA. It is my honor to be here today. Thank you for inviting me to speak about the present drought and how we can improve information for anticipating and managing drought impacts.

Drought is a pallet of the American experience, from the Southwest in the 13th century to the events of the 1930s and the 1950s to the present. From 2000 to 2010, the annual average land area affected by drought in the United States was 25 percent. Prior to the 2000s, this number stood at 15 percent. 2012 ended as one of the driest years on record, having had five months in which over 60 percent of the country was in moderate to extreme drought. It was also the warmest year on record. Only 1934 had more months with over 60 percent of the U.S. in moderate to severe drought. 1934 was also a warm year.

Drought conditions continue across much of the nation. According to one estimate, the cost of the 2012 drought is in excess of $35 billion, based on agriculture alone. However, it is important to note the drought-related impacts cross a broad spectrum, from energy, tourism, and recreation in the State of Colorado where I live, to wildfire impacts. According to the National Interagency Fire Center in Boise, over nine million acres were burned last year, which had only happened twice before in the record, 2006 and 2007, since 1960. Low river levels also threaten commerce on the vital Mississippi shipping lanes, affecting transportation of agricultural products. As many of you know, half of the transport on the Mississippi is agriculturally based.

An important feature of conditions in 2012 was the persistence of the area of dryness and warm temperatures, the magnitude of the extremes, and the large area they encompassed. Figure 1, which you have in front of you, shows the progression of drought conditions since 2010 to the present. Twenty-twelve began with about 32 percent of the U.S. in moderate to exceptional drought. The drought reintensified in May, and you can see a jump in the

figure there. And by the end of August, the drought had expanded to cover 60 percent of the country, from the Central Rockies to the Ohio Valley and the Mexican to the Canadian borders. Several States had record dry seasons, including Arkansas, Kansas, Nebraska and South Dakota.

The drought years of 1955 and 1956 have the closest geographical pattern to what we have seen to date, and the year 1998, now the second-warmest year on record, and 2006, the third-warmest year on record, have the closest temperature pattern to what we see.

So as of this morning, we have released the U.S. Drought Monitor that gives you present conditions, which people have in front of them. And what we are pointing out in this case is the drought continues across many parts of the Midwest and the West. The physical drivers of drought are linked to sea surface temperatures in the Tropical Pacific and Atlantic Oceans.

As you can see from the last figure on the U.S. Drought Monitor, a dry pattern is expected over the upcoming three months across the South and the Midwest. Prospects are limited for improvement in drought conditions in California, Nevada, and Western Arizona. Drought development and persistence is forecasted for Texas by the end of April. The drought and warm temperatures in the Midwest are firmly entrenched into February, placing a greater need for above-normal spring rains if the region is to recover. This area is now becoming the epicenter of the 2013 drought. Despite some relief, much of the Appalachicola-Chattahoochee-Flint River Basin remain under extreme drought conditions, including low ground water levels, and Georgia is now in its driest two-year period on record.

The number of watershed and State drought plans that use information from the National Integrated Drought Information System at the local levels has increased significantly, and the effectiveness of this effort through 2012 is the result of strong multi-State and multi-agency partnerships.

In December 2012, we drew on these partnerships and convened a National Drought Forum in D.C. The goals of the forum were to understand the extent of the 2012 drought impacts and response and help provide new information on coordination for improving the nation's drought readiness for 2013 and into the future. This forum was cosponsored by the National, Midwestern, Southern, and Western Governors Association, Federal agencies, and regional and local partners. It highlighted the need to increase public awareness of this year's drought and potential future impacts, to increase the technical assistance for using drought-related information in those local rural impacted communities, and ensure sustained support for monitoring and other data critical for responding to drought, such as SNOTEL sites and the water census led by the USGS.

Through the Economic Development Administration and NIDIS, we are working with USDA on its National Disaster Recovery Framework for drought, and these efforts will be bought around a recently signed MOU between Commerce and USDA to improve cross-agency collaboration.

Over the coming year, we will focus on increasing public awareness of available information and transfer successful approaches in early warning to areas not having those systems as yet to improve the understand and predictability of multi-year droughts and to work with the private sector and others on guidance and standards for developing value-added products.

All of the information in this testimony is drawn from NIDIS and its many supporting Federal, State, Tribal, and private partners, including NOAA's Climate Prediction Center, the National Drought Mitigation Center, the University of Lincoln, Nebraska, the Corps of Engineers, the Department of Interior, USDA, and others.

Thank you for the opportunity to be here today.

[The prepared statement of Mr. Pulwarty can be found on page 78 in the appendix.]

Chairwoman STABENOW. Thank you very much for that sobering information.

Dr. GLAUBER.

STATEMENT OF JOE GLAUBER, CHIEF ECONOMIST, U.S. DEPARTMENT OF AGRICULTURE, WASHINGTON, DC

Mr. GLAUBER. Well, thanks very much. Chairwoman Stabenow, Ranking Member Cochran, and other members of the committee, thank you for the opportunity to be at today's hearing.

Despite a historic drought affecting much of U.S. agriculture, the U.S. agricultural economy is strong, and in aggregate, farm income measures are at or near record highs. However, aggregate measures belie large differences between sectors. Row crop producers have generally fared well, despite the adverse weather, in large part due to higher prices and protection from the Federal Crop Insurance Program, which has helped offset many of the yield losses. For uninsured producers, or producers of crops for which insurance is unavailable, however, crop losses have had a more adverse effect. Livestock producers experienced high feed costs and poor pasture conditions this year with limited programs to fall back on, particularly since key livestock disaster programs authorized under the 2008 farm bill are currently unfunded.

What had started out as a promising year for U.S. crop production, with favorable planting conditions supporting high planted acreage and expectations of record or near-record production turned into one of the most unfavorable growing seasons in decades. Crop production estimates for several major crops declined throughout the summer. By January 2013, final production estimates for corn were down almost 28 percent from our May projections. Sorghum was down 26 percent, while soybeans fell about six percent over the same period.

As a result, prices for grains and oil seeds soared to record highs in the summer. Higher prices and crop insurance indemnity payments helped offset crop losses for many rural crop producers. Roughly 85 percent of corn, wheat, and soybean area, almost 80 percent of rice area, and over 90 percent of cotton area is typically enrolled in the Crop Insurance Program, and for those of you who were around back in 1988, this contrasts sharply with what the experience was in 1988 when we had this massive drought in the Midwest. At that time, only about 25 percent of the area, insurable

area, was enrolled in the program. So, again, very, very strong participation has helped offset those losses.

As of February 11, just this Monday, about $14.2 billion in indemnity payments have been made to producers of 2012 crops suffering crop or revenue losses. We think that these indemnity payments will likely go higher. They could be as high as 16 or 17 billion dollars before we are done.

On the other hand, looking at the livestock, dairy, and poultry producers, they are facing very high feed costs for most—they faced very high feed costs for most of 2012, and the high prices are likely to persist through much of 2013 until new crops become available in the fall. And in addition to these high feed costs, cattle producers have been particularly hard hit by poor pasture conditions and a poor hay crop. Almost two-thirds of the nation's pasture and hay crops were in drought conditions, with almost 60 percent of pasture conditions rated poor or very poor for most of July, August, and September 2012. December 1 stocks for hay were at their lowest level since 1957.

The U.S. cattle and calf herd, as was mentioned in your statement, is at its lowest level since 1952. Dryness in the Southern Plains has persisted for over two years and resulted in large liquidation in cattle numbers. The January 1 NASS Cattle Report indicated that total cattle and calf numbers in Kansas, Oklahoma, and Texas alone declined by 3.4 million head between 2011 and 2013. The reduction is a 13.6 percent decline and almost equals the net decline in the U.S. herd over the same period. Likewise, dairy producers have faced high feed costs and poor pasture conditions, and higher temperatures during the summer also adversely affected milk production.

Net cash income is forecast lower in 2013 for all livestock, dairy, and poultry sector. Feed costs make up 51 percent of expenses for dairy, about 20 percent for beef cattle, 42 percent for hogs, and 35 percent for poultry farm businesses.

Major concerns related to persistent drought conditions remain. Fifty-nine percent of wheat area, the winter wheat area, 69 percent of cattle production, and 59 percent of hay acreage remains under drought conditions. Forty-three percent of the winter wheat production is located in areas under extreme or exceptional drought conditions, down only slightly from the 51 percent in August. While that also implies that spring plantings may be affected by drought conditions, there have been some improvements in the Eastern Corn Belt, where many areas are no longer experiencing drought. Assuming adequate precipitation, it is likely that the major spring planted row crops will see a return to trend yields. If so, a rebuilding of stocks and lower commodity prices would be expected in the fall, that is, the fall of 2013. This should help relieve feed prices.

That concludes my testimony. I would be happy to answer any questions.

[The prepared statement of Mr. Glauber can be found on page 47 in the appendix.]

Chairwoman STABENOW. Thank you very much to both of our witnesses.

Dr. Glauber, let me start with you. If you could talk a little bit more about the financial impacts of the drought between sectors,

the average livestock producer, a row crop farmer, a specialty crop grower. Paint a little bit more of a picture on this.

Mr. GLAUBER. Well, again, it is—as you mentioned, there were a number of calamities that hit producers. If I can start with the drought, because that certainly has had most of the attention. There, you really have just seen, because of the extensiveness of the drought and the severity of the drought, larger yield loss in most areas, and we haven't seen anything like this in the Corn Belt since 1988. I mean, certainly, the floods in 1993 were bad, but insofar as drought is concerned, this drought is the worst since 1988.

With that, we saw record prices. Now, record prices help row crop producers, because if you have a crop, you are going to be getting paid high prices and several areas of the country did do pretty well. Southeast, for example, which was in drought conditions for most of the year, including the summer, they did have timely rains and they were able to get a crop in, in many cases, record yields in some areas. They were able to take advantage of higher prices. Higher prices help offset some of those losses, but when you move to areas—and in addition, again, as I mentioned in my testimony, just very high participation rates with many of the corn and soybean producers insuring at 70 percent or higher and many of them insuring with revenue products that indemnify at harvest prices.

Chairwoman STABENOW. So if you have crop insurance, it made a significant difference.

Mr. GLAUBER. It made a very big difference.

Now, let us go to the flip side. If you were under-insured, if you were not insured, then you were looking at yield losses, and particularly for some specialty crop producers, where the participation rates tend to be lower, or there may not be anything other than non-insured acreage disaster programs, their losses could be larger. We know, for example, in your area, Pennsylvania, New York, because, as you mentioned, the warm early spring, a lot of the tree crops flowered and then were hit with a devastating freeze. And, again, if you are insured, you will get some compensation there, but if not—you were facing some serious losses.

Chairwoman STABENOW. Well, how long before we are going to have crop insurance available for specialty crop growers?

Mr. GLAUBER. Well, I think we have made some improvements there. As you know, I sit on the Federal Crop Insurance Board. We have seen several products, new products that have come in that have extended crop insurance to some specialty crops. We have made some changes, for example, in the cherry policy with a revenue product. I think the overall liability for specialty crops right now is around 10 to 13 billion dollars. Certainly, we would like to see that improved.

The difficulty is that with a lot of these crops, they are very small with not a lot of producers, and sometimes some of the producers are not interested in crop insurance. Now, what we have seen over the last five years, ten years, which is very different than, I would say, 15 years ago, is the fact that a lot of producers now are interested in developing these products.

I think there is some potential there, particularly for these rainfall products and some of these index products, more generic insurance products that could affect some of these producers that are

particularly vulnerable to specific risks, like freeze or other sorts of weather damages.

Chairwoman STABENOW. Well, as you know, I care very deeply about making sure we provide the same kind of crop insurance to—we have an awful lot of producers that want that, and I appreciate you working with us on cherries. But we have got to make sure all of our producers that want and need crop insurance have access to it.

But I want to turn to Dr. Pulwarty before my time is up and ask, was the weather experience last year normal, and if not, do you expect the same type of severe weather that we saw in 2012 to be a persistent problem in coming years? What about this year? What about the future, when we look at the volatility in the weather patterns?

Mr. PULWARTY. Thank you for the question. The event that we saw in 2012 began to a large extent at the end of 2012. The extent to which we saw the drought conditions was not completely outside the realm of natural variability, even though the drought itself was exacerbated by the fact that we had very high temperatures. That combination of natural variability and the background temperatures did have a significant impact on stressing our reservoir systems and our crops.

From the standpoint of looking at temperature relationships and the future, in the 1950s and the 1930s and other periods in which we had high temperatures, we saw that it did impact, affect, the size, magnitude, and the extent of the drought system. Twenty-twelve was very unusual, but we are not finding a strong link from sea surface temperatures or other driving factors. But, instead, the major jump from May into summer, when we jumped from about 30 percent to 60 percent, was caused by a high ridge just sitting over the United States leading to much drier conditions.

Chairwoman STABENOW. And you expect that—did I hear you earlier say that you expect that this year, as well?

Mr. PULWARTY. And the continuing conditions really look like we are setting up for a very similar level of drought in the Midwest and the West. However, since none of this is absolutely predictable 100 percent, we are hoping for some alleviation in the late spring.

Our major issue, as you know, in the Midwest and the Southwest, in particular, the Colorado Basin, is that we are having back-to-back dry years, and a third year of that puts our systems completely under stress. The forecast for this season is that, in fact, we are projecting drier conditions.

Chairwoman STABENOW. Thank you very much.

Senator Cochran.

Senator COCHRAN. Madam Chair, thank you very much.

We are all trying to figure out exactly what the practical consequences are going to be for sequestration and targeting of certain programs for cuts. These cuts will be visited on recipients of government program dollars, and these recipients had been planning the use of these dollars for some time. And I specifically wanted to ask you about the Agricultural Disaster Relief Fund. It is included in a list of accounts targeted for sequestration. Can you tell us a little bit more about when, specifically, the dates for this sequestration can be expected to be released or imposed on those who benefit

from these programs, and exactly what the impact will be on producers who have signed contracts relying upon the fact that the Agricultural Disaster Relief Fund would provide specific amounts, given the sign-ups and other compliance requirements.

Mr. GLAUBER. Thanks, Senator, and I am almost hesitant to talk about appropriations with someone like yourself who knows these books far better than I do.

As you know, we have the mandatory accounts and we have the discretionary accounts. My understanding is we have been working with OMB on determinations of what under the mandatory accounts would be shielded and what would be affected by the sequester. Hopefully, there will be some release on that information soon.

Insofar as the discretionary accounts, there what you find is that for a lot of the—as you are well aware, on the discretionary side in terms of the agency budgets, a lot of those are salary-based. There is some discretion, but with the costs of salaries and expenses, there is not a lot you can do to sort of avoid, if you are talking about a five, six percent cut, in terms of how you manage that.

Insofar as these specific disaster provisions that you mentioned, I am going to have to get back with you on that and would be happy to do so. We will follow up on that. But in terms of the specific things like livestock disaster provisions, those have been unfunded out of the 2008 farm bill, of course, and so they would need additional funding for those. But I can get back with you on the other accounts.

Senator COCHRAN. It would be interesting to know what the administration's plans are so producers can plan and not be surprised totally at the last minute. So that would be very helpful, if you can supply us with some information.

Sequestration is a word we are all still trying to figure out how you define and what the practical consequences of it are. I think it shifts more responsibility to the administration than they are accustomed to having. Usually, Congress specifies a level of appropriations for government program funding and that is carried out. I remember, I think it was maybe during the Nixon administration where they came in and impounded funds and everybody in Congress threw up their hands and held their heart, oh, my gosh. We directed that this be spent. This is mandatory spending. So we contrived these things that tell the administration in no uncertain terms, this is money that is to be spent. It is appropriated. It is mandated. Spend it.

What is your reaction to that in this environment? Have things changed? Are we going back to government impoundment? And when do we know about it? How are you going about identifying those programs that are going to have the funds impounded, or sequestered, the new word?

Mr. GLAUBER. Well, thanks. I remember not so fondly the days of Gramm-Rudman and the cuts that went in place back in the 1980s. Again, as I mentioned, my understanding, at least, the Secretary has been working with OMB on what qualifies, at least under the mandatory spending, what would be subject to sequestration. Obviously, there are some accounts that will not be affected because of contractual relations, other things, and then oth-

ers that at least the lawyers feel that they do have authority to sequester. I can get back with you on that.

I agree with you in your point that the sooner the better this is made known. People have to make planning decisions, understand.

Senator COCHRAN. Thank you.

Chairwoman STABENOW. Thank you very much.

Senator Klobuchar.

Senator KLOBUCHAR. Thank you very much, Madam Chair. Thank you for heading up this hearing, calling this hearing.

I think, first of all, it just calls to mind how important it is to get this farm bill passed when you think of the provisions that would help with the disasters that you mentioned, from the Livestock Disaster Program to the conservation tools that are contained in our new farm bill, obviously, the crop insurance and then the grazing, expanded grazing opportunities that we included for livestock producers as well as the agriculture research on drought-resistant seed. So, again, that was my basic reaction when I listened to both of you, so thank you for that.

I wanted to ask specifically about, first of all, how this could affect exports. I see this is one of our main ways to get out of somewhat of the trench we are in with the economy right now, and that is increasing exports. Minnesota exported $6.8 billion worth of agricultural goods just last year, and how does the increase in extreme weather impact our ability to capture growing export markets.

Dr. Glauber.

Mr. GLAUBER. Thank you, Senator. There is a certain counterintuitive result about exports, much like farm income. We will put out new farm export numbers just next week. But our November estimates show a record export level this year. Now, that is largely because of higher prices. If you look at, say, corn, we just revised our estimates downward for corn exports over the 2013–2014 year to 900 million bushels. That is the lowest level since 1971.

Senator KLOBUCHAR. So what you are saying is the price has caused the export numbers to go up?

Mr. GLAUBER. Export value, that is right. The volumes are down, not for all commodities, but for corn.

Senator KLOBUCHAR. Okay. Very good. But we would like the volumes to go up, I think, too.

Mr. GLAUBER. Yes.

Senator KLOBUCHAR. Mississippi River transportation is my next question. In 2012, as you know, the barge traffic on the Mississippi was greatly impacted by the drought. It was more difficult to transport grain abroad and more farm inputs up-river to our farmers in Minnesota. We were very scared at the end of the year they were actually going to have to stop barge traffic. Could you talk about that a little and how this could impact our ability to stay competitive, as so many agriculture products go down the Mississippi?

Mr. GLAUBER. Yes. We, too, were very concerned with it because it looked like, particularly late December, early January, that there would be a halt in traffic. Now, understand, the upper part of the Mississippi, as you well know, you stop shipping because of the winter weather. But I think there were a couple of good things. One, the best thing, is that we got rain. The Corps was able to go

in and clear out some of the disruptions in the river and then we got adequate rain and barge traffic is moving very well.

I will say this. Because of the lower corn harvest and lower soybean harvest and the fact that so much more grain is going to China, it was probably less stress than it might have been under, say, 15 years ago. But, still, the best news is that we have adequate water.

Senator KLOBUCHAR. Right. It is good, but it was a close call and I think it is something that we have to prepare better for next time and have a plan in place.

Drought-resistant seeds—what efforts is the USDA taking to speed the adoption of such drought-hardy varieties developed using biotech or conventional breeding?

Mr. GLAUBER. Well, as you know, most of the breeding for seed breeding is in private hands these days. They do it better. There are a lot of profits to be made in that industry and they are working very hard. My understanding is, is that we should be seeing some disaster-resistant, purely disaster-resistant strains come on the market just in the next few years. So that is an encouraging sign. I think the R&D that has been going into seed research continues to be very, very strong, largely in private hands. We do some public research there, but most of it is coming from the private sector.

Senator KLOBUCHAR. All right. During last year's disaster, I supported emergency efforts to help with haying and grazing, as you know, and one of the concerns I have heard is that emergency haying and grazing is often only allowed in counties already impacted by drought, in other words, counties where the land is already dry. I see you nodding your head, Dr. Pulwarty. What steps could the USDA take to expand the areas allowed for emergency haying and grazing?

Mr. GLAUBER. Well, you are absolutely right. It does not help you much if you allow haying and grazing when there is no pasture to speak of. I think we allowed about 2.8 million acres to be hayed and grazed. There are restrictions on that during nesting periods. Right now, we do it with disaster designated counties. I might add, with things like pasture, obviously, it does not help much to have pasture 1,000 miles away that is in good shape. But with hay and things like that, you can move that around some. So, certainly, we would be happy to work with you in trying to improve that flexibility. But it is just to say, remember, this year, it was such an extensive area where you are really talking 60, 65 percent of pasture in drought conditions.

Senator KLOBUCHAR. Thank you.

Dr. Pulwarty, did you want a quick follow-up?

Mr. PULWARTY. Just a very brief follow-up to the issue of the Mississippi and barging. We know upstream, as well, about 20 percent of what comes into the basin is coal and 20 percent is about fertilizers, as well. And from the standpoint of how we look at monitoring, while there is the strong effort on improving certainly our drought-resistant crops and the conservation programs, the idea of monitoring around the world, places like China and so son, becomes very important from the standpoint of how we understand where drought is happening.

Senator KLOBUCHAR. Okay.

Mr. PULWARTY. We have been receiving calls from around the world saying, well, what is happening this year, and where——

Senator KLOBUCHAR. Because they know it is going to impact them.

Mr. PULWARTY. —they can step into some of the markets. So from that standpoint, I would really like to add to the issue of given the importance of transportation, that in the context of other areas that are not only vulnerable, but they are looking at their own productivity, like Brazil, India, and elsewhere, that strengthening our understanding of global monitoring is critical.

Senator KLOBUCHAR. Thank you.

Dr. Glauber, please pass on to Secretary Vilsack that I am very much looking forward to him coming to our Pheasants Forever Convention in Minnesota this weekend. We are going to be together. Thank you.

Chairwoman STABENOW. You got that plus in there. Okay.

[Laughter.]

Chairwoman STABENOW. All right. Senator Roberts, before you arrived, I said, thank you for your service and wish you well in your new Ranking Membership on the Rules Committee. And so, welcome.

Senator ROBERTS. Would you like me to respond?

Chairwoman STABENOW. Yes, please. Well, you are actually up next for questions, as well, so——

Senator ROBERTS. Well, I thank you. I want to say that I am looking forward very much to working with our new leadership team. No Chair of this committee, at least to my memory, and I have been around for quite a while, has worked any harder, with more perseverance, with more enthusiasm for agriculture than our current Chairperson. So, Madam Chairperson, I want to thank you personally for all of your past courtesies, your staff working with my staff during very difficult times, the committee hearings that we have enjoyed, and especially your perseverance over the last session.

I look forward to working with you and my colleague and my friend for over 20 years. I just told him that my closing line with regard to Senator Cochran—Thad and I have been friends for a long time—is that the Marines always depend on the Navy if we are going to get anything done.

[Laughter.]

Chairwoman STABENOW. Well, thank you very much.

Senator ROBERTS. Well, they just bring us to the battle, and then we have to do the fighting, but then that is beside the point.

[Laughter.]

Senator ROBERTS. He asked a very critical question. Joe, I really hope that you and the Secretary can work together and the rest of your staff to determine what—we might have a different idea of what is mandatory and what is discretionary. And I would point out that through the leadership of the Chairperson and everybody on this committee, we were the only committee that stepped up in the last session and offered up $24 billion of savings. That was wrapped up in the five-year farm bill that we passed here with 73 votes. And so I am very proud of the fact that agriculture did its

duty in regards to deficit reduction, but what is considered mandatory and discretionary is going to be exceedingly important to our farmers out there, and you know which programs we are talking about. So I think Senator Cochran really hit the nail on the head, and if we can get that information to all of us, that would be helpful.

Well, we have got two years of sustained drought and another one coming, according to our renowned forecaster here. But Kansas producers, once again, put seeds in the ground. Many will once again fire up their tractor and their planter in another six weeks. This is not due to some day late or dollar short ad hoc disaster program. It is because they manage their risk and protect their operations from Mother Nature's destruction through the purchase of crop insurance.

Unfortunately, livestock producers do not have a similar safety net. However, with the support of Secretary Vilsack last year, the Department authorized the emergency haying and grazing of Conservation Reserve Program acres in all Kansas counties, including the emergency grazing on CP-25 for the first time. You do not do that unless you have a very, very serious problem. This was a lifesaver for ranchers struggling to find or pay for feed, and I want to thank all the parties involved for allowing it to happen.

Now, according to USDA reports last year, over 9,000 emergency haying and grazing contracts allowed haying and grazing on over 470,000 acres in Kansas, that's a lot of acres. As we continue to experience drought, and Dr. Pulwarty, if you could get El Nino to step up to La Nina, it would be very, very helpful. Bring a little moisture in from the Gulf. But as we continue to experience what we have experienced in the 1950s and back in the 1930s, what considerations has the Department given to allowing emergency haying and grazing of CRP acres for 2013??

Mr. GLAUBER. Senator, we will certainly be looking at this. We have already made some disaster declarations for counties in 2013. As we move forward and we get into those situations—I would agree with you. I think, particularly for cattle producers, the next four or five months are extremely critical, one, to be looking at, hopefully, some better pasture conditions, and then in the fall, better crop prices so that we get lower feed costs. But a lot of these producers have been hanging on with very, very tight or negative margins. And again, I cited these numbers. Over three million, three-and-a-half million head down from just two years ago in your region of the country. And so it is very critical. I think any help that we can get to the producers to help them make it through to better prices, we will be working with your office on that.

Senator ROBERTS. I know you will cooperate with us. You have in the past, and I thank you for your assistance. As you know, many ranchers simply culled their herds and lost their genetics and many are out of business.

Mr. GLAUBER. Yes.

Senator ROBERTS. And we look for the same problems, unfortunately, today.

Northwest Kansas producers irrigating from the Ogallala Aquifer, they must work to conserve their water, but current RMA practices do not have a middle ground between fully irrigated and dry

land practices and we need a mechanism to allow limited irrigation to be fairly rated. I know you know that. And as the Chairwoman has pointed out, time and time again, the more producers that are under the crop insurance tent and using risk management tools, why, the better off we are going to be. So I am interested in hearing your thoughts on how to improve an enormously successful program. You do not have to answer that right now. My time has expired, and I will submit that question for the record. I thank you for your service.

Thank you, Madam Chairperson.

Chairwoman STABENOW. Thank you.

Senator Bennet.

Senator BENNET. Thank you, Madam Chair, and again, thanks for holding the hearing.

I actually just want to pick up where Senator Roberts left off and say thank you for the emergency grazing. We have a rancher named Al Heaton who runs most of his cattle in Colorado's Dolores County, which is near the Utah border, and he was the first person, Madam Chair, to say to me that if he knew in advance that he could have an extended period of time on CRP land, that it would allow him to manage his summer grazing differently than he was and stress that less. We were able to take his voice to Washington and the Secretary responded to that, and it sounds like we are going to have another year where we are going to need more of that.

I wonder, Dr. Glauber, if you would like to talk briefly about the value of the USDA Conservation Programs for keeping our soils healthy and occasionally giving producers this type of relief.

Mr. GLAUBER. No, there is no question. I think, particularly in—well, in a lot of areas, obviously——

Senator BENNET. I am all that is left, so you can talk about how important it is to Colorado.

[Laughter.]

Mr. GLAUBER. But, particularly in those areas where we are seeing very dry conditions right now. Things like the Emergency Watershed Protection Program, which I think is very, very important. If you look at the wildfires that affected Colorado, there, as you know, we are limited in funding. We hope that we can work and get funding restored to some of these programs. But I think, there, again, very important to mitigate and to help communities respond to these disasters.

Senator BENNET. Actually, you raise—I am going to come to Dr. Pulwarty next, but you raise an important point. We had the EWP funds in the Sandy bill that was passed by the Senate, appropriately so, I think, because we are still trying to deal with the effects of these disasters in our State, these wildfires that you talk about brought on by drought and other circumstance. You know, as the former Ranking Member was saying earlier, this is the only committee that actually did bipartisan deficit reduction in the last Congress. It had the sense, however, to think about things like fire mitigation as something that would save us money going forward rather than making these cuts in the name of deficit reduction, knowing that we are going to have to deal with these disasters on

the back end and the effect on our watershed on the back end. I wonder if you have thoughts about that. You are an economist——

Mr. GLAUBER. Well, no, this has been a very successful program when the funding is there to help communities and to organize on this and to do the sort of mitigation efforts and rehabilitation efforts that are necessary. It has been very important and, hopefully, we will find a funding source for these.

Senator BENNET. This is another case, I think, where the Congress's inability to act in real time is absolutely penny wise and pound foolish. I mean, when the spring snow melts start in Colorado, which they inevitably will, even though we do not have the snow pack that we wish that we had, you know, watch these hillsides wash into our streams. The effect on our water systems, the effect on our producers could be very significant. It is, I think, another case where people are playing games here instead of focusing on what is going on at home.

Dr. Pulwarty, I have never said this to a witness in any hearing that I have ever attended in Congress, but I hope you are wrong, because——

Mr. PULWARTY. I do, too, sir.

Senator BENNET. —we have now had two years in a row, and it sounds like we are going to have a third year of drought in our region. And I wonder if you could talk about the specific challenges that NOAA projects for producers in the water-scarce Western region of our country.

Mr. PULWARTY. Thank you very much, Senator. I hope I am wrong, as well. The State of Colorado, as you know, in the Front Range, where I live and others do, we get 40 percent of our water, 30 to 40 percent, from the Colorado Basin itself. The Colorado Basin came in at 44 percent in the previous water year. So far, the fall snow pack has not been as significant as we would like it. In some places, it is 40, some places 60 percent, and we hope that picks up in March and April.

However, right now, based on what is happening in the Pacific Ocean and the Atlantic Oceans, we are not projecting an improved set of conditions in those basins, the Upper Basin, including the San Juan and places like that. I actually know the Dolores Valley pretty well. I know where Mr. Heaton is.

The area in terms of the basin is experiencing some lower precipitation and snow pack, and it is also experiencing a combination of high temperatures, however driven. Something else that is happening in that basin has to do with some of our rural communities, where there is rain-fed agriculture. So the combination of temperature and drought is actually creating the die-off of key vegetation that holds our soils together. And the result, then, is dust storms, dust on snow, which lets the runoff and melt occur even earlier than we are accustomed to managing it.

From that standpoint, and looking into the future, while we are seeing some improvement in the lower Colorado Basin—Arizona, Southern California, Nevada—we are expecting that to be short-lived into April. From the standpoint of the Upper Basin, and again, I hope I am, in fact, wrong, we are not projecting significant new inputs of snow unless we get heavy rainfall events later in the spring.

One of the reasons why that is the case is when it has been dry for a year before, even when you get significant snow pack, a lot of that disappears because the soil just picks it up. In 2005, we had 100 percent of snow pack, but the runoff was 70 percent of what we expected because the springtime had been warm.

The Colorado is now in its second longest ten-year period of low flows on record. If we average over the last ten years, the flow has been at average or less, and this is in an already over-allocated system, as you know better than I do. I have only lived in Colorado for 26 years, so I am a newbie.

The issue concerning the basin, where 30 million people live and where we have seven States reliant on the water, is very much at the edge. The demand exceeded supply about ten years ago, so it does not take a major drought to put us into areas of contention.

What has been excellent, however, has been that our partners, the Bureau of Reclamation and others, have stepped back and said, let us work with the States on how to effectively manage this situation. What new information can we provide?

So NOAA is working with the River Forecast Center in Salt Lake City, is working with Reclamation and others, to make certain that we are clearer on what that inflow might look like. And to be perfectly honest, given the uncertainty, certainly, there are issues in introducing drought-resistant crops. There are issues in introducing risk pooling and insurance. But where the Conservation Reserve Programs come in is the admission that we are uncertain about the future, that it leaves us the flexibility to manage for the pieces that we are uncertain about. And I think that is the richest contribution from the standpoint of an understand what the weather incline is doing, naturally or otherwise, and then what the buffers in our system supply.

Senator BENNET. Thank you, Madam Chair.

Chairwoman STABENOW. Thank you very much.

Senator Cowan, welcome.

Senator COWAN. Thank you, Madam Chair, and I am pleased to join this honorable committee today. I have a question, but I would preface it by saying the last time a Massachusetts Senator sat on this committee was in 1879——

[Laughter.]

Senator COWAN. —and I am only the third Senator from Massachusetts to serve on this committee. So if you are wondering why I am here, I want to tell you.

We in Massachusetts are not unfamiliar with agricultural issues and the importance of agriculture to this nation and certainly the Commonwealth. Personally, I spent much of my childhood in North Carolina on my great-grandparents' working farm, where almost everything we ate was either grown or born on that farm.

Though Massachusetts is not a Corn or Wheat Belt State, it is an important food producer for the nation. In the Northeast, specialty crops and dairy are our largest agricultural sectors, and we are the nation's leaders in sales of locally-grown products, with a growing and dynamic population of organic and new and first-time farmers. We are also the second-largest producer of cranberries. Not only do we have roughly 8,000 farms, we also have over 80,000

fishermen, farmers of the sea. These farmers and fishermen have a combined production of $7.2 billion in annual sales.

I recognize that some aspect of our fisheries are not in the jurisdiction of this committee, but fishermen from the Northeast who risk their lives to put food on our tables must be treated with the same respect as farmers across the nation. Our fishermen are struggling, too, and are currently facing drastic stock reductions. Many fishermen, through no fault of their own, are in dire straits, and I will continue to push for provisions in the farm bill that my predecessor, Secretary John Kerry, advanced to ensure that fishermen are eligible for disaster assistance programs, just like the other important farmers in this nation.

As we look to reauthorize the farm bill in this Congress, we must make sure farmers and fishermen have the tools they need to manage risk, that we protect our natural environment for future generations, and that we preserve Federal nutrition and other programs that ensure that no child is forced to go to bed hungry.

We also need to be thinking about new threats that our farmers and fishermen are facing. The climate change and more frequent and intense extreme weather events threaten our agricultural economy, and I am pleased that the committee is discussing this important issue today. According to the Climate Vulnerability Initiative, the U.S. is among the top ten countries that will be most adversely affected by desertification and sea level risk, and this does not bode well for either our farmers or fishermen.

Again, I am honored to join this committee and I look forward to representing the interests of Massachusetts citizens, farmers, and fishermen and working with all to solve our challenges.

Now, I would like to ask a question of Dr. Glauber, if I may. As an economist, and as we have heard more and more about the increased frequency and intensity of weather patterns and the changing climate over the next 50 years, I am wondering if you might be able to tell us a little more about your expectations of what that is going to mean in terms of our agricultural economy, both in the U.S. and globally, if we do not do something to curb some of the greenhouse gas issues we are facing.

Mr. GLAUBER. Well, thanks very much, Senator. Just last week, in fact, the USDA put out two major reports on climate change, looking at what the impacts of climate change would be on agriculture, and among a number of findings, one that does stand out is sort of the variability in weather and the potential there, the impact on agriculture from the sort of extremes that one might see because of increases in temperatures due to climate change.

One thing we are working on at USDA, and this goes across both in terms of the forests and in terms of agriculture, is looking at adaptation strategies. I think these are going to be very, very important. Clearly, the Forest Service has a good history there of putting in additional resources to look at that, but as we face these sorts of pressures, agriculture is going to have to be able to have adoptive strategies where they can help mitigate the impacts of variances in weather.

The other thing, obviously, is things that can be done to actually reduce carbon emissions, and there, forests in particular, we are looking at things like carbon sinks. There has been a lot of work

done there, and there continues to be a lot of work done there, and on conservation practices, which help reduce greenhouse gas emissions.

Senator COWAN. Thank you, Doctor. Thank you, Madam Chair.

Chairwoman STABENOW. Thank you very much, Senator. I appreciate your advocacy for fisheries. You do follow in the distinguished steps of former Senator Kerry and we look forward to working with you on those issues, as well.

Just one final question for Dr. Pulwarty. From your perspective, are the long-term temperature changes from climate change affecting the length or the severity of droughts like the one that we just saw last year?

Mr. PULWARTY. Thank you for the question, Senator. When we have seen high temperatures before, they have certainly helped to exacerbate drought conditions. From the standpoint of what the modeling studies are showing, into the middle of this century, it is about when we would really begin to see the stronger influence of temperature on the severity of drought.

From the standpoint of what has recently happened, there is a lot to be learned from it, about the relationship between temperature and the extent of drought, but it is as yet too early to say that we can definitely describe a piece of this to anthropogenic climate change, how much that would be.

Is the background changing? Is climate changing? It is. Will temperature affect the magnitude and strength of droughts into the long term? We are anticipating by the middle of the century, we would, in fact, see that signal. Was that the case in 2012? We can't conclusively say so. However, what we can say into the future is that the link between temperature and dry conditions—in the case of 2012, the drought was actually caused really much more by a lack of precipitation—temperature itself does not create a drought, it can help exacerbate a drought—from that standpoint, it becomes even more important to develop the monitoring and early warning systems that are needed, simply because when we add drought and a background trend together, what we produce is a surprise in the system, such as 2012 or 2002. It is not simply the addition of a drought event on a linear trend. When those two are added together, in many cases, sometimes what is produced is larger than we anticipate. Thank you.

Chairwoman STABENOW. Thank you very much.

We have been joined by Senator Grassley. Welcome. We are pleased to see you this morning and we will turn things over to you for questions.

Senator GRASSLEY. Am I the only one who has not yet asked a question?

Chairwoman STABENOW. You are the only one, and if you would like, we could keep——

Senator GRASSLEY. Can you please give me five minutes?

Chairwoman STABENOW. I can give you—what I will do is ask—we can continue to ask questions of our panelists.

I will ask Dr. Glauber, could you speak a little bit more—and we will give Senator Grassley a moment—from a livestock perspective as to what has happened in terms of the severity of the drought. Livestock producers have no access to crop insurance. From a fi-

nancial standpoint, they are left there trying to deal with everything that has been happening, as well as rural communities and what is happening. We are seeing facilities shutting down and so on. The ripple effect of this is very serious. I wonder if you might speak a little bit more about that.

Mr. GLAUBER. No, absolutely, and I think—I keep pointing out to people, when we talk about record farm income, it makes it sound like everything is going great. I think if you look at the livestock sector, and really over the last five years, you think of the price spikes that we have seen—we saw one, of course, in 2007–2008, another price spike in 2010–2011, and now this one caused by the drought—these clearly, when you talk about higher grain prices, higher soybean prices, this as a big impact on producers. We all remember the struggles that the dairy industry went through in 2009. You look at the hog sector, look at the poultry sector, similar things happened in 2008. We are really back in those sort of margin levels right now.

Now, the good news is, the hog sector has shown great productivity. Dairy, looking at milk production per cow, that has gone up some. So these margins have declined, but that has been offset a little bit by increased productivity. But there is no question right now, it does not matter which species you are looking at, they have been under very tight margins, and particularly for those who depend on pasture. I think that is the double-whammy, if you will, because not only are you facing high feed costs, you are looking at very limited pasture opportunities.

So to the degree that those things have impacted beef and hogs, and as we mentioned earlier in answer to, I think, Senator Roberts, these have been very, very tough times, and hopefully, with this year, if we can get a return to more normal yields on the feed grain side, soybean side, we should see some softening in those feed prices towards the end of the year and then, hopefully, some spring rains to get pasture conditions back up.

Chairwoman STABENOW. Thank you very much, and I will now turn to Senator Grassley.

Senator GRASSLEY. I am sorry I missed your testimony, but I had two other committee meetings this morning and I am glad to get here, because this is such an important issue, particularly, it looks like the maps I see of my State and maybe even further West than my State, things are bad, but particularly in the Western part of my State.

So something Senator Klobuchar started on, I want to follow up on. Some of this improvement, where we did not have quite the reduction in production as we thought we would have. It, of course, is due to better practices and modern technology. A lot of it is the improvement of seed technology. Dr. Glauber, how important have biotechnology-derived seeds been to farmers in producing crops in these drought conditions? And I am asking this question, I think, even before a couple years—it is a couple of years before we have what you call drought-resistant corn seed available.

Mr. GLAUBER. No, that is right, but you are absolutely right. What has been developed of the crop developments that we have seen have really been very instrumental in sort of preventing a

much more catastrophic impact on crop yields this year, at least in 2012.

If you look at the weather, and Dr. Pulwarty went through this pretty well, very similar to 1988 in terms of the intensity of the drought. But remember, in 1988, you had fields that came out with no corn, and all things considered, we took four billion bushels off our corn crop estimate by the end, but that was about the size of the 1988 crop. Because of the no-till practices, and a lot of that has been helped by biotech varieties, and because of the developments in seed varieties, I think we were able to get a much better crop than we would have had otherwise.

Senator GRASSLEY. Yes. For Senator Stabenow, you just answered her question about livestock problems. I would like to continue on, if you could discuss the problems that will have for the renewable fuel industry faced by the lessened production, the higher prices, et cetera, the challenges you see ahead for that.

Mr. GLAUBER. Well, two things on the renewable fuels. I think that, clearly, this past year, because of the high corn prices, we saw a reduction in margins for ethanol producers and we saw a cutback in production. If you look at the weekly levels of ethanol production, they took a big dip about mid-July when corn prices came up. They have been remaining below, well below, the caps under the Renewable Fuel Standard for conventional fuels. We have revised our estimates downward for corn use for ethanol, down to 4.5 billion bushels. We anticipate that they will remain low over the course of the next year.

The other major thing going on with the Renewable Fuel Standard, of course, is also the so-called blend wall, and there, that refers to how much ethanol can be put into the gasoline supply. There, because of declining fuel consumption, because of improved fuel efficiency, because of other factors, that has put a ceiling on how much ethanol can be blended. But the hope, or at least, I think, the main thing driving it for the time—for at least over the last year or so—has been higher corn prices. I think, looking forward, it is going to be this blend wall which will be the real challenge to the industry.

Senator GRASSLEY. Okay, and my last question, if I could, Madam Chairman, is, you know, with just one or two percent of the people producing most of the food in this country, there is not as much understanding of agriculture, and you always read about food prices going up. Speak to me, as best you can, what direct correlation there is between consumer prices and the problems of drought and which causes the price of agricultural products to go up.

Mr. GLAUBER. Well, that is a great question, and I get this all the time because people often talk about commodity prices as food prices. And, of course, for something like corn, you are a very long way from a plate of food that you might purchase. For some products, obviously, the difference between a farm-level price and the retail price is closer. For things like corn, of course, you are talking about what goes into an animal that then gets processed and then ends up being sold as meat to consumers.

If you look at the total value of farm products in the retail food dollar that we spend, that is about 14 cents. So even large increases in commodity prices have fairly small impacts on consumer

prices. That is not to say that they are not significant. If you look over 2007–2008, you look at this most recent period, 2011–2012, and I have—I think in my testimony there is a chart on this—it shows the monthly inflation rates looking at the year before, so the change, say, from December 2012 vis-a-vis 2011. And you can see that we have now come down to a very low level of inflation. I think the most recent levels that BLS reported for food at home was about 1.3 percent, and that is well below the two to three percent that we saw a lot over the last 20 years.

However, back in 2007–2008, floor inflation rose about seven percent. It has come down. We will see some increase, I think, due to the current food prices. The Economic Research Service is forecasting food inflation of around three to four percent. But, again, a far cry from the 26, 30, 40 percent increases in commodity prices that we saw in the summer.

Senator GRASSLEY. In closing, let me give you an admonition from your position of respect as an economist, and particularly in the Department of Agriculture. Do not let people get away with saying that 40 percent of our corn crop goes for ethanol when considering one-third of the bushel of corn is still available for animal feed, which then would bring that down to 20 to 25 percent of the corn crop that is used for ethanol.

Mr. GLAUBER. Well, you are absolutely right. The distiller dry grains, the other byproducts from ethanol production, have become a very central portion of the overall feed diets of a number of these livestock groups. Thanks.

Senator GRASSLEY. Thank you, Madam Chairman.

Chairwoman STABENOW. You are welcome. Thank you.

Senator Donnelly.

Senator DONNELLY. Thank you, Madam Chair. I just have a couple of questions.

To Mr. Glauber, and I apologize if these have been asked. I was at an Armed Services Committee hearing that I had to go to. You had mentioned about the debt-to-asset ratio for those with crop insurance. Do you have any idea right now what the debt-to-asset ratio is for those producers of crops for which insurance is not available?

Mr. GLAUBER. No, thanks; actually, the debt-to-asset ratio that I mentioned was for the aggregate, for the entire U.S. farm sector. And as I said earlier in my remarks, you have to be very, very careful of the aggregate.

Let me see if we can coax that out of the numbers, and I can go back and look to see if we can get a breakout for those numbers and get back to you. I mean, obviously, this year, there is no question that if you were a field crop producer and you had high coverage levels, if you have a revenue product, the crop insurance was a big boost and helped you maintain—offset those losses.

Senator DONNELLY. Thank you, Doctor.

Dr. Pulwarty, you mentioned the collaboration between NOAA and USDA to try to be able to better handle drought and drought situations. Are there any other tools that you can think of that would help us in minimizing the impact of these droughts?

Mr. PULWARTY. Thank you for the question. There are several practices that are there, that people in USDA and elsewhere, and

our farmers, have been doing for a long time. In fact, that is why we are still there.

From the standpoint of an understanding of the impacts of drought, there is a lot that can be learned from this present event that we are going through that can help us stave off longer-term risks. I think Mr. Bennet and others mentioned knowing the fact that some things that we put into place up front. For a long time, we have learned, if you put in a dollar up front, you can save three to four dollars in drought mitigation practice in the long term.

Looking more effectively at our observations, our satellite-based observations of where there might be risks to crops, what lands might be fallowed so that the price of the water can be used by the farmer for other purposes, is an avenue that we should probably pursue, simply because if we are not—if we can get the prices for the crops, that is fine. If we can get a higher price for the water, then the farmer should keep the right to the water but also be able to sell it when he or she can.

From that standpoint, we have projects with USDA and others in the State of California on what areas might be likely to be fallowed during a drought such that, up front, one can see there is an amount of water that can be saved that can be sold somewhere else.

There is quite a bit of early warning information that leads to making those types of decisions, and if I can be clear about it, the idea of having better improved monitoring for soil moisture is really the missing piece, coordinated across all of our agencies. We have good pieces of soil moisture data, but effectively coordinating the soil moisture, what we know about it across NOAA, USDA, and others, I think is extremely critical.

From that standpoint, we can also point to the ideas that you have heard today of looking at where we have programs like EQIP, WHIP, and the Conservation Program as to how to effectively design those programs for extended drought. We are really good at the onset of drought. We have the markets that can take care of it. We have the storage that can take care of it.

But as was mentioned earlier, when you get to places like Texas, when we get into a deep drought and the price of purchasing feed and so on goes up, all of a sudden, we are rapidly selling off. And so we have worked very closely with the State and others on what is the likelihood of meeting those thresholds. So, from our standpoint, finding out where the thresholds for making those decisions are and how best we can provide information from an economic standpoint to secure the investments.

As a last statement, that is actually the basis of an MOU that NOAA signed with the Western Governors Association and we can look to sort of learning from how we think about where to place our investments over the long term.

Senator DONNELLY. Thank you very much, Doctor.

Thank you, Madam Chair.

Chairwoman STABENOW. Thank you very much to both of you for a very important discussion about the challenges facing our ranchers and farmers going forward. We appreciate and we look forward to working with you.

This would conclude our first panel. We would ask our second panel to come forward. Thank you.

[Pause.]

Chairwoman STABENOW. Well, good morning again, and we are so pleased to have this panel with us. I know, as others have been here in the past understand, we have multiple commitments that members are trying to be able to meet this morning. Cloning might be good for the committee structure here. I know we are working on that in agriculture. But Senator Cochran had to step out to an Appropriations meeting, but certainly it does not reflect his interest, and others will be coming and going, as well, this morning.

We so appreciate all of you being here. We will introduce all of our witnesses and then ask you each to speak for five minutes, and we welcome any other written testimony that you have.

I am first going to turn and ask Senator Baucus to introduce the distinguished first panelist, Leon LaSalle. Senator Baucus.

Senator BAUCUS. Thank you, Madam Chairwoman.

It is a real honor for me to introduce Leon LaSalle. Leon is a Native American rancher. The real deal, several generations. His grandfather, Frank Billy, is one of the first to found the ranch on the Chippewa Cree Reservation of Montana. It actually is part of the Rocky Boys Reservation. We have got seven reservations in Montana. Leon and his family are real stalwarts, and one of the reservations is Rocky Boys and the Chippewa Cree are the Tribal members in that reservation. They raise Black Angus around the Bears Paw Mountains between Rocky Boys, up around Havre, Montana. It is sort of a real standout, that is, as a landmark in our State. We are very proud of it.

Leon was featured in a book. The book was called Big Sky Boots. It is the working seasons of a Montana cowboy. He has a great quote in that book. He said he thinks there is a growing disconnect between the general public and agriculture producers. Well, Leon, I have got to tell you, the same thing is true in Washington, D.C. There is a disconnect between the people here and the people who represent the rest of the country, and maybe you can kind of help connect those dots a little bit here when it comes time for you to testify.

We are really very honored to have you here because you are a great credit to the Tribe and to the State of Montana and your industry. I might say, Leon is also on the Board of Directors of the Montana Stockgrowers and one of the guiding lights there, as well, so thank you very much.

Chairwoman STABENOW. Thank you, Senator Baucus.

I was holding up—I felt like Vanna White for a moment.

Senator BAUCUS. There it is.

Chairwoman STABENOW. I was holding up the book. Mr. LaSalle has given this to us and the committee.

Senator BAUCUS. You have got it.

Chairwoman STABENOW. We will keep it here in a place of honor and look forward to having a chance to look at it, as well.

Senator BAUCUS. You bet.

Chairwoman STABENOW. Mr. LaSalle, as I told you privately, nobody fights more for Montana agriculture than Senator Baucus, so thank you.

I am going to turn now to Senator Donnelly and ask him to introduce our second witness.

Senator DONNELLY. Thank you, Madam Chair.

Chairwoman STABENOW. Ranking Member Cochran, and other members of the committee, I am looking forward to us working together to address the important issues facing our nation's farmers and we are fortunate today to have with us Anngie Steinbarger. Anngie is a Hoosier corn and soybean farmer from Shelby County who took the time to come out here to Washington to share her perspective on conservation practices, crop insurance, and the risk management techniques critical to operating a farm in the 21st century.

As the folks testifying before the committee today have made clear, we need to find the appropriate balance between strong crop insurance and disaster assistance programs that provide robust support for our producers when they need it, but are also fiscally responsible. As Anngie will tell you, last year's growing season was extraordinarily challenging. We had a very, very significant drought situation in Indiana. Anngie and her family faced it on their family farm and she is going to share some of that with us today.

Anngie and her husband had always dreamed to farm, and through their hard work, dedication, and thrift, they have managed to grow their operation to 1,500 acres. She and her husband are a great example to us here on the committee. We owe it to the Steinbargers and every other agricultural producer in the country to roll up our sleeves and to get a farm bill as soon as possible, as well, Madam Chairwoman.

Thank you, Anngie.

Chairwoman STABENOW. Well, thank you very much. We are pleased to have you.

I now want to introduce from Leelanau, Michigan, Jeff Send, who is a lifelong cherry farmer. And I do have to say that Mr. Send has given us chocolate-covered cherries that will not remain in the committee longer than the end of this day. They will be gone. So thank you. Thank you very much for bringing that.

But Mr. Send is a lifelong cherry farmer who grew up working on his grandfather's 40 acres. He and his wife, Nita, have now expanded that farm to 800 acres of sweet and tart cherries. Mr. Send has also operated a receiving station for over 35 years with 35 growers bringing cherries to his station. He is currently the Vice Chairman of the Cherry Marking Institute Board of Directors and Vice Chairman of the National Cherry Growers and Industries Foundation. We are so pleased to have you here today.

Last but certainly not least, Mr. Steffen, Ben Steffen, who was introduced earlier by Senator Johanns. He is President and coowner of the production operation Steffen Ag, Incorporated, which milks 135 cows, raises crops on 1,900 acres, and has six full-time employees. He currently sits on the President's Advisory Board of his alma mater, the University of Nebraska, and serves as President Elect of the Ag Builders of Nebraska, and formerly the President of the Richardson County Farm Bureau and County Extension.

So we welcome each of you and we will ask Mr. LaSalle to begin his testimony.

STATEMENT OF LEON LASALLE, RANCHER, HAVRE, MONTANA

Mr. LASALLE. Thank you, Chairwoman Stabenow, Ranking Member Cochran, Montana Senator Baucus, and members of the committee, for this opportunity to share my experiences regarding the Federal Livestock Disaster Programs.

My name is Leon LaSalle and I am a Native American rancher from Rocky Boys Indian Reservation, approximately 100 miles northeast of Great Falls, Montana. I am President of LaSalle Ranch, Incorporated, a family ranch corporation including my wife, Shannon, my parents, Robert L. and Jenny, my brother, Robert W. and his wife Susie. Together, we raise Black Angus cattle near the beautiful Bears Paw Mountains and the reservation.

I serve as a Board of Director for the Montana Stockgrowers Association and as President of the Rocky Boys Cattlemen's Association. My maternal grandfather, Frank Billy, and his sons were among the first residents of Rocky Boys to become cattle ranchers, and today, as in the past, we manage our ranching operation with future generations in mind.

We have installed numerous conservation practices specifically designed to preserve and protect our natural resources. Even though we have implemented these conservation measures, there are times when my family's ranch has been struck so hard by weather-related disasters that we have sought economic assistance. The Federal Livestock Disaster Programs have been that assistance.

We have participated in the Federal Disaster Program since the mid-1980s. One thing that has always been a problem was the need to have Congress pass legislation for these programs to proceed. That changed in the 2008 farm bill, where, for the first time, Livestock Disaster was included. Those years when we have used these programs to help offset the financial sting of a drought or a blizzard are tough years. I have known this is especially true for Native American ranchers.

The Native American Livestock Feed Program is a great example of a program that helped when feed was short. In drought years, when there is little or no hay to feed our livestock, ranchers like me must purchase hay at a premium. Sometimes by the time the hay reaches the ranch, the freight is more than the cost of the hay itself. Our family has used the Emergency Livestock Assistance Program in 2008 when our ranch qualified for a payment to purchase replacement hay. We also currently have a Livestock Indemnity Program application pending. The loss resulted from a blizzard during the winter of 2010–2011.

These programs provide the only financial relief available when a rancher was faced with loss of livestock or forage to feed them. There is no insurance for catastrophic livestock losses, such as those experienced by Southeastern Montana ranchers during the horrific wildfires of 2012.

I have helped neighbors prepare applications for LIP, and on one sad occasion, I participated as a third-party witness when several

cattle fell through the ice and drowned while trying to shelter themselves from a stinging Montana blizzard.

While these programs are a welcome relief, they also come with some frustration. Livestock producers like me typically do not work with the FSA on a regular basis and the FSA office is an unfamiliar experience with unfamiliar rules. For example, a ranch family in Blaine County lost 160 ton of hay when lightning struck their haystack. Their application was denied because the rancher had not purchased crop insurance on a small field of hay barley. There also is a rule requiring an operator to report a loss within 30 days. This time period needs to be extended. Losses may not have even been assessed in the 30 days. When a disaster is occurring, seldom has the thought crossed my mind that I need to document my losses. I am normally just struggling to keep my calves from freezing to death. I will count them later.

I believe these disaster programs should become continuous programs that have a stability that would benefit both the livestock producer and FSA. Many of the problems we as livestock producers have stem from FSA's documentation requirements and the failing of livestock producers to gather the type of data FSA requires. Program consistency would help with this.

Mother Nature throws a variety of natural events in the path of a Montana rancher. Our weather is uncertain, sometimes severe. We find our markets are even vulnerable to the effects of drought, as well. Drought has reduced the number of cattle available, and processing facilities have closed as a result, thus affecting our price. If weather and markets are not the issue, then many of my fellow ranchers are challenged by the ever-increasing predator losses.

In summary, I would suggest the following changes. One, the current system for determining drought needs to be revised. Droughts can be very local.

Two, the whole crop insurance thing needs to be dropped from livestock eligibility criteria.

Three, these programs need to be handled differently from other FSA programs. In most cases, they are working with an entirely different crowd than those historically served by FSA.

Four, a streamlined process encouraging program participation would be a welcome change.

Five, consistency. The program needs to be made permanent; six, the 30-day reporting deadline needs to be extended.

In closing, I want you all to know that I am proud of my family and my Native American heritage, and I am equally proud to be a Montana rancher, working every day to deliver safe, healthy, environmentally wholesome beef to your families and to families throughout the world. Thank you.

[The prepared statement of Mr. LaSalle can be found on page 74 in the appendix.]

Chairwoman STABENOW. Thank you very much.

Ms. Steinbarger.

STATEMENT OF ANNGIE STEINBARGER, FARMER, EDINBURGH, INDIANA

Ms. STEINBARGER. I would like to thank you, Chairman Stabenow and Senator Donnelly, for that nice introduction, and the committee members for allowing me the opportunity to comment.

My husband and I began farming the family farm in 1989, just after the last big weather event of 1988, which was the drought. Thanks to our ability to manage financial risk, management techniques, and off-farm income, we now farm 1,500 acres of corn and soybeans as well as a small cow-calf operation in the State. We find our association with various farm organizations, such as the Indiana Soybean Alliance, invaluable to the success of our operation. The Indiana Soybean Alliance is an arm of the American Soybean Association, a trade organization that represents our nation's 600,000 soybean farmers on national and international policy issues.

It has always been our dream to farm. My husband and I both knew that the only way to make our dreams a reality were to save our pennies and work off-farm incomes in hope that, one day, my father would give us the opportunity to participate in the farming operation. Mike worked in the seed, tile ditching, and bulk milk transport business while I worked in fertilizer, chemical, and crop insurance businesses.

The drought of 1988 took a toll on my father. Poor health, no crop insurance, and no crop led us to the ability to participate into the family farm. We started farming 600 acres and have increased the operation to 1,500 acres. Roughly one-half of our acres are on a share arrangement with our landlords. We continue to work off-farm, as it is still not self-supporting. Mike sold the milk truck to buy a school bus and I continue to work in the crop insurance and do the farm recordkeeping.

To manage our thin, light soil types, we started our farming operation employing conservation tillage techniques, using such programs as CRP and NRCS cost share funding. To this day, we are still advocates of no-till farming as a way to preserve our soil and maintain soil moisture. As a result of our conservation efforts, our average yields are 150 bushels of corn and 50 bushels of soybeans.

My father warned us that farming is very risky and we should prepare for the worst case scenario. We did not anticipate the record-breaking drought and heat when we planted our 2012 crop. The crop was planted timely and we were concentrating on installing an irrigation pivot on 35 acres of really sandy soils in hopes of raising 200-bushels-plus corn per acre under the pivot and around 170 bushels on our non-irrigated soils.

The middle of June, it became apparent that we were not going to realize our crop goals. The heat and drought had settled in to stay. It is so frustrating to watch the crop wither and die. I actually used our fields as training examples of permanent wilt and drought stunted corn. I just happen to have a couple pictures that I submitted to the committee.

The race was on to get our irrigation pivot operating. Due to a storm, we did not water the crop until July 6. We also bought back some of the grain that we had contracted to the elevator for our landlords. We were concerned that our corn crop would not raise

40 bushels to the acre, and about 40 bushels is the most we ever contract for a landlord per acre. Our best corn was on the farm with the pivot. Under the pivot, it was 200 bushels to the acre. And outside of the pivot, ten.

This farm averaged 100 bushels to the acre, and that allowed us to meet our contracts. The rest of the crop was dismal. Needless to say, there was not anything to put in the grain bins. Due to the drought and heat, the grain quality was very poor and we even shipped our grain that was going to be fed for livestock.

We always live on the proceeds of the crop year following the year we produce it, so we will be feeling those effects of the drought of 2012 in 2013.

The number one barrier to increasing our yields is the lack of water. Dry weather in the months of July and August always limit our yield potential. We find crop insurance an effective tool in managing risk when we experience these weather events. We began using crop insurance in 1991 as a way to maintain our cash flow and prevent us from having to borrow money. I actually have lost money over buying crop insurance over the last 20-year time span. It was not until the last two drought years that it actually paid for us to have crop insurance.

Using crop insurance as a risk management tool is not cheap. We have Revenue Plan 2 coverage and optional unit structure and insure 80 percent of our corn average yield and 75 percent of our soybean average yield. This roughly costs us $38 an acre for corn and $20 an acre for soybeans. This plan does allow us to be covered for differences due to poor yield or a poor price or actually a price fluctuation that goes up.

The yields from 2012 were the lowest on record for our farm. The average corn yield was 41 bushels to the acre. By the way, that is worse than 1988. And, actually, the soybeans averaged 30.4, which were marginally better. It ended up being one of our best decisions to purchase the irrigation pivot.

As you can see, we paid a substantial premium for crop insurance, and that decision is keeping us in business for the 2013 crop year.

Thank you, Chairman, for this opportunity to testify and I look forward to your questions.

[The prepared statement of Ms. Steinbarger can be found on page 117 in the appendix.]

Chairwoman STABENOW. Thank you very much.

Mr. Send.

STATEMENT OF JEFF SEND, CHERRY FARMER, LEELANAU, MICHIGAN

Mr. SEND. Thank you, Senator Stabenow, and members of the committee, for inviting me to testify today and for your concern about a very important issue.

I am Jeff Send. I am a cherry farmer from Northern Michigan, and I grew up working my grandfather's 40 acres. Now, my wife and I, Anita, farm 800 acres of sweet and tart cherries. Putting some of the land into the Federal Farm and Ranch Land Protection Program is one of the tools we use to expand our operation. Our

youngest daughter and her husband work with us and they someday hope to take over the farm.

I also have managed a receiving station for 37 years. I have a working relationship with 35 growers who bring me cherries to be weighed, inspected, shipped to ten different processors in Michigan, Wisconsin, and the State of New York that I work with.

I currently am serving as Vice Chair of the Cherry Marketing Institute Board. CMI is a national organization for tart cherry farmers. I am also a Vice Chair of the National Cherry Growers and Industries Foundation, which is a sweet cherry organization.

Year in and year out, Michigan produces 75 percent of the United States tart cherries. However, that was not the case in 2012. Last year was the most disastrous year I and the cherry industry have ever experienced. Our winter was much warmer than normal, with little snow and ice on the Great Lakes. In mid-March, there were seven days of 80-degrees temperatures, which is unheard of in Northern Michigan. Cherry trees began to come out of dormancy and began to grow. This left them completely vulnerable to the next 13 freezes in April. This extreme weather in Michigan was one of the worst disasters we had ever seen. Sweet cherries endured freezes slightly better than tart cherries. But to top things off, we were hit with a worst case bacterial canker I had ever seen. There is no treatment for this disease, which affects the fruit buds.

In Michigan, we have the capacity to grow 275 million pounds of tart cherries. In 2012, our total was 11.6 million pounds. If this would have happen a year sooner, the SURE program would have been in place and we would have had some form of safety net. There is no tart cherry insurance available at all for our industry, so my fellow growers and I had no risk management tool to get through this very difficult year.

NAP insurance is available, but the policy starts at 50 percent loss and then pays out only 50 percent of that number. Farmers are left with only about 25 percent of coverage, and there is a $100,000 cap. This does not come close to covering our expenses. My costs on my farm alone are between three-quarters and a million dollars.

Tree fruits must be maintained whether there is a crop or not on them. You carry on with the same practices in order to keep them healthy. So expenses remain the same. Imagine working for a year-and-a-half with no paycheck and still having the same expenses.

There is a pilot program for sweet cherries that is available in two counties. Fortunately, I live in one of the two counties. What it meant to me was 50 percent of my sweet cherries were covered. However, the farmers that I represent in neighboring counties did not have the option to purchase sweet cherry insurance.

The Administrator of RMA visited last summer and we are working on a tart cherry program, which I hope will be up and running for the 2014 season.

I worry about our young farmers, who haven't built up any equity. No income with all the same expenses is formula for disaster. There needs to be something to help farmers stay in business when natural disaster hits. A few days that we have no control over can put us out of business.

In closing, I would like to thank you for being able to testify here today. I also would like to leave you with three points.

Number one, disaster relief is very important to the tree crop industry.

Number two, long-term crop insurance needs to be available to all farmers who grow food in the United States.

Number three, where no crop insurance is available, we need to improve the NAP policies to provide farmers with better risk management tools.

I am very worried about 2013 and what this year will bring. We must have a good crop so growers and the industry can get back on their feet. Another year with some form of safety net will put a lot of us out of business.

Thank you for your time.

[The prepared statement of Mr. Send can be found on page 98 in the appendix.]

Chairwoman STABENOW. Thank you very much. I know how serious this is.

Mr. Steffen, welcome.

STATEMENT OF BEN E. STEFFEN, FARMER, STEFFEN AG, INC., HUMBOLDT, NEBRASKA

Mr. STEFFEN. Good morning, Chairwoman Stabenow, Ranking Member Cochran, and members of the committee. I want to thank Senator Johanns for his earlier introduction and I want to thank all of you for your leadership and hard work on behalf of our nation. I salute your commitment to public service.

My family, our employees, and I produce milk, corn, soybeans, wheat, and hay on our farm at Humboldt in Southeast Nebraska. We milk 135 cows on 1,900 acres of non-irrigated dryland farm, and I have family members at home right now caring for and feeding animals so that I can be here today.

This nation has benefited from a food supply that is plentiful, inexpensive, and of the highest quality, and securing that food supply for the future is clearly a responsible public policy. Facing a growing world population, it is a moral imperative.

The impact of fire and drought has hit our farming operation and those of our neighbors. The price of high-quality dairy hay has gone up by 50 percent, and the price of lower-quality hay suitable for beef animals has more than doubled. While we appreciated last year's release of Conservation Reserve Program acres for emergency haying and grazing, we would like to see efforts made for an earlier release date for those acres. This would dramatically improve the quality and the quantity of those forages.

My neighbors in Western Nebraska have been dealt a particularly hard blow by wildfires, and nearly 400,00 acres, approximately half the State—equivalent to half the State of Rhode Island—were burned in 2012. On those ranches, feed supplies were wiped out, fences were destroyed, and cattle have been liquidated. I would urge you to consider some tax relief to help those ranchers regain their footing. Ladies and gentlemen, our nation's cattle herd is at a 61-year low and consumers will feel this damage for years.

I would also note that the farm bill which passed this body addressed the reauthorization and funding of a number of important

Livestock Disaster Assistance Programs which were not funded for 2012 or in the recent farm bill extension, and the funding of those programs should be a top priority for this committee as we look toward passing a farm bill this year.

Livestock contributed $10 billion to Nebraska's economy in 2011 and crop production contributed $11.7 billion. I have seen that in my own operation as well as in my community, where I sit on the Board of Directors of the Richardson County Bank, and that money moves through virtually every business and community in our State.

In the crop production arena, we can all say with pride that the Federal Crop Insurance Program has worked well. For us, Federal crop insurance is not a fountain of free money. Until last year, our farming operation had an 11-year crop insurance purchasing history that showed us paying in more money in premiums than we received in indemnity payments. Last year, the insurance program appropriately covered a portion of our massive losses. We choose to participate and pay premiums every year to protect our operation from an event like the history losses of 2012, and producers across the nation have endorsed this program with their massive participation. I would urge you to consider changes that would allow the individual policies to be customized to more closely fit each farm, but maintaining the successful Federal Crop Insurance Program should be our highest priority.

Risk management strategies that have contributed to our success include many tools, and the idea that Federal crop insurance alone guarantees a profit is simply not true. Other tools play a major role in controlling risk and increasing the chances of success. Education, hard work, and determination come to mind. My parents, Richard and Sue Steffen, both graduates of the University of Nebraska, ensured that their children would have a college education, as well. They set a high standard for education, for hard work, and determination.

Another risk management tool that we employ is diversification. We include both livestock and crops in our business. In order to manage price risk, we constantly watch the changing world markets and the prices for the products we sell, and we accept the challenge of using futures and options contracts. But we, along with thousands of other producers and processors, were victimized by the genius of mismanagement at MF Global when our accounts were frozen in the subsequent bankruptcy. We continue to wait for the return of a slowly rising percentage of our funds.

We work every day to find and apply the best management practices, and we have relied on the Land Grant University Research and Extension System established by the Morrill Act of 1862 to help us move our business forward. This has led us to nearly 40 years of no-till farming, saving water, soil, and time. And thanks to Land Grant Research and Extension, we have dramatically improved the way we care for and feed our milk cows, leading to higher production, improved herd health, and better quality milk.

To further protect our soil and water, we began using cover crops years ago. But participation in the Conservation Security Program gave us a push to go beyond the program requirements, and last year, we planted nearly 60 percent of our acres to cover crops. This

practice holds great promise for conserving our soil, saving water, building quality, and sequestering carbon, but we need more research in this area. I urge Congress and this committee to prioritize funding for both basic and applied agricultural research and our Land Grant system of universities created by the Morrill Act of 1862. This research and development is the engine of our nation's food supply.

I conclude as I began. This nation has benefited from a food supply that is plentiful and inexpensive and of the highest quality. Securing that food supply for the future is clearly responsible policy. Facing a growing world population, it is a moral obligation.

Thank you.

[The prepared statement of Mr. Steffen can be found on page 112 in the appendix.]

Chairwoman STABENOW. Thank you very much to each of you. You are all on the front lines of making sure we have a safe, abundant food supply in the riskiest business in the world, so we thank you very much.

Mr. LaSalle, you talked about the livestock disasters and some changes you would like to see. I am very pleased to say that most of those, we put in the farm bill we passed in this committee and in the Senate, and we are going to continue to push for those.

Mr. Send, as you know, we addressed disaster assistance in our farm bill.

Mr. Steffen, I would just say, on MF Global, we are working. This committee also has oversight and we are laser focused on making sure you get every penny of your money back, so we are going to keep pushing on that.

Mr. Send, talk a little bit more, if you could, about the difference in the coverage options for you—the limited coverage that you have under crop insurance right now with your sweet cherry insurance policy versus the current NAP program and how this all fits for you when you are trying to put it together with limited options.

Mr. SEND. Thank you, Senator. I think I touched on it a little bit when I said $100,000. A hundred-thousand dollars does not cover much. If I could have crop insurance like the Sweet Cherry Insurance Pilot Program, you would pick your policy. Your policy runs all the way from 50 percent coverage to 75 percent coverage. This last year, I had 50 percent coverage. I was very, very happy. I was very fortunate I lived in one of the two counties. Since the episode, I increased my coverage for next year because my fear is this possibly could happen again. So there will be more monies coming there.

The NAP program, you know, the $100,000 just does not get it. We need a policy that we, as growers, can buy and set some form of coverage up for ourselves so we have some form of tool that we can fall back onto, because I, too, feel our climates have changed. I fear that it could affect all of us sitting at this table. But we have no crop insurance, and if we do not get it, it is going to put many of us out of business.

Chairwoman STABENOW. Could you speak, also, just for a moment, about the costs of maintaining the orchards and so on regardless of the situation. Your costs do not go down just because you do not have a crop.

Mr. SEND. Well, I think on the long version that I wrote, I touched a little bit. Our costs will be the same—I should not say that. Let me restate. Our costs are a touch cheaper because we did not have to harvest product this year. But if you look in the long version, I think I made a statement, spring came early, which meant we started five weeks sooner than normal. Your first sprays, your first fertilizer, everything, are the very, very most important things that you can do, and you have to do them. If you are going to stay in this long-run, I have a theory. You have to keep them happy and healthy. And if you do not do it, it is going to catch up to you later.

So expenses pretty much this year were down a touch, but you have to fertilize, spray, do it all. I mean, we ended up with four extra sprays this year, and let me tell you, it is not cheap.

Chairwoman STABENOW. Thank you.

I would like to ask, Mr. LaSalle, Ms. Steinbarger, and Mr. Steffen, you all talked about additional risk management tools related to conservation practices, and I wonder if you might each just touch on, briefly, what conservation practices you use and how it makes it more resilient for you managing the drought and other disasters. Mr. LaSalle.

Mr. LASALLE. Yes. Over the years, we have installed many, many miles of livestock water pipeline across fences so we could manage our grazing in a manner where we always—we leave some grass in our rotation that we never use in case we have a drought. And through some of the cost-share programs that are available, that has enabled us to put the—to drill wells, develop springs, pipe the water, install tanks.

One of the other things that we have done is, also, we have installed the permanent livestock shelters. We have actually built them out there, so that when cattle are in a blizzard, they can actually get to a spot that hopefully keeps them from going to like what my neighbor experienced, those types of practices.

Chairwoman STABENOW. Thank you.

Ms. Steinbarger.

Ms. STEINBARGER. Yes. Our conservation techniques, number one would be no-till farming. We are on thin, light soils. It does not hold moisture well. We found—started our farming operation using those no-till techniques where we do not disturb the soil, just plant into it, and that has worked very well for us. Also, we have used waterway projects, where we tried to make the best use of the water that we do have. And the other one would be filter strips, where you do farm near rivers and we find that—and we want to preserve all the soil that we can and those filter strips along the river not only allow us to maintain water quality, but also to maintain soil.

Chairwoman STABENOW. Thank you.

Mr. Steffen.

Mr. STEFFEN. Thank you, Senator, for the question, and I would point—as I mentioned in my testimony, I would point again to the no-till techniques we have been using for 40 years on our operation, to save soil, conserve water, and improve our crops. I would also point out that we are making extensive use of cover crops, and those crops planted in conjunction with our traditional crops offer

us a way to catch more moisture and snowfall, to improve the way water and rainfall percolates into the soil and it is absorbed so that we are able to capture and store more water in that soil by using those cover crops. It is a way to increase the organic matter levels in the soil, and that makes the soil more productive and increases its ability to hold water.

So those are all techniques that we use, and I would mention, again, the value of long-term planning and thinking and foresight, and it is imperative that producers continue to look forward and plan ahead to be able to weather periods of stress and drought, and that we raise awareness, as you are doing today in this hearing, of the necessity for planning ahead.

Chairwoman STABENOW. Thank you very much.

Senator Donnelly.

Senator DONNELLY. Thank you, Madam Chair.

Anngie, you had mentioned crop insurance allowed you to ensure that you had a budget for this year's expenses. Can you talk about any important ideas you would like this committee to consider as we examine crop insurance and disaster assistance?

Ms. STEINBARGER. Yes, I do have a couple items that are kind of on the forefront of my mind as we prepare for the 2013 year. As you consider a new farm bill, I am very concerned that we maintain subsidy for crop insurance. Maybe I should say direct payments that we have had in the past reward a farmer regardless of his ability or desire to participate in risk management. I feel with the Crop Insurance Program that if you want to play, you are going to pay, and that is just exactly what we have chosen to do, and I hope that you consider that same type of idea as we go forward. I think that would probably be the most important one as of right now.

Senator DONNELLY. Thank you very much. And to all our panelists, I just want to tell you how much admiration we have for you. You are the people who feed our country, who have been an extraordinary positive part of our export program, who have been stewards of our land, and who have left our nation's lands in the extraordinary condition that they are in. To all of you, you have put your heart and soul into family operations. It is the epitome of American entrepreneurial spirit, of American enterprise, what you do. And so to all of you, thank you.

Mr. Send, I will tell you, I happen to live up near the Michigan border. I am a proud Hoosier, but will tell you that our area is inundated with your products every year. So I just wanted to let you know that, as well.

Thank you.

Chairwoman STABENOW. Great.

Senator Baucus.

Senator BAUCUS. Thank you, Madam Chairwoman.

Leon, a couple things. Following on Senator Donnelly's point, it has always struck me how farmers and ranchers have a better perspective on life. They are more philosophical, Why? Because they know they can't control their fate as much as some people in cities think they can, erroneously. You can't control the weather. You can't control price. Cost, you can't control. You take what you get, but you have got to manage it as well as you possibly can. It is

very, very difficult and it is kind of humbling. It gives you a sense of life and the importance of hard work and doing one's best. Whereas on the other hand, I think a lot of people in the city get a little arrogant and they think they can control everything, and obviously, they can't.

I was struck—I do not know if you saw it, the Super Bowl ad, a Paul Harvey ode, basically, to farmers and ranchers. It was very powerful. Now, it was an ad for Dodge Truck, but that was the main point.

[Laughter.]

Senator BAUCUS. The main point, it was just a powerful ode, statement, respect for the nation's farmers and ranchers. I urge all of us who haven't seen it to—or who did see it, just take that to heart, because it is so important.

In our State, Madam Chairwoman, agriculture is our number one industry. It is number one. One out of five Montanans' income is dependent upon agriculture. It has been that way ever since I have been around, and I expect it is going to be that way for a long time. And I just think, therefore, it makes sense—not just Montana, but other States—to get a little more sanity in some of these programs. And, clearly, one is Livestock Disaster Assistance. I mean, it is just incredible to me how wrong-headed it has been that prior to 2008, about 30 years, we have had this on again, off again, ad hoc disaster program. Farmers, ranchers do not know if Congress is going to act. Are they going to act? Are they not going to act? How much will they provide for? What years will it apply to? You have got to choose. It is just nuts.

In my State, Madam Chairwoman, as we discussed, a lot of them are very inefficient. Sometimes, the farmer or rancher gets the payment when he or she should not just because the county got it, or vice-versa. It is just very inefficient.

In fact, in the 30 years preceding the 2008 farm bill, about $60 billion was paid in disaster assistance. That obviously comes out to about $2 billion a year. In the four years from 2008 to 2011, I think about $8 billion. Excuse me. Four-point-six billion was spent. So, roughly, we are two times more efficient under the permanent program than we were under the ad hoc program, basically. So it is cost effective, permanent Livestock Disaster Assistance, and that is basically why, in 2008, I authored the provision to make it permanent. Regrettably, we did not have money to keep it going over the ten-year period, but it just goes to the point of permanence, so farmers and ranchers can count it and know that it is there.

Madam Chairwoman, I would say, when I am home, a lot of farmers and ranchers come up to me and say, boy, that estate tax provision you put in, that is great. First of all, the numbers are good. Second, it is permanent. It is not on again, off again. It is not a one-year program. It is not five. It is not ten. It is permanent. It just makes it easier for people that farm and ranch to conduct their operations when they can't control the weather. You can't control price. You can't control cost. At least we can make things a little more stable for people.

So I wonder if, Leon, you can just give us a sense of just all the problems you have been going through—you already did in your opening statement—because we do not have a program now. We

did. It expired at the end of 2011. But currently, all these things you have to go through. You mentioned the FSA offices. You mentioned the 30-day wait and all that, just very good points that we have to address. But could you just kind of compare what life was like before 2008 compared with what life has been since and now afterwards when we do not have it? Just add some flavor, because this is your chance. Just tell it like it is.

Mr. LASALLE. Great.

Senator BAUCUS. Do not pull any punches. Let us know.

[Laughter.]

Mr. LASALLE. Okay. Yes. Well, I mean, I think you kind of alluded to it there. Before 2008, we were always at—we were at the mercy of Congress to enact legislation so we had a program, and a lot of times, you know, that might be six months, a year, two years down the road from when the actual disaster occurred and we were still bleeding at those times, so to say, and we were looking for some relief. Unfortunately, you know, some people did not get that and it set their operations back——

Senator BAUCUS. You might explain, too, we have had floods, we have had droughts, we have had it all.

Mr. LASALLE. We have had it all, yes, and actually, yes. What I alluded to here, we actually had the blizzard of 2010–2011 where we lost numerous heads of livestock. Well, following that, the following spring, then, we had unprecedented 100-year rainfall events that actually completely changed the landscape of our ranch and neighboring ranches. So we went from one extreme to the other. And then last year, we were at the tail end of this nationwide drought, but we were starting to feel it in North Central Montana, also.

But without permanency, we just do not have anything to really go to the bank with, so to speak, because bankers, they love it, too. They like to know that, yes, we have insurance on these or we have some way of knowing that when I go down there and ask for an operating loan of X-amount, that I can somehow back it up.

There again, these droughts, a lot of times in the old program, we had a county-wide—we may have had a county-wide designation or contiguous counties, and there were cases when maybe people who did not really have a drought were able to participate and get these payments. Like you said, Senator Baucus, you were paying out maybe more to people who did not really necessarily fall into the same category. And we have—our Montana Stockgrowers' policy, we have actually addressed that in a resolution, that we would like to see some changes made to how droughts are designated, also.

Senator BAUCUS. Yes. Thanks for what you do. I mean, you speak well for an awful lot of people and we deeply appreciate it.

Mr. LASALLE. Thank you.

Chairwoman STABENOW. Well, thank you very much to each of you. And we have committed, and I will emphasize again, we did pass permanent Livestock Disaster Assistance as part of our farm bill, as Senator Baucus certainly was the leader in making sure that happened, and we are committed to having the right kind of farm bill again as we move forward.

Let me just say, in conclusion, that we have heard from economic and weather experts about not only the drought of 2012 that rivaled the Dust Bowl era, but unfortunately, it appears that we can expect conditions that could be even worse this year. So that is something that certainly is very sobering today. But we have also heard from each of you, from people on the front lines, farmers and ranchers who suffered through the weather disasters and are counting on us to put in place risk management tools going forward that will help you be able to be successful, whether that is strong crop insurance for every crop that is interested in crop insurance or whether it is Livestock Disaster Assistance or the permanency of a five-year farm bill. It is so important that we get that done. We are committed to doing that.

I want to thank each of you for coming, particularly people who traveled a long way today to be with us, and for the committee, any additional questions for the record should be submitted to the Committee Clerk five business days from today. That is 5:00 p.m. on Friday the 21st.

With that, the meeting is adjourned.

[Whereupon, at 11:49 a.m., the committee was adjourned.]

A P P E N D I X

FEBRUARY 14, 2013

OFFICE OF
SENATOR JOHN BOOZMAN
STATE OF ARKANSAS
WASHINGTON, DC 20510
PHONE: (202)224-4843
FAX: (202)228-1371

MEMORANDUM

TO: JNB
FROM: ZH
SUBJECT: AGRICULTURE COMMITTEE HEARING ON 2012 DISASTERS: OPENING REMARKS
DATE: 18 FEBRUARY 2014

☐ CONFIDENTIAL
☐ DRAFT
☐ FYI
☐ STAFF USE ONLY
☐ PERSONAL

NOTES/COMMENTS:

Madame Chair, Ranking Member Cochran, it is good to be back here with my colleagues in the committee and I appreciate you calling this hearing to highlight ,and help us better understand, the impact and implications of last year's disasters and how they have affected the agriculture industry.

As you are fully aware, last year's droughts took a heavy toll on all of our nation's producers of row crops and livestock alike. Our corn crop was hit particularly hard, which not only impacts moms and dads at the grocery store, but drove up the price of feed for our livestock producers. Other grains were not spared. For our farmers

in Arkansas, many of whom irrigate, the cost of production skyrocketed as they had to pump more water, drill new wells, and purchase water when their retention ponds when dry. Grazing lands took a heavy hit as well and our cattle producers had to purchase hay at astronomical prices – if they were able to find it – in order to sustain their herds, many of which had to be thinned out before it was over. Our poultry industry in Arkansas suffered from the high price of feed, as did our catfish industry, just as they were beginning to turn the corner on previously difficult times. Yet, through it all, our farmers and ranchers fought hard to save their crops and their farms to ensure that we all have food to eat. We should think of them and be grateful every time we sit down to eat the food we so often take for granted.

Fortunately, our nation's modest investment in an agriculture safety net ensured that we, as a nation, continue to have the most reliable, safest, and most affordable food supply in the world. I look forward to working with this committee during the coming weeks and months to craft the 5-year Farm Bill that will provide our producers of all crops, in all regions of the country, with the certainty and security they need to continue feed the world's ever growing population and take care of their families.

Senator Sherrod Brown
Statement for the Record
2/14/13

Chairwoman Stabenow and Ranking Member Cochran I appreciate that you are holding this hearing on a pressing topic for all agricultural producers---risk management and the weather. There is no question that the unpredictable weather patterns of the past few years are straining farmers.

In 2011, Ohio received about 20 inches more rain than usual. By contrast, 2012 left many of the very same counties parched. Agriculture is an important economic driver nationwide—and Ohio's number one industry. When Ohio's agriculture producers are under stress, ripples are felt throughout the state.

The Agriculture Committee has the responsibility of ensuring all agricultural producers---whether they are producing livestock, dairy, apples, tomatoes, leafy greens, pasture or row crops—have the tools they need to manage risk.

Recognizing this responsibility, this Committee took bipartisan action last year and produced a five-year farm bill that passed in the Senate.

That bill took steps to address many of the issues we are all here to discuss today.
I'm proud we were able to pass a bill that included a long-term solution to providing livestock and specialty crop producers with the risk management tools they need in the face of natural disaster.

But I'm also frustrated. Frustrated that while this body acted responsibly and came up with a bipartisan farm bill we're having the same conversation we had two years ago.

We are here again because:

- We have partners in the House—if you can call them that—who will not play ball.
- We have an inadequate farm bill extension that provides farmers who have crop insurance with unnecessary, guaranteed payments at a $5 billion cost to taxpayers but does nothing for producers without adequate insurance options or numerous renewable energy, rural development, healthy food, and beginning farmer programs.
- We have to start the process of writing a farm bill again.

The bright side of this rotten deal is we have the chance to consider whether the risk management tools on the books can weather the storm—so to speak—of changing weather patterns.

It is a chance to think through what more can be done on the front end—through research, soil and water conservation, and risk management—and on the back end when things go wrong, to ensure farming remains a viable way to make a living and again becomes a profession of interest to young people.

Senator Cochran Remarks for Senate Agriculture Committee Hearing
Thursday, February 14, 2013 – 9:30 a.m.
328A Russell Senate Office Building

Thank you, Madam Chairwoman, for convening this important hearing to discuss the drought and other disaster events of 2012. I would also like to thank the members of the committee and the panel of witnesses for being here to discuss ways we can help America's farmers and ranchers.

It is an honor to serve as Ranking Member on the Agriculture Committee. I am delighted to get to work alongside Chairwoman Stabenow, and members of this Committee, in crafting a new 5-year Farm Bill, and in addressing all important matters under this committee's jurisdiction.

This country, and many around the world, relies heavily on our farmers and ranchers. The food and fiber they produce allows us to enjoy basic qualities of life, which we must always keep inmind. American agriculture is a bright spot for our nation's economy, and it is important these successes continue.

All types of producers in every region of the country take great risks to ensure we remain clothed and fed. The drought and weather related events of 2012 illustrate the importance of providing agricultural producers with adequate protection from events in which they can't control the ultimate outcome. The diverse group of producers on our second panel can attest to the fact that no farmers are immune from these risks. It also shows that different producers and regions are subject to different types of exposure, which influence the way they plan, what they produce, and the practices they put forth in making a living and providing for their families.

We all know that not much can be done to prevent natural disasters from occurring, but we can always work on and improve our response and recovery efforts. When a natural disaster occurs, the economic losses do not stop at the producer; they extend down the production line and into the community. The estimated total damage in crop and livestock losses caused by natural disasters in the last year has left me with great concern.

A strong, robust safety net for our farmers is important to the United States agriculture producers and industries. We can gain a better understanding from today's witnesses of how we can improve our response to their interests. Thank you all for attending this hearing, and I look forward to hearing your testimony.

Again, I look forward to working with you, Chairwoman Stabenow, and all members of the Committee, as we move forward in the 113th Congress.

Senate Committee on Agriculture, Nutrition & Forestry
Drought, Fire and Freeze: The Economics of Disasters for America's Agricultural Producers
February 14, 2013

Senator Thune

Madam Chairwoman and Ranking Member Cochran, thank you for holding this important hearing. I hope this hearing will provide insight about the effects of the disasters that have occurred over the past year and continue to affect the agricultural community across the United States. I also hope that this hearing will provide practical information about the ways we can improve disaster assistance, monitoring, warning systems, and responses.

I believe the biggest questions that we are faced with today are, "How do we better prepare for droughts and other disasters in order to secure our food supply and national economy, and what is the most cost efficient and effective disaster assistance that needs to be provided when natural disasters occur?"

South Dakota has witnessed both drought and wild fires, as did many other states across the country. From the U.S. Drought Monitor released February 7th, nearly 97% of South Dakota is designated D2 – D4 drought, or severe to exceptional drought. The drought has made our forests more vulnerable to the invasive pine beetle, which has in turn killed and damaged thousands of acres of pine forest, leaving abundant fuel for future forest fires. Nationwide, corn yields were the lowest on record in 17 years, while hay yields were at their lowest since 1976.

I was pleased that the Senate crafted and passed a five-year reauthorization of the Farm Bill last year, which included reforms to the Commodity Title and reauthorization of livestock disaster programs, while also saving $23 billion over 10 years. It is very unfortunate that a new Farm Bill was not signed into law before the end of the last congress.

The continuing drought conditions highlight the importance of passing a multi-year Farm bill, along with the work of USDA and NOAA. We need to create certainty in the marketplaces and support our producers. I look forward to hearing from our panels of witnesses.

STATEMENT OF JOSEPH GLAUBER
CHIEF ECONOMIST, U.S. DEPARTMENT OF AGRICULTURE
BEFORE THE U.S. SENATE COMMITTEE ON AGRICULTURE, NUTRITION AND FORESTRY

February 14, 2013

Chairwoman Stabenow, Ranking Member Cochran and other Members of the Committee, thank you for the opportunity to be at today's hearing on the impacts of recent drought and other weather extremes that have adversely impacted crop and livestock production in the United States. Despite a historic drought affecting much of U.S. agriculture, the U.S. agricultural economy is strong and, in aggregate, farm incomes are near record highs. However, aggregate measures belie differences between sectors. Row crop producers have generally fared well despite the adverse weather, in large part due to higher prices from the federal crop insurance programs which have helped offset losses. For uninsured producers or producers of crops for which insurance is unavailable, crop losses have had a more adverse effect. Livestock producers experienced high feed costs and poor pasture conditions, with limited programs to fall back on, particularly since key livestock disaster programs authorized under the 2008 farm bill are currently unfunded.

My testimony will focus on direct impacts of the 2012 summer drought on crop and livestock producers and actions that the Department of Agriculture has implemented to help those in need of relief from this drought. However, other adverse weather events were at work as well in 2012. For example, Florida citrus production experienced sub-freezing temperatures in early January 2012 and tree crop producers in Michigan, Ohio, Pennsylvania and New York were hard hit by an early spring freeze. The western Corn Belt and Southern Plains currently are running a severe water deficit that has implications for the current winter wheat crop, pasture conditions for livestock, and the upcoming spring planting season. Some of my discussion draws upon USDA's updated farm financial outlook and the 2013 USDA Agricultural Projections, both released on February 11. We will update that information in more detail at USDA's Agricultural Outlook Forum on February 21-22, 2013.

Effects of Drought on Crop Conditions

The heat and rainfall deficit conditions that characterized the summer of 2012 were well outside the range of normal weather variation. To focus on the 2012 drought as a single isolated event does not reflect the range of conditions that farmers and ranchers had to deal with over the past 24 months. While the droughts of 2011 and 2012 appear to be separate events, a look at the spatial coverage indicates that many areas—such as parts of northern Texas, Oklahoma, Kansas and Colorado—were hard hit in both 2011 and 2012 as the drought migrated northward (figure 1).

In late June 2011, a relatively small but intense drought afflicted much of the nation's southern tier, with the southern Plains particularly hard hit. Texas saw a 50-percent reduction in wheat production in 2011 and record cotton abandonment. Nationally, crop insurance indemnities for the 2011 crop year totaled a then record $10.8 billion, with over $4.1 billion paid out to producers in Kansas, Oklahoma and Texas. Due to the effects on pasture, the drought conditions in 2011 particularly affected livestock producers in the southern Plains. While winter rains brought limited relief to some of the drier areas of Texas and Oklahoma, drought persisted in much of the area into early 2012.

Continued dry conditions in May and June coupled with the underlying long-term precipitation deficits from 2011 led to an intensification of drought conditions in the southern Plains during the summer. Severe drought conditions (D4) spread into the central Corn Belt. With the eastward movement of drought conditions, crop conditions in the Corn Belt deteriorated rapidly (table 1). In early June 2012, less than 10 percent of the corn and soybean crop was rated poor or very poor. By early August, almost 90 percent of these crops were located in areas affected by drought and the percent of the corn and soybean crops rated poor or very poor had risen to 50 percent and 40 percent, respectively. Sorghum, too, was hard hit, with about half of the crop rated poor or very poor by mid-August. The cotton crop, while not as bad as 2011, was rated about 30 percent poor or very poor by late August 2012. Most of the cotton area rated poor or very poor was located in Texas which was experiencing its second year of abnormally dry conditions.

Some areas and crops fared better. While much of the Southeast was in drought in early 2012, the region received timely rains. Crop conditions for peanuts and cotton in the region were actually more favorable than previous years. Spring wheat matured before dryness spread to the Northern Plains in late summer and hence only about 11 percent of the crop was rated poor or very poor just prior to harvest. Conditions for soft red winter wheat were also generally good as much of the crop was harvested before drought intensified in the eastern Corn Belt in June and July 2012.

Impacts on Crop Production and Use

What had started out as a promising year for U.S. crop production, with favorable planting conditions supporting high planted acreage and expectations of record or near-record production, turned into one of the most unfavorable growing seasons in decades. Crop production estimates for several major crops declined throughout the summer as the drought intensified, and by January 2013, USDA's National Agricultural Statistics Service (NASS) final production estimate for corn was down 27.5 percent from USDA's May 2012 projection (USDA's first projections for major crops), while soybeans fell 6 percent over the same period (table 2). Those declines reflect sizeable reductions in crop yields per harvested acre, and for corn, a smaller-than-normal harvested share of planted cropland. Sorghum production also declined significantly—26 percent—between May 2012 and January 2013, but 2012 production levels are now expected to exceed 2011 levels by nearly 20 percent, reflecting higher acreage despite yields estimated 9 percent below 2011. Final production estimates for rice, cotton and wheat were higher than May projections, reflecting better growing conditions as discussed above.

Corn. With the highest plantings since 1937 and expectations of record yields due to early planting progress, expectations in May 2012 suggested a record crop of 14.8 billion bushels. The drought sharply reduced yields and harvested acreage. Final production estimates in January 2012 were over 4 billion bushels less than what had been expected in May. With sharply higher prices, demand has been rationed. Feed and residual use is now estimated at 4.45 billion bushels, down 18 percent from the May 2012 projection (table 2). Margins for ethanol producers fell in the summer reflecting higher corn prices (figure 2). As a result, weekly ethanol production (on an annualized basis) began to fall below the allowable cap for conventional ethanol under the

Renewable Fuel Standard and has remained below the cap since mid-July (figure 3). Projected corn use for ethanol has been reduced for the 2012/13 marketing year to 4.5 billion bushels, a reduction of 10 percent from May 2012 projections. Exports saw the largest proportionate decline due to drought-reduced production, with estimates falling to 950 million bushels, a 50-percent reduction from the May projection, and, if realized, the lowest corn exports since 1971/72.

Corn ending stocks are estimated at 602 million bushels for 2012/13. That is down 39 percent from 2011/12 carryout and down almost 1.3 billion bushels from carryout levels anticipated in May 2012. The monthly average farm price, as measured by NASS, hit record levels in August at $7.63 per bushel. The average farm price for corn for 2012/13 is estimated to be $7.40 at the midpoint, and, if realized, will be 19 percent above last year's average price.

Soybeans. Soybean prices rose in early 2012 due to poor crops harvested in Brazil and Argentina in the winter and early spring. The drought pushed soybean farm prices to record highs in the United States, where they reached $16.30 per bushel in September 2012. Lower production and higher prices saw estimated soybean crush for 2012/13 reduced to 1.6 billion bushels, down 3 percent from May 2012 projections. Export estimates were reduced to 1.35 bushels, down 10 percent from May expectations. Ending stocks for 2012/13 are estimated at 135 million bushels. The average farm price for 2012/13 is estimated at $14.25 at the midpoint of the range, an increase of 14 percent over last year's price.

Sorghum. Like corn, a sharply reduced sorghum crop from the May projection will result in significant demand rationing in 2012/13. Exports are now estimated at 65 million bushels, down 75 percent from the May 2012 projection. Likewise, food, seed and industrial use of sorghum is estimated at 60 million bushels, down 30 percent from the May projection. Feed use, however, will likely increase given reduced corn supplies and poor pasture conditions in sorghum growing areas in the Southern Plains.

Wheat. Despite relatively good yields, wheat prices soared in the summer, in part due to a poor wheat yields in Russia, Ukraine and Kazakhstan, as well as increased demand for feed use due to the poor corn crop. Estimated feed and residual use for wheat for 2012/13 was increased to 350

million bushels, a 52 percent increase over the May 2012 projection, due to strong implied feed use in the September-November 2012 quarter. Exports are estimated at 1.05 billion bushels, down 9 percent from the May projection. Ending stocks are currently forecast at 716 million bushels. The average farm price for wheat for 2012/13 is estimated at $7.90 per bushel, a record, if realized, and 9 percent higher than last year's average price.

Rice. Record high rice yields in Arkansas, Louisiana, Missouri, and Texas offset short grain rice yield losses in California. Production was estimated at almost 200 million hundredweight (cwt), 9 percent higher than the May 2012 projection. Global rice production was a record in 2012 which contributed to some weakness in world rice prices from estimates made earlier in the spring. Nonetheless, the season average farm price for rice for 2012/13 is estimated at $14.90/cwt, which would be 4 percent above last year's price if realized and a record.

Cotton. Global production continued to outstrip demand in 2012/13, leading to an increase in projected ending global stocks to almost 80 million bales. Texas realized significant abandonment due to drought, although at a lower level than in 2011. By contrast, Alabama, California, Georgia, North Carolina, South Carolina and Virginia recorded record yields in 2012. Higher U.S. and global cotton stocks have pushed prices downward. Cotton prices for 2012/13 are estimated at 68.50 cents per pound, down 22 percent from last year's season average farm price.

Hay. Hay production in 2012 is estimated at 120 million tons, down 8.6 percent from 2011 levels and the lowest yield since 1976. Yields were down across the country except in the South where moisture was more readily available when compared to 2011. Last year's December 1 hay stocks were at their lowest level since 1957.

Specialty crops. Drought resulted in fewer losses to specialty crop producers because either most specialty crops were in regions with adequate rainfall or they were irrigated. Subfreezing temperatures in early April 2012 were particularly damaging to trees in Michigan, New York, and Pennsylvania which had begun to flower due to unseasonably warm temperatures earlier in March. U.S. tart cherry production was forecast down relative to 2011 by 68 percent, with the majority of the loss occurring in Michigan. Wisconsin, New York and smaller producing states

also had severe losses due to the freeze. Sweet cherry production was up in 2012 nationally due to bumper crops in the Pacific Northwest, but was down by more than 80 percent in Michigan. Apple production was down significantly in Michigan, New York, North Carolina, Wisconsin, Ohio, and Indiana. As would be expected, other specialty crop losses resulted in crop insurance indemnities in 2012. Some examples include January 2012 and December 2012 freeze damage to berry and tree crops in California, Arizona, Texas, and Florida and April fruit tree damage in California.

Impacts on Livestock, Dairy and Poultry

Livestock, dairy and poultry producers faced high feed costs for most of 2012 and high prices are likely to persist through much of 2013 until new crops become available in the fall. Feed ratios, which have generally been tight since 2007, tightened further in 2012 as feed costs rose relative to meat and dairy prices (figure 4). While productivity gains have offset some of the decline in feed ratios, margins have been tight throughout the second half of 2012 and into 2013.

In addition to high feed costs, cattle producers have been particularly hard hit by poor pasture conditions and a poor hay crop. Almost two-thirds of the Nation's pasture and hay crops were in drought conditions with almost 60 percent of pasture condition rated poor or very poor for most of July, August and September 2012. As was mentioned previously, dryness in the Southern Plains has persisted for over two years and resulted in large liquidation in cattle numbers. The January 1 NASS *Cattle* report indicated that total cattle and calf numbers in Kansas, Oklahoma and Texas declined by 3.4 million head between 2011 and 2013. The reduction is a 13.6 percent decline and about equals the net decline in the U.S. herd over the same period. The U.S. cattle and calf herd is at its lowest level since 1952.

Likewise dairy producers were adversely affected by high feed costs and poor pasture conditions. High temperatures during the summer also adversely affected milk production. As a result of high feed costs, milk feed ratios have remained near the low levels experienced during 2009.

Strong pork and broiler exports helped keep margins higher than they would have been otherwise, but high feed costs has limited hog, poultry and dairy expansion. The livestock, dairy

and poultry sectors face continued tight margins in 2013, at least until new crop feed grains and soybeans reach the market in the late summer and fall. Another year of below trend yields and high prices would likely result in further liquidation.

Impact of Farm Safety Net Programs on Producers

Several USDA agencies provided critical assistance to help crop and livestock producers offset the loss in farm revenue caused by the drought and other natural disasters. Crop insurance played a major role in helping many row crop producers offset crop losses. However, many producers either lacked adequate coverage or in the case of some specialty crops and livestock producers, insurance coverage was unavailable. To help address their concerns, the Department took a number of administrative actions to provide more flexible and timely assistance to farmers and ranchers hurt by natural disasters.

Crop insurance. Almost 282 million acres were enrolled in the Federal crop insurance program in 2012. Participation among most row crops has been high. Roughly 85 percent of corn, wheat and soybean area, almost 80 percent of rice area and over 90 percent of cotton area is typically enrolled in the program. This contrasts sharply with participation at the time of the 1988 drought (also a severe drought) when only 25 percent of insurable area was enrolled in the crop insurance program.

As of February 11, 2013, $14.2 billion in indemnity payments had been made to producers of 2012 crops suffering crop or revenue losses. Corn indemnity payments totaled almost $9.3 billion, with over 94 percent of these payments issued for revenue-based policies which indemnify producers at harvest prices (table 3). Soybean indemnities have totaled almost $1.9 billion, almost 94 percent from revenue policies. Not surprising, most of the indemnities have been to producers in the Midwest though heavy losses are also evident in the Southern Plains (table 4 and figure 5).

Indemnity payments for 2012 losses continued to be made and it is likely that total indemnity payments could be as high as $17 billion, larger than last year's record $10.8 billion paid on 2011 crop year losses.

Other actions taken by the USDA to aid affected producers. USDA has a number of programs that help form a safety net for crop and livestock producers. For example, farmers that grow crops that are not currently covered by a crop insurance product can apply for a direct payment under the Noninsured Crop Disaster Assistance Program (NAP), which functions similarly to catastrophic crop insurance. NAP payments for 2011 crop losses totaled over $260 million and to date have totaled almost $100 million for losses to the 2012 crop.

Due to the severity of the drought conditions and widespread impacts on agricultural production, USDA took advantage of flexibilities afforded under its authorities to speed assistance to affected producers (table 5). For example, during the summer, USDA expanded the lands in the Wetland Reserve Program and the Conservation Reserve Program that would be eligible for emergency haying or grazing in order to help manage the extremely poor pasture conditions and high feed costs faced by livestock producers. Roughly 2.8 million acres in the Conservation Reserve Program were opened up under the emergency haying and grazing option, which provided up to $200 million in forage value to livestock producers. In addition, funds were prioritized under the Environmental Quality Incentives Program (EQIP) and the Wildlife Habitat Incentives Program (WHIP) to help producers manage drought conditions. Modifications of existing contracts were allowed for grazing and livestock watering in drought stricken areas.

In addition, USDA Secretary Tom Vilsack last July announced several program improvements to deliver faster and more flexible assistance to farmers and ranchers devastated by natural disasters. Those actions included simplifying the process for Secretarial disaster designations, which resulted in a 40 percent reduction in processing time for most counties affected by disasters. In 2012, 2,333 counties received disaster designation status (2,254 due to drought); 704 counties have been designated as disaster counties in 2013 (703 due to drought). Other actions included a reduced interest rate for emergency loans and a payment reduction on Conservation Reserve Program (CRP) lands qualified for emergency haying and grazing in 2012, from 25 to 10 percent. The Secretary also worked with crop insurance companies to provide an extended payment period to pay crop insurance premiums and filed special provisions with the federal crop insurance program to allow haying or grazing of cover crops without affecting the insurability of planted 2013 spring crops.

Most recently, in December 2012, Secretary Vilsack announced that, in the wake of a series of regional drought conferences with farmers, ranchers, business owners and other stakeholders, a memorandum of understanding has been signed with the Department of Commerce, including the National Oceanic and Atmospheric Administration (NOAA), to improve sharing of data and expertise, monitoring networks, and drought forecasting efforts.

Despite the actions noted above and listed in Table 5, some programs that could have helped mitigate the impacts of the severe drought conditions had expired or currently have no funding, particularly for livestock producers (see table 6). In 2011, payments from those programs totaled more than $500 million. Preliminary analysis suggests that in 2012, the Livestock Forage Program payments alone could have totaled between $500 million and $600 million, roughly double the 2011 levels.

Impacts of the Drought on Farm Income

On February 11, USDA's Economic Research Service (ERS) released its revised farm income forecast for 2012 as well as its first forecast of farm income for 2013. For 2012, net cash income is forecast at $135.6 billion, a record in nominal terms and, the highest since 1973, adjusting for inflation. Farm cash receipts are forecast at $391 billion, up $17 billion over 2011 levels. Crop receipts are estimated at $220 billion, up 5.4 percent over 2011, while livestock receipts are up 3.4 percent to $172 billion. Total expenditures are up as well, with feed costs forecast to rise 16.6% to $64 billion reflecting higher grain and oilseed prices. Other farm income, which includes crop insurance indemnities covering the 2011 and 2012 crop years, is forecast to be $31.3 billion in 2012, up 20 percent over 2011 levels.

For 2013, ERS projects net cash income to be $123.5 billion, a decline of almost 9 percent. Total cash receipts are forecast at $393 billion, up marginally from 2012. Crop receipts are forecast to decline 1.5 percent from 2012 levels to $216 billion while livestock receipts are forecast to increase 2.8 percent from 2012 levels to $177 billion. Feed costs are expected to increase by $4 billion to almost $68 billion. Other large increases in production expenses are forecast to be rental expenses, up $1.7 billion and labor costs, up almost $3 billion.

While net cash income is projected to fall in 2013, net farm income is forecast at $128 billion, a nominal record and highest level in real terms since 1973 if realized. The increase in net farm income in 2013 reflects projected increases in farm inventories in 2013 due to the expectation of trend yields and increased crop production.

ERS forecasts that average farm business income, after rising in 2012, will fall for most row crop producers in 2013 (figure 6). Higher production expenses will likely offset record farm cash receipts. Net cash income is forecast lower in 2013 for all livestock farm businesses due to higher feed costs (figure 7). Feed costs make up 51 percent of expenses for dairy, 19 percent for beef cattle, 42 percent for hogs, and 35 percent for poultry farm businesses.

Farm equity is forecast to increase to record levels in 2012 and 2013. The farm debt-to-asset ratio for 2013 is forecast at 10.2 percent, the lowest level, if realized, since ERS began calculating the measure in 1960. Farm assets in 2013 are forecast at a record high $2.732 trillion, a record high in both nominal and real terms. Farm real estate is forecast at $2.35 trillion, up 7.5 percent over 2012 levels (and up 15.7 percent over 2011 levels). Real estate debt is forecast to decline by $3 billion (2 percent) in 2013 but this decline will likely be offset by increases in non-real estate debt which is forecast to increase by almost $12 billion from 2012 levels.

The non-real estate debt forecast is principally driven by increases in working capital (current assets less current liabilities) and capital spending (mainly for machinery and equipment). During 2012, farmers have continued to invest substantially in equipment, structures, and land improvements. A survey of commercial banks by the Federal Reserve Bank of Kansas City conducted in November 2012 found that bank lending for feeder livestock and current operating expenses rose sharply compared to 2011.[1] Non-real estate loan volumes for current operating expenses, including crop inputs and feed, doubled year-ago volumes, and loan volumes for feeder livestock remained well above 2011 levels.

Impacts on Food Prices

[1] Henderson, J. and M. Akers. "Farm Lending Soars at Commercial Banks." *Agricultural Finance Databook.* The Federal Reserve Bank of Kansas City. January 2013.

The Consumer Price Index (CPI) for food measures the changes in the retail prices of food items. The drought has affected commodity prices for corn and soybeans as well as other field crops which should, in turn, affect retail food prices. However, the transmission of commodity price changes into retail prices typically takes several months to occur. The 12-month percent change in retail food prices shows that food price inflation slowed through the second half of 2012, but that at the end of the year, that slowing had leveled off (figure 8). The BLS reports that all-food prices in December 2012 were 1.8 percent higher than levels in December 2011. Food-at-home prices rose 1.3 percent over the same period. While food inflation is anticipated to rise in 2013, the levels are unlikely to approach the levels reached in 2008 and 2011.

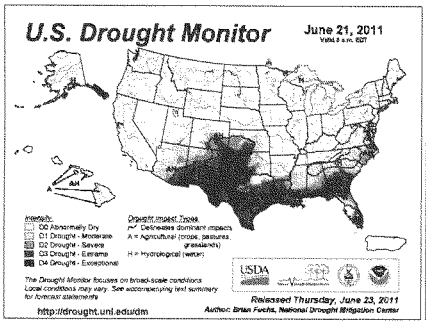
Moreover, the farm component of most food sales is relatively small—about 14 percent of the overall food dollar. So while prices for food and feed grain crops have increased substantially over the past few months, USDA forecasts that food prices will increase only between 3 to 4 percent in 2013, just slightly above the historical average of 3 percent (last 9 years). Inflation is expected to remain strong, especially in the first half of 2013, for most animal-based food products due to higher feed prices. Food inflation is expected to be above the historical average for categories such as cereals and bakery products as well as other foods.

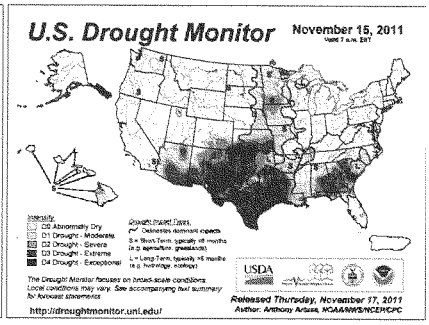
Conclusions

Major concerns related to persistent drought conditions remain: 59 percent of winter wheat areas; 69 percent of cattle production; and 59 percent of hay acreage remain under drought conditions. Forty-three percent of winter wheat production is located in areas under extreme or exceptional drought conditions, down only slightly from a higher of 51 percent in August (see figure 9). While that also implies that spring planting may be affected by drought conditions as well, there have been improvements in the eastern Corn Belt, where many areas are no longer experiencing drought. Assuming adequate precipitation, it is likely that the major spring planted row crops will see a return to trend yields. If so, a rebuilding of stocks and lower commodity prices would be expected in the fall.

That concludes my testimony. I would be happy to answer any questions.

Figure 1—U.S. Drought Monitor (June 2011 – January 2013)


U.S. Drought Monitor
June 21, 2011
Valid 8 a.m. EDT
Released Thursday, June 23, 2011
http://drought.unl.edu/dm


U.S. Drought Monitor
November 15, 2011
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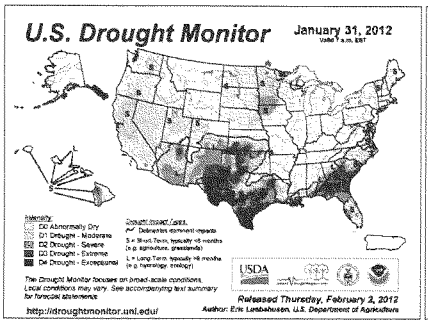
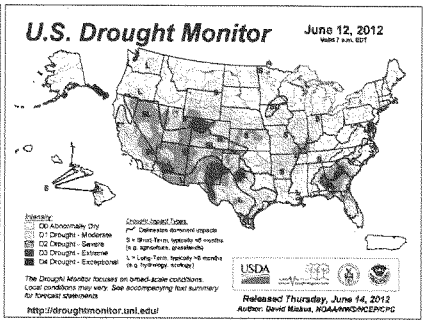
http://droughtmonitor.unl.edu/


U.S. Drought Monitor
January 31, 2012
Valid 7 a.m. EST
Released Thursday, February 2, 2012
http://droughtmonitor.unl.edu/


U.S. Drought Monitor
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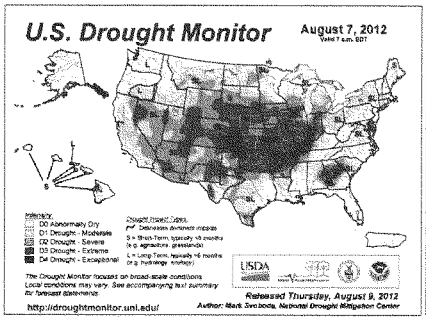
Released Thursday, June 14, 2012
http://droughtmonitor.unl.edu/


U.S. Drought Monitor
August 7, 2012
Valid 7 a.m. EDT
Released Thursday, August 9, 2012
http://droughtmonitor.unl.edu/

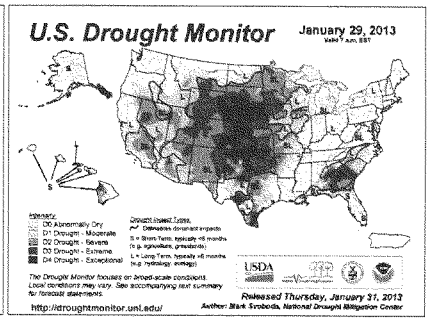

U.S. Drought Monitor
January 29, 2013
Valid 7 a.m. EST
Released Thursday, January 31, 2013
http://droughtmonitor.unl.edu/

Table 1—Percent of selected 2012 crops rated in "Poor" or "Very Poor" condition

Week ending	Corn	Soybeans	Cotton	Peanuts	Rice	Sorghum	Spring wheat	Winter wheat	Pasture
6/3/2012	5	6	9	3	5	9	2	18	22
6/10/2012	8	10	13	1	4	12	4	17	27
6/17/2012	9	12	15	1	6	13	3	17	28
6/24/2012	14	15	16	2	5	15	4	17	34
7/1/2012	22	22	18	2	5	24	5	---	43
7/8/2012	30	27	18	2	8	29	7	---	50
7/15/2012	38	30	18	2	7	32	8	---	54
7/22/2012	45	35	18	4	6	40	11	---	55
7/29/2012	48	37	22	4	6	42	11	---	57
8/5/2012	50	39	27	5	7	45	11	---	59
8/12/2012	51	38	28	3	7	48	11	---	59
8/19/2012	51	37	30	3	6	51	---	---	59
8/26/2012	52	38	28	4	7	50	---	---	59
9/2/2012	52	37	28	2	7	50	---	---	59
9/9/2012	52	36	30	3	8	51	---	---	58
9/16/2012	50	36	30	3	---	51	---	---	56
9/23/2012	51	34	30	4	---	50	---	---	56
9/30/2012	50	33	31	3	---	50	---	---	55

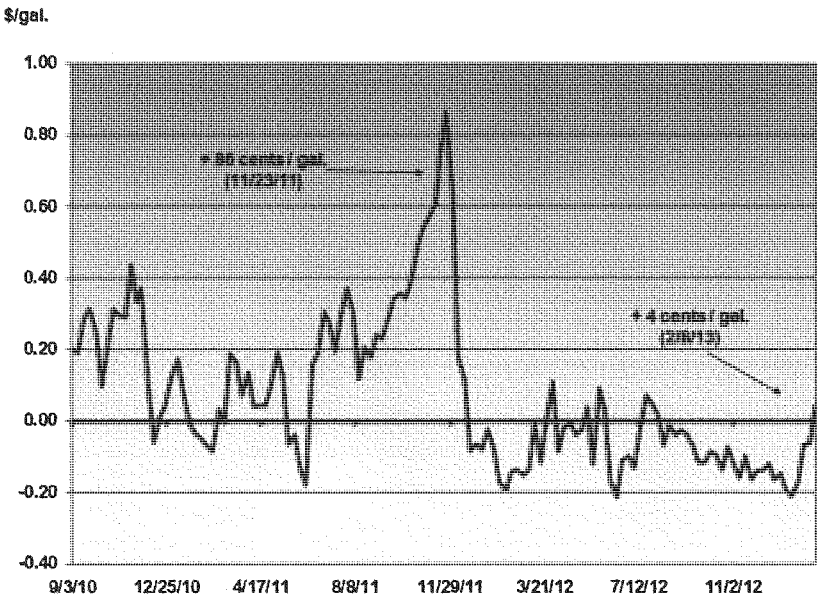
Table 2—Change in U.S. crop production and use estimates for selected crops, 2012 crop year

Crop	Unit	USDA projection/ estimate as of: 5/10/2012	1/11/2013	Change	Percent change
Corn					
Production	Mil bu	14,790	10,780	-4,010	-27.1%
Feed and residual	Mil bu	5,450	4,450	-1,000	-18.3%
Ethanol	Mil bu	5,000	4,500	-500	-10.0%
Exports	Mil bu	1,900	950	-950	-50.0%
Ending stocks	Mil bu	1,881	602	-1,279	-68.0%
Average price	$/bu	4.60	7.40	2.80	60.9%
Soybeans					
Production	Mil bu	3,205	3,015	-190	-5.9%
Crush	Mil bu	1,655	1,605	-50	-3.0%
Exports	Mil bu	1,505	1,345	-160	-10.6%
Ending stocks	Mil bu	145	135	-10	-6.9%
Average price	$/bu	13.00	14.25	1.25	9.6%
Sorghum					
Production	Mil bu	335	247	-88	-26.3%
Feed and residual	Mil bu	90	125	35	38.9%
Food, seed, industrial	Mil bu	90	60	-30	-33.3%
Exports	Mil bu	140	65	-75	-53.6%
Ending stocks	Mil bu	42	21	-21	-50.0%
Average price	$/bu	4.25	7.30	3.05	71.8%
Wheat					
Production	Mil bu	2,245	2,269	24	1.1%
Food use	Mil bu	945	950	5	0.5%
Feed and residual	Mil bu	230	350	120	52.2%
Exports	Mil bu	1,150	1,050	-100	-8.7%
Ending stocks	Mil bu	735	716	-19	-2.6%
Average price	$/bu	6.10	7.90	1.80	29.5%

Table 2—Change in crop production and use estimates for selected crops, 2012 crop year (continued)

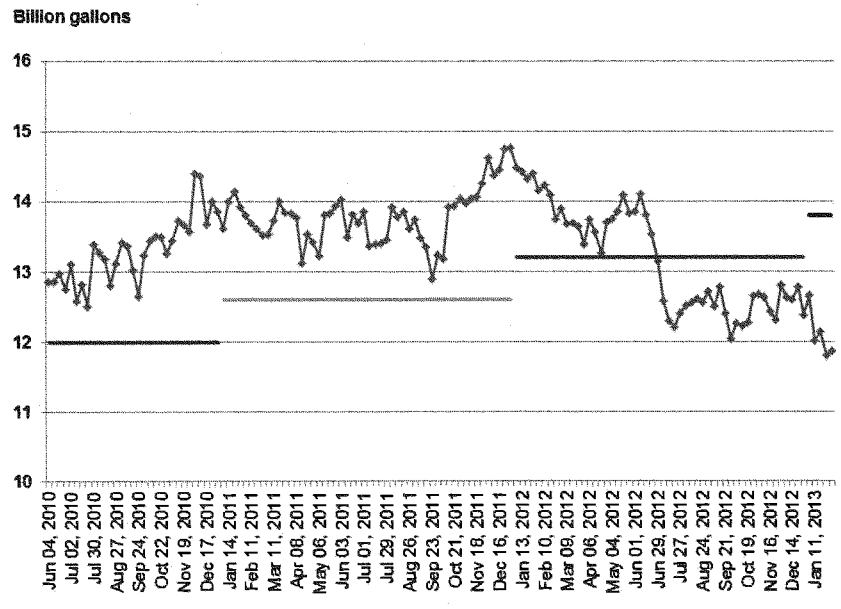
Crop	Unit	USDA projection/ estimate as of:		Change	Percent change
		5/10/2012	1/11/2013		
Rice					
Production	Mil cwt	183.0	199.5	16.5	9.0%
Domestic	Mil cwt	123.0	125.0	2.0	1.6%
Exports	Mil cwt	89.0	106.0	17.0	19.1%
Ending stocks	Mil cwt	27.0	30.1	3.1	11.5%
Average price	$/cwt	15.8	14.9	-0.9	-5.7%
Cotton					
Production	Mil bales	17.0	17.0	0.0	0.1%
Mill use	Mil bales	3.5	3.4	-0.1	-2.9%
Exports	Mil bales	12.0	12.2	0.2	1.7%
Ending stocks	Mil bales	4.9	4.8	-0.1	-2.0%
Average price	Cents/lb	75.0	68.5	-6.5	-8.7%

Figure 2--Ethanol producer net returns above variable costs



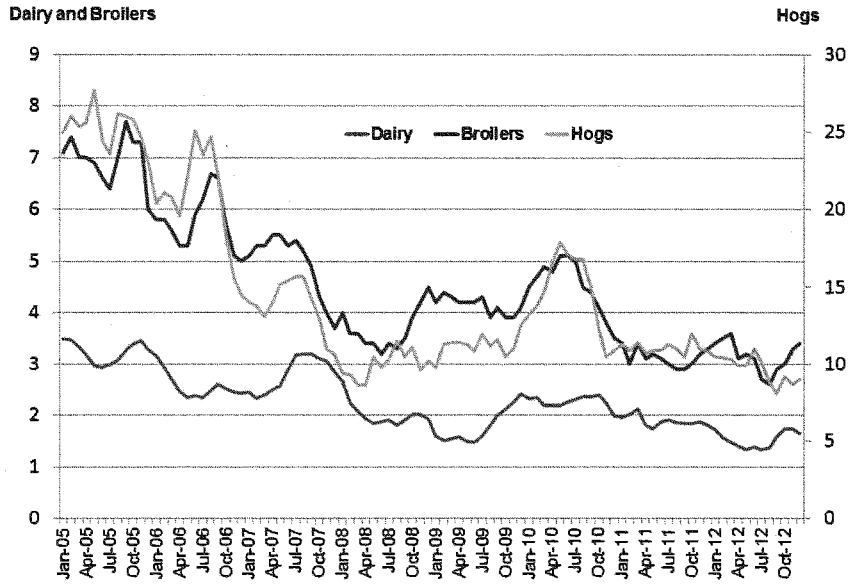
Source: Based on spot prices from USDA-AMS and forecasts for natural gas and electricity prices from EIA.

Figure 3--Weekly ethanol production (annualized)



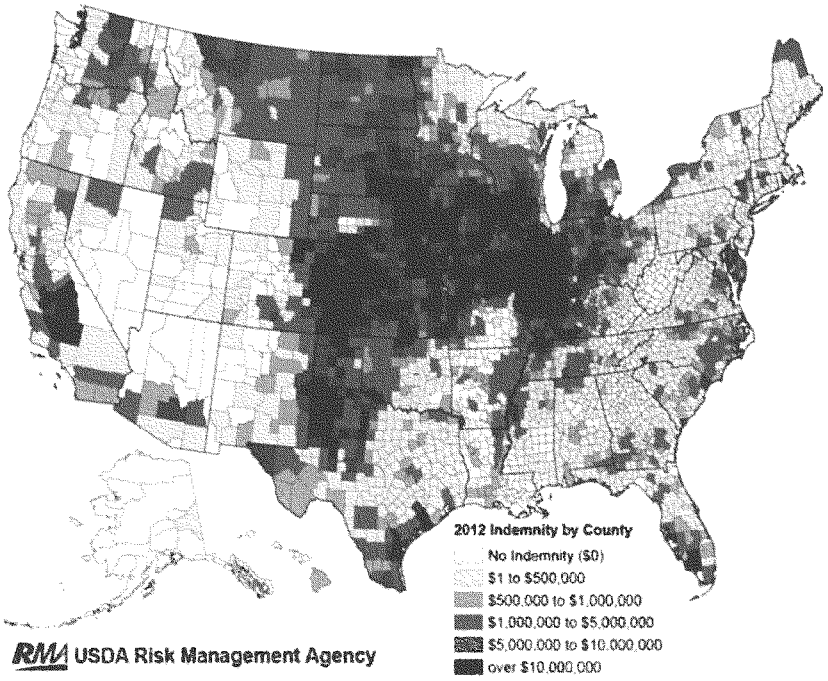
Source: EIA.

Figure 4--Feed ratios (2005 – 2012)



Source: National Agricultural Statistics Service

Figure 5—Indemnities for 2012 crops (as of 02/4/2013)



Source: available online at http://www.rma.usda.gov/data/indemnity/index.html.

Table 3—Summary of business for top 5 crops, 2012 crop year

Crop	Premium	Indemnity	Loss ratio
Corn	4,317.4	9,270.1	215%
Soybeans	2,345.3	1,853.4	79%
Upland cotton	834.0	1,026.7	123%
Wheat	1,781.9	727.3	41%
Grain sorghum	213.9	392.4	183%
Other	1,578.8	958.8	61%
Total	11,071.3	14,228.7	129%

Source: FCIC Summary of Business, February 11, 2013

Table 4—Summary of business for selected states, 2012 crop year

State	Premiums	Indemnities	Loss ratio
Illinois	771.5	2,344.4	304%
Iowa	901.7	1,725.2	191%
Nebraska	666.1	1,408.5	211%
Kansas	807.7	1,322.3	164%
Texas	1,079.2	1,318.4	122%
South Dakota	699.2	1,072.8	153%
Missouri	366.2	963.9	263%
Indiana	436.9	851.9	195%
Kentucky	144.2	380.0	264%
Wisconsin	269.0	356.8	133%
Ohio	325.6	318.7	98%
Colorado	217.5	253.7	117%
Minnesota	823.7	237.2	29%
North Dakota	955.0	227.7	24%
Oklahoma	252.7	203.7	81%
Other	2,355.1	1,243.5	53%
Total	11,071.3	14,228.7	129%

Source: FCIC Summary of Business, February 11, 2013

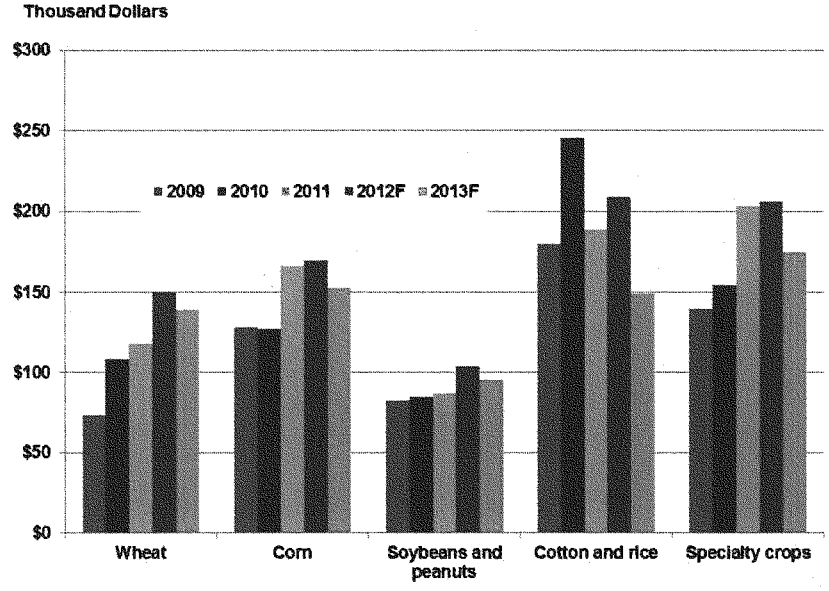
Table 5—Actions taken by USDA in response to the drought

Program	Action
Crop Insurance	Extended payment period to pay crop insurance premiums and allowed haying or grazing of cover crops without impacting the insurability of planted 2013 spring crops
Nutrition Assistance Programs	Purchased approximately $170 million of pork, lamb, chicken, and catfish for federal food nutrition assistance programs, including food banks, to help relieve pressure on American livestock producers and bring the nation's meat supply in line with demand.
Conservation Reserve Program (CRP)	Opened haying and grazing on previously ineligible practices and suspended rental payment penalties for emergency grazing provisions on CRP acres. In total, roughly 2.8 million acres under 57,000 CRP contracts utilized the emergency haying and grazing option providing between $140 million to $200 million in forage value and needed flexibility in livestock feed supplies. The rental payment reduction on emergency hayed and grazed acres was reduced from 25 percent to 10 percent.
Wetland Reserve Program (WRP)	Authorized haying and grazing of WRP easement areas in drought-affected areas where haying and grazing is consistent with conservation of wildlife habitat and wetlands.
Emergency Conservation Program (ECP)	Transferred $14 million in unobligated program funds into ECP to rehabilitate farmland damaged by natural disasters and for carrying out emergency water conservation measures in periods of severe drought.
Wildlife Habitat Incentives Program (WHIP) and Environmental Quality Incentives Program (EQIP)	Prioritized $16 million from the WHIP and EQIP to target states experiencing exceptional and extreme drought. Allowed producers to modify current contracts to allow for grazing, livestock watering, and other conservation activities to address drought conditions.
Disaster Declaration: • 2,333 counties for CY2012 • 704 counties for CY2013	Simplified the Secretarial disaster designation process and reduced the time it takes to designate counties affected by disasters by 40 percent. Qualifies farm operators in the areas eligible for low-interest emergency loans. Updated the emergency loans application process to allow loans to be made earlier in the season, and reduced the emergency loan rate.
Conservation Innovation Grants	Authorized up to $5 million in grants to evaluate and demonstrate agricultural practices that help farmers and ranchers adapt to drought.

Table 6—Expired and Unfunded Disaster Provisions under the 2008 Farm Act

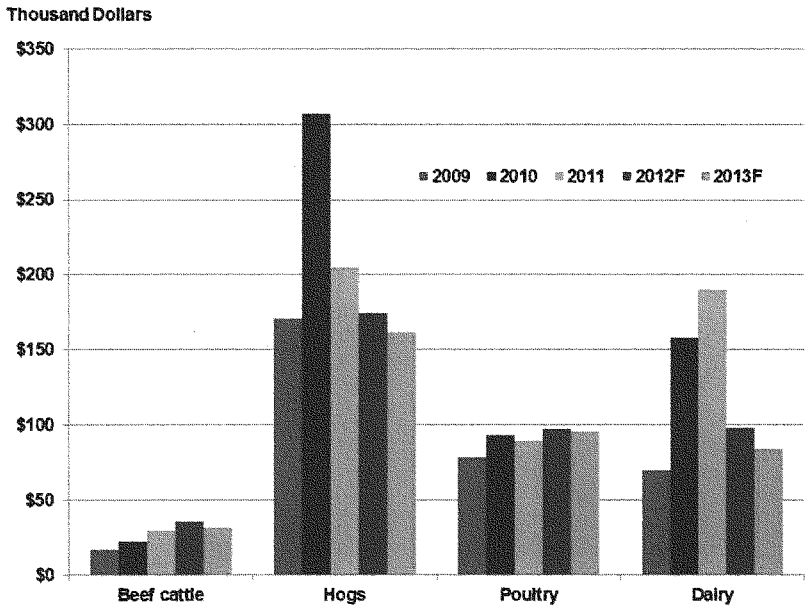
Program	Description
Livestock Forage Disaster Assistance Program (LFP)	Provided compensation to eligible livestock producers that suffered grazing losses for covered livestock on land that is native or improved pastureland with permanent vegetative cover or is planted specifically for grazing. The grazing losses must have occurred on or after Jan. 1, 2008, and before Oct. 1, 2011.
Livestock Indemnity Program (LIP)	Provided benefits to livestock producers for livestock deaths in excess of normal mortality caused by adverse weather that occurred on or after Jan. 1, 2008, and before Oct. 1, 2011, including losses because of hurricanes, floods, blizzards, disease, wildfires, extreme heat, and extreme cold. The livestock death losses must also have occurred in the calendar year for which benefits are being requested.
Emergency Assistance for Livestock, Honeybees, and Farm-Raised Catfish (ELAP)	Provided emergency relief to producers of livestock, honey bees, and farm-raised fish. Covered losses from disaster such as adverse weather or other conditions, such as blizzards and wildfires not adequately covered by any other disaster program occuring before Oct. 1. 2011.
Tree Assistance Program (TAP)	Provided financial assistance to qualifying orchardists and nursery tree growers to replant or rehabilitate eligible trees, bushes and vines damaged by natural disasters occurring on or after Jan. 1, 2008, and before Oct. 1, 2011
Supplemental Revenue Assistance Payments (SURE)	Expired: provided assistance to producers suffering crop losses due to natural disasters occurring through Sept. 30, 2011.

Figure 6--Net cash income for farm businesses that specialize in crop production



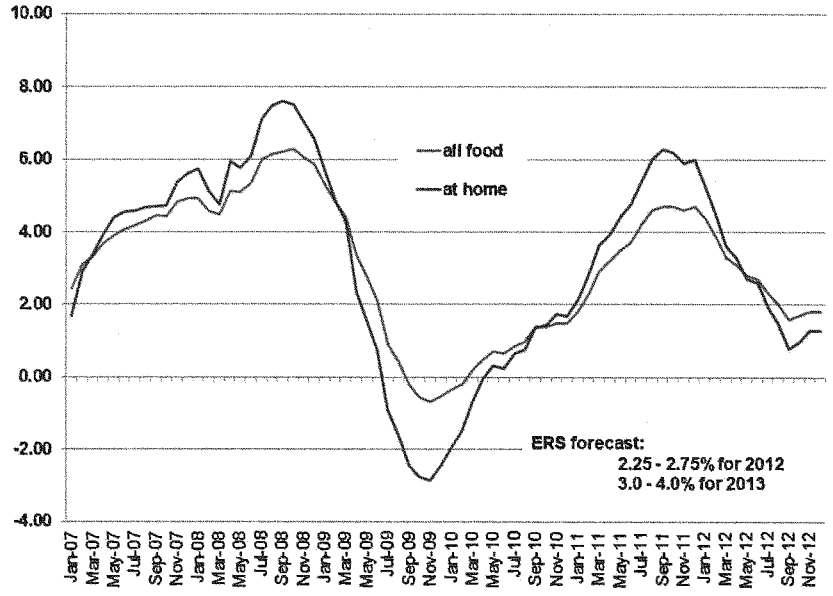
Source: USDA Economic Research Service (http://www.ers.usda.gov/topics/farm-economy/farm-sector-income-finances.aspx)

Figure 7--Net cash income for farm operations that specialize in livestock production



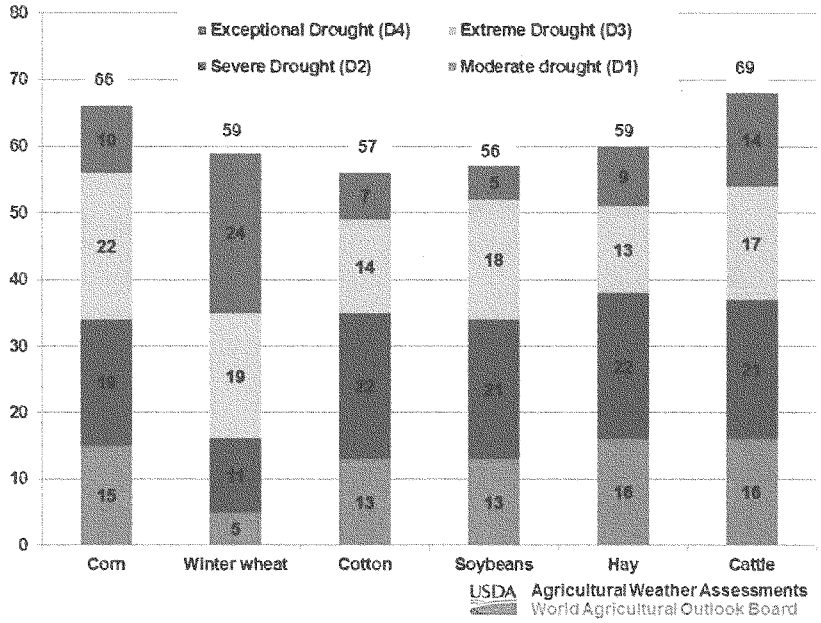
Source: USDA Economic Research Service (http://www.ers.usda.gov/topics/farm-economy/farm-sector-income-finances.aspx)

Figure 8--Food CPI (2007 – 2013)



Source: BLS.

Figure 9--Percent of crop production in drought (as of January 29, 2013)



Source: USDA Joint Agricultural Weather Facility.

Weather and the LaSalle Ranch

Written Statement for the Record

Leon LaSalle
President, LaSalle Ranch Inc.
Havre, Montana

Drought, Fire and Freeze:

The Economics of Disasters for America's Agricultural Producers

Before the United States Senate
Committee on Agriculture, Nutrition and Forestry

The Honorable Debbie Stabenow, Chairwoman

February 14, 2013
Washington, D.C

Thank you, Chairwoman Stabenow, Ranking Member Cochran, Montana Senator Baucus and members of this committee for today's opportunity to share my experiences regarding the Federal Livestock Disaster Programs.

My name is Leon LaSalle and I am a Native American rancher from Rocky Boys Indian Reservation located in north central Montana approximately 100 miles north east of Great Falls. I am president of LaSalle Ranch Incorporated, a family ranch corporation that includes my wife Shannon, my parents Robert L. and Jenny, my brother Robert W. and his wife Susie. Together we raise Black Angus cattle in and around the beautiful Bears Paw Mountains, a mountain range making up a large part of the Rocky Boys Indian Reservation.

Currently I serve as a member of the Montana Stockgrowers Association Board of Directors and as the President of the Rocky Boys Cattlemen's Association.

My maternal Grandfather Frank Billy and his sons were among the first residents of Rocky Boy to become cattle ranchers, and today, as in the past, we manage our ranching operation with future generations in mind. We have installed several conservation practices specifically designed to preserve and protect our natural resources and to help the land help us withstand nature's challenges that present themselves in the form of droughts, blizzards, wildfires and floods. Weather phenomena so severe that when encountered each can financially devastate a family ranching business.

Even though we have implemented these conservation measures there are times when my family's ranch has been struck so hard by weather related disasters that we have had to search for additional economic assistance...The Federal Livestock Disaster Programs have been that assistance.

My family and I have participated in the Bureau of Indian Affairs (BIA), ASCS and FSA disaster programs since the mid 1980's and I have been witness to some pretty dramatic changes through the years. With anything that changes, the change itself causes uneasiness as we attempt to learn the new program.

One thing that has always been a problem was the need to have Congress pass legislation in order for these programs to proceed. That changed in the 2008 Farm Bill. For the first time livestock disaster was included as part of the farm bill. This inclusion was definitely a positive and welcome change for livestock producers.

Those years when we have used these programs to help offset the painful financial consequences of a drought, fire, blizzard or flood have been tough years; and without the disaster programs we may not have been able to continue on. I know this is true especially for most Native American ranchers. The Native American Feed Program is a great example of a program that has helped keep Native American ranchers going after a weather related disaster. In drought years there is no hay. The normal option of feeding our livestock the hay we have produced is no longer available. At times like this ranchers like me must then purchase, at a premium, some or all of our livestock feed. Quite often, by the time the feed is trucked to the ranch the freight cost is more than the price of the feed itself.

Our family used the Emergency Livestock Assistance Program (ELAP) to help offset the financial effects of drought year 2008. We qualified for a payment to purchase replacement hay necessary to cover what we normally would have produced...but due to the drought conditions, we had little to no hay production to feed our livestock. We also have a current Livestock Indemnity Program (LIP) application pending. LIP is intended to provide financial assistance to help ranchers partially recover the value of calves that have perished. In my case that loss occurred during a terrible blizzard the winter of 2010-2011.

These programs provide the only financial relief a livestock producer has available when he finds himself faced with the loss of livestock or the forage necessary to feed them.

While crop producers have access to crop insurance, there is no insurance available for catastrophic livestock losses such as those experienced by Montana ranchers during the devastating wild fires in south eastern Montana during the summer of 2012. I have helped neighbors prepare applications for LIP and on one particularly sad occasion I participated as a third party witness when several cattle fell through the ice and drowned while they were trying to shelter themselves from the stinging cold, raging wind and blowing snow delivered by a harsh Montana blizzard.

While these programs are a welcome relief for producers they also come with a fair amount of frustration. Livestock producers like me typically do not work with the Farm Service Agency (FSA) staff and rules on a regular basis. If you do not have crops there is seldom a need to venture into the FSA office and for those ranching individuals the FSA office is an unfamiliar experience with unfamiliar rules.

For example a ranch family in Blaine County lost 160 tons of hay to fire when lightning struck their hay stack. The application was denied because that rancher had not purchased crop insurance on a small field of hay barley. There is also a rule requiring that an operator report a loss within 30 days of the loss event occurring. This time period needs to be extended. Very often all the losses have not even been assessed in 30 days. You need time to start your recovery from the disaster before having to prepare your data for and deliver it to your local FSA office.

The whole crop insurance thing needs to be dropped from the eligibility criteria. The LIP program is intended to provide assistance to livestock producers for livestock lost due to a natural disaster. This should not be another program for the crop insurance folks to cash in on. In general these programs need to be handled differently from other FSA programs because in most cases they are working with an entirely different crowd than those historically served by FSA. A much more streamlined process encouraging participation rather than discouraging participation would also be a welcome change to the programs.

I do believe these disaster programs should become continuous programs. If the livestock programs had some stability to them I believe that stability would benefit both the livestock producer and FSA. If the livestock programs were consistently available and if livestock producers were required to submit the necessary records annually much of the historical data FSA requires for disaster programs would already be in the FSA office.

Many of the problems we have as livestock producers, when we sign up for these programs, stems from FSA's administrative requirements and the lack of livestock producers gathering the type of data FSA requires. When a disaster is occurring seldom has the thought crossed my mind that I need to document my losses...at that given time I am normally just trying keep other calves from freezing to death. If I already had some baseline data delivered to FSA about my livestock operation I believe the program would work smoother and better for both parties.

For example the FSA handbook it states..." when appropriate use a normal calving rate of 90%"...this would only be appropriate if I had no records indicating the number of pregnant cows I started with. I however, try to use Best Management Practices (BMP's) and did have a record of pregnant cows. Meaning I had reason to expect all of them to calve. Additionally I had records demonstrating an industry average death loss of 3.5%. However, my local FSA office has interpreted the data to mean I have experienced a normal calving loss of 13.5%. A figure way above industry standards and certainly way above an acceptable economic thresh hold for calving deaths. It is this type of rule that makes the program unusable for producers. Livestock producers, who should, in fact, qualify for the program.

Mother Nature throws a variety of natural events in the path of a Montana rancher. Our weather is uncertain...sometimes severe and we find our markets are even vulnerable to the effects of drought. Drought has reduced the number of cattle and processing facilities have closed as a result. If the weather and markets are not the issue then many of my fellow ranchers are challenged by ever increasing predator losses.

In summary my experience with these programs would suggest the need for the following changes...

- The current system for determining drought needs to be revised
- The whole crop insurance thing needs to be dropped from the livestock eligibility criteria.
- The LIP program is intended to provide assistance to livestock producers for losses due to a natural disaster. This should not be another program for the crop insurance folks to cash in on.
- These programs need to be handled differently from other FSA programs. In most cases they are working with an entirely different crowd than those historically served by FSA.
- A streamlined process encouraging participation rather than discouraging participation would be a welcome change to the programs.
- Consistency...the programs need to be made permanent

In closing I want you all to know that I am proud of my family and my Native American Heritage...and I'm equally proud to be one of many Montana Ranchers working every day to deliver safe, healthy, environmentally wholesome beef to your families and to other families around world.

Thank you.

Respectfully submitted,

Leon LaSalle

TESTIMONY OF
DR. ROGER S. PULWARTY
DIRECTOR
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NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE

BEFORE THE U.S. SENATE COMMITTEE ON AGRICULTURE, NUTRITION, AND FORESTRY
February 14, 2013

My name is Roger S. Pulwarty and I am the Director of the National Integrated Drought Information System (NIDIS) at the National Oceanic and Atmospheric Administration (NOAA). It is my honor to be here today. Thank you for inviting me to speak about our program, report on the information and data that have been made available to local, state and regional water decision-makers, and how we can improve the information for anticipating and managing current and future drought conditions.

The NIDIS was established via the NIDIS Act of 2006 (Public Law 109-430, hereafter NIDIS Act), which builds on longstanding efforts among agencies and institutions that have historically focused on drought risk assessment and response. The NIDIS Act prescribes an interagency approach, led by NOAA, to "Enable the Nation to move from a reactive to a more proactive approach to managing drought risks and impacts." Our goals are to (a) improve public awareness of drought and attendant impacts and (b) improve the coordination and capacity of counties, states and watershed to reduce drought risks proactively.

An important feature of the weather conditions in 2012 was the *persistence* of the areas of dryness and warm temperatures, the *magnitude of the extremes*, and the *large area* they encompassed. Broad sectors were affected and continue to be affected by the 2012 drought. Impacts include, but are not limited to, the reduction in crop yields and commerce on major river systems. The summer drought of 2012 contributed to an unusually high number of acres in the United States (U.S.) burned by wildfires. According to the National Interagency Fire Center, there were over 9.2 million acres charred in wildfires in 2012 as of December 20th. A spokesman for the National Interagency Fire Center in Boise said, "Since 1960, when we began keeping good records, surpassing 9 million acres burned has only happened three times: this year, 2006 and 2007."

The Colorado Basin experienced only 44% of its annually expected runoff for Water Year 2012. The basin also experienced the second driest ten-year period in the streamflow record. Media reports carried news such as "Ski resorts in Colorado were seeing fewer visitors because of below normal snowfall. Skier visits to the 21 resorts in Colorado Ski Country USA were down 11.5% through the end of 2012, compared to the previous year. At Loveland Ski Area, just 40 of the 93 runs were open during the third week of January."

The dry weather (which lowered moisture supplies), coupled with intense spring and summer heat (which increased evapotranspiration and, thus, moisture demand), depleted soil moisture, lowered streamflow (May, June, July, August), reservoir and stock pond levels, and ravaged crops and livestock. By year's end, low river levels threatened commerce on the vital Mississippi River shipping lanes.

It is as yet uncertain as to whether the economic impacts of the 2012 drought will exceed prior events. The 1988 drought inflicted $78 billion in losses and the 1980 event caused $56 billion in losses (adjusted for inflation to 2012 dollars)[1]. While an independent insurance company has estimated that the costs of the 2012 drought to be in excess of $35 billion with agriculture accounting for most of the losses[2], it is important to note that drought related impacts over the past year cross a broad spectrum of economic and environmental services sectors from wildfire to energy, tourism and recreation.

In my testimony I will highlight what we know about the following questions and issues:

How did we get here? Status and antecedent conditions.
Is this drought like others? Why has it been dry/drier than normal?
What are the impacts and where are they occurring?
What information is being provided and by whom? Are information needs being met?
How bad might it get and how long will it last?
How is NOAA working with other Federal agencies such as the USDA?

Information for this testimony is drawn from NIDIS and its supporting partners including NOAA's Climate Prediction Center, NOAA's Earth System Research Laboratory's Physical Sciences Division, NOAA's National Climate Data Center, NOAA's River Forecast Centers, and NOAA's Regional Integrated Sciences and Assessments, the National Drought Mitigation Center (NDMC) at the University of Nebraska Lincoln, the U.S. Army Corps of Engineers, the Department of the Interior (U.S. Geological Survey (USGS), the Bureau of Reclamation), the U.S. Department of Agriculture (USDA)'s Office of the Chief Economist and Natural Resources Conservation Services, National Aeronautics and Space Administration (NASA), the National Interagency Fire Center, the Western Governors Association and Western States Water Council, Regional Climate Centers, State Climatologists, and State and Tribal Water Resources Departments, among others.

Drought in the U.S.: How did we get here? And have we been here before?

Drought is part of the American experience. Severe, long-lasting droughts have occurred in the Southwest during the 13th century, and in the central and lower Mississippi Valley in the 14th through 16th centuries. The great Civil War drought of 1861-1864 led to the first water rights agreement in the West - in the San Luis Valley in the state of Colorado where I live. In the 20th century, droughts in the 1930s (Dust Bowl era) and 1950s were

[1] http://www.ncdc.noaa.gov/billions/events.pdf
[2] Aon Benfield Reinsurance Group's Annual Global Climate and Catastrophe Report

particularly severe and widespread. In 1934, 65% of the contiguous United States was affected by severe to extreme drought. These extreme events, including droughts of shorter duration but nevertheless severe such as in 1977, have been felt throughout economies, ecosystems, and livelihoods, and certainly shaped much of the planning and practice surrounding modern water resources management and related decisions.

Since 2000, the total U.S. land area affected by drought of at least moderate intensity has varied from as little as 7% of the contiguous U.S. (August 3, 2010) to as much as 46% of the US land area (September 10, 2002). Based on weekly estimates of the areal extent of drought conditions since 2000, the average amount of land area across the United States affected by at least moderate-intensity drought annually has been 25%.
As mentioned earlier, an important feature of the weather conditions in 2012 was the *persistence* of the areas of dryness and warm temperatures, the *magnitude of the extremes*, and the *large area* they encompassed.

Figure 1 (attached) shows the progression of drought conditions since 2010 to the present. 2012 began with about 32% of the contiguous U.S. in moderate to exceptional drought with three areas of moderate to exceptional drought in the Southern Plains and moderate to extreme drought in the Southeast — with areas of moderate to severe drought in the Upper Mississippi Valley and moderate drought in the Far West. As the year progressed, the western drought expanded to link with the Southern Plains drought area and new drought areas developed along the East Coast, pushing the national drought area to 38.2% by May 1st. Drought re-intensified suddenly in May and strengthened through July and August, which inhibited summertime convection/rainfall and some locations experienced exceptionally dry conditions with 30-60 days having no precipitation event. One of the causes of this drought re-intensification was the unusual high pressure that reduced the southward push of cold fronts from the North that typically serves to organize rainfall during this time. An interagency task force on drought that includes NOAA, NASA, and works with NIDIS, is researching the cause of this re-intensification. Dryness during the late spring began to take its toll in the agricultural heartland by summer as drought intensified and expanded to cover much of the country from the Central Rockies to the Ohio Valley, and the Mexican border to the Canadian border, by the end of August. This solid mass of drought, which stretched from border to border and (by now) West Coast to Mississippi River, persisted through the fall. According to the U.S. Drought Monitor (USDM – maintained by the USDA, NOAA, and the NDMC, the area in drought peaked at about 65.5% on September 25 (a new high in the 1999-2012 USDM record) and ended the year at 61.1%. The areas in extreme to exceptional drought reached maximum coverage on August 7, at 24.1% of the U.S. Since the end of summer, soil moisture conditions remained depleted since the mid-West was going through its normal drier season.

2012 ended as one of the driest years on record having had much of the country over or near 60% in moderate to extreme drought. Only 1934 had more months with more than 60% of the contiguous U.S. in moderate to severe drought.

Year Month and % Area under Moderate or stronger drought conditions over the U.S.

1934 May 73.1 Jun 74.1 Jul 79.9 Aug 77.5 Sep 70.2 Oct 67.7
1939 Dec 62.1
1954 Jul 60.4 Dec 59.5
2012 Jul 62.8 Aug 60.0 Nov 60.0 Dec 61.8

The 10 driest years ranked in order of their summer (May-August) rainfall in the mid-West deficits are: 2012, 1934, 1936, 1901, 1976, 1913, 1988, 1953, 1911, and 1931. The deficit in rainfall over the mid-West in 2012 was -34.2 mm, which was about 53% of the region's long-term mean rainfall (73.5 mm). This deficit broke the record of -28.4 mm observed in 1934. In May and June (Figure 1, attached), a zonal ridge of high pressure anomalies inhibited the typical southward push of cold fronts from Canada that often serve to organize widespread rains.

When the month-to-month variability is averaged out a consistent pattern becomes evident — the drought years 1955 and 1956 are the closest historical analogs to the geographical pattern of drought in 2012, and 1998 (the second warmest year on record) and 2006 (third warmest year on record) are the closest historical analogs to 2012 for the spatial temperature pattern. The average temperature nationwide during the six month period from January-June 2012 was 52.9 degrees Fahrenheit, or 4.5 degrees above average.

Many local records were also set this past year. For instance, on June 26, Red Willow, Nebraska set a temperature record of 115 degrees, eclipsing the 114-degree mark set in 1932. 28 states east of the Rockies set temperature records for the six-month period, putting further pressure on agricultural irrigation requirements and direct plant crop stress, on energy demands for cooling and water storage management.

The following summarizes key features of the 2012 drought as experienced across different regions of the U.S. over the year (Figure 1, attached):

- Persistent and anomalous heat resulted in the warmest month ever in July 2012, and 2012 was ranked as the warmest year on record for the contiguous U.S.
- During the May – July growing season, dry weather dominated across the agricultural areas in the Central Plains to the Midwest.
- The anomalous warmth increased evaporation and intensified drought conditions during the growing season.
- As the year progressed, the western drought expanded to link with the Southern Plains drought area and new drought areas developed along the East Coast.
- Record heat and near-record dryness occurred in Colorado, contributing to numerous wildfires.
- Several states had record dry seasons: Arkansas (April-June and other seasons), Kansas (May-July), Nebraska (June-August and other seasons), and South Dakota (July-September).
- The prolonged dryness in parts of the Southeast gave Georgia the driest December-November 24-month period (December 2010-November 2012) on record.

- Several river basins have experienced unusually dry conditions during 2012, with the Upper Colorado having one of its driest years in the 1895-2012 period in the record.
- The spatial pattern of drought this year closely overlaid the agricultural area of the U.S. heartland, and the excessive temperatures and lack of rain during the critical growing season severely reduced corn and soybean crop yield.
- The extreme severity of the dryness and evapotranspiration demand over the growing season resulted in a rapid increase in the percent area of this agricultural belt experiencing moderate to extreme drought (as defined by the Palmer Drought Index) and moderate to exceptional drought (for the Midwest and High Plains as defined by the USDM).

The Southern U.S. Drought 2011-2012

As early as the summer of 2010, NOAA's Climate Prediction Center (CPC) predicted that La Niña conditions would increase the potential for drought formation across the southern United States. The forecast for drought formation was verified, and the Fall 2010 drought was one of the most severe multiple-year droughts on record. It continued into the following year with the 2011 Water Year in Texas being the driest in 100 years. Just looking at agricultural-related impacts, losses were close to $9 billion[3].

The data, tools and experience from NIDIS activities were brought to bear during the onset of drought in the Southern U.S. in Fall 2010. NIDIS, with NOAA's National Environmental Satellite and Data Information Service (NESDIS) and the National Weather Service (NWS), in partnership with the States of Texas, Oklahoma, New Mexico, and other partners, conducted a series of drought information outlooks related to that drought. The drought information outlooks are a new approach to improve communication and delivery of drought early warning information for planning and risk management. The research, impacts assessments, and coordinating mechanisms supported by NIDIS improved coordination and usability of drought information in Texas. NIDIS engaged local partners such as the regional weather and climate offices and state climatologists to lead this effort together with researchers and products from NOAA's Earth System Research Laboratory, the NWS Climate Prediction Center (CPC) and other Federal entities. From this research, it became clear that La Niña was a critical initiator but not the main driver of ensuing drought severity and duration, which highlighted the need for additional research. This work has gained attention in national media, including the Wall Street Journal on January 2, 2012), which carried one of the outlooks created by NIDIS.

The National Drought Status and Outlook for U.S. Regions through April 2013 (Figures 2 and 3, attached)

The NWS forecast products utilized to create the summary and outlook include the Hydrometeorological Prediction Center's (HPC) 5-day Quantitative Precipitation Forecasts(QPF) and 5-day Mean Temperature prognoses, the 6-10 Day Outlooks of

[3] "Impact of the 2011 Drought and Beyond" Report (Texas Comptroller report)
Link: http://www.window.state.tx.us/specialrpt/drought/pdf/96-1704-Drought.pdf

Temperature and Precipitation Probability, and the 8-14 Day Outlooks of Temperature and Precipitation Probability, valid as of late Wednesday, February 6, of the USDM release week.

The NWS forecast is available at: http://www.cpc.ncep.noaa.gov/products/forecasts/.

Dryness Categories:

D0 ...Abnormally Dry...used for areas showing dryness but not yet in drought, or for areas recovering from drought.

Drought Intensity Categories:

D1 ... Moderate Drought ; D2 ... Severe Drought ; D3 ... Extreme Drought ; D4 ... Exceptional Drought

Drought or Dryness Types:

S ... Short-Term, typically <6 months (e.g. agricultural, grasslands)
L ... Long-Term, typically >6 months (e.g. hydrology, ecology)

The Northeast: Below normal temperatures and virtually no precipitation across the region are leading to no changes with regard to the remaining D0.

Mid Atlantic: After back-to-back wet weeks for most of the region, drying and cool temperatures this past week, resulted in a status quo depiction on the map.

The Southeast: The Southeast also turned predominantly dry and warmer. One major difference between 1934 and 2012 was in the Southeast United States-which was not significantly affected during the "Dust Bowl" but is experiencing continuing dry conditions today. The most notable changes occurred in Georgia, South Carolina and Florida. The border region along the Savannah River between Georgia and South Carolina saw an expansion of extreme drought (D3) to the coast along with a deepening of severe drought (D2) in southern South Carolina and southern Georgia. Florida saw a 1-category expansion in abnormally dry areas (D0) across most of the Florida Peninsula along with moderate (D1) and severe drought expansion (D2) also noted in the Panhandle. In addition, there was also a slight pushing south and west of moderate drought (D1) and severe drought areas (D2) in southern Alabama where recent rains have missed and the dry trend continues to intensify. Drought conditions remain through much of the Apalachicola/Chattahoochee/Flint River Basin (ACF). From 2 to 5 inches of rain in the upper part of the basin in past weeks providing some relief, but less than 0.5 inch fell in the lower half of the basin. There have been no significant tropical events in the basin for the past three years. Although streamflows have increased in the lower basin, they remain near historic low levels for this time of year as do ground water levels in Southern Georgia. Lake Lanier has also begun to see near normal inflows. Despite this relief, much of ACF remains under extreme (D3) or exceptional (D4) drought conditions. Streamflows on the Flint River show some recovery, however, they remain at or near historical lows at many locations. For the 3-month streamflow forecast, all locations have the greatest probability for below normal flows.

The South: Very warm temperatures (10 to 15 degrees above normal was commonplace) and dryness marked weather conditions across most of the region. Those conditions, coupled with a return to a drier season, leads to mostly minor shifts and slight deterioration across most of Texas and southwestern Oklahoma as well. Arkansas remains unchanged from last week but the recent wet pattern continues to indicate improved conditions, particularly in central and northeastern reaches.

Midwest: There was some late period precipitation across northeastern Iowa, northern Illinois and southern Wisconsin this past week, but given the deficits, lack of impacts and frozen top soils, it is not enough to move the drought off its mark, so it has remained at status quo.

The Plains: The region remained unseasonably warm except for the Dakotas, but all shared in the all-too-common persistent dryness with no major precipitation outbreaks occurring last week. As such, the drought is firmly entrenched into February. The relative lack of winter snow in back-to-back years will certainly place a much greater emphasis on the need for well above-normal spring rains if the region is to have any real chance of recovering from this drought. No changes of note on the map this week in what is now becoming the epicenter of the 2013 drought.

The West: The West saw a mixed set on both the temperature and precipitation fronts last week as much of the Rocky Mountain spine region and the Southwest experienced well above normal temperatures. The Pacific Northwest remained the exception by staying cooler and wetter. Across central Arizona, anywhere from 2-4 inches of precipitation or more were observed, bringing about 1-category improvements to the moderate to extreme drought (D1-D3). Longer-term dryness/drought is still a concern, but this system provided some much needed moisture. Northwestern New Mexico shared in the same system, but not nearly to the degree seen in central Arizona and southwestern Colorado. However, this was enough to remove the extreme drought (D3) intensity category from New Mexico, although many basins are still running below normal with regard to snow water equivalent (SWE) levels, meaning the severe drought (D2) remains. Similarly, for southwestern Colorado, the system helped boost SWE values, but not enough to move them out of severe drought (D2) given the chronic dryness stretching back to last winter. Ample rains along the southern coast of California lead to a 1-category improvement from D1 to D0, or moderate to abnormally dry, and a push of the moderate drought D1 category westward off the coast from San Diego to Santa Barbara. Finally, well to the north in and around the Idaho Panhandle and northwestern Montana, precipitation last week led to a trimming of the abnormally dry region (D0), primarily on the Montana side of the Divide, although the D0 is still left intact (albeit in a diminished state given the lagging SWE). For the Colorado Basin a second year of lower than average flows seems in the offing unless conditions change dramatically. Snowfall has been low for a 2nd winter in a row. This does not bode well for the runoff season since 42% variance of CO River runoff is related to Fall moisture. The next two weeks show above-average chances for moisture in northern CO in particular, but not nearly enough to make up for lost ground. Given the continuing Pacific Decadal Oscillation-Atlantic Meridional Oscillation

setup for drought, a projection of drier than normal conditions is justified for over next few months.

Hawaii, Alaska, and Puerto Rico: The rains of recent weeks have brought some improvements to parts of the Hawaiian Islands and this trend seems to still be occurring, but this week's map remains unchanged as local impact assessments continue to weigh short-term improvement vs. the long-term chronic drought that has persisted since 2008. Conditions remain unchanged in Alaska and on Puerto Rico.

Looking Ahead:
The NWS HPC 5-Day forecast calls for a potential storm system to bring moisture to the Pacific NW and into the northern Rockies. Another system will push eastward, bringing with it good chances for 1-2 inches of rain, or more, to the Gulf Coast region, and up the Appalachian spine into the Northeast. Temperatures are expected to be above normal across most of the West and central-southern Plains. Below-normal readings will be most pronounced in the Great Lakes region and unseasonably cool weather is expected to encroach across the rest of the East Coast and down into Florida.
The Climate Prediction Center's 6–10 day outlook (February 5 thru February 9) is showing a strong likelihood for above-normal temperatures across the Southwest, South, Great Plains and Midwest. The New England region and north coast of California and south coast of Oregon can expect below-normal readings. As for precipitation, the wet trend is expected to continue across a good portion of the Desert Southwest and within the Midwest and Northeast. Drier conditions are to be expected along the Gulf Coast and into the coastal Carolinas, enveloping all of Florida as well.

Since the beginning of 2013, drier and colder weather prevailed over the West after a relatively wet December. In the Great Basin and central Rockies, 2-week temperature departures averaged 10 to 20 degrees F below normal. Farther east, however, a series of slow-moving cold fronts embedded with surface lows brought surplus precipitation to the southern Plains (eastern New Mexico and Texas), parts of the central Plains (western Oklahoma and central Kansas), and the lower Mississippi, Tennessee, and Ohio Valleys, providing some relief from the drought. Portions of the northern Rockies and Plains and upper Midwest also saw above normal year-to-date precipitation. Temperatures in the eastern half of the Nation have quickly moderated after a cold start to the year. Elsewhere, mostly dry weather exacerbated drought conditions in the Southwest, central Plains and western Corn Belt, and eastern Gulf and southern Atlantic Coasts. In Hawaii, shower activity has increased during the past 2 weeks, mostly falling on windward locations and northern islands.

According to the CPC, a much drier pattern is expected over the upcoming three months across the southern third of the Nation (from central California to the eastern Gulf Coast). This limits the prospects for further drought improvements during the latter end of the wet season in California, Nevada, and western Arizona, and in fact, increases the probabilities for drought development and deterioration in the tri-State area. This also marks a change from recent wet conditions in the southern Plains and western Gulf Coast as drought development and persistence is forecasted for Texas by the end of April.

Similarly, drought development and persistence is possible in the eastern Gulf Coast States, but less likely further north. Thus, the National Wildland Significant Fire Potential Outlook indicates Spring pre-greenup potential and long term drought may keep parts of the West and the Southeast in above normal wildland fire potential for April-May. In contrast, enhanced probabilities of surplus precipitation and subnormal temperatures across the northern U.S. (from the northern Rockies eastward to the upper Midwest and into the western Corn Belt) increase the odds for drought improvement. Some improvement is possible across the middle Mississippi Valley and the Piedmont, the latter area from wetness forecast for the rest of the month. With odds favoring subnormal Feb-Mar-Apr rainfall, drought conditions should persist across the leeward sides of Hawaii's southern islands and possibly expand toward windward sides during the latter end of the winter rainy season.

NOAA and the USDA: Working together to increase the Nation's Resilience to Drought

The number of watershed, state, and local drought and water plans using NOAA-based information has significantly increased since NIDIS was initiated in 2007. Part of the support that NIDIS has generated and the ability of the program to meet the needs of the Nation are a result of the strong partnerships that the program has with other agencies, outreach organizations, and an enabling set of programs and observational capabilities. NIDIS called on these partnerships in December 2012 and convened a National Drought Forum (hereafter, "Forum") hosted at the National Governors Association Hall of States here in Washington D.C. The Forum was co-chaired by Dr. Robert Detrick, the NOAA Assistant Administrator for Oceanic and Atmospheric Research and Dr. Donald Wilhite, founder of the University of Nebraska National Drought Mitigation Center (NDMC). The Forum featured keynote addresses from Secretary Vilsack (USDA), Gov. Brownback of Kansas and the NOAA Deputy Administrator Dr. Kathryn Sullivan. The Forum was co-sponsored by the National, Mid-Western, Southern and Western Governors Association, the U.S. Army Corps of Engineers, and the Department of the Interior and saw significant participation at high levels by these agencies and by regional and local agriculture, health, and water managers. The goals of the Forum were: "To understand the extent of 2012 drought impacts and response in 2012, and help provide new information and coordination for improving the nation's drought readiness for 2013 and in the future."

Among other issues, discussions at the National Forum highlighted the need to:

- Increase public awareness of this year's drought and potential impacts for next year;
- Increase technical assistance for the communication and use of drought-related information in impacted communities including efforts through the NIDIS regional early warning systems in partnership with NDMC; and
- Ensure sustained support for monitoring programs and equipment critical to understand and respond to drought, e.g. the National Resources Conservation Service SNOwpack TELemetry (SNOTEL) sites; and the Water Census led by the USGS.

Recommendations from the Forum are being finalized across the multiagency and multistate planning team and should be circulated to participants in the next week. NOAA will be happy to provide a copy of the Forum Report to this Committee after its review is completed. Through the Economic Development Administration and NIDIS, the Department of Commerce (DOC) is working closely with USDA and other agencies within the National Disaster Recovery Framework for Drought, with a strong focus on the recovery needs and sustainability of rural communities. Critical preliminary efforts will be built on the DOC-USDA Memorandum of Understanding (MOU) announced at the Forum and signed by the Secretary of Agriculture and the Acting Secretary of Commerce in December 2012. This MOU is aimed at improving cross-agency collaboration on drought risk reduction. The agreement is intended to (1) strengthen Commerce's and Agriculture's development and delivery of relevant local and regional drought information services to agricultural, forestry, rural economies, and related sectors; and (2) foster improved understanding by end-users in these sectors of the value and use of weather and climatological information and its integration with social and economic information, in planning and operational activities for farming and forestry communities.

To achieve a more comprehensive vision of a truly "national integrated drought information system" requires improvements that NIDIS has already begun to address. These include:

- Improving the understanding and predictability of droughts across a variety of timescales for seasonal, to interannual and decadal time scales including the role of precipitation events in reducing drought duration and intensity;
- Improving collaboration among scientists and managers to enhance the public awareness and effectiveness of observation networks, monitoring, prediction, information delivery, and applied research;
- Improving the national and regional drought information framework by transferring successful approaches (information development, products, capacity, and coordination) to areas covered by the drought portal, but not yet having active early warning systems;
- Improving coordination between institutions that provide different types of drought early warning;
- Developing impact indicators to form part of a comprehensive early warning system; and
- Working with the private sector and others on guidance and standards for developing value-added products to support drought plans.

Included at the end of this written testimony is a brief Appendix that provides examples of ongoing regional and local drought-related efforts between the USDA and NOAA.

Thank you for the opportunity to be with you today.

APPENDIX: Examples of ongoing regional drought-related efforts between USDA and NOAA

The USDM[4] sets the standard for communicating location and intensity of drought to a broad audience. The map summarizes and synthesizes information from the local and state level to the national scale, making it the most widely used gauge of drought conditions in the country. Policy makers use it to allocate relief dollars, states use it to trigger drought response measures, and media rely on it. The map is produced in partnership with numerous agencies including NOAA, including the Climate Prediction Center, the National Climatic Data Center, and the Western Regional Climate Center; the U.S. Department of Agriculture's Office of the Chief Economist, including the Joint Agricultural Weather Facility and the World Agricultural Outlook Board; and the National Drought Mitigation Center at the University of Nebraska-Lincoln. Support for the USDM is provided on a voluntary basis through in-kind contributions of time and expertise. There is no devoted funding or budget for this process.

NIDIS Regional Climate Outlook Forums

Climate Outlook Forums bring together a diverse group of stakeholders, including many from the agricultural community, on a seasonal basis to focus and discuss current drought conditions and the potential for changes in those conditions. Current and future drought impacts in all economic sectors are discussed with an eye on possible strategies for mitigation. Strategies for communicating with vulnerable and at risk populations, as well as the media, are examined. These climate outlook forums result in regional outlooks and summaries of ongoing and potential conditions related to drought including water resources, wildfires, etc. that are released jointly by NOAA and the Western Governors Association.

From 2010 through 2012, several Climate Outlook Forums were conducted with the support of NIDIS:

- Albany, GA
- Austin, TX
- Fort Worth, TX
- Upper Colorado River Basin
- Upper Mid-West
- Lake Lanier, GA
- Lubbock, TX
- Santa Fe, NM

NIDIS is supporting efforts to reinforce and expand this activity in other regions of the country, utilizing the Regional Drought Early Warning System. The results of these appear on www.drought.gov and other partner websites, such as www.westgov.org.

Education and Outreach Webinars with Preparedness Communities

[4] http://drought.unl.edu/AboutUs.aspx

These following NIDIS supported activities are designed to delve more deeply and comprehensively into specific aspects or impacts of a drought disaster. The audiences for these educational activities to increase awareness include the regional stakeholders, agricultural commodity groups, as well as the media, with a goal of sustaining information and processes that will reduce or mitigate impacts on an ongoing basis. The goal of this outreach is intended to build capacity outside time of crisis.

Drought preparedness advice and planning are carried out by water-dependent managers such as State Engineers, Water Availability Task Forces, farmers, agribusinesses, land managers, city councils, and others. However, the results of drought-related research, including data analyses, are not always disseminated in a timely fashion or through easily accessible or compatible modes for incorporation into risk management.

Identification and development of drought triggers and indicators requires active engagement among research, information brokers, and stakeholders in various sectors responsible for managing drought-related risks. Many of the lessons learned following drought events can be documented with post-drought assessments to ensure that these critical lessons are not lost. Post-drought assessments are a key step within the drought planning process, and NIDIS is learning from existing networks, such as Cooperative Extension, and has been engaged by the American Planning Association to help address and reduce the urban impacts of drought. One key product developed specifically in response to this need by NIDIS, the Sectoral Applications Program, and the NDMC, is a Drought-Ready Communities guidebook to improve drought planning.

California Fallow Lands Project
Despite the importance of fallowed acreage as a drought impact variable, there is no source of timely, objective information on the extent of fallowed acreage during the main growing season (April – September) to guide decision making with respect to requests for county drought disaster designations, state emergency proclamations, and water bank operations. The NIDIS California Central Valley activity is developing a fallowed land monitoring capability for the Central Valley of California, a rich agricultural region, to identify changes in farming practices during drought. Monthly county tabulations, maps, and GIS files are derived from automated processing of Landsat digital satellite imagery. Data from the Landsat satellite archive are processed for historical context. Such a capability will identify the extent of changes in fallowed acreage due to water shortage during drought. Shortage of water for irrigation and crop production is a principal impact of drought in the Central Valley, and this activity will provide a source of timely, objective information on the extent of fallowed acreage to guide decision making, such as for local water transfers, county drought disaster designations, or state emergency proclamations

Southern Climate Impacts Planning Program (SCIPP) project working with USDA's Farm Service Agency (FSA)
Through funding from NOAA's NIDIS Program, the SCIPP, which is part of the NOAA Regional Integrated Sciences and Assessments program at the University of Oklahoma,

has been assisting the Oklahoma FSA office in assessing agricultural drought impacts in Oklahoma to inform FSA programs in the state. SCIPP is also working with partners in agriculture in Texas.

NOAA's Climate Prediction Center (CPC) and USDA's Risk Management Agency (RMA) Pasture, Rangeland, Forage (PRF) Pilot Insurance Program
A collaborative effort between USDA, NOAA, and USGS results in the modification of the Pasture, Rangeland, and Forage Pilot Insurance Program, which uses two separate indices - the Rainfall Index and the Vegetation Index. These innovative pilot programs are based on vegetation greenness and rainfall indices, and are designed to give forage and livestock producers the ability to buy insurance protection for losses of forage produced for grazing or harvested for hay. The Rainfall Index uses NOAA's CPC data. Insurance payments, made under this program through the Federal Crop Insurance Corporation are calculated using NOAA CPC data for the grid(s) and index interval(s) that have been chosen to be insured. The Vegetation Index uses data from the USGS. The Pasture, Rangeland, Forage Rainfall Index and Vegetation Index pilot programs are being tested by RMA in select counties and States.

NOAA's Rio Grande/Bravo Basin (RGB) Early Warning System Project
In response to the ongoing and intensifying drought in this region, affecting a variety of economic and environmental sectors, NOAA is working with regional stakeholders to develop a drought early warning information system. The U.S. and Mexico are both engaged in a wide variety of climate and weather observational and monitoring activities in the RGB. Utilizing this bilateral coordination, NOAA and its stakeholder partners are supporting efforts to identify and prioritize mutual needs for drought related data, products, and services, including in the areas of monitoring, reporting, research, and forecasting. This emerging regional collaboration will support water resource managers, agricultural interests, and other constituents within the basin as they respond to future drought events and build capacity to respond to other climate extremes.

The intent is to link up the Rio Grande/Bravo Drought Early Warning Information System with other relevant basin activities such as the new USDA Conservation Reserve Enhancement Program (CREP) established in RGB, to help conserve irrigation water and reduce groundwater withdrawals.

Drought Monitoring Gaps Assessments and Surface Water Supply Index Development
A partnership between USDA's Natural Resources Conservation Service (NRCS), the State Colorado, and NIDIS (via the Colorado Climate Center) to revise and improve one of the key hydrologic drought indicators utilized by Colorado in managing, responding, and recovering from drought. The project is focused on increasing the spatial resolution of the Surface Water Supply Index (SWSI). The analysis increases the number of watersheds from 7 to 30 that are being actively monitored for drought conditions. The revised SWSI provides a more stable month-to-month transition and eliminate some of the erratic shifts sometimes produced by current index.

Utah and Wyoming have already adopted a SWSI similar to this revised Colorado SWSI. A transition to this technique in Colorado will improve cross-state comparisons of drought severity. This consistency would assist with the coordination of drought categories used in the USDM, which is a prime example of cross-agency collaboration.

ATTACHMENT: FIGURES

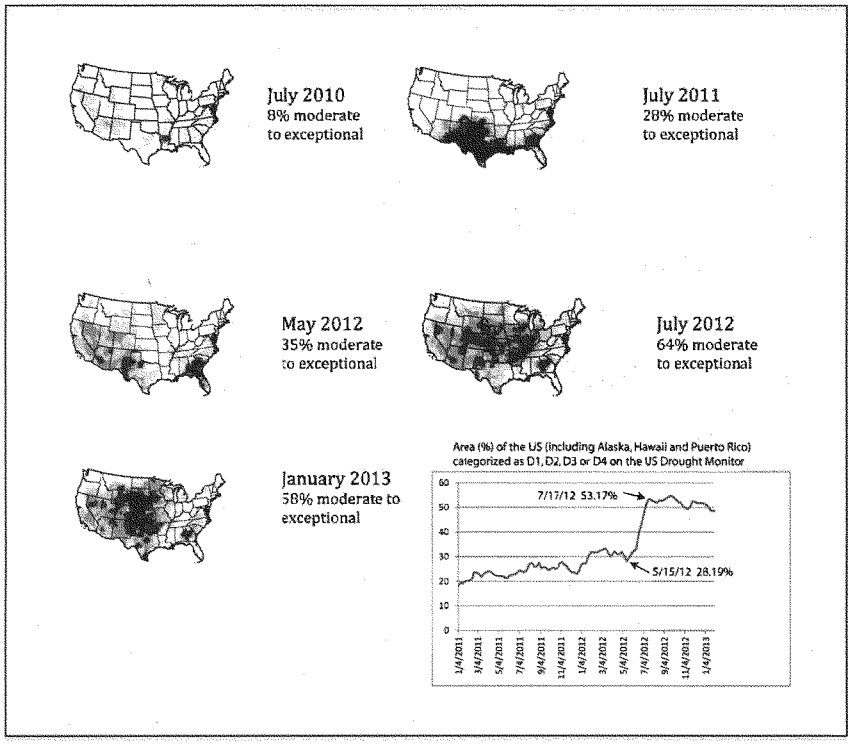


Figure 1. How did we get here? Antecedent conditions and status (Source, NIDIS and NDMC, 2013)

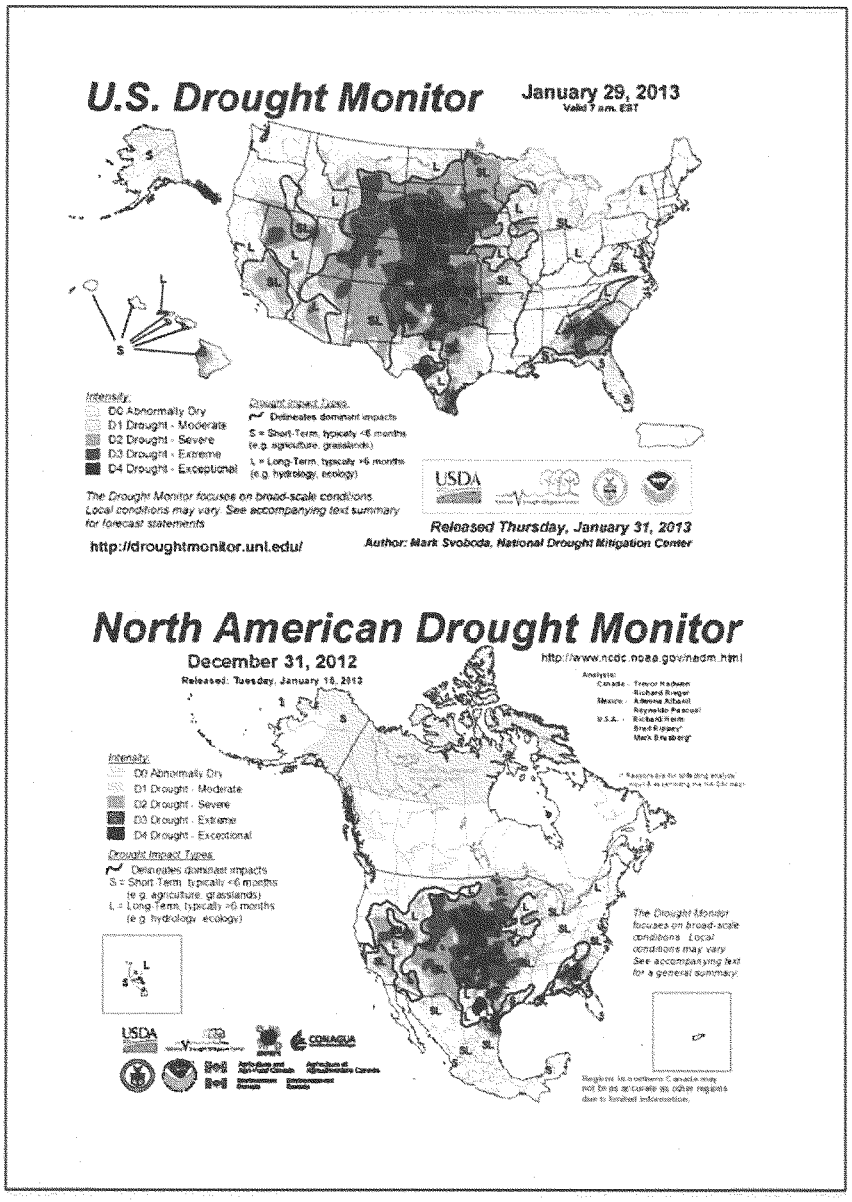


Figure 2. (a) The US Drought Monitor. January 29, 2013, and (b) The North American Drought Monitor December 31, 2012 (available from NIDIS www.drought.gov)

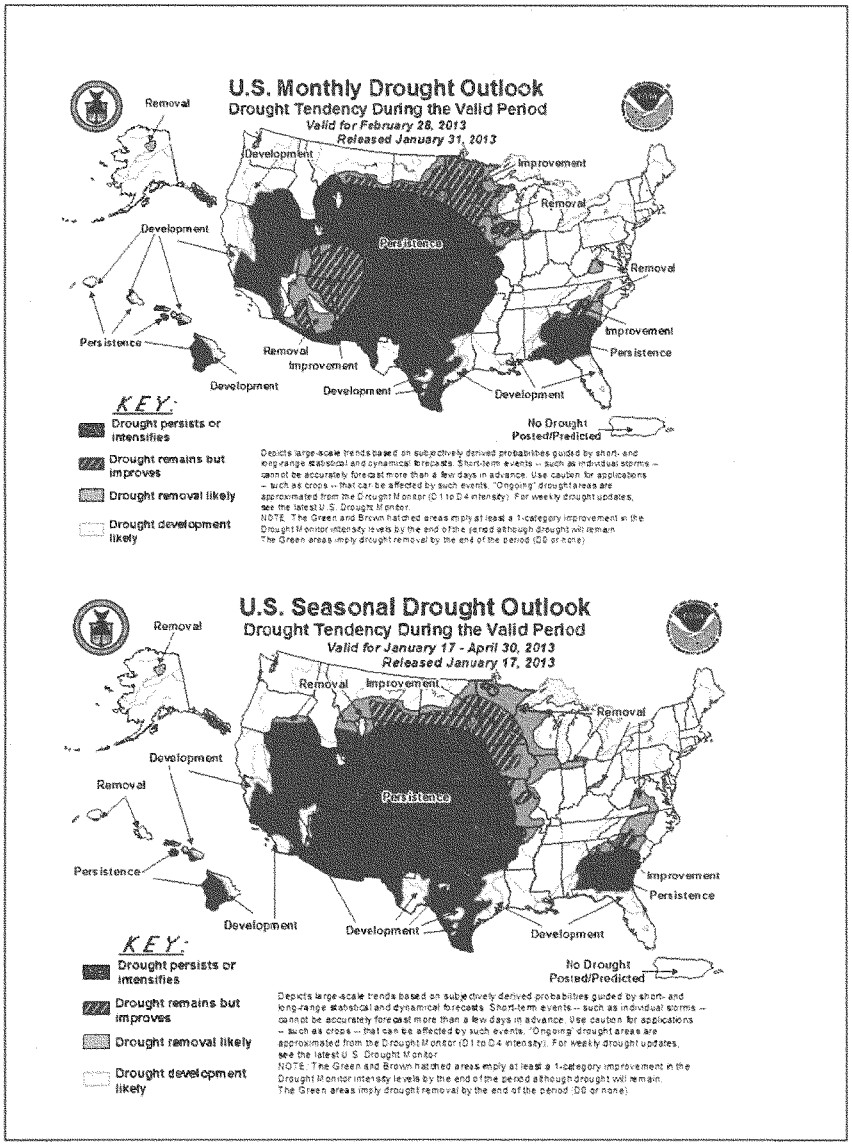
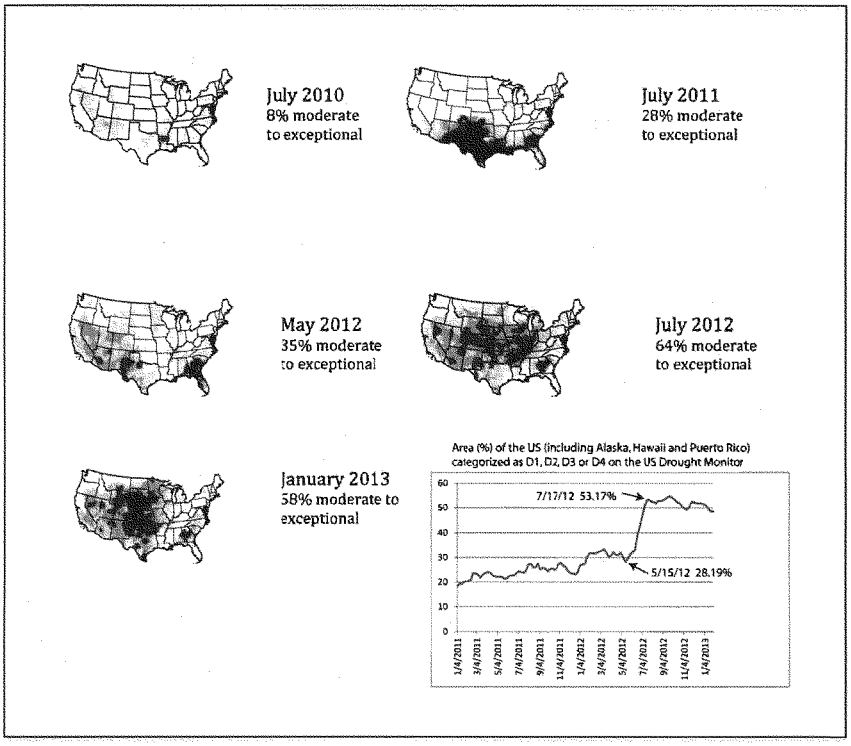


Figure 3: The Seasonal Drought Outlook (a) 1 month through February 28, 2013, and (b) three months through April 30, 2013. Source: NOAA CPC

ATTACHMENT: FIGURES



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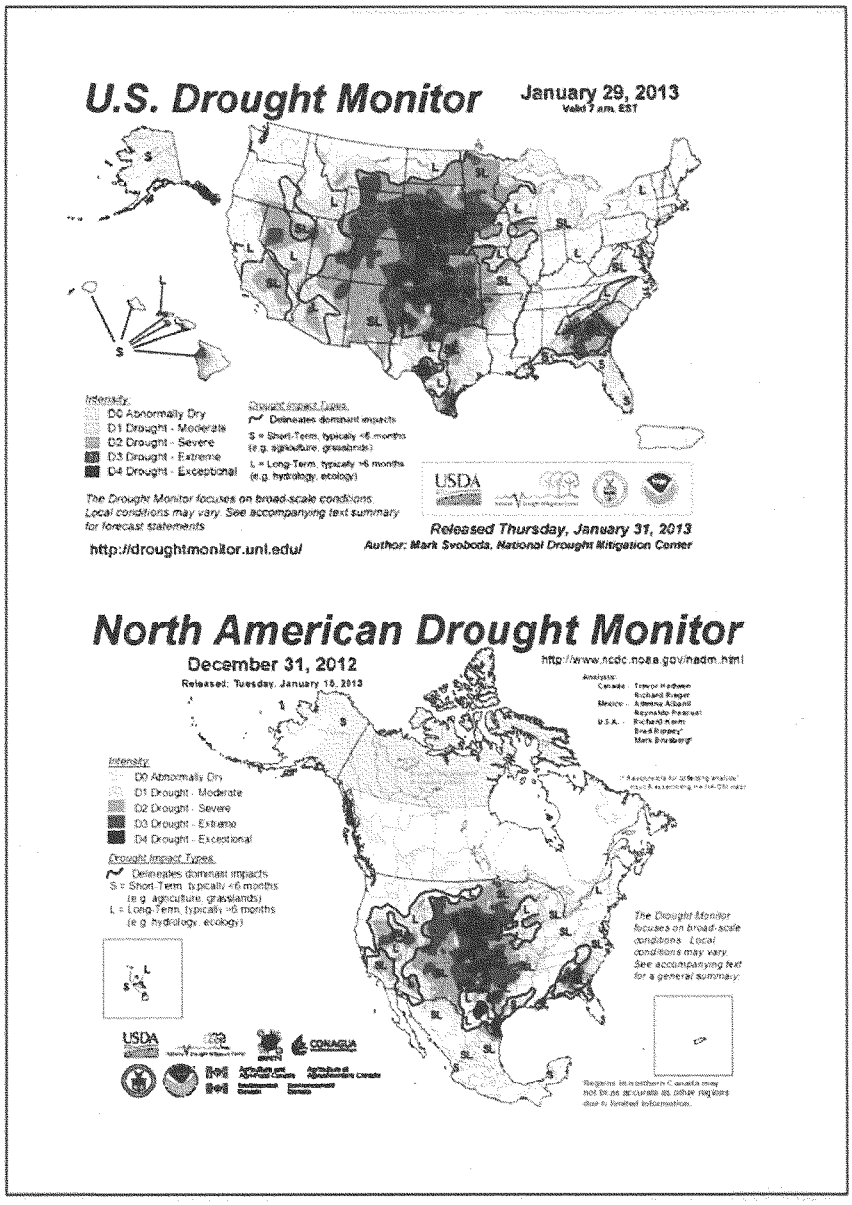

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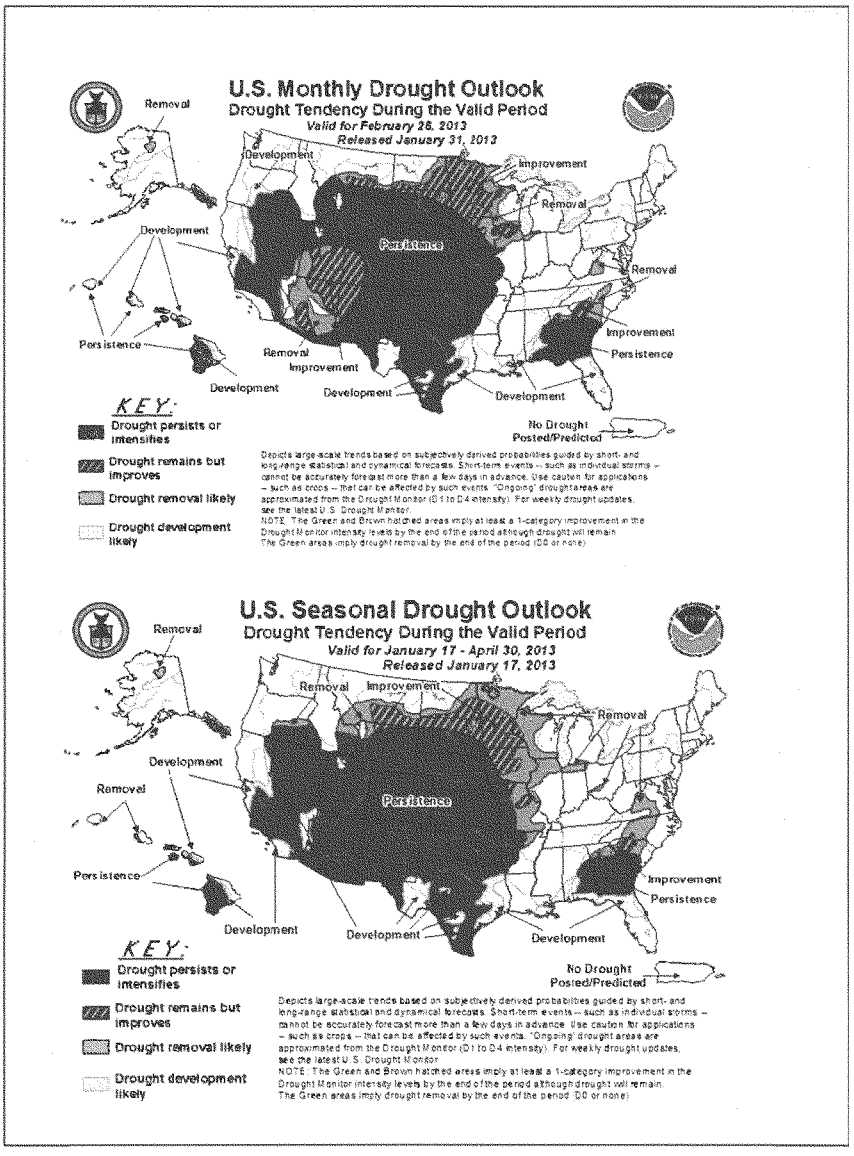


Figure 3: The Seasonal Drought Outlook (a) 1 month through February 28, 2013, and (b) three months through April 30, 2013. Source: NOAA CPC

Thank you, Senator Stabenow and members of the Committee for the invitation to testify today and for your concern about this very important issue.

I am Jeff Send and I have been a cherry farmer my entire life. I grew up working on my grandfather's forty acres. Now my wife, Nita and I manage 800 acres of sweet and tart cherries. Protecting a portion of our land through the Federal Farm & Ranchland Protection Program helped us to expand our operation. The government received permanent agricultural security for a fraction of the cost and we received capital to reinvest on the farm. This program is a win-win in government programming. Our youngest daughter and her husband work with us and they hope to take over the farm one day. I also operate a receiving station that we have managed for 35 years. I have a working relationship with 35 growers who bring their cherries to my station. The cherries are weighed, inspected and loaded onto trucks to be delivered to ten processers in Michigan, Wisconsin and New York that we work with. I am currently serving as Vice Chairman of the Cherry Marketing Institute (CMI) Board of Directors. CMI is the national organization for tart cherry farmers. I am also Vice Chairman of the National Cherry Growers and Industries Foundation (NCGIF) which is the national organization for sweet cherry farmers.

Year in and year out Michigan produces 75% of the United States supply of red tart cherries. Michigan also ranks fourth in sweet cherry production but first in processed sweet cherries. However, that was not the case in 2012! Last year was the most disastrous year that I and the cherry industry have ever experienced. Our winter was much warmer than normal with little snow and ice in the Great Lakes. Cold winters hold back early spring warm ups which is key for all fruit production regions. In March my area was hit with two to three feet of extremely wet and heavy snow and ice. There was extensive damage to tart trees breaking branches and even destroying some. Over ten thousand of my trees were damaged. It is likely that more will break down when we set a crop again. The weakened trees may not be able to carry the load. In mid-March there were seven days of 80 degree temperatures which is unheard of in Michigan. Cherry trees moved out of dormancy and began to grow. This left them completely vulnerable to 13 to 20 different freezes, depending on location, during March and April. This extreme weather devastated the fruit industry in Michigan, Wisconsin and New York. Sweet cherries endured the freezes slightly better than tart cherries but to top things off we were hit with the worst case of bacterial canker I have seen. There is no treatment for this disease which kills bud sets. Some trees will be without fruit for two years and some may actually die.

In Michigan we have the capacity to produce 275 million pounds of tart cherries. In 2012 our total was 11.6 million pounds. The entire national crop was only 85 million pounds. There were only 8.5 million pounds of sweet cherries harvested instead of 35

to 50 million pounds. If this had happened just one year ago the SURE program would have been in place and we would have had a safety net to stop our free fall. There is no tart cherry crop insurance available at all for our industry. So my fellow cherry growers and I have no risk management tool to get through this very difficult year. NAP, the Noninsured Crop Disaster Assistance Program is available. However, the policy starts at a 50% loss and then pays out only 50% of that number. Farmers are left with only about 25% coverage and there is a $100,000 cap. This does not come close to just covering our expenses. My costs are ¾ to 1 million dollars to operate my farm. Fruit trees must be maintained whether there is a crop on them or not. You carry on with the same practices in order to keep them healthy: trimming, mowing, applying fertilizer, and chemically treating for pests and disease. In fact, we had to spray orchards in 2012 more times than most years since spring started five weeks early. So the expenses remain the same, whether you harvest a crop or it is destroyed. Imagine working for a year and a half with no paycheck but still having to pay all the same bills.

There is a pilot crop insurance program for sweet cherries that is only available in two counties in Michigan. Fortunately I live in one of the pilot counties. For me it meant that I was covered for 50% of my loss because that was the policy I had chosen. Because of this year and my fear that it could happen again I increased our coverage level for 2013. However, the farmers I represent in neighboring counties did not have the option to purchase a sweet cherry crop insurance policy. They have to fit both of their tart and sweet cherry losses under a NAP policy that is capped at $100,000, which in many cases is a fraction of their total cost of expenses. The sweet cherry pilot program was expanded last summer to cover most of the production regions in the state and will be a great help in the future. However, it will not make up for the losses that farmers experienced in 2012.

The Administrator of RMA visited Michigan last summer and we are working on a tart cherry crop insurance program. We hope to have a national policy in pilot for the 2014 crop year. This is a tight timeline, however we remain on track to date for this to happen.

I worry about our younger farmers who have not built up any equity on their farm. No income with all the same expenses is a formula for disaster. The margins are always tight in agriculture. There needs to be something to help farmers stay in business when natural disasters hit. A few days of weather that we have no control over should not force farmers out of business. It truly is an economic tsunami that challenges the future of our farmers and the cherry industry.

As I wrap up my comments today, I also want to address the importance of Ag research and extension program. While this may not seem like an appropriate topic for a disaster hearing, it's important to note that I did not have to face the challenges of last year alone. I personally have never been through a year like 2012. With an early season, lots of frost damage, and rampant bacterial canker, cherry growers were left questioning where we could cut expenses, and how to continue to protect our orchards so we could set a crop next year. These were big questions in a year where we knew we would have no tart cherry revenue. Michigan State University played a key role in getting information out to growers providing us the ability to make timely decisions. This partnership is very important to the cherry industry, especially in the state where 75% of the nation's tart cherries are grown. New Ag research and extension programs are very important for all specialty crop farmers who cannot rely on the private sector for support.

Thank you for the chance to testify today. I want to leave you with three things.

1) Disaster Relief is very important to the Tree Fruit Industry to protect farmers that don't have the option to purchase crop insurance.
2) Long term Crop Insurance needs to be available to **all farmers** who grow food in the United States.
3) Where crop insurance is not available we need to improve the NAP policies to provide farmers a better risk management tool to survive crop disasters like we just faced in 2012.

I am very worried about 2013 and what this year will bring. We must have a good crop to get growers and the industry back on their feet. Another year like this without some form of safety net will unfortunately put most of us out of business.

USDA Tart Cherry Production and Utilization
(Reported in Millions of Pounds)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
MICHIGAN											
NW	1.0 [1]	96.9 [1]	87.9 [1]	127.6 [1]	114.2 [1]	134.2 [1]	95.8 [1]	185.3 [1]	72.5 [1]	92.5 [1]	2.5
WC	6.0 [1]	36.0 [1]	36.5 [1]	64.2 [1]	49.2 [1]	52.4 [1]	49.9 [1]	62.9 [1]	53.0 [1]	47.7 [1]	7.8
SW	7.1 [1]	18.6 [1]	23.5 [1]	14.9 [1]	25.7 [1]	8.8 [1]	18.3 [1]	16.5 [1]	14.5 [1]	16.8 [1]	1.2
OTHER	0.9 [2]	2.5 [2]	1.1 [2]	1.3 [2]	0.9 [2]	0.6 [2]	1.0 [2]	1.3 [2]	-5.0 [2]	0.5 [2]	0.1
TOTAL	15.0 [3]	154.0 [3]	149.0 [3]	208.0 [3]	190.0 [3]	196.0 [3]	165.0 [3]	266.0 [3]	135.0 [3]	157.5 [3]	11.6
LAKE STATES											
MI	15.0	154.0	149.0	208.0	190.0	196.0	165.0	266.0	135.0	157.5	11.6
NY	12.7	7.2	10.7	7.5	8.6	11.3	9.6	11.2	7.8	5.9	2.7
PA/OHIO	3.8	3.9	3.0	2.6	5.2	3.5	3.9	3.9	2.3	3.2	3.3
WI	4.0	13.3	6.7	7.5	4.5	10.4	0.6	10.9	5.7	6.7	1.7
TOTAL	35.5	178.4	169.4	225.6	208.3	221.2	179.1	292.0	150.8	173.3	19.3
WESTERN STATES											
CO	0.3	0.6	0.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OREGON	3.2	1.4	3.9	0.3	3.4	0.5	2.8	3.2	1.2	2.5	1.0
UTAH	3.0	26.0	22.0	28.0	28.0	20.0	20.0	47.0	23.0	35.0	40.0
WASHINGTON	20.5	20.1	17.5	16.5	22.3	11.5	12.5	16.7	15.4	20.9	24.8
TOTAL	27.0	48.1	43.6	45.0	53.7	32.0	35.3	66.9	39.6	58.4	65.8
TOTAL U.S.	62.5	226.5	213.0	270.6	262.0	253.2	214.4	358.9	190.4	231.7	85.1
FRESH UTILIZATION											
LAKE STATES	0.4	0.7	0.6	0.6	0.9	0.7	0.7	0.7	0.7	0.3	0.2
WESTERN STATES	0.0	0	0	0	0	0	0	0	0.0	0.0	0.0
TOTAL U.S.	0.4	0.7	0.6	0.6	0.9	0.7	1.0	1.3	1.1	0.5	0.4
PRODUCTION ABANDONMENT											
LAKE STATES	0.0	0	0	0	9.8	3.4	0.2	19.1	6.2	0.1	0.1
WESTERN STATES	0.3	0	0	2	3.6	1.1	1.0	13.3	0.5	0.5	0.0
TOTAL U.S.	0.3	0.0	0.0	2.0	13.4	4.5	1.2	32.4	6.7	0.6	0.1
SUPPLY FOR PROCESSING											
LAKE STATES	35.1	177.7	168.8	225.1	198.0	217.1	178.4	266.2	143.9	172.2	19.2
WESTERN STATES	26.7	48.1	43.6	43	50.1	30.9	34.3	53.6	39.1	57.9	65.8
TOTAL U.S.	61.8	225.8	212.4	268.1	248.1	248.0	212.7	319.8	183.0	230.1	85.0
FARM VALUE OF PRODUCTION (MILLION DOLLARS)											
MICHIGAN	7.2	57.6	49.8	47.6	34.7	50.9	63.0	37.9	27.2	47.2	12.7
U.S	27.8	79.5	69.9	64.0	53.4	67.9	80.3	61.6	40.7	68.5	50.5

Source 1 Michigan Regional Production Source - CIAB
Source 2 Difference between USDA Michigan Production and CIAB Michigan Production
Source 3 Total USDA Michigan Production

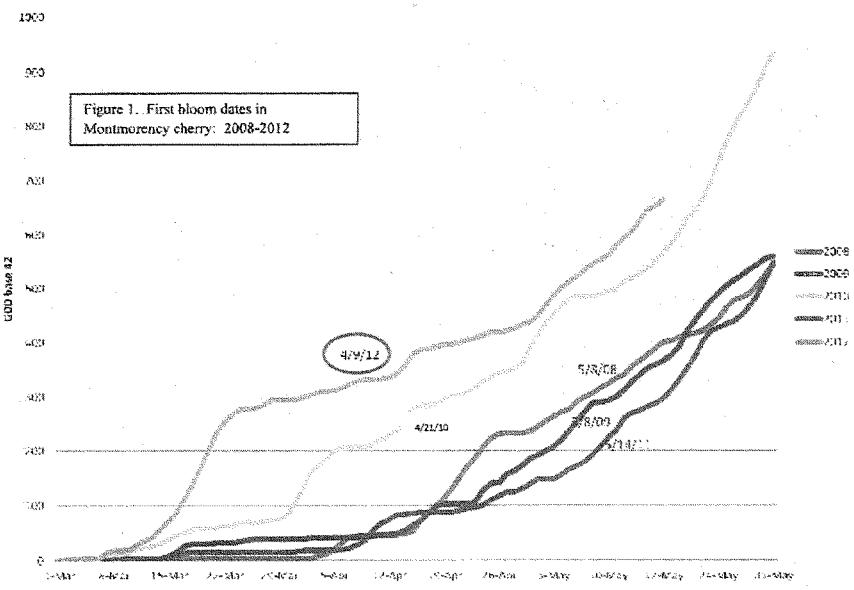
U.S. Tart Cherry Production

Year	Total Production Mil lbs.	Year	Total Production Mil lbs.
1938	130	1975	290
1939	194	1976	147
1940	209	1977	211
1941	163	1978	181
1942	211	1979	170
1943	82	1980	218
1944	225	1981	135
1945	92	1982	311
1946	232	1983	155
1947	182	1984	271
1948	264	1985	286
1949	217	1986	224
1950	310	1987	359
1951	314	1988	236
1952	234	1989	271
1953	263	1990	216
1954	213	1991	200
1955	298	1992	348
1956	198	1993	340
1957	293	1994	304
1958	207	1995	396
1959	276	1996	272
1960	232	1997	293
1961	329	1998	348
1962	353	1999	256
1963	162	2000	289
1964	547	2001	370
1965	354	2002	63
1966	180	2003	227
1967	178	2004	213
1968	275	2005	270
1969	317	2006	262
1970	251	2007	253
1971	280	2008	214
1972	312	2009	359
1973	175	2010	190
1974	265	2011	232
		2012	85

Source: USDA, *Non-Citrus Fruits and Nuts*, various issues.

Summary of 2012 Weather Events and Impact on Tree Fruit Crops, NW Michigan

The 2012 growing season has been both unusual and challenging for fruit farmers across the eastern U.S. The difficulty began in mid-March with a warm-up that lasted seven days, and during that time, tart and sweet cherry and apple trees moved out of dormancy and began to grow. Those temperatures accelerated the degree-day accumulations, and by the start of April, we were five weeks ahead of schedule. Even if the calendar said it was the beginning of April, we had accumulated enough heat units to move the trees along to begin tart cherry bloom on April 9th; tart cherry bloom typically begins around May 12th (Figure 1).



Year	# days in bloom	# of nights below freezing	total # of hours below freezing	extreme low temp (F)
2008	12	2	4	31
2009	11	2	10	25
2010	13	4	29	23
2011	10	0	0	
2012	19	13	85	*3 nights of extreme lows (22, 23, 24)

This situation has presented state and regional fruit farmers with some major challenges this spring. For example, if cherry trees move out of dormancy and buds begin to swell in early May, growers track those below-freezing night time temperatures that could damage those tender buds. In a 'normal' year, the riskwindow for

frost is approximately four weeks. In 2012, cherry bud swell started at the end of March, which extended that risk window by another four weeks—essentially cherry buds were in danger from frost for over eight weeks this year compared to the typical four. The number of freeze events and the duration of the cold temperatures are captured in Table 1.

The result of these weather conditions is a severely reduced tree fruit crop throughout northwest Michigan. Tart cherry crop load is estimated at 5% of a normal crop. Sweet cherries endured the freeze temperatures slightly better than tart cherries but have been greatly impacted by bacterial canker (*Pseudomonas syringae*), a disease that is exacerbated by cold and wet temperatures during bloom (Figures 2 and 3). The sweet cherry crop was estimated to be 40% of a normal crop, but with the severity of this disease, the crop estimate is well below 20%.

Figures 2 and 3. Sweet cherry spurs killed by *P. syringae* in Leelanau County, 2012.

Estimations for the apple crop in northwest Michigan is still underway, but as apples begin to size, we estimate that we have potentially 20% of a crop. However, this crop is highly dependent on variety and on orchard sites. Firm numbers for the apple crop are expected by next week. Damaged and healthy apple blossoms can be seen in Figures 4 and 5.

Figures 4 and 5. Damaged and healthy apple blossom in Grand Traverse County, 2012.

Tart Cherry Bearing Acreage, Yield, Production, Utilization, Price, and Value – States and United States: 2010-2012 **(continued)**

State and year	Price per pound			Value of production		
	Fresh	Processed	All	Fresh	Processed	All
	(dollars)	(dollars)	(dollars)	(1,000 dollars)	(1,000 dollars)	(1,000 dollars)
Michigan						
2010	1.100	0.210	0.212	220	27,040	27,260
2011	1.250	0.300	0.301	250	46,960	47,210
2012	2.400	1.100	1.110	240	12,640	12,880
New York						
2010	(D)	(D)	0.174	(D)	(D)	1,360
2011	(D)	(D)	0.242	(D)	(D)	1,426
2012	(D)	(D)	1.050	(D)	(D)	2,844
Oregon						
2010	(D)	(D)	0.317	(D)	(D)	380
2011	(D)	(D)	0.340	(D)	(D)	850
2012	(D)	(D)	0.951	(D)	(D)	951
Pennsylvania						
2010	(D)	(D)	0.257	(D)	(D)	540
2011	(D)	(D)	0.371	(D)	(D)	1,150
2012	(D)	(D)	1.110	(D)	(D)	3,560
Utah						
2010	(X)	0.270	0.270	(X)	6,075	6,075
2011	(X)	0.290	0.290	(X)	10,005	10,005
2012	(X)	0.510	0.510	(X)	20,400	20,400
Washington						
2010	(D)	(D)	0.228	(D)	(D)	3,515
2011	(D)	(D)	0.312	(D)	(D)	6,521
2012	(D)	(D)	0.323	(D)	(D)	8,000
Wisconsin						
2010	0.634	0.280	0.293	127	1,484	1,611
2011	0.646	0.280	0.285	65	1,845	1,910
2012	1.250	1.100	1.110	125	1,760	1,885
Other States						
2010	1.760	0.195	(X)	703	5,092	(X)
2011	1.370	0.300	(X)	273	9,674	(X)
2012	1.970	0.475	(X)	394	14,961	(X)
United States						
2010	1.310	0.218	0.222	1,050	39,691	40,741
2011	1.180	0.298	0.300	588	68,484	69,072
2012	1.900	0.588	0.594	759	49,761	50,520

- Represents zero.
(D) Withheld to avoid disclosing data for individual operations.
(X) Not applicable.
[1] Yield is based on total production.

Tart Cherry Bearing Acreage, Yield, Production, Utilization, Price, and Value – States and United States: 2010-2012

State and year	Bearing acreage	Yield per acre [1]	Production		Utilization	
			Total	Utilized	Fresh	Processed
	(acres)	(pounds)	(million pounds)	(million pounds)	(million pounds)	(million pounds)
Michigan						
2010	26,200	5,150	135.0	128.7	0.2	128.5
2011	26,700	5,900	157.5	156.7	0.2	156.5
2012	27,300	425	11.6	11.6	0.1	11.5
New York						
2010	1,500	5,200	7.8	7.8	(D)	(D)
2011	1,500	3,930	5.9	5.9	(D)	(D)
2012	1,500	1,800	2.7	2.7	(D)	(D)
Oregon						
2010	650	1,850	1.2	1.2	(D)	(D)
2011	650	3,850	2.5	2.5	(D)	(D)
2012	650	1,540	1.0	1.0	(D)	(D)
Pennsylvania						
2010	600	3,830	2.3	2.1	(D)	(D)
2011	550	5,820	3.2	3.1	(D)	(D)
2012	550	6,000	3.3	3.2	(D)	(D)
Utah						
2010	3,300	6,970	23.0	22.5	-	22.5
2011	3,300	10,600	35.0	34.5	-	34.5
2012	3,300	12,100	40.0	40.0	-	40.0
Washington						
2010	1,600	9,630	15.4	15.4	(D)	(D)
2011	1,600	13,100	20.9	20.9	(D)	(D)
2012	1,600	15,500	24.8	24.8	(D)	(D)
Wisconsin						
2010	1,800	3,170	5.7	5.5	0.2	5.3
2011	1,700	3,940	6.7	6.7	0.1	6.6
2012	1,600	1,060	1.7	1.7	0.1	1.6
Other States						
2010	(X)	(X)	(X)	(X)	0.4	26.1
2011	(X)	(X)	(X)	(X)	0.2	32.2
2012	(X)	(X)	(X)	(X)	0.2	31.5
United States						
2010	35,650	5,340	190.4	183.2	0.8	182.4
2011	36,000	6,440	231.7	230.3	0.5	229.8
2012	36,500	2,330	85.1	85.0	0.4	84.6

See footnote(s) at end of table.

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Sweet Cherry Bearing Acreage, Yield, Production, Utilization, Price, and Value – States and United States: 2010-2012

[Blank cells indicate estimation period has not yet begun]

State and year	Bearing acreage	Yield per acre [1]	Production		Utilization	
			Total	Utilized	Fresh	Processed
	(acres)	(tons)	(tons)	(tons)	(tons)	(tons)
California						
2010	29,000	3.34	97,000	94,000	83,000	11,000
2011	30,000	2.27	68,000	66,000	57,000	9,000
2012	31,000	2.98	92,300	89,300	78,000	11,300
Idaho						
2010	900	2.11	1,900	1,800	(D)	(D)
2011	900	3.11	2,800	2,800	(D)	(D)
2012	900	4.00	3,600	3,300	(D)	(D)
Michigan						
2010	6,700	2.25	15,100	14,400	1,100	13,300
2011	6,500	2.86	18,600	18,600	2,200	16,400
2012	6,500	0.65	4,250	4,250	120	4,130
Montana						
2010	730	3.38	2,470	2,050	(D)	(D)
2011	720	2.80	2,015	1,650	(D)	(D)
2012	690	3.26	2,250	1,395	(D)	(D)
New York						
2010	700	1.43	1,000	800	(D)	(D)
2011	700	1.00	700	670	(D)	(D)
2012	700	0.43	300	290	(D)	(D)
Oregon						
2010	12,500	3.09	38,650	37,500	25,500	12,000
2011	12,500	3.64	45,500	43,800	29,600	14,200
2012	12,500	4.48	56,000	54,600	39,500	15,100
Utah						
2010	500	2.20	1,100	1,080	650	430
2011	500	1.60	800	770	330	440
2012	500	2.60	1,300	1,280	700	580
Washington						
2010	34,000	4.59	156,000	156,000	130,000	26,000
2011	34,000	5.76	196,000	196,000	165,000	31,000
2012	34,000	7.76	264,000	264,000	210,000	54,000
Other States						
2010	(X)	(X)	(X)	(X)	4,090	560
2011	(X)	(X)	(X)	(X)	4,790	330
2012	(X)	(X)	(X)	(X)	4,235	750
United States						
2010	85,030	3.68	313,220	307,630	244,340	63,290
2011	85,820	3.90	334,415	330,290	258,920	71,370
2012	86,790	4.89	424,000	418,415	332,555	85,860

See footnote(s) at end of table.

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Sweet Cherry Bearing Acreage, Yield, Production, Utilization, Price, and Value – States and United States: 2010-2012 **(continued)**

[Blank cells indicate estimation period has not yet begun]

State and year	Price per ton			Value of production		
	Fresh	Processed	All	Fresh	Processed	All
	(dollars)	(dollars)	(dollars)	(1,000 dollars)	(1,000 dollars)	(1,000 dollars)
California						
2010	3,090.00	204.00	2,750.00	256,470	2,245	258,715
2011	3,430.00	193.00	2,990.00	195,510	1,740	197,250
2012	3,270.00	240.00	2,890.00	255,060	2,712	257,772
Idaho						
2010	(D)	(D)	2,230.00	(D)	(D)	4,011
2011	(D)	(D)	2,620.00	(D)	(D)	7,337
2012	(D)	(D)	2,640.00	(D)	(D)	8,706
Michigan						
2010	2,290.00	545.00	678.00	2,519	7,246	9,765
2011	2,410.00	777.00	970.00	5,302	12,740	18,042
2012	4,280.00	1,360.00	1,440.00	514	5,619	6,133
Montana						
2010	(D)	(D)	1,960.00	(D)	(D)	4,026
2011	(D)	(D)	2,470.00	(D)	(D)	4,068
2012	(D)	(D)	1,450.00	(D)	(D)	2,019
New York						
2010	(D)	(D)	2,820.00	(D)	(D)	2,255
2011	(D)	(D)	3,140.00	(D)	(D)	2,106
2012	(D)	(D)	3,700.00	(D)	(D)	1,073
Oregon						
2010	2,392.00	899.00	1,910.00	60,996	10,790	71,786
2011	2,240.00	800.00	1,770.00	66,304	11,360	77,664
2012	1,517.00	972.00	1,370.00	59,922	14,684	74,606
Utah						
2010	1,860.00	521.00	1,330.00	1,209	224	1,433
2011	2,760.00	502.00	1,470.00	911	221	1,132
2012	2,300.00	421.00	1,450.00	1,610	244	1,854
Washington						
2010	2,720.00	388.00	2,330.00	353,600	10,093	363,693
2011	3,120.00	393.00	2,690.00	514,800	12,186	526,986
2012	2,140.00	773.00	1,860.00	449,400	41,748	491,148
Other States						
2010	2,480.00	241.00	(X)	10,157	135	(X)
2011	2,790.00	412.00	(X)	13,375	136	(X)
2012	2,710.00	429.00	(X)	11,476	322	(X)
United States						
2010	2,800.00	486.00	2,330.00	684,951	30,733	715,684
2011	3,080.00	538.00	2,530.00	796,202	38,383	834,585
2012	2,340.00	761.00	2,020.00	777,982	65,329	843,311

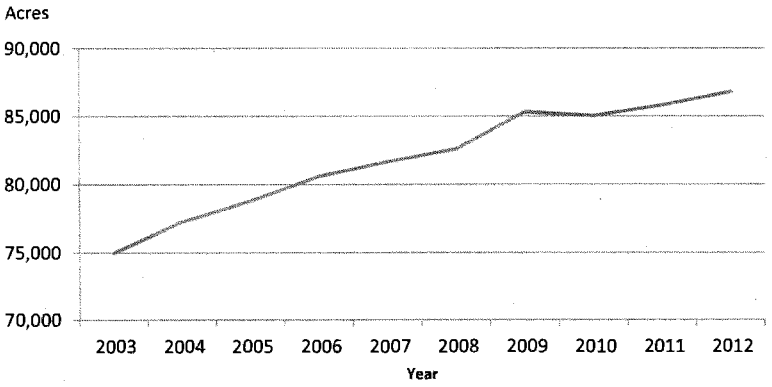
(D) Withheld to avoid disclosing data for individual operations.
(X) Not applicable.
[1] Yield is based on total production.

Sweet and Tart Cherry Processed Utilization and Price by Use – States and United States: 2010-2012

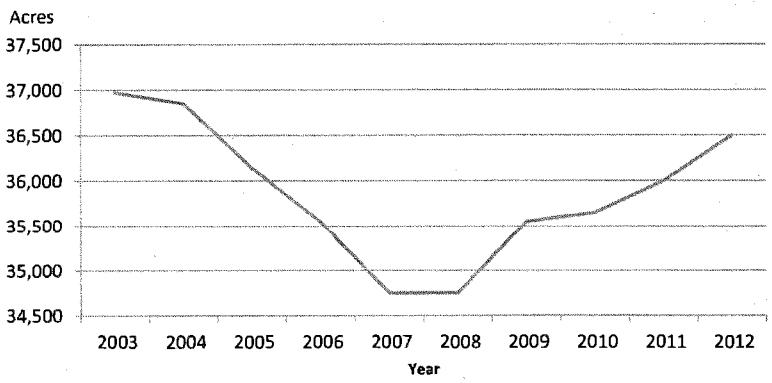
Crop, utilization, and State	Quantity			Price per unit		
	2010	2011	2012	2010	2011	2012
	(tons)	(tons)	(tons)	(dollars per ton)	(dollars per ton)	(dollars per ton)
Sweet cherries						
Canned						
Michigan	450	1,800	(D)	660.00	1,000.00	(D)
Oregon	700	1,450	(D)	995.00	1,100.00	(D)
Washington	2,000	3,000	3,000	1,100.00	968.00	1,100.00
United States	3,150	6,250	5,900	1,014.00	1,010.00	1,150.00
Brined						
Michigan	8,500	9,150	1,350	490.00	600.00	1,050.00
Oregon	10,200	10,500	9,600	910.00	750.00	950.00
Utah	430	440	580	521.00	502.00	420.00
Washington	11,500	14,000	29,000	470.00	480.00	750.00
Other States [1]	7,604	5,535	6,535	245.00	241.00	244.00
United States	38,234	39,625	47,065	548.00	546.00	725.00
Other [2]						
Michigan	4,350	5,450	2,780	640.00	1,000.00	1,510.00
Oregon	1,100	2,250	5,500	737.00	840.00	1,010.00
Washington	12,500	14,000	22,000	199.00	183.00	759.00
Other States [1]	3,955	3,795	2,615	132.00	138.00	264.00
United States	21,905	25,495	32,895	302.00	409.00	780.00
	(million pounds)	(million pounds)	(million pounds)	(dollars per pound)	(dollars per pound)	(dollars per pound)
Tart cherries						
Canned						
Michigan	29.0	34.0	3.0	0.210	0.340	1.160
Other States [1]	6.3	4.4	3.5	0.153	0.308	1.080
United States	35.3	38.4	6.5	0.200	0.336	1.120
Frozen						
Michigan	87.0	101.0	8.0	0.215	0.295	1.080
Utah	22.5	34.5	40.0	0.270	0.290	0.510
Other States [1]	16.4	18.6	11.8	0.210	0.260	0.533
United States	125.9	154.1	59.8	0.224	0.290	0.591
Other [3]						
Michigan	12.5	21.5	0.5	0.180	0.261	1.040
Other States [1]	8.7	15.8	17.8	0.248	0.337	0.373
United States	21.2	37.3	18.3	0.208	0.293	0.392

(D) Withheld to avoid disclosing data for individual operations.
[1] Includes data withheld above and/or data for States not listed in this table.
[2] Includes California canned utilization and other processed utilizations (frozen, juice, etc.) from all States.
[3] Juice, wine, brined, and dried.

Sweet Cherry Bearing Acreage
United States: 2003-2012



Tart Cherry Bearing Acreage
United States: 2003-2012



Noncitrus Fruits and Nuts 2012 Preliminary Summary (January 2013)
USDA, National Agricultural Statistics Service

United States Department of Agriculture
National Agricultural Statistics Service
Michigan Field Office
Cooperating with Michigan Department of Agriculture & Rural Development

NR-12-33 **News Release** June 11, 2012

Fruit Inventory Results for Sweet and Tart Cherries

Results from the 2011 Michigan Fruit Inventory have been compiled for sweet and tart cherries. This inventory of commercial fruit farms was conducted by the USDA, NASS, Michigan Field Office. There were 400 sweet cherry and 450 tart cherry farms at the end of the 2011 season.

Sweet cherry trees covered 7,200 acres at the conclusion of 2011, down 300 acres since 2006. There were 720 acres of sweet cherries planted from 2007 through 2011. Sixty-nine percent of the land in sweet cherries was in Leelanau and Grand Traverse Counties. Gold, Emperor Francis, and Ulster were the top three varieties. They accounted for 58 percent of the acres.

There were 32,000 acres of tart cherries at the end of 2011, unchanged from five years earlier. Acreage declines in the southwest and west central regions were offset by an increase in the northwest. There were 4,500 acres of new tart cherry plantings from 2007 through 2011.

All tables on cherries are available through the NASS home page at www.nass.usda.gov. Select Michigan under Statistics by State to access the Michigan internet page. In the list of Michigan Publications, choose Michigan Rotational Surveys to find the Fruit Inventory 2011-2012 information.

Cherries, sweet: Number of farms and acres by county and district

County and district	Farms		Acres	
	2006	2011	2006	2011
Antrim	30	27	730	630
Benzie, Charlevoix	21	21	300	260
Grand Traverse	83	67	1,500	1,500
Leelanau	118	107	3,500	3,450
Manistee	11	9	170	160
Northwest	263	231	6,200	6,000
Mason	15	10	410	360
Oceana	32	27	450	350
Other counties	35	34	140	190
West Central	82	71	1,000	900
Berrien	51	38	160	180
Van Buren	16	16	40	30
Other counties	12	10	20	25
Southwest	79	64	220	235
East	46	34	80	65
Michigan	470	400	7,500	7,200

Cherries, tart: Number of farms and acres by county and district

County and district	Farms		Acres	
	2006	2011	2006	2011
Antrim, Charlevoix	40	34	2,800	3,400
Benzie	21	22	1,400	1,500
Grand Traverse	81	76	4,200	4,400
Leelanau	124	107	8,150	7,800
Manistee	18	13	800	800
Northwest	284	252	17,350	17,900
Kent	10	8	320	230
Mason	17	10	1,770	1,850
Oceana	65	60	8,000	7,900
Other counties	14	10	260	220
West Central	106	88	10,350	10,200
Allegan	6		200	
Berrien	66	52	1,750	1,550
Van Buren	30	22	1,850	1,750
Other Counties	9	9	450	550
Southwest	111	83	4,250	3,850
East	39	27	50	50
Michigan	540	450	32,000	32,000

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Good morning, Chairwoman Stabenow, Ranking Member Cochran, and members of the committee. My name is Ben Steffen. Thank you for all of your leadership and hard work on behalf of our nation. I salute your commitment to public service.

My family, our employees, and I produce milk, corn, soybeans, wheat and hay on our farm at Humboldt in southeast Nebraska. We milk 135 cows and raise crops on 1900 acres. I have family members and key employees at home right now feeding and caring for animals so that I can be here today.

This nation has benefited from a food supply that is plentiful, inexpensive, and of the highest quality. Securing that food supply for the future is clearly responsible public policy. Facing a growing world population, it is a moral imperative.

I would like to discuss the impacts of drought and wild fire on agriculture. Additionally, I will comment on some of the risk management strategies that have helped us move forward successfully.

The impact of drought and fire has hit our farming operation and those of our neighbors. Of most immediate concern to our dairy operation is the area of feed supply and costs. Hay is in very short supply for both dairy and beef producers. The price of high quality dairy hay has gone up 50%; lower quality hay, suitable for beef cattle has more than doubled.

While we appreciated last year's release of Conservation Reserve Program acres, efforts should be made to allow for an earlier release of CRP acres for emergency haying and grazing under the conditions experienced in 2012. The goal of providing livestock producers with access to a source of forage is negated by the terrible quality brought about by the extended delay prior to release. A release 30 days earlier would make a

dramatic improvement in feed quality. As a consequence of the feed shortage and higher costs, herds have been liquidated and consumers will feel the damage in higher prices in the coming years as our nation's cattle herd is at a sixty-one year low.

In the crop production arena, we can all say with pride that the Federal Crop Insurance program has performed well. Crop Insurance has helped to mitigate huge losses farmers suffered in 2012. I have seen that in my own operation as well as in my community, where I sit on the Board of Directors of the Richardson County Bank. Crop production contributed $11.7 billion to Nebraska's economy in 2011. That money moves through virtually every business and community in the state.

For us, Federal Crop Insurance is not a fountain of free money. Until last year, our farming operation had an 11-year crop insurance purchasing history that showed us paying in more money in premiums than we received in indemnity payments. Last year, the insurance program appropriately covered a portion of our massive losses. We choose to participate and pay premiums every year to protect our operation from an event like the historic losses of 2012.

I would urge you to consider changes that will allow individual policies to be customized to more closely fit each farm. Maintaining this successful Federal Crop Insurance program should be our highest priority.

My neighbors in Western Nebraska have been dealt a particularly hard blow by wild fires. Nearly 400,000 acres, equal to one half the state of Rhode Island, burned in 2012. On those ranches, feed supplies were wiped out, fences were destroyed, and cattle herds have been liquidated. I would urge you to consider some tax relief to help those ranchers regain their footing.

I would also note that farm bill which passed this body addressed the reauthorization and funding of a number of important livestock disaster assistance programs which were not funded for 2012 or in the recent farm bill extension. The funding of these programs should be a top priority for this committee as we look toward passing a farm bill this year.

Risk management strategies that have contributed to our success include many tools. The idea that Federal Crop Insurance guarantees a profit is simply not true. Other tools play a major role in controlling risk and increasing the chances of success in agricultural production. Education, hard work, and determination come to mind.

As a WWII Vet, my father Richard Steffen took advantage of the G.I. Bill to finish his college education at the University of Nebraska in 1949. He and my mother Sue Steffen, also a University of Nebraska graduate, ensured that their children would have a college education as well.

My father stopped helping with the milking at age 79, but continued to feed our baby calves and contribute to management until he died this past January 18th at 85. Our parents set a high standard for education, hard work, and determination.

Another risk management strategy we employ is diversification. We include both crops and livestock in our business. This strengthens our ability to maneuver through tough economic times.

In order to manage price risk, we constantly watch the changing world market prices for the products we sell. Using futures and options contracts we try to price our products when we see favorable prices. We accept this challenge but were floored when our futures accounts at Refco were caught up in that company's bankruptcy several years

ago. Once was not enough, and we along with thousands of other farmers and processing companies were victimized by the genius of mismanagement at MF Global as our "individually segregated customer account" funds were illegally moved into European bonds and frozen in the subsequent bankruptcy of MF Global. We continue to wait for the return of a slowly rising percentage of our funds.

We work every day to find and apply best management practices and we have relied upon Land Grant University research and Extension Education to help move our business forward. This has led us to nearly 40 years of no-till farming, saving water, soil, and time. Thanks to Land Grant Research, we have dramatically improved the way we feed and care for our milk cows. This has led to higher milk production, fewer health problems, and better quality milk.

We began using cover crops years ago, but participation in the Conservation Security Program gave us a push to increase this practice. We have moved beyond the program requirements and last year planted nearly 60% of our acres with cover crops. This is a practice that holds great promise for controlling erosion, saving water, building soil quality, and sequestering carbon. We need more research in this arena as well as in many others.

I urge Congress to prioritize funding for both basic and applied Agricultural research through the land grant system of universities. This is the research and development engine for our nation's food supply.

These are a few of the critical risk management tools we have used to ensure that the farm my parents started in 1956 continues today.

I conclude as I began. This nation has benefited from a food supply that is plentiful, inexpensive, and of the highest quality. Securing that food supply for the future is clearly responsible public policy. Facing a growing world population, it is a moral imperative.

Anngie Steinbarger, Farmer
Edinburgh, Indiana

before the

Committee on Agriculture, Nutrition & Forestry
U.S. Senate

February 14, 2013

I would like to thank you Chairwoman Stabenow, Senator Donnelly and committee members for the opportunity to comment. My husband and I began farming the family farm in 1989 just after the last big drought event in the state of Indiana. Thanks to our ability to manage financial risk, management techniques and off farm income we now farm 1500 acres of corn & soybeans as well as a small cow calf operation in the state. We find our association with various farm organizations such as the Indiana Soybean Alliance invaluable to the success of our operation. The IN Soybean Alliance is an arm of the American Soybean Association (ASA) a trade organization that represents our Nation's 600,000 soybean farmers on national and international policy issues.

Steinbarger Farm Background

It has always been our dream to farm. My husband and I both knew the only way to make our dreams reality was to save our pennies while working in agriculture related careers and to hope that one day my father would give us the opportunity to participate in his farming operation. Mike worked in the seed, tile ditching and bulk milk transport business while I worked in the fertilizer, chemical and crop insurance business. All of these endeavors were educational and instrumental preparation in achieving our goal. The drought of 1988 took a toll on my father, poor health, no crop and no crop insurance lead to our ability to buy into the family business.

We started farming 600 acres and have increased the operation to 1500 acres. Roughly one half of our acres are share rent arrangements with our landlords. We are extremely grateful for their willingness to participate in the risk of growing a crop. We continue to work off the farm as it is still not self - supporting. Mike sold the milk truck to buy a school bus and I continue to work in the crop insurance and do the farm record keeping.

Conservation Practices

To manage our thin light soil types, we started our farming operation employing conservation tillage techniques such as CRP and NRCS cost share funding. To this day we still are advocates of no till farming as a way to preserve our soil and maintain soil moisture. The NRCS and state soil programs provided education and cost sharing opportunities in the construction of waterways and filter strips. As a result of conservation efforts our average yields are 150 bushels for corn and 50 bushels for soybeans.

Farming in 2012

My father warned us that farming is very risky and that we should prepare for the worst case scenario. We did not anticipate record breaking drought and heat when we planted our 2012 crop. The crop was planted timely and we concentrated on installing an irrigation pivot on 35 acres of really sandy soil in hopes of raising 200+ bushel corn per acre under the pivot and 170 bushels per acre on our non irrigated soils. We were confident we could raise 70 bushels per acre of soybeans. The middle of June it became apparent we weren't going to realize our crop goals. The heat and drought had settled in to stay.

It is so frustrating to watch the crop wither and die. I actually used our fields as training examples for permanent wilt and drought stunted corn. I just happen to have a couple of pictures I'm attaching. The race was on to get our irrigation pivot operating. Due to a storm we didn't water the crop until July the 6th. We also bought back some of the grain we had contracted to the elevator for our landlords. We were concerned our corn crop would not even yield 40 bushels to the acre, which is the most we have ever forward contracted for corn.

Our best corn was on the farm with the pivot. Under the pivot was close to 200 bushels per acre and outside of the pivot was 10 bushels per acre. This farm averaged 100 bushels per acre that allowed us to meet our contracts. The rest of the crop was dismal. Needless to say there wasn't anything to put in the bins. Due to the drought and heat the grain quality was not good so even grain for cattle feed was shipped. All in all the year was the worst on record.

We always live on the proceeds of the crop the year after we produce it so we will feel the effects of the 2012 drought this year. Predictions are that 2013 will also be a drought year so we have our fingers crossed and are busy trying to find water for an additional irrigation pivot as 2013 unfolds.

Crop Insurance

The number one barrier to increasing our yields is lack of water. Dry weather in the months of July and August always limits our yield potential. We find crop insurance an effective tool in managing risk when we experience these weather events. We began using crop insurance is 1991 as a way to maintain our cash reserves and prevent the need to borrow operating money. In the early days crop insurance only protected yield. The addition of revenue protection now allows us the ability to protect against fluctuations in both yield and price. Our goal is not to make money off of crop insurance but to balance our yearly revenue so we will have operating money for the following crop year. I actually lost money by buying crop insurance over a 20 year time span. It wasn't until the last two years that it paid to have crop insurance.

Using crop insurance as a risk management tool is not cheap. We have Revenue Plan 2 coverage and insure 80% of our average corn yield at a cost of $38 per acre and 75% of the average soybean yield at a cost of around $20 per acre. This plan allows us to be covered for a loss of revenue due to low yields or a price fluctuation either upward or downward during the crop year.

2012 Yield Averages

The yields from the 2012 crop were the lowest on record for our farm. The average corn yield was 41 bushels/acre while the soybeans fared somewhat better at 30.4 bushels/acre. It ended up being one of our best decisions to purchase an irrigation pivot this year. Our average corn yield would be 34 bushels/acre had we not installed the irrigation pivot. We normally have a 50/50 rotation of corn and soybean acres on the farm.

Revenue Results

Our harvested yield of 41 bushels per acre of corn contracted to the elevator in the winter at a price of $5.44 gave us harvested revenue per acre of $223.04. Without crop insurance we would not be able to plant a crop in 2013 without borrowing money as our budgeted expenses for 2013 on corn is $750 per acre.

Our crop insurance guaranteed revenue 80% of $900 per acre. Are crop ended up being worth $223.04 per acre. We were paid an indemnity of $592.50 per acre. The $592.50 + our harvested revenue of $223.04 = $815.54 per acre to budget against next year's expenses.

Crop Insurance Corn Expected Revenue/Acre	$900		
Crop Insurance Corn Harvested Revenue/Acre	$307.50		
Crop Insurance Indemnity/Acre	$592.50		
Harvested Revenue without Crop Insurance		$223.04	
Total Revenue/Acre			$815.54

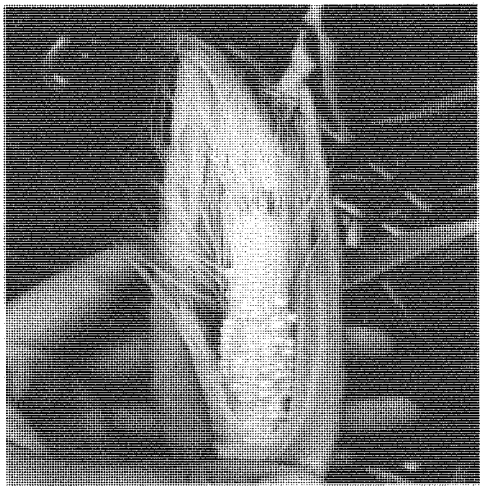
Our harvested yield of 30.4 bushels per acre of soybeans contracted to the elevator in the winter at a price of $12.55 gave us harvested revenue per acre of $381.52. Without crop insurance we would not be able to plant a crop in 2012 without borrowing money as our budgeted expenses for 2013 on soybeans is $542.

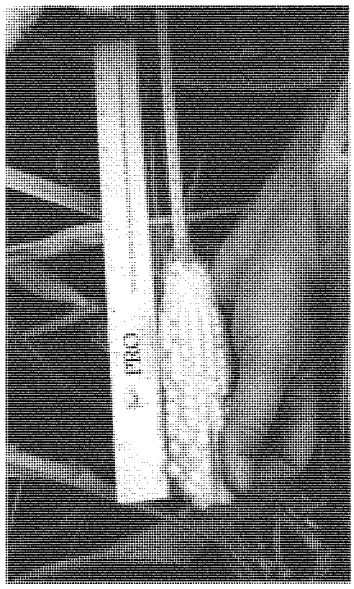
Our soybean crop insurance guaranteed 75% of $577 per acre. Our harvested revenue was $381.52 per acre for the 30.4 bushels at a value $15.39 per acre. We were paid an indemnity of $109 per acre. The $109.14 per acre + the harvested revenue of $381.52 = $490.66 per acre to budget toward next year's expenses.

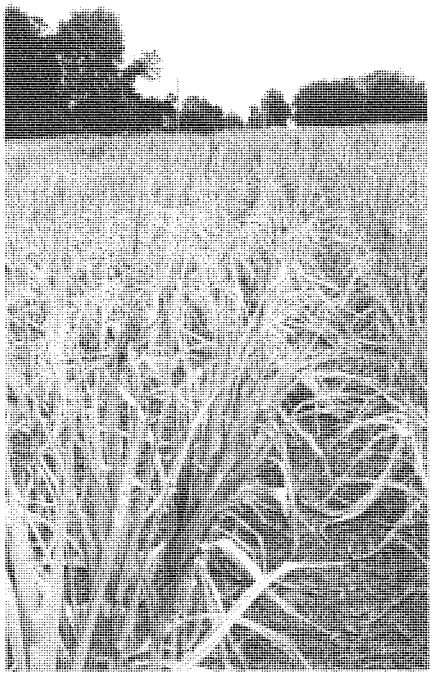
Crop Insurance Expected Revenue/Acre	$577		
Crop insurance Harvested Revenue/Acre	$467.86		
Crop Insurance Indemnity/Acre	$109.14		
Harvested Revenue without Crop Insurance		$381.52	
Total Revenue/Acre			$490.66

As you can see we paid a substantial premium for crop insurance and that decision is keeping us in business for the 2013 crop year.

Thank you Chairwoman Stabenow for this opportunity to testify. I look forward to your questions.







DOCUMENTS SUBMITTED FOR THE RECORD

FEBRUARY 14, 2013

February 13, 2013

The Honorable Harry Reid, Majority Leader
U.S. Senate
522 Hart Senate Office Building
Washington, DC 20510

The Honorable Mitch McConnell, Majority Leader
U.S. Senate
317 Russell Senate Office Building
Washington, DC 20510

Dear Majority Leader Reid, Minority Leader McConnell and Members of the U.S. Senate;

As representatives of US farmers and ranchers, we ask for your support of the comprehensive legislation that was introduced by Senators Max Baucus (D-MT), Debbie Stabenow (D-MI) and Roy Blunt (R-MO) on January 25, 2013. S.141 will extend agriculture disaster assistance programs for 2012, 2013.

As the nation awaits passage of a comprehensive Farm Bill, agriculture producers across the country are left without the reassurance and support they need in times of extreme weather events. 2012 saw the nation struck with one of the worst droughts in 50 years; many regions across the country have yet to recover and are still undergoing unseasonably dry weather and thus without any relief in sight for their herds and crops.

Following the passage of the American Taxpayer Relief Act and subsequent extension of 2008 Farm Bill policies and programs, these necessary disaster relief programs were left without any mandatory funding. We urge for passage of necessary legislation that backfills programs for 2012 and extends through the remainder of 2013.

We ask that the following programs be supported through mandatory funding, thus allowing America's farmers and ranchers to overcome the harsh weather conditions: the Livestock Indemnity Program (LIP), Livestock Forage Program (LFP), Emergency Assistance for Livestock, Honey Bees, & Farm-raised Fish Program (ELAP), Tree Assistance Program (TAP) and the Noninsured Crop Disaster Assistance Program (NAP). These programs cover the immediate and long-lasting effects from extreme weather events and provide necessary assurance to ranchers and farmers across the nation.

Sincerely,

American Sheep Industry Association
National Association of Conservation Districts
National Farmers Union
United States Cattlemen's Association

cc: Members of the U.S. Senate

National Association of Conservation Districts

Testimony on behalf of the National Association of Conservation Districts

Senate Agriculture Committee

Hearing on Weather Disasters, Effects on Agriculture, and the Economy

February 14, 2013

Dear Chairwoman Stabenow, Ranking Member Cochran, and Committee,

Conservation programs help producers make their operations more resilient. By mitigating the effects of disasters and preventing longer-term harm to the land and other precious natural resources, conservation technical assistance, Farm Bill programs, and other proactive measures help producers stay on their feet when disasters strike. Conservation measures pay dividends beyond disaster payments and offer confidence to crop insurance providers. From droughts to hurricanes and freezes to wildfires, such extreme events can have a paralyzing effect on the entire agricultural industry, local economies, and our natural resource base. Proactive conservation planning and implementation on the ground sustains agriculture from year to year, increasing efficiency and cost savings for producers.

Conservation districts have a long history of being proactive with clear results. For example, NACD's Past President, Gene Schmidt, grew up near a farm in Indiana that was recently hit by an F4 tornado. Back in the 1950s, a windbreak was built surrounding this farm such that it was protected from the tornado's heavy winds and scattered debris. The windbreak was built for just $200, but the estimated cost of repairs could have been as high as $200,000, not counting personal injury and personal property loss. According to an insurance adjustor, had it not been for the windbreak, an effort initiated by the local Conservation District, the small Indiana farm would have suffered major losses detrimental not only to its farmers, but to the entire community that relies on their work.

Conservation districts' careful advance planning also aided a North Central Illinois township, where a massive blizzard recently struck the community. Because of pre-existing conservation projects implemented on the roads, snow buildup was minimized, allowing life in the township to return to normal much more quickly than in other nearby communities. In fact, it took one-third of the normal time to plow the roads because of the efforts of conservation districts in putting measures on the ground to help snowfall remain in the field rather than drifting over the roadway. These measures ultimately increase productivity in the township. It is precisely these types of projects for which NACD advocates to enable conservation districts to help local landowners make themselves and the economy more resilient.

In relation to Hurricane Sandy, Connecticut conservation districts are helping farmers develop emergency operations plans. In New Hampshire, districts are gearing up to partner with the Connecticut Watershed Council to help repair damage caused by the storm. In New York, districts are looking at ways to help producers do damage reports, using damage assessment forms developed by the Department of Agriculture and Markets after Hurricanes Lee and Irene. In Pennsylvania, areas where best management practices were implemented survived the storm well, helping to mitigate the worst effects of the Hurricane in Pennsylvania and neighboring states.

The mission of NACD is to coordinate assistance for conservation districts from all available sources–public and private, local, state and federal–in an effort to develop locally driven solutions to natural resource concerns. There are nearly 3,000 conservation districts across the United States. Established under state law, conservation districts are local units of state government charged with carrying out programs to protect and manage natural resources at the local level. To assist in federal conservation programs' implementation, our members work with the U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) and the Farm Service Agency (FSA), as well as other federal agencies and state and county programs. National entities, such as the U.S. Army Corps of Engineers and FEMA, should allow state and local entities to take the lead in disaster situations, such as landscape recovery and wildlife restoration, while providing assistance to these state and local entities.

It is with this mission in mind that NACD would like to emphasize to the Committee the effectiveness of state and local actors who have existing connections to farmers in coordinating with local landowners on a response to weather disasters. Conservation technical assistance provides a proactive solution for long-term resource concerns whereas many reactions to extreme weather come too late. For example, though the past year's drought out West harming livestock producers and early freezes in the East harming orchard farmers – many of these losses can have the same disastrous effects as hurricanes but often do not receive the same response because of the perceived lack of urgency. It is important that there is a clear plan of action in place for a coordinated response to droughts, fires, freezes and other extreme weather events, and we thank you for including disaster aid in the framework of the next Farm Bill. This will help streamline the process of recovery while conserving resources, both physical and financial and while providing long-term certainty for producer planning purposes.

NACD also supports recent legislation that recognizes the needs of agriculture in times of struggle due to weather events. The Disaster Relief Appropriations Act of 2013 will greatly assist in the land recovery from Hurricane Sandy. NACD also hopes that the bill recently introduced by Chairwoman Stabenow along with Senators Baucus and Blunt will be received favorably in order to help support those afflicted by the recent droughts. The 2013 Farm Bill framework should proactively plan for weather disasters to mitigate the cost of recovery, ensuring a strong return-on-investment for tax-dollars.

Because conservation districts already have a strong working relationship with farmers, districts should be involved in any deliberations on ways to better prepare for or recover from extreme weather events. Conservation districts are already engaging local experts in this type of research, and it is clear that districts would bring experience and expertise to help solve these national problems through a locally-led approach. NACD would like to take this opportunity to express support for this Committee in addressing the concerns of the agricultural industry about the weather disasters that have recently plagued the entire country.

Sincerely,

Earl J. Garber

Earl Garber
President, National Association of Conservation Districts

QUESTIONS AND ANSWERS

FEBRUARY 14, 2013

Senate Committee on Agriculture, Nutrition & Forestry
Drought, Fire and Freeze: The Economics of Disasters for America's Agricultural Producers
Questions For The Record
February 14, 2013
Chairwoman Debbie Stabenow

Dr. Joe Glauber, Chief Economist, USDA

1. Can you provide a table that quantifies the financial impacts of extreme weather events in 2012 on the crop, livestock, and specialty crop sectors respectively? Can you also include the mitigating factor of crop insurance coverage for these three sectors?

2. If livestock disaster assistance would have been available in 2012, what would have been the impact on the financial health of livestock producers, the financial situation of the meat processing industry, and on the size of the U.S. cattle herd?

Dr. Roger Pulwarty, Director, National Drought Information System, NOAA

1. Can you give us an estimate of how close we are to reaching a situation where drought conditions match the severity of the Dust Bowl? The outlook you provided was for the next few months, but from your experience, how likely is it that conditions improve substantially for the next growing season or are we in such a deficit in some areas that even improved weather will not help?

2. It is expected that global climate change will exacerbate the length and severity of droughts, can you explain why and how drought is affected by climate change?

3. What are the most frequent information requests that you receive from farmers and ranchers who are using your data to plan their farming operations, are they seeking information as to what, where, and when to plant?

Senate Committee on Agriculture, Nutrition and Forestry
Drought, Fire and Freeze: The Economics of Disasters for America's Agricultural Producers
Thursday, February 14, 2013 – 9:30 A.M.; 328a Russell
Senator Michael Bennet

Questions for the Second Panel:

1. Ms. Steinbarger—In your testimony, you mentioned that you have been involved not only in farming and ranching, but also in the farm supply and crop insurance business. Many people forget that a healthy farm economy is good for everyone—retail, transportation, banking, and other sectors. Given your broad experience in agriculture, what would you like to communicate to lawmakers questioning whether or not reauthorizing the Farm Bill should be a priority here in Washington?

2. Mr. Send—You and other witnesses on this panel have described some the best ways to keep American agriculture competitive: crop insurance, conservation, sensible disaster programs, and research. We should add one more item to that list: a steady workforce.

The current work visa program for agriculture is falling short. Labor shortages and administrative complications are holding back fruit growers on Colorado's Western Slope and dairies along our Front Range. Do you think reforming agriculture's work visa program would help you and other cherry farmers?

Senator Sherrod Brown
Questions for the Record

Questions for Dr. Glauber:

1) It's no secret that I've never been a supporter of direct payments -- the fixed payments made every year according to historical planting data -- paid to producers indiscriminate of need. I'm concerned that these payments exaggerate disparities between different types of agricultural production and may affect farmers' business decisions. Dr. Glauber, would you please provide some information for the 2012 crop year that would help us assess inequities in the system? For instance, what portion of producers who received direct payments did not experience any losses? And, what portion of producers who experienced a loss, but did not receive direct payments?

2) Dr. Glauber, your written testimony and your remarks this morning point out a few simultaneous trends. We are here talking about disaster and the hardship producers are enduring because of uncontrollable weather events. Later this morning we'll hear from producers who lost much, if not all, of their harvest in 2012. At the same time, you've explained that net cash income for 2012 is forecast at record highs -- and net farm income for 2013 will likely follow suit – reaching the highest level, in real terms, in 40 years. Total cash receipts are up and while input costs -- such as feed and labor -- are up, net farm income remains at record levels. Additionally, Farm Equity is at record highs, farm real estate continues to increase in value, while the farm debt-to-asset ratio is at record lows. This all makes it sounds like agriculture is doing very well.

But at the same time you've noted that crop insurance indemnity payments for 2013 are likely to surpass the 2012 record. Would you please help me understand this seemingly incongruous information?

Questions for Dr. Pulwarty:

1) Dr. Pulwarty, as you may know, the farm bill is about more than just agriculture---it's also about building strong rural communities. Given your expertise in climate and experience integrating research into decision making, what advice would you provide this committee about what a farm bill needs to do to prepare rural communities for the changing temperatures and weather patterns of the future?

Question for Both Dr. Pulwarty and Dr. Glauber:

1) Whether pervasive drought or a severe storm, once a disaster strikes, it is this Committee's job to determine how best to provide assistance to agricultural producers who suffer significant losses. The weather is one of those things we can't control -- but we can be prepared. Broadly speaking, agricultural research, soil and water conservation, diversification, appropriate risk management could all be seen as investments in prevention. Given your respective areas of expertise, what do you see as essential preventative measures this Committee can take at a time

when farmers are facing changing weather patterns AND the federal government is focused on reducing expenditures? How can we do more and better with less?

Senate Committee on Agriculture, Nutrition & Forestry
Drought, Fire and Freeze: The Economics of Disasters for America's Agricultural Producers
Questions for the record
February 14, 2013

Ranking Member Cochran

Dr. Glauber:

1. In addition to the natural disaster damages that farmers and ranchers have seen this past year, I have also heard from many forest owners who have suffered from catastrophic events like drought, wildfires, and hurricanes. Can you provide the Committee with an estimate of the impact that these disasters have had on private forest owners? In particular, what is the loss in timber value from these disasters? What assistance is available at USDA for these kinds of landowners, especially given that it is very difficult for most forest owners to get insurance against disasters like these?

2. The 2012 fire season was one of the worst fire seasons on record, burning more than 3 million acres over the 10-year average. What is USDA doing to respond to this devastation on both public and private forests in an effort to maintain the livelihoods of forest owners and the forest products industry -- both of whom rely on these forests? Can you provide an estimate of the economic damages caused by these fires on both public and private forests?

3. Can the U.S. Forest Service provide a status update of the pine beetle outbreak in the DeSoto National Forest in Mississippi and the national forests in Texas? Is the U.S. Forest Service using all relevant authorities to control the outbreak? What other major insect infestations are occurring in other parts of the country that threaten the livelihood and health of our national forests?

4. Last December, the U.S. Forest Service announced the Mountain Pine Beetle Response Project on the Black Hills National Forest in South Dakota after an extensive public comment period and environmental review. Can you tell me about the Mountain Pine Beetle Response Project and how that project is coming along? Do you expect litigation as you move to implementation? Is this a model for how to complete National Environmental Policy Act (NEPA) requirements more efficiently? If so, are you applying this model nationwide across the National Forest System?

5. The Healthy Forest Restoration Act (HFRA) is approaching its ten-year anniversary. To date, how many acres has the Forest Service treated using HFRA authorities? Is the Forest Service using the HFRA to its fullest extent to manage our national forests and reduce the threat of devastating wildfires? Are there any areas within the HFRA that can be improved to provide the agency with additional tools to mitigate the risks of wildfire?

6. Can you provide the Committee with information regarding what the Forest Service has accomplished to date in regards to carrying out the Large Airtanker Modernization Strategy which would upgrade the aging airtanker fleet with "next generation" airtankers? What is the current make-up of the airtanker fleet under contract today, including both the number of aircrafts and aircraft types? From the Forest Service's perspective, what would an updated fleet of aerial assets, including airtankers and scoopers, look like – in terms of aircraft mix and how these planes are owned and operated? Has the Forest Service issued any contract solicitations for any next generation airtankers? Have there been any delays in making the awards?

7. Recently Secretary Vilsack stated that as a result of sequestration, Food Safety and Inspection Service (FSIS) inspectors at meat and poultry facilities would need to be furloughed for 15 days. If sequestration is a permanent cut to the FSIS budget, how does furloughing inspectors solve the budget gap? Wouldn't FSIS be forced to furlough inspectors again in future budget years?

   Further, during the threat of a government shutdown in spring 2011, USDA claimed that essential federal employees would not be subject to furloughs and that FSIS inspectors were included as "essential federal employees." It is our understanding that "essential" employees were those that are "necessary to fulfill constitutional responsibilities, safeguard human life or protect property." What is different today or what has changed since 2011 to now claim FSIS inspectors as subject to being furloughed employees?

8. On September 14, 2012, OMB provided preliminary estimates of the funding reductions scheduled to occur due to the 2013 sequester. Is there still intention to target the Tobacco Trust Fund and Agricultural Disaster Relief Fund?

Dr. Pulwarty:

What is the current capability of the National Oceanic and Atmospheric Administration (NOAA) to predict droughts in the near term and how can these capabilities assist farmers in making decisions to mitigate the effects of a drought on their crops?

Mr. Steffen:

In your testimony, you mentioned diversification as an important part of your risk management plan. How has a diversified operation helped you deal with the drought and economic swings of recent years?

Questions for Dr. Joe Glauber, Chief Economist at USDA

Question 1—Feed Shortage Question:

Due to feed grain shortages and skyrocketing prices, New York dairy farmers are struggling to feed their cows through the winter. Corn is the primary component of feed grain for dairy cows, and as you know, we saw a 27% decrease in corn production nationwide last year, caused by the severe drought. Simultaneously, the price of corn increased by 61% in 2012, further taxing dairy farmers' narrow margins of income. Additionally, dairy farmers are suffering from severe shortages in hay, since we saw the lowest level of hay production since 1957.

These feed shortages are devastating for New York dairy farmers. I am hearing from agriculture extension workers in New York that farmers are faced with the distressing situation of having to cull cows since they don't have enough to feed them through the winter. I am hearing that auctioneers are expecting this to cause the closing and sale of hundreds of family farms across the state. One auctioneer in an impacted area said he was expecting to be "very, very busy" in March and April. I am very concerned that this will translate into small family dairy farms closing and the big mega-farms buying all of them up, which will mean a significant loss of jobs and livelihoods in rural areas of New York and across the country.

These feed shortages are devastating to the agriculture economy in New York State and across the country, and a solution needs to be found as soon as possible. Have you explored back up strategies, such as establishing a strategic grain reserve to save our dairy farms and livestock operations nationwide? Have you explored potential solutions to the extreme hay shortages nationwide?

Question 2—Crop Insurance is Broken and Needs to be fixed for Diversified specialty crop farms in New York State:

In the past 1.5 years, New York farmers have suffered from multiple 100 year storm events. While I am heartened to hear about the successful crop insurance programs for the corn growers in the Midwest to deal with these types of

weather events, I must ask – why don't the diversified fruit and vegetable farms in the Northeast, and namely New York, deserve the same adequate safety net?

Diversified family owned farms in New York more often than not function without any crop insurance at all because there isn't a policy that matches their needs. When the floods from Irene and Lee took out entire valleys of farms in Schoharie and Columbia Counties in NY, we learned that only 27% of farmers had insurance through the NAP program. They don't sign up because the potential payments (even when there is a 100% loss of crops) are insignificant. Farmers feel that NAP is inadequate and doesn't help them in times of need.

I believe that the crop insurance program is broken for diversified fruit and vegetable farmers and needs to be fixed as soon as possible. The family farm which grows 50 kinds of produce to meet local and national needs deserves the same safety net as the large corn producing farm in the Midwest. Will you work with me to achieve this change at USDA, partnering with your counterpart at the Risk Management Agency?

Question 3 – Ethanol Question:

According to USDA, 35-40% of corn produced in the United States goes into producing ethanol. USDA also reports that the drought caused a decrease in corn production of 27%, coupled with a rise in the price of corn by 61%. This tragic situation for dairy farmers caused by severe drought and climate change has caused a dairy feed shortage that's breaking our dairy farmers' backs financially and forcing them to cull cows.

With the potential for continued severe drought, and feed shortages for our cows, why not explore an alternative to the current practice of using corn which is such an important feed for livestock and dairy cows? Have you considered cellulosic (i.e. switch grass) as an alternative? What is USDA doing to promote switch grass as an alternative biomass to corn in the production of ethanol?

Question 4 – Rebuilding after Superstorm Sandy:

I want to express my thanks for USDA's role in helping New York farmers rebuild after the catastrophic floods of Irene and Lee back in 2011. The funding through the Emergency Conservation Program (ECP) and Emergency Watershed Program (EWP) helped our agriculture communities hardest hit to rebuild and keep their land in production.

As you know, Superstorm Sandy was devastating to New York State, including damaging 4.5 miles of levees that protect five farms and over 700 acres of farmland in the Town of Southold on the North Fork of Long Island. Due to the destruction of these levees, salt water has washed up on this farmland and without needed repairs, continued to drench this land during high tides and full moons, making it impossible to grow fruits and vegetables. About half of the impacted land was already protected from development rights, so our state, federal and local governments, as well as the farm families, have already invested in keeping this land agricultural. I want to thank USDA for working with my office and those New York communities to rebuild after the storm. I understand that an Emergency Watershed Program (EWP) proposal has been submitted by the Town of Southold. I ask that you consider the great importance of this request for a community which risks losing over 200 years of farming heritage. Will you agree to work with me to ensure that this critical farmland remains in agricultural production?

Witness Questions:

Mr. Ben Steffen, Dairy Farmer (135 cow herd), Steffen Ag, Inc., Humboldt, NE:

Question 1: Thank you for your testimony Mr. Steffen. I understand that you have 135 cows on your dairy farm in Nebraska. Your herd size is just about the same size as the average New York dairy farm. Based on the math (20,071 lbs. of milk/cow/year X135 cows = 2,709,585), you fall under the MILC (Milk Income Loss Contract) cap. What has your experience been with the program? What are your thoughts on the new margin insurance and market stabilization program? For

your size farm, would the new program offer an equivalent safety net for your milk?

Question 2: Mr. Steffen, I would also like to ask you about hay and grain shortages and skyrocketing prices. You mentioned that hay prices have risen dramatically due to shortages. I am hearing from farmers in New York that in some cases, it isn't possible to purchase hay at all– no matter the cost. The shortage is that severe. You also mentioned that the only solution in these situations is to cull cows. Since this is a consequence of the feed shortage, it occurs to me that dairy farmers deserve the same level of support which commodity farmers receive to keep their businesses viable. What do you think about the idea of having crop insurance for hay, alfalfa and other forms of animal feed? Would such a program be helpful in keeping your dairy farm in business?

Senate Committee on Agriculture, Nutrition & Forestry

Drought, Fire and Freeze: The Economics of Disasters for America's Agricultural

Questions For The Record

February 14, 2013

Senator Heitkamp

1.) Question for Chief Economist Joe Glauber – Young farmers don't have the working capital built up that older, more established producers can rely on. Consequently, risk management tools are even more critical for this group of young and beginning farmers. An important goal of mine on this Committee is to explore ways to help young farmers, the future leaders of farm states like North Dakota.

- Can you tell me how disasters may impact new and beginning farmers, while addressing some of the challenges that are unique to a farmer that is just starting out?

- The livestock disaster programs expired in calendar year 2011. How does the lack of a Livestock Forage Disaster Program (LFP), Livestock Indemnity Program (LIP) and an Emergency Livestock Assistance Program (ELAP) disproportionately impacts young farmers and ranchers?

2.) Question for Chief Economist Joe Glauber – North Dakota is a state that experiences more natural disasters than many others. Some years we have flooding in the Red River Valley and near Devil's Lake. Other years we experience draught that can affect producers across the state in both livestock and row crop operations.

- Can an insurance based safety net meet the needs of producers facing steep losses from disaster?

- What risk management tools do growers in my state need to survive events like flooding and draught?

- Where do you see the holes in the crop insurance program for row crop producers in a state like North Dakota?

Senate Committee on Agriculture, Nutrition & Forestry
Drought, Fire and Freeze: The Economics of Disasters for America's Agricultural Producers
February 14, 2013
Questions for the Record

Senator Pat Roberts

Questions for Dr. Joe Glauber:

1. Crop insurance already protects more than 250 million acres of cropland in the United States but there are still acres that aren't protected and producers who can't afford to purchase the kind of protection they need. As we continue our work to preserve, protect and strengthen crop insurance, how can we improve upon an enormously successful program?

2. In northwest Kansas, producers irrigating from the Oglala Aquifer must work to conserve their water, however, current RMA practices do not have a middle ground between fully irrigated and dry land practices. RMA has been evaluating a limited-irrigation crop insurance policy for several months and has contracted for a pilot program. Can you please provide a status update on this product and pilot program? Are there problems or concerns with moving forward, and if so, what are they? When do you believe it will be available to farmers?

Senate Committee on Agriculture, Nutrition & Forestry
Drought, Fire and Freeze: The Economics of Disasters for America's Agricultural Producers
February 14, 2013
Questions for the record

Senator Thune

Dr. Joe Glauber

1) You have outlined the devastation to US corn production from last year's drought. 2012 also saw a record setting corn crop from Brazil, a major competitor with US corn exports on the world market. How will this affect US export market share, and how will we recover our status as the world's leader in corn exports?

2) The drought's impact has far reaching effects in South Dakota's economy. How will drought resistant seed traits help western Corn Belt states deal with the effects of multiple year droughts? What can Congress or the Administration do to ensure that new traits are brought to market in a timely manner?

3) The prolonged drought has had a dramatic impact on livestock herds in South Dakota and much of the United States. Can you tell us what the outlook and projected recovery of grazing livestock herds will look like for the Western United States? What impacts on this recovery would have been made if the livestock disaster programs included in the Senate passed Farm Bill had been in place for 2012?

4) In December, the USDA and NOAA signed a Memorandum of understanding, the purpose of which was to better deliver information about events like drought to users on the ground. Can you both please inform the committee of the current status of the collaborations between your two agencies and how this MOU will foster improved collaboration in the future?

Dr. Roger Pulwarty

1) How does NIDIS prioritize the regional implementation of Drought Early Warning Systems?

2) Can you please highlight the inter-agency approach that NIDIS takes to drought monitoring and forecasting? In particular, could you discuss the relationship between NOAA, USDA, partners at the state and local level, and the private sector?

3) How does NIDIS ensure that the data you provide is useful to the public? What kind of a relationship do you maintain with trade groups or other organizations that could help disseminate actionable information to end-users?

4) What kind of feedback have you received from agricultural businesses and trade groups on your drought forecast products? Are they able to use these forecasts to better manage their businesses?

5) How has NIDIS's work to build capacity, leadership, and partnerships to increase drought preparedness paid off during the most recent drought?

Mr. Leon LaSalle

1) To what degree does each of you use the USDA/NOAA drought monitor to make decisions for your farms? How could the drought monitor be made more useful to you in your business planning?

2) Last year Secretary Vilsack made feed available through emergency haying and grazing of CRP, which was beneficial for states like South Dakota. Was your area included in the emergency haying and grazing of CRP program lands that Secretary Vilsack made available last year, and was there sufficient CRP available to make a difference in local feed supplies? Are there other types of assistance that USDA could have provided to grazing livestock producers in your area that would have been more effective than haying and grazing CRP?

3) How has your herd size changed as a result of these disasters? What are your plans for recuperation?

Ms. Anngie Steinbarger

1) To what degree does each of you use the USDA/NOAA drought monitor to make decisions for your farms? How could the drought monitor be made more useful to you in your business planning?

2) What level of crop insurance do you generally purchase for your farm? What is your greatest concern regarding the future of crop insurance?

3) How will last year's drought affect your management decisions for the upcoming seasons?

Mr. Jeff Send

1) How does the drought monitor affect planning for perennial crops such as your cherry trees? Are there mitigation practices you can employ when a drought is predicted?

2) What types of insurance or disaster assistance are currently available for the fruit trees and other crops you grow on your farm? What crop insurance or disaster assistance products would be most helpful for your operation in the future?

3) How will last year's drought affect your management decisions for the upcoming seasons?

Senate Committee on Agriculture, Nutrition & Forestry
Drought, Fire and Freeze: The Economics of Disasters for America's Agricultural Producers
Questions for the Record
February 14, 2013
Dr. Joseph W. Glauber

Chairwoman Debbie Stabenow

1.) Can you provide a table that quantifies the financial impacts of extreme weather events in 2012 on the crop, livestock, and specialty crop sectors respectively? Can you also include the mitigating factor of crop insurance coverage for these three sectors?

Response: On February 11, USDA's Economic Research Service (ERS) released its revised farm income forecast for 2012 as well as its first forecast of farm income for 2013. For 2012, net cash income is forecast at $135.6 billion, a record in nominal terms and, the highest since 1973, adjusting for inflation. Farm cash receipts are forecast at $391 billion, up $17 billion over 2011 levels. Crop receipts are estimated at $220 billion, up 5.4 percent over 2011, while livestock receipts are up 3.4 percent to $172 billion. Total expenditures are up as well relative to 2011, with feed costs forecast to rise 16.6% to $64 billion reflecting higher grain and oilseed prices. Other farm income, which includes crop insurance indemnities covering the 2011 and 2012 crop years, is forecast to be $31.3 billion in 2012, up 20 percent over 2011 levels.

Table 1a shows farm income projections for calendar year 2012 made by ERS in February 2012, compared to subsequent forecasts made in August 2012, November 2012, and most recently, in February 2013. This table can highlight some of the financial impacts of the extreme weather events in 2012. Projections for farm income for 2012 increased over the period. That increase was largely due to increased commodity prices which offset declines in crop yields over the period, increased placement of cattle from pasture to feedlots, higher pork production, stronger than expected meat exports, and increases in crop insurance indemnities. Cash receipts for crops are up almost 11 percent from projected levels made in February 2012. Livestock receipts are up almost 4 percent from previous projections. Projected cash expenses for 2012 are roughly the same level as was projected in February 2012. Higher feed expenses were offset by lower-than-forecast expenditures for energy-related expenses, machine hire and storage expenses.

Table 1a--Projected 2012 farm income

Item	2012 Farm Income Forecast as of:				Feb13/Feb12
	Feb 2012	Aug 2012	Nov 2012	Feb 2013	
Cash income statement:	Billion dollars				
1. Cash receipts	364.075	387.950	385.537	391.236	7.5%
Crops 1/	198.292	222.144	216.557	219.557	10.7%

Livestock	165.783	165.806	168.979	171.679	3.6%
2. Direct Government payments	10.993	11.077	10.860	10.845	-1.3%
3. Farm-related income 2/	19.898	34.542	34.895	31.322	57.4%
4. Gross cash income (1+2+3)	394.966	433.568	431.291	433.403	9.7%
5. Cash expenses 3/,4/	298.712	293.909	298.506	297.803	-0.3%
6. NET CASH INCOME (4-5)	96.254	139.659	132.785	135.599	40.9%
Farm income statement:					
7. Gross cash income (1+2+3)	394.966	433.568	431.291	433.403	9.7%
8. Nonmoney income 5/	24.660	24.630	24.649	24.475	-0.8%
9. Value of inventory adjustment	5.890	-6.840	-7.907	-11.363	-292.9%
10. Total gross income (7+8+9)	425.516	451.358	448.033	446.514	4.9%
11. Total expenses	333.767	329.126	334.032	333.679	0.0%
12. NET FARM INCOME (10-11)	91.749	122.232	114.001	112.836	23.0%

Table 1b shows net crop insurance indemnity payments for selected crops for 2012. As of April 1, 2013, over $16 billion had been paid out in crop insurance indemnity payments to cover 2012 crop losses. Almost $11 billion was paid to corn producers while soybean producers received over $2 billion in indemnity payments. Non-row crop producers received about $1 billion in indemnity payments in 2012. Less than $35 million has been paid to producers enrolled in the livestock and dairy pilot programs.

Table 1b--Net indemnity payments, selected 2012 crops (million dollars)

Crop	Total	Subsidy	Producer-paid	Indemnity	Net indemnity

	Premium		premium		
Barley	83.2	52.3	30.8	43.3	12.5
Corn	4,320.4	2,682.8	1,637.6	10,735.9	9,098.2
Grain Sorghum	213.9	138.2	75.7	400.8	325.1
Oats	8.3	5.2	3.1	5.0	1.9
Wheat	1,783.9	1,111.0	672.9	733.5	60.6
Rice	55.4	38.5	16.9	40.1	23.2
Upland cotton	835.3	553.2	282.1	1,078.4	796.3
Peanuts	87.3	51.7	35.6	24.6	-11.0
Soybeans	2,345.1	1,469.4	875.7	2,029.0	1,153.3
Total selected row crops	9,732.8	6,102.4	3,630.4	15,090.5	11,460.1
Other	1,350.0	854.8	495.2	998.9	503.7
All crops	11,082.7	6,957.1	4,125.6	16,089.4	11,963.8

Source: Risk Management Agency, Summary of Business, April 1, 2013.

2.) If livestock disaster assistance would have been available in 2012, what would have been the impact on the financial health of livestock producers, the financial situation of the meat processing industry, and on the size of the U.S. cattle herd?

Response: Livestock, dairy and poultry producers faced high feed costs for most of 2012 and high prices are likely to persist through much of 2013 until new crops are harvested in the fall. Feed ratios, which have generally been tight since 2007, tightened further in 2012 as feed costs rose relative to meat and dairy prices. In addition to high feed costs, cattle producers have been particularly hard hit by poor pasture and hay conditions. Almost 60 percent of pasture condition rated poor or very poor for most of July, August, and September 2012. Dryness in the Southern Plains has persisted for over two years and the U.S. cattle and calf herd is at its lowest level since 1952.

USDA took advantage of several flexibilities within the existing framework of statutory authorities to provide assistance to producers last summer. For example, USDA expanded lands in the Wetland Reserve Program and the Conservation Reserve Program (CRP) that would be eligible for emergency haying or grazing. Roughly 2.8 million acres in the CRP were opened up under the emergency haying and grazing option, which provided up to $200 million in forage value.

In addition, funds were prioritized under the Environmental Quality Incentives Program and the Wildlife Habitat Incentives Program to help producers manage drought conditions. Modifications of existing contracts were allowed for grazing and livestock watering in drought stricken areas.

Further, through a regulation change, USDA simplified the process for Secretarial disaster designations, which resulted in a 40 percent reduction in processing time for most counties affected by disasters. In 2012, 2,333 counties received disaster designation status (2,254 due to drought); 704 counties have been designated as disaster counties in 2013 (703 due to drought).

Other actions included a reduced interest rate for emergency loans and a payment reduction on CRP lands qualified for emergency haying and grazing in 2012, from 25 to 10 percent. The Secretary also worked with crop insurance companies to provide an extended payment period to pay crop insurance premiums and filed special provisions with the federal crop insurance program to allow haying or grazing of cover crops without affecting the insurability of planted 2013 spring crops.

Despite these actions, some programs that could have helped mitigate drought impacts currently have no funding. The three livestock disaster assistance programs authorized in the 2008 farm bill were reauthorized in the American Taxpayer Relief Act of 2012, but have not yet been funded by appropriations. For 2008-2011 losses, the Livestock Forage Program (LFP), for example, paid more than $550 million. Preliminary analysis suggests that LFP payments could have totaled between $500 million and $600 million for 2012 losses alone.

With total livestock, dairy and poultry cash receipts for 2012 estimated at $172 billion, LFP payments would have had limited impact to sector income, but they would have had potentially larger regional effects for producers adversely affected by the drought.

Ranking Member Thad Cochran

1.) ***In addition to the natural disaster damages that farmers and ranchers have seen this past year, I have also heard from many forest owners who have suffered from catastrophic events like drought, wildfires, and hurricanes. Can you provide the Committee with an estimate of the impact that these disasters have had on private forest owners? In particular, what is the loss in timber value from these disasters? What assistance is available at USDA for these kinds of landowners, especially given that it is very difficult for most forest owners to get insurance against disasters like these?***

Response: The natural disasters that have occurred with increasing intensity and frequency in recent years have had a significant impact on private forest land. While reliable national data is not currently available for assessing loss in timber value, local and state data indicate that millions of acres of private forest land have been adversely impacted cumulatively by wildfire, hurricanes, tornado outbreaks and drought. Some of the most widespread and devastating impacts have been the result of climate change and drought induced pine and bark beetle infestations that have resulted in vast areas of die-off particularly in western states. Southern pine

plantations have also proven particularly vulnerable to blow-down from recent hurricanes and tornado outbreaks.

USDA has a variety of technical and financial assistance programs to assist private landowners care for their forests, including the Forest Legacy Program, Forest Stewardship Program, Environmental Quality Assistance Program, Wildlife Incentive Program, and the Conservation Stewardship Program. More information about these, and other landowner assistance programs, can be found at http://www.usda.gov/wps/portal/usda/usdahome?navid=FOREST_FORESTRY.

2.) ***The 2012 fire season was one of the worst fire seasons on record, burning more than 3 million acres over the 10-year average. What is USDA doing to respond to this devastation on both public and private forests in an effort to maintain the livelihoods of forest owners and the forest products industry -- both of whom rely on these forests? Can you provide an estimate of the economic damages caused by these fires on both public and private forests?***

Response: The Forest Services' intent is to maintain a consistent level of goods and services and is accomplishing this in many ways, e.g., the Lakeview CFLR project in Oregon is modifying their proposal after wildfire burned through the project area in 2012 with the intent of providing a high level of goods and services in spite of the adjustment.

Hazard trees are being removed along roads and trails and in and around campgrounds to protect the public while providing logs to the industry.

Several million acres of NFS rangelands were burned throughout the West, including parts of the Great Plains. An example of the worst situation is the Pine Ridge District of the Nebraska NF where nearly all that district, thus all the grazing allotments, burned. Nationally, fires resulted in a grazing reduction of 327,397 head per month (>2% of all authorized grazing over two grazing seasons) affecting 436 allotments (>5% of all allotments were affected) of which 178 allotments were totally unusable, resulting in 455 permittees (ranchers) affected. However, there was a significant amount of assistance given in the form of reconstructed fences, water troughs and pipelines, as well as other structures ($5,603,604; 1257 structures; 112 alternative allotments offered)

There is a need for further mitigation of the drought effects on these NFS rangelands. The recuperation time for the grasses will greatly vary by site. In most areas recovery will require at least one full growing season before it can be grazed, and in other areas it might take longer. The Forest Service is working within current authorities and funding to implement mitigation activities.

Over the last two fiscal years the Forest Service burned area emergency response (BAER) program spent almost $94 million in emergency stabilization efforts on NFS lands immediately after fires to help with erosion, flooding, and other threats to human health and safety, and

threats to resources. Treatments were as diverse as hillside stabilization, road protection, hazardous material stabilization, and hazard tree removal, as well as myriad other treatments.

The most effective way to assist private forest landowners is proactively, through programs like the **Forest Stewardship Program** (FSP). Through the FSP, and state forest agency partners, the Forest Service is working with landowners to maintain and improve forest health and biodiversity. Healthy and diverse forests are much more resilient (and stable, resistant, and adaptive) and thus able to withstand natural disasters and stress much better than unmanaged forests. Well managed forests are also much less susceptible to intense wildfires that can significantly alter long-term ecosystem structure. Nationally, there are currently more than 20 million acres of private forestland that are being managed according to **Forest Stewardship Plans**, in a way that is intended to enhance and restore long-term forest health, biodiversity and resilience.

The FSP also provides forestry technical assistance to support the delivery of financial assistance to private forest landowners through the **Emergency Forest Restoration Program.**

3.) ***Can the U.S. Forest Service provide a status update of the pine beetle outbreak in the DeSoto National Forest in Mississippi and the national forests in Texas? Is the U.S. Forest Service using all relevant authorities to control the outbreak? What other major insect infestations are occurring in other parts of the country that threaten the livelihood and health of our national forests?***

Response: In 2012 a southern pine beetle (SPB) outbreak developed on the National Forests of Mississippi quickly affecting more than 1,400 acres of pine forests in the State. Most of the beetle activity occurred on the Homochitto, Bienville and Tombigbee Forests; however, no activity was reported on the De Soto Forest. This is the first significant outbreak in the region since the last outbreak ended in the early 2000's. Over the past 10 years, the Forest Service and state cooperators have been focusing efforts on SPB prevention activities to help reduce future losses to SPB by thinning stands to increase resiliency. Of the more than 700 SPB spots on the Homochitto, only 2 spots were in thinned stands. The Forest Service is working closely with the Mississippi Forestry Commission and Mississippi State Extension Service to reach out to landowners and provide technical support needed to suppress beetle activity on private land. Additionally, the Forests are actively pursuing the use of Stewardship Contracting Authority to more cost-effectively address the suppression of any additional SPB activity.

Pine mortality on National Forests in Texas has been related to multi-year drought conditions and subsequent engraver beetle activity in these Forests. These beetles are much less aggressive than SPB and outbreaks often subside on their own once weather conditions improve.

Many other insects and pathogens affect our nation's forests. In 2012, approximately 4.6 million surveyed acres had tree mortality from insects and pathogens. This is down from 6.6 million acres in 2011. Most of this decline is due to the continued decrease in acres with mountain pine

beetle-caused mortality in the west. Other insects, such as the spruce beetle, western spruce budworm and gypsy moth affect many acres in different parts of the country. The Forest Service, and our state partners, has treated nearly a million acres of Federal, state and private forest lands to reduce the impacts of these threats to forest health.

4.) ***Last December, the U.S. Forest Service announced the Mountain Pine Beetle Response Project on the Black Hills National Forest in South Dakota after an extensive public comment period and environmental review. Can you tell me about the Mountain Pine Beetle Response Project and how that project is coming along? Do you expect litigation as you move to implementation? Is this a model for how to complete National Environmental Policy Act (NEPA) requirements more efficiently? If so, are you applying this model nationwide across the National Forest System?***

Response: The Black Hills National Forest's Mountain Pine Beetle Response Project (MPBRP) includes treatments on portions of 248,000 acres of ponderosa pine stands at high risk for MPB infestations in SW South Dakota and NE Wyoming. Since signing the decision, forest personnel have been actively implementing the project. Rose Petal is the first timber sale being implemented on the ground; two more sales, Fox Ridge and Buck Mountain, are in the review phase with on the ground implementation beginning soon. The chance of litigation is possible due to the fact that the organizations who gained standing to litigate, by filling objections to the project, have also litigated other pine beetle projects within the last couple of years. However, it is not possible to predict if they will file suit against the MPBRP. The National Environmental Policy Act approach utilized for the MPBRP has been utilized successfully for other projects within the agency. The adaptive nature of the MPBRP analysis and decision is being promoted agency wide as an efficient method to be considered for use when analyzing landscape scale acreage when specific treatment areas have not yet been identified.

5.) The Healthy Forest Restoration Act (HFRA) is approaching its ten-year anniversary. To date, how many acres has the Forest Service treated using HFRA authorities?

Response: 1,476,106 acres were treated under HFRA from Fiscal Year 2005 to 2012.

Is the Forest Service using the HFRA to its fullest extent to manage our national forests and reduce the threat of devastating wildfires?

Response: The HFRA is a tool that is being used to the fullest extent where appropriate within the limitations associated with implementation of the program.

Are there any areas within the HFRA that can be improved to provide the agency with additional tools to mitigate the risks of wildfire?

Response: Broadening of the application of HFRA's environmental analysis provisions to help accomplish more fuel reduction acres as part of landscape-scale projects; as the agency increases

focus on planning and implementing at the landscape level, the more likely a project will include some work items outside the scope of HFRA since HFRA use is limited to hazardous fuel reduction activities.

6.) Can you provide the Committee with information regarding what the Forest Service has accomplished to date in regards to carrying out the Large Airtanker Modernization Strategy which would upgrade the aging airtanker fleet with "next generation" airtankers?

Response: The Forest Service issued a solicitation for next generation large airtankers in late 2011. Due to protests, the announcement of the intent to award made in June 2012 was not finalized. A revised solicitation which clarified elements in the solicitation was issued in November 2012 with a projected tentative award in spring 2013.

What is the current make-up of the airtanker fleet under contract today, including both the number of aircrafts and aircraft types?

Response: The current airtanker fleet is made up of 8 airtankers awarded on March 27th, 2013. These 8 airtankers were awarded under what was called the "legacy" airtanker contract, because the solicitation focused on existing P-2V airtankers which the agency expects to phase out as more Next Gen airtankers become available. It is expected that when the Next Generation contracts are awarded there will be up to 7 additional airtankers under contract. Up to 3 airtankers may be available through interagency agreement from the State of Alaska. Additional airtankers may be available from Canada through an interagency agreement. Also, eight Modular Airborne Firefighting System (MAFFS) equipped Air Force/National Guard aircraft would be available in 2013.

From the Forest Service's perspective, what would an updated fleet of aerial assets, including airtankers and scoopers, look like – in terms of aircraft mix and how these planes are owned and operated?

Response: As stated in the Large Airtanker Modernization Strategy the Forest Service believes a core fleet of 18-28 next-generation large airtankers is needed to meet the firefighting challenges of the future. This fleet will be comprised of a mix of aircraft makes/models contracted from private industry with the potential that some airtankers may be government owned. If government owned aircraft are part of the airtanker fleet they would be operated and maintained by private industry.

Currently, the Forest Service has 2 water scoopers available through a contract shared with the Bureau of Land Management.

Has the Forest Service issued any contract solicitations for any next generation airtankers? Have there been any delays in making the awards?

Response: Yes, in the fall of 2011 a solicitation was issued for up to 7 Next Generation Large Airtankers. In January 2012 the solicitation closed. A technical evaluation board reviewed the proposals and the Next Generation intent to award was announced in June 2012, but the awards were protested by two companies that did not receive an award. The protests were based on technical evaluation and pricing. Following a GAO hearing, the FS amended the solicitation making clarification to the Request for Proposal (RFP). The amended RFP closed on November 5, 2012. Only the original bidders were eligible to submit revised proposals. These revised proposals were reviewed by the Technical Evaluation Board in late 2012 and early 2013 with a projected announcement of intent to award in Spring 2013. To date, the intent to award has not been announced. It is projected that Notices of Intent to Award will be issued to successful vendors in May, 2013, with subsequent contract award predicated upon the successful completion of cancellation ceilings thereafter

7.) Recently Secretary Vilsack stated that as a result of sequestration, Food Safety and Inspection Service (FSIS) inspectors at meat and poultry facilities would need to be furloughed for 15 days. If sequestration is a permanent cut to the FSIS budget, how does furloughing inspectors solve the budget gap? Wouldn't FSIS be forced to furlough inspectors again in future budget years?

Response: Based on the limited flexibility FSIS has in its budget, the size of the sequestration reductions pursuant to the Balanced Budget and Emergency Deficit Control Act (BBEDCA), the time left in FY2013, and the lack of flexibility in applying sequestration cuts, FSIS had no alternative but to make plans to furlough the entire Agency at that time. Subsequently, as a result of the Continuing Appropriations Act of 2013, Congress provided USDA with authority to transfer $55M from other accounts into FSIS. Although this leaves a significant FSIS funding shortfall, based on actions already taken and projected savings, FSIS will avoid a furlough in FY2013.

Under the *Blueprint for Stronger Service*, USDA has saved more than $700 million over the past three years, and continues to try to find efficiencies and reduce costs. FSIS is currently trying to complete a proposed rule on Modernization of Poultry Inspection that would increase food safety and also save the Agency approximately $31M per year once fully implemented. USDA and FSIS are committed to continuous efforts to find efficiencies and reduce costs; however, because FSIS funding requirements are driven by compliance with its regulatory mission there is a limit on how much FSIS can reduce its costs. Avoiding future furloughs will be largely contingent upon sustaining FSIS funding levels, particularly when mandated missions like the Cooperative Interstate Shipment Program are added or increased.

Further, during the threat of a government shutdown in spring 2011, USDA claimed that essential federal employees would not be subject to furloughs and that FSIS inspectors were included as "essential federal employees." It is our understanding that "essential" employees were those that are "necessary to fulfill constitutional responsibilities, safeguard human life

or protect property." What is different today or what has changed since 2011 to now claim FSIS inspectors as subject to being furloughed employees?

Response: A sequestration pursuant to BBEDCA and a short-term government shutdown due to a lapse of appropriations, whether by the expiration of full-year appropriations at the conclusion of the fiscal year or of a continuing resolution, will have different impacts on the agency. A government shutdown involves a lapse, not a reduction, of budget authority. In the context of a lapse in appropriations (*i.e.*, a shutdown), agencies can rely on an exception to the Antideficiency Act (ADA) that permits them to designate employees as essential "in cases of emergency involving the safety of human life or the protection of property" (31 U.S.C. § 1342). Unfortunately, that exception to the ADA does not apply in the current context, and BBEDCA does not contain a similar provision on which FSIS could rely to exempt FSIS inspectors from furloughs.

FSIS's governing statutes require that food safety inspections of meat and poultry products be conducted by FSIS personnel, with authorizations for Congress to make appropriations in such sums as necessary for that purpose. Accordingly, furloughing inspection personnel to comply with the limits of appropriations enacted by Congress for that purpose does not violate any provisions of the FMIA and PPIA. Faced with reduced resources as a result of sequestration, FSIS must take appropriate steps, potentially including furloughs, to control its expenditures and stay within its funding authority for the fiscal year. Unlike other budget scenarios, such as a short-term government shutdown, the exemption provisions of BBEDCA are not applicable to FSIS inspection activities. Although the PPIA and the FMIA state the Secretary shall "cause to be made" inspections of meat and poultry, this requirement is not a mandate for the Secretary to inspect meat and poultry that overrides following other laws. That is, the Secretary continues to be bound by fiscal law, including the ADA, which prohibits government officials from making or authorizing expenditures exceeding the amounts Congress has appropriated for those expenditures.

8.) On September 14, 2012, OMB provided preliminary estimates of the funding reductions scheduled to occur due to the 2013 sequester. Is there still intention to target the Tobacco Trust Fund and Agricultural Disaster Relief Fund?

Response: Both the Tobacco Trust Fund/Tobacco Transition Payment Program (TTPP) and the Agricultural Disaster Relief Trust Fund payments, of which the Supplemental Revenue Assistance Program (SURE) is a part, were subject to sequestration and reduced by $48,960,000 and $69,972,000, respectively. On March 19, 2013, Secretary Vilsack sent a letter to congressional leaders to notify them of USDA's intent to utilize interchange authority under 7 U.S.C. 2257 to transfer $155.584 million from the Farm Service Agency's (FSA) direct payment program to several other FSA administered programs, including TTPP and SURE, to address the reduction from sequestration. If the use of this interchange authority is not blocked, TTPP and

SURE recipients would receive payments as normal. Should the use of interchange authority be blocked, USDA would need to reexamine how the sequestration reduction is applied, but TTPP and SURE recipients would receive smaller payments and producers who already received payments in FY 2013 may be asked to return a portion of these payments.

Senator Sherrod Brown

1.) It's no secret that I've never been a supporter of direct payments -- the fixed payments made every year according to historical planting data -- paid to producers indiscriminate of need. I'm concerned that these payments exaggerate disparities between different types of agricultural production and may affect farmers' business decisions. Dr. Glauber, would you please provide some information for the 2012 crop year that would help us assess inequities in the system? For instance, what portion of producers who received direct payments did not experience any losses? And, what portion of producers who experienced a loss, but did not receive direct payments?

Response: Unfortunately, we do not have current data to match recipients of direct payments with 2012 indemnity payments. Based on the 2011 Agricultural Resource Management Survey (ARMS), almost 60 percent of the farm households that received direct payments in 2011 also purchased crop insurance in that year. Farms receiving direct payments and purchasing crop insurance accounted for about 80 percent of the value of production of farms receiving direct payments.

About 37 percent of farms that received direct payments and purchased crop insurance in 2011 received indemnity payments. About 30 percent of farms that did not receive direct payments in 2011, did receive indemnity payments.

While we do not yet have farm level data that can match 2012 losses with direct payment recipients, the attached table provides some insight into the percent of crop insurance policies receiving indemnity payments in 2012 for selected crops eligible for direct payments were made. Through April 1, 2013, about 42 percent of all crop insurance policies had received an indemnity payment for 2012 losses. This compares with 34 percent of policies indemnified in 2011 and 23 percent in 2010. Of crops eligible for direct payments, almost 54 percent of corn policies, 53 percent of cotton policies, 60 percent of sorghum policies, and 37 percent of soybean policies were indemnified as of April 1.

Note that we do not have data on farms who suffered crop losses but who did not receive an indemnity because their losses did not exceed their policy deductible. Thus, the percent of farms with crop losses who also received direct payments will likely be larger than what is reported above.

Incidence of Crop Insurance Indemnity Payments for Selected Crops, 2012 Crop Year

Crop	Loss ratio	Percent of policies indemnified
Barley	0.52	21.6%
Corn	2.48	53.5%
Grain Sorghum	1.87	60.4%
Oats	0.60	19.3%
Wheat	0.41	27.0%
Rice	0.72	7.9%
Upland cotton	1.29	52.9%
Peanuts	0.28	14.4%
Soybeans	0.87	36.9%
All crops	1.45	40.9%

Source: Risk Management Agency.

2.) Dr. Glauber, your written testimony and your remarks this morning point out a few simultaneous trends. We are here talking about disaster and the hardship producers are enduring because of uncontrollable weather events. Later this morning we'll hear from producers who lost much, if not all, of their harvest in 2012. At the same time, you've explained that net cash income for 2012 is forecast at record highs -- and net farm income for 2013 will likely follow suit – reaching the highest level, in real terms, in 40 years. Total cash receipts are up and while input costs -- such as feed and labor -- are up, net farm income remains at record levels. Additionally, Farm Equity is at record highs, farm real estate continues to increase in value, while the farm debt-to-asset ratio is at record lows. This all makes it sounds like agriculture is doing very well.

But at the same time you've noted that crop insurance indemnity payments for 2013 are likely to surpass the 2012 record. Would you please help me understand this seemingly incongruous information?

Response: Indemnity payments for 2012 losses continued to be made (in 2013) and total indemnity payments for the 2012 crops will exceed $17 billion, larger than last year's record $10.8 billion paid on 2011 crop year losses. We do not have an idea of what the indemnity

payments will be for the 2013 crop year. However, some of the crop losses from 2012 will indemnified in calendar year 2013, which are incorporated into the 2013 projected farm income statistics.

For 2013, ERS projects net cash income to be $123.5 billion, a decline of almost 9 percent. Total cash receipts are forecast at $393 billion, up marginally from 2012. While net cash income is projected to fall in 2013, net farm income is forecast at $128 billion, a nominal record and highest level in real terms since 1973 if realized. The increase in net farm income in 2013 reflects projected increases in farm inventories in 2013 due to the expectation of trend yields and increased crop production.

Farm equity is forecast to increase to record levels in 2012 and 2013. The farm debt-to-asset ratio for 2013 is forecast at 10.2 percent, the lowest level, if realized, since ERS began calculating the measure in 1960. Many producers have benefitted from high commodity prices, which have helped keep farmland values and subsequently farm sector assets high. Moreover, farmers who insured with revenue products were indemnified at prices 15 to 25 percent higher than planting prices, which helped offset crop losses. Farm assets in 2013 are forecast at a record high $2.732 trillion, a record high in both nominal and real terms. Farm real estate is forecast at $2.35 trillion, up 7.5 percent over 2012 levels (and up 15.7 percent over 2011 levels).

3.) Whether pervasive drought or a severe storm, once a disaster strikes, it is this Committee's job to determine how best to provide assistance to agricultural producers who suffer significant losses. The weather is one of those things we can't control -- but we can be prepared. Broadly speaking, agricultural research, soil and water conservation, diversification, appropriate risk management could all be seen as investments in prevention. Given your respective areas of expertise, what do you see as essential preventative measures this Committee can take at a time when farmers are facing changing weather patterns AND the federal government is focused on reducing expenditures? How can we do more and better with less?

Response: Designing an equitable and efficient means to provide producers with a safety net for unforeseen disasters is a difficult task made more difficult with the objective of reducing federal government expenditures. USDA has a number of programs that help form a safety net for crop and livestock producers. For example, farmers that grow crops for which catastrophic risk protection level of crop insurance is not available can apply for coverage under the Noninsured Crop Disaster Assistance Program (NAP), which functions similarly to catastrophic crop insurance. NAP payments for 2011 crop losses totaled over $260 million and to date have totaled almost $100 million for losses to the 2012 crop. And other programs that could have helped mitigate the impacts of the severe drought conditions have expired or currently have no funding, particularly for livestock producers. The President's budget has identified several places to lower expenditures on Farm Bill programs and has done so while maintaining a robust safety

net for times of need. The FY 2014 budget would cut more than $11 billion from the crop insurance program over the next 10 years, while extending some disaster assistance programs for the 2014 through the 2018 crops and provides additional support to dairy farmers through expansion of the dairy gross margin insurance program.

Senator Kirsten Gillibrand

1.) Feed Shortage Question:

Due to feed grain shortages and skyrocketing prices, New York dairy farmers are struggling to feed their cows through the winter. Corn is the primary component of feed grain for dairy cows, and as you know, we saw a 27% decrease in corn production nationwide last year, caused by the severe drought. Simultaneously, the price of corn increased by 61% in 2012, further taxing dairy farmers' narrow margins of income. Additionally, dairy farmers are suffering from severe shortages in hay, since we saw the lowest level of hay production since 1957.

These feed shortages are devastating for New York dairy farmers. I am hearing from agriculture extension workers in New York that farmers are faced with the distressing situation of having to cull cows since they don't have enough to feed them through the winter. I am hearing that auctioneers are expecting this to cause the closing and sale of hundreds of family farms across the state. One auctioneer in an impacted area said he was expecting to be "very, very busy" in March and April. I am very concerned that this will translate into small family dairy farms closing and the big mega-farms buying all of them up, which will mean a significant loss of jobs and livelihoods in rural areas of New York and across the country.

These feed shortages are devastating to the agriculture economy in New York State and across the country, and a solution needs to be found as soon as possible. Have you explored back up strategies, such as establishing a strategic grain reserve to save our dairy farms and livestock operations nationwide? Have you explored potential solutions to the extreme hay shortages nationwide?

Response: Livestock, dairy and poultry producers faced high feed costs for most of 2012 and high prices are likely to persist through much of 2013 until new crops are harvested in the fall. Feed ratios, which have generally been tight since 2007, tightened further in 2012 as feed costs rose relative to meat and dairy prices.

Due to the severity of the drought conditions last year and widespread impacts on agricultural production, USDA took advantage of flexibilities afforded under its authorities and expanded the lands in the Wetland Reserve Program and the Conservation Reserve Program that would be eligible for emergency haying or grazing in order to help manage the extremely poor pasture conditions and high feed costs faced by livestock producers. Roughly 2.8 million acres in the

Conservation Reserve Program were opened up under the emergency haying and grazing option, which provided up to $200 million in forage value to livestock producers.

And while major concerns related to persistent drought conditions remain: 56 percent of winter wheat areas; 61 percent of cattle production; and 50 percent of hay acreage remain under drought conditions, there have been improvements in the Corn Belt, where many areas are no longer experiencing drought. Assuming adequate precipitation, it is likely that the major spring planted row crops will see a return to trend yields. If so, a rebuilding of stocks and lower commodity prices would be expected in the fall. Futures prices for May delivery of corn have fallen nearly $1.00 per bushel and prices for September delivery of corn have declined more than $0.50 per bushel since February.

To restore the safety net for livestock and dairy producers, the Present's 2014 budget reflects a number of proposals that extend some disaster assistance programs for the 2014 through the 2018 crops, and provides additional support to dairy farmers through expansion of the dairy gross margin insurance program. The President's Budget also proposes to extend selected livestock disaster assistance programs for 2014 through 2018. Federal support for livestock insurance products, including dairy gross margin insurance, is currently capped at $20 million per year. The 2014 Budget provides an additional $100 million per year, from the funds of the Commodity Credit Corporation, to support the dairy gross margin insurance program available through the Federal crop insurance program

2.) Crop Insurance is Broken and Needs to be fixed for Diversified specialty crop farms in New York State:

In the past 1.5 years, New York farmers have suffered from multiple 100 year storm events. While I am heartened to hear about the successful crop insurance programs for the corn growers in the Midwest to deal with these types of weather events, I must ask – why don't the diversified fruit and vegetable farms in the Northeast, and namely New York, deserve the same adequate safety net?

Diversified family owned farms in New York more often than not function without any crop insurance at all because there isn't a policy that matches their needs. When the floods from Irene and Lee took out entire valleys of farms in Schoharie and Columbia Counties in NY, we learned that only 27% of farmers had insurance through the NAP program. They don't sign up because the potential payments (even when there is a 100% loss of crops) are insignificant. Farmers feel that NAP is inadequate and doesn't help them in times of need.

I believe that the crop insurance program is broken for diversified fruit and vegetable farmers and needs to be fixed as soon as possible. The family farm which grows 50 kinds of produce to meet local and national needs deserves the same safety net as the large corn producing farm in

the Midwest. Will you work with me to achieve this change at USDA, partnering with your counterpart at the Risk Management Agency?

Response: Diversified fruit and vegetable farmers in the Northeast deserve a strong safety net, and USDA continues to work to strengthen the safety net for diversified farmers.

Producers can elect to participate in the Non-insured Assistance Program (NAP), administered by the Farm Services Agency, which offers catastrophic type coverage for crops without insurance programs.

Producers can also elect to participate in the Federal crop insurance program, administered by the Risk Management Agency (RMA). There are many different Federal crop insurance programs available in New York. For example, in Schoharie County crop insurance is specifically available for apiculture (honey), apples, corn, fresh market sweet corn, nursery, oats, pasture/range/forage, and soybeans, and those same crops plus peaches and wheat are available in Columbia County. If a crop insurance program for a particular insured crop is not offered in the producer's county, the producer may be able to obtain a written agreement for insurance by contacting their crop insurance agent. Most crop insurance programs offer coverage levels up to 75 percent and some offer coverage up to 80 or 85 percent.

There are also currently two whole-farm pilot program insurance products offered in nearly all counties in New York, Adjusted Gross Revenue (AGR) and Adjusted Gross Revenue-Lite (AGR-Lite) insurance. These products are based on farm tax records and forms and are designed for very diverse operations. While these policies have not been as popular as single crop insurance programs, they do provide a method of offering crop insurance coverage to all commodities on the farm without requiring as much data as is needed to rate a single crop insurance product. RMA is currently beginning work to review and evaluate the whole farm policies to determine what improvements can be made to better tailor a whole farm product and coverage to a producer's needs.

RMA has initiated several ways to strengthen the safety net for diversified producers through the Federal crop insurance program. These efforts include exploring opportunities for new insurance products and improvements to existing products. Since 2000, RMA has developed 17 new risk management products through contracted work and worked with private developers to place 27 more new products on the market. Unfortunately, the unavailability of data for actuary and underwriting work has slowed the process of program development for this sector.

Federal crop insurance liability for 2012 in New York State totaled nearly $537.6 million with nearly $10 million covered by crop insurance in Columbia County and over $1.8 million covered in Schoharie County. Statewide for New York, approximately 48 percent of the total crop value was covered by insurance in 2012 with producers purchasing Federal crop insurance coverage to protect approximately 70 percent of the value of apples, 60 percent of the value of grapes, 80 percent of the value of onions, and 55 percent of the acres of principle crops. As RMA

continues to look for new products to cover more fruits and vegetables, a continuing challenge will be the need for credible and available data to support required actuarial and underwriting work. The lack of necessary data is the single biggest limiting factor in our ability to provide insurance products for specific crops.

As you can see, much work is being done to provide additional insurance options to producers, but we agree there is more work to do. I, and USDA, look forward to working with you to enhance crop insurance coverage for New York producers.

3.) Ethanol Question:

According to USDA, 35-40% of corn produced in the United States goes into producing ethanol. USDA also reports that the drought caused a decrease in corn production of 27%, coupled with a rise in the price of corn by 61%. This tragic situation for dairy farmers caused by severe drought and climate change has caused a dairy feed shortage that's breaking our dairy farmers' backs financially and forcing them to cull cows.

With the potential for continued severe drought, and feed shortages for our cows, why not explore an alternative to the current practice of using corn which is such an important feed for livestock and dairy cows? Have you considered cellulosic (i.e. switch grass) as an alternative? What is USDA doing to promote switch grass as an alternative biomass to corn in the production of ethanol?

Response: The renewable fuel standard (RFS2) as implemented under the Energy Independence and Security Act of 2007 (EISA) is actually a complement of multiple standards by year. The total RFS2 which calls for 36 billion gallons (bg) by 2022 to be utilized in the fuel supply. Of that total, 21 bg is "advanced biofuels" which can be further disaggregated into 16 bg of "cellulosic biofuels", 1.0 bg of biomass based diesel, and 4 bg of other advanced biofuels. The remaining 15 bg to meet the mandate is conventional biofuel, typically attributed to corn starch ethanol. For a biofuel to be classified as an advanced biofuel, the land used to produce the biomass must have been in production or actively managed prior to enactment of the EISA and meet a 50 percent greenhouse gas emissions reduction relative to a 2005 baseline 100 percent gasoline or diesel fuel. To be considered a cellulosic fuel a 60 percent GHG emissions reduction must be realized.

There are many alternative feedstocks, including switch grass, which can be used to meet the country's transportation fuels and heat and power needs. Alternative feedstocks for the production of biofuels include sugarcane; woody biomass (residues left after timber harvest, short-rotation woody species such as poplar, and diseased and insect damaged trees); perennial grasses (e.g., switch grass and Miscanthus); biomass sorghum (including sweet sorghum); and oil seed crops (including industrial canola, camelina, soybean) and algae. USDA is also researching crop residues, such as corn stover and cereal straws, as possible feedstocks for biofuel production. Different conversion technologies can produce different kinds of biofuels.

USDA's research focuses on quality and productivity, integrating "energy-based crops" into the agroforestry production system in a sustainable way using best management practices.

- In 2010, Secretary Vilsack created five Regional Biomass Research Centers to help make the most of existing USDA research resources. The centers are networks of existing ARS and Forest Service facilities with scientists in locations across the country. Those centers represent a commitment to research on dependable and sustainable supplies of feedstocks for advanced biofuels production. The regional approach to feedstock production enables USDA to take advantage of the resources unique to the region and promotes broad participation by many rural areas across the country in the emerging biofuels and biobased-products economy.
- USDA's National Institute of Food and Agriculture (NIFA) collaborates with other federal agencies such as the US Department of Energy on fundamental research of biomass genomics with emphasis on perennials and trees for biofuels production and the understanding of basic plant processes that control cell wall composition, nutrient uptake, carbon allocation, impacts of temperature and water availability. In addition, NIFA extramural research grants to investigate sustainable supply chains for the production of biofuels with emphasis on feedstock production and the harvest, handling storage; smaller standard grants are more focused but support a system.
- USDA and DOE co-chair the Biomass Research and Development Initiative Board (BRDI) and administer competitive grant projects that support the entire bioenergy supply chain from feedstock development through deployment and commercialization of technologies.
- The Biomass Crop Assistance Program (BCAP), Section 9011 of the 2008 Farm Bill, administered by USDA's Farm Services Agency provides incentives to farmers, ranchers and forest landowners to establish, cultivate and harvest biomass for heat, power, bio-based products and biofuels.
- USDA also collaborates with the Environmental Protection Agency (EPA) in its review and assessment of potential feedstocks that could be utilized to produce biofuels. USDA has provided data, market intelligence, and review of EPA analyses since the enactment of the EISA. This effort helps to broaden and increase the number of approved feedstocks for biofuels that can be used to meet the RFS2 mandates.
- USDA through a number of Title IX programs is providing loan guarantees and grants to improve efficiency of renewable fuel production and/or advance the production of second generation (cellulosic) biofuels. For example, a $75 million loan guarantee; $50 million DOE grant; $2.5 million State of Florida grant was made to INEOS New Planet Bioenergy, LLC. Municipal solid waste and citrus pulp are feedstocks that will produce 8 million gallons per year of cellulosic ethanol and 6 MW of electricity. The facility is completed and start-up is underway. Another USDA loan guarantee ($54.4 million) was made to Sapphire Energy for the production of renewable jet fuel and renewable diesel (from algae), both advanced fuels. Sapphire has repaid its loan and has recently reached

a new milestone of continuous cultivation of biocrude oil production from its New Mexico facility. Sapphire has also entered into a commercial agreement with Tesoro Refining and Marketing Company, LLC., which will purchase the biocrude oil.

- USDA and DuPont recently announced "federal-private collaboration" to safeguard natural resources on private lands used to supply bio-based feedstocks for cellulosic ethanol production. The agreement involves the signing of a Memorandum of Understanding (MOU) between USDA's Natural Resource Conservation Service (NRCS) and DuPont. USDA, through NRCS, will provide conservation planning assistance for farmers who supply bio-based feedstocks to biorefineries as the industry begins to commercialize. The first plant involved in this national agreement is Nevada, Iowa where DuPont is building a 30 million gallons/year cellulosic facility. This plant will use harvested residues from a 30-mile radius around the facility.

4.) Rebuilding after Superstorm Sandy:

I want to express my thanks for USDA's role in helping New York farmers rebuild after the catastrophic floods of Irene and Lee back in 2011. The funding through the Emergency Conservation Program (ECP) and Emergency Watershed Program (EWP) helped our agriculture communities hardest hit to rebuild and keep their land in production.

As you know, Superstorm Sandy was devastating to New York State, including damaging 4.5 miles of levees that protect five farms and over 700 acres of farmland in the Town of Southold on the North Fork of Long Island. Due to the destruction of these levees, salt water has washed up on this farmland and without needed repairs, continued to drench this land during high tides and full moons, making it impossible to grow fruits and vegetables. About half of the impacted land was already protected from development rights, so our state, federal and local governments, as well as the farm families, have already invested in keeping this land agricultural. I want to thank USDA for working with my office and those New York communities to rebuild after the storm. I understand that an Emergency Watershed Program (EWP) proposal has been submitted by the Town of Southold. I ask that you consider the great importance of this request for a community which risks losing over 200 years of farming heritage. Will you agree to work with me to ensure that this critical farmland remains in agricultural production?

Response: Thank you for supporting the Town of Southold's request for Emergency Watershed Protection (EWP) Program funding under the USDA Natural Resources Conservation Service (NRCS) to help with the broken levees that provide protection for farms and farmland in the Town of Southold area. We applaud your efforts in working with federal agencies to maximize the benefits to communities in New York that were harmed by Hurricane Sandy.

The NRCS State Office in New York received a "Request for Assistance" from the Town of Southold and made a visit to the site. At this time the NRCS State Office determined the land is

eligible and is working closely with the Town of Southold in assessing further eligibility requirements of the project, finalizing the damage surveys of the sites to estimate the cost for recovery, and securing the sponsor's financial commitment. A final funding decision will be made after all necessary documents are secured by the project sponsor and NRCS.

We are mindful of the challenging circumstances presented by Hurricane Sandy and we will continue to use the flexibility of the EWP program to maximize the benefits it provides to the Town of Southold and other communities in their recovery.

Senator Heidi Heitkamp

1.) ***Young farmers don't have the working capital built up that older, more established producers can rely on. Consequently, risk management tools are even more critical for this group of young and beginning farmers. An important goal of mine on this Committee is to explore ways to help young farmers, the future leaders of farm states like North Dakota.***

a) ***Can you tell me how disasters may impact new and beginning farmers, while addressing some of the challenges that are unique to a farmer that is just starting out?***

Response: Half of all current farmers in the U.S. are likely to retire in the next decade. Enlisting and supporting new farmers is essential to the future of family farms, the farm economy and healthy rural communities. Beginning farmers face two primary obstacles: starting a farm operation is expensive and there can be a lack of available land for purchase or rent. But, the USDA does have programs that are intended to help those starting a new farm gain access to financing. While new and beginning farmers have access to crop insurance an unforeseen disaster can have a greater impact on those farmers because they often have higher levels of debt and fewer assets relative to established farmers, which makes them less able to cope with stressful financial conditions. That is one reason why the Secretary streamlined the disaster declaration process last year in order to speed emergency loans and other emergency assistance programs to those most in need. Last year approximately 2,333 counties received disaster designation status.

b) ***The livestock disaster programs expired in calendar year 2011. How does the lack of a Livestock Forage Disaster Program (LFP), Livestock Indemnity Program (LIP) and an Emergency Livestock Assistance Program (ELAP) disproportionately impacts young farmers and ranchers?***

Response: USDA has a number of programs that help form a safety net for crop and livestock producers. Due to the severity of the drought conditions and widespread impacts on agricultural production, USDA took advantage of flexibilities afforded under its authorities to speed assistance to affected producers when possible. Despite those actions, some programs that could have helped mitigate the impacts of the severe drought conditions had expired or currently have no funding, particularly for livestock producers: Livestock Forage Disaster

Program (LFP); Livestock Indemnity Program (LIP); Emergency Assistance for Livestock, Honeybees, and Farm-Raised Catfish (ELAP); Tree Assistance Program (TAP); and Supplemental Revenue Assistance (SURE). In 2011, for example, payments from those programs totaled more than $500 million. Preliminary analysis suggests that in 2012, the Livestock Forage Program payments alone could have totaled between $500 million and $600 million, or roughly double the 2011 levels.

c) ***North Dakota is a state that experiences more natural disasters than many others. Some years we have flooding in the Red River Valley and near Devil's Lake. Other years we experience drought that can affect producers across the state in both livestock and row crop operations.***

i.) Can an insurance based safety net meet the needs of producers facing steep losses from disaster?

Response: Crop insurance has worked very well for most row crop producers. Premium subsidies, the availability of revenue policies that indemnify losses at the greater of harvest time or planting prices, and recent program changes, such as the introduction of trend-adjusted APH provisions, have encouraged producers to insure at high coverage levels. Over $16 billion in indemnity payments will help producers offset the effects of lower yields due to the 2012 drought. As a result, net cash income for 2012 is forecast at a nominal record and the highest level since the early 1970s, adjusting for inflation.

ii.) What risk management tools do growers in my state need to survive events like flooding and drought?

Response: Crop insurance has become one of the most important and widely-used risk-management instruments crop producers can use to mitigate the economic impacts of adverse weather events. Insuring crops with a revenue policy allows producers to lock in a guaranteed gross level of income at planting with the potential of indemnifying losses at harvest prices in the event of price increases.

iii.) Where do you see the holes in the crop insurance program for row crop producers in a state like North Dakota?

Response: North Dakota has one of the highest participation rates in the crop insurance program and its producers have traditionally insured at high coverage levels. Progress has been made in recent years in addressing the problem of declining APH yields due to multiple-year crop losses. Recent improvements include rate changes for corn, wheat and soybean and the introduction of trend-adjusted yields which have allowed producers to insure at higher effective coverage rates.

Senator Pat Roberts

1.) ***Crop insurance already protects more than 250 million acres of cropland in the United States but there are still acres that aren't protected and producers who can't afford to purchase the kind of protection they need. As we continue our work to preserve, protect and strengthen crop insurance, how can we improve upon an enormously successful program?***

Response: While the Federal crop insurance program has grown substantially over the past 25 years, there still remain numerous producers who either are uninsured because crop insurance is unavailable for crops that they produce or underinsured because the cost of crop insurance is perceived as too high for the perceived benefit that it provides. For uninsured crops, interested parties can develop crop insurance policies for approval through the 508(h) process but this can be a costly process with oftentimes uncertain demand. The per-policy development costs are often quite high. One alternative that has been suggested is the development of weather derivatives that are more generic in nature (i.e., less crop-specific) but can be tailored to the individual crop needs (e.g., rainfall during critical time periods of crop growth, protection from freeze). However, because these products are based on area rather than farm specific inciators they are often less correlated with actual yield loss.

2.) ***In northwest Kansas, producers irrigating from the Oglala Aquifer must work to conserve their water, however, current RMA practices do not have a middle ground between fully irrigated and dry land practices. RMA has been evaluating a limited-irrigation crop insurance policy for several months and has contracted for a pilot program. Can you please provide a status update on this product and pilot program? Are there problems or concerns with moving forward, and if so, what are they? When do you believe it will be available to farmers?***

Response: Developing a solution for limited irrigation is a complex issue. The Risk Management Agency (RMA is in the process of evaluating the feasibility of a risk a management solution for reduced irrigation that meets the needs of a wide range of producers. The contractor, Watts and Associates, will provide the results of their study showing the best possible alternatives so work can move forward as quickly as possible. RMA cannot be certain about availability or timing until further progress is made on their evaluation. However, RMA hopes to make it available to producers for the 2014 crop year. Below we have outlined the efforts we have initiated so far to address a crop insurance risk management solution for producers who face reductions in their historical water allocation.

University of Nebraska – Lincoln (UNL) Model:

As a preliminary step RMA entered into a cooperative agreement with UNL to develop a risk management tool for producers to use in helping mitigate risk under limited irrigation scenarios and conditions. The tool expanded and enhanced the existing W*ater Optimizer*

program and provides assistance to producers' in understanding the potential trade-off between irrigation and production for crop management decisions. Elements of the tool were utilized to identify the potential reduction in yield for a given reduction in irrigation applicable to specific counties in CO, KS, and NE for corn and soybeans.

While the tool helped understand the trade-offs between irrigation and crop production, it lacked critical elements for purposes of establishing crop insurance coverage which include:

- Estimating an appropriate premium rate for a practice of limited irrigation.
    - The limited irrigation model focuses on the effect of irrigation on yield, but not the yield variability where yield risk increases as irrigation decreases.
    - The cooperative agreement did not contain a rating analysis, as such; no assessment or development of an actuarially sound premium rate was completed.
    - Without appropriate yield adjustments, insufficient coverage for growers or excessive losses for Approved Insurance Providers and taxpayers could result.
- The tool was not designed for producers in other states or crops experiencing similar situations, or even for all counties in the proposed states.
- To address these issues and seek a long range permanent solution, RMA initiated a contracted study on the effects of limited irrigation this past fall.

Limited Irrigation Written Agreements in Sheridan County 6 High Priority Area:

Sheridan County 6 High Priority Area is a defined area of Sheridan and Thomas counties in Kansas where producers voluntarily cut back on irrigation water over a period of time. For the 2013 crop year RMA is offering producers the opportunity to obtain a written agreement for these acres offering coverage for a limited irrigation practice, thus allowing RMA to respond to a local conservation effort in a proactive manner and test the UNL limited irrigation model in a small sample area.

This area was the first Local Enhanced Management Area plan received by the Kansas Division of Water Resources with approximately 100 irrigated producers. Written agreements will provide a means to obtain data and test the limited irrigation model results on yield reduction.

RMA Irrigation Contract Study:

On January 23, 2013, RMA awarded a contract to Watts and Associates to evaluate the feasibility and develop as appropriate the necessary materials for an actuarially sound risk management solution for reduced irrigation that meets the needs of a wide range of producers, and has long-term viability and sustainability as part of the Federal crop insurance program.

Two listening sessions were held in March 2013 to gather input from growers, industry, and other interested stakeholders about limited irrigation and ideas to address the crop insurance consequences of the changing irrigation water situation in future years. Both sessions had good

dialogue from varying stakeholders voicing ideas, concerns, and questions with the majority in attendance supportive of Federal crop insurance seeking solutions. Several participants cautioned that this is a very complex issue that needs to be thoroughly researched and vetted, and that RMA should not rush to develop a limited irrigation risk management solution that could have unintended consequences.
The next step in the process is for the contractor to advise whether the UNL limited irrigation proposal is a feasible alternative or whether existing policies and procedures are sufficient. If not, the contractor is to propose alternative solutions for development.

Once a solution for reduced irrigation that meets the need of a wide range of producers, and has long-term viability and sustainability as part of the Federal crop insurance program is developed, RMA will work to expeditiously make it available to producers and if possible, for the 2014 crop year; however, until the contractor's work further progresses RMA cannot be certain of the outcome.

Senator John Thune

1.) You have outlined the devastation to US corn production from last year's drought. 2012 also saw a record setting corn crop from Brazil, a major competitor with US corn exports on the world market. How will this affect US export market share, and how will we recover our status as the world's leader in corn exports?

Response: In the most recent World Agricultural Supply and Demand Estimates (WASDE) domestic corn production for 2012/13 is projected to be 274 million metric tons, down from 314 million metric tons in 2011/12. As a result exports fell to the lowest level in more than 40 years, accounting for a projected 23 percent of global corn exports. By comparison Brazil is projected to supply 22 percent of the global corn exports in marketing year 2012/13. As recently as 2010/11 the U.S. exported more than half of all the corn exported in the world. USDA currently projects that in the 2013/14 marketing year; the U.S. will recover its market share and could supply as much as 40 percent of global exports, twice as much as any other country.

2.) The drought's impact has far reaching effects in South Dakota's economy. How will drought resistant seed traits help western Corn Belt states deal with the effects of multiple year droughts? What can Congress or the Administration do to ensure that new traits are brought to market in a timely manner?

Response: Seed varieties have been improving along a number of traits for decades, which have helped improve overall plant health and crop productivity. For example, recent research suggests that had corn hybrids from 1988 been subject to the weather in 2012, yields would have been much lower than they were –by as much as 10 percent. Specific drought tolerant seed varieties for commercial crops are beginning to become more affordable and effective for farmers in areas such as the western Corn Belt. For example, Monsanto's *DroughtGard* and DuPont Pioneer's *AQUAmax* hybrids are promoted as providing higher yields than other hybrids

in water-limited conditions. USDA is also conducting research on drought tolerant crop varieties at experiment stations across the U.S., such as at the Plant Stress & Germplasm Development Unit in Lubbock, TX. In addition, USDA is focusing on cutting administrative processes and improving services, which should be reflected in faster approvals for new seed varieties. For example, APHIS is dramatically reducing times for programmatic processes and procedures, cutting wait time by 20 to 76 percent and enhancing business competiveness, by reducing the length and variability of time it takes to make determinations on petitions for nonregulated status for genetically engineered plants.

3.) The prolonged drought has had a dramatic impact on livestock herds in South Dakota and much of the United States. Can you tell us what the outlook and projected recovery of grazing livestock herds will look like for the Western United States? What impacts on this recovery would have been made if the livestock disaster programs included in the Senate passed Farm Bill had been in place for 2012?

Response: Cattle producers were hard hit last year by poor pasture conditions and a poor hay crop. And about 50 percent of the Nation's hay areas and 60 percent of cattle areas remain under moderate or more intense drought conditions. Dryness in the Southern Plains has persisted for over two years and has resulted in large liquidation in cattle numbers. The January 1 NASS *Cattle* report indicated that total cattle and calf numbers in Kansas, Oklahoma and Texas declined by 3.4 million head between 2011 and 2013. The reduction is a 13.6 percent decline and about equals the net decline in the U.S. herd over the same period. The U.S. cattle and calf herd is at its lowest level since 1952. Cattle placements in feedlots during February were down 14 below 2012 and were the lowest for the month since 1996, when NASS began collecting those data. However, USDA baseline projections suggest beef consumption in the United States and beef prices will level and remain relatively stable at around 25 billion pounds per year with farm prices at approximately $125 to $130 per cwt over the next 10 years.

USDA has a number of programs that help form a safety net for crop and livestock producers. Due to the severity of the drought conditions and widespread impacts on agricultural production, USDA took advantage of flexibilities afforded under its authorities to speed assistance to affected producers when possible. Despite those actions, some programs that could have helped mitigate the impacts of the severe drought conditions had expired or currently have no funding, particularly for livestock producers: Livestock Forage Disaster Program (LFP); Livestock Indemnity Program (LIP); Emergency Assistance for Livestock, Honeybees, and Farm-Raised Catfish (ELAP); Tree Assistance Program (TAP); and Supplemental Revenue Assistance (SURE). In 2011, for example, payments from those programs totaled more than $500 million. Preliminary analysis suggests that in 2012, the Livestock Forage Program payments alone could have totaled between $500 million and $600 million, or roughly double the 2011 levels.

4.) In December, the USDA and NOAA signed a Memorandum of understanding, the purpose of which was to better deliver information about events like drought to users on the ground.

Can you both please inform the committee of the current status of the collaborations between your two agencies and how this MOU will foster improved collaboration in the future?

Response: The Memorandum of Understanding (MOU) between the Departments of Agriculture (USDA) and Commerce (DOC) signed December 21, 2012, provides recommendations and guidelines for cooperative efforts to meet the weather and climate information needs of stakeholders that rely on this information to make business and natural resource management decisions. It is an updated version of a similar document signed in 1995. The agreement provides for the development and delivery of local and regional climate information services, and fosters improved understanding by end-users of the value and use of weather and climatological information.

Subsidiary agreements attached to the MOU detail specific collaborative activities. A subsidiary agreement attached to the MOU establishes the Joint Agricultural Weather Facility (JAWF) and provides for the publication of the *Weekly Weather and Crop Bulletin.* In addition, other less formal working relationships are in place that provide for information sharing arrangements between the two Departments.

Currently, several USDA agencies are working with NOAA/NWS to develop new subsidiary agreements specifically aimed at monitoring drought with particular emphasis placed on serving the interests of the agricultural and forestry communities. These agreements are aimed at fully utilizing the existing infrastructure of both Departments and the National Integrated Drought Information System (NIDIS).

Particular activities addressed include:

- Improving forecast reliability and projection of weather and climate extremes in drought-risk areas;
- Improving accessibility, compatibility, and sharing of data, analysis, and expertise supporting the development of regional drought early warning systems;
- Establishing a National Soil Moisture Monitoring Network, using existing infrastructure and providing a foundation for expansion into under-served regions, including tribal lands;
- Developing enhanced drought adaptation strategies, using best practices and technologies, for at-risk regions throughout the United States; and
- Increasing collaboration on the development of products used in production of the *U.S. Drought Monitor* and other potential joint endeavors.

Senate Committee on Agriculture, Nutrition & Forestry
Drought, Fire and Freeze: The Economics of Disasters for America's Agricultural Producers
Questions For The Record
February 14, 2013
Mr. Leon LaSalle

Senator John Thune

1.) To what degree does each of you use the USDA/NOAA drought monitor to make decisions for your farms? How could the drought monitor be made more useful to you in your business planning?

I do not use the drought monitor at all for decisions on my ranch I have installed numerous conservation practices and manage my ranch to account for drought. The drought monitor does not work at all in our country. We have cool season grasses that need moisture in the cool season for production. Moisture in July, August and September do no more than green up the grass. We need a system that monitors timing of moisture not a yearly average.

2.) Last year Secretary Vilsack made feed available through emergency haying and grazing of CRP, which was beneficial for states like South Dakota. Was your area included in the emergency haying and grazing of CRP program lands that Secretary Vilsack made available last year, and was there sufficient CRP available to make a difference in local feed supplies? Are there other types of assistance that USDA could have provided to grazing livestock producers in your area that would have been more effective than haying and grazing CRP?

Our area was not included initially but was later added. We need to open up areas not affected by drought early in the grazing season. Opening up haying and grazing in a county suffering from drought is not much help. Other assistance would be helping fencing and developing water on CRP acres prior to drought so these areas would be ready for grazing. There are a lot of acres unavailable for use because they do not have stock proof fences or adequate water.

3.) How has your herd size changed as a result of these disasters? What are your plans for recuperation?

At this point we have not had to reduce our herd size.

Senate Committee on Agriculture, Nutrition & Forestry
Drought, Fire and Freeze: The Economics of Disasters for America's Agricultural Producers
Questions for the Record
February 14, 2013
Dr. Roger S. Pulwarty

Chairwoman Debbie Stabenow

1.) **Question: Can you give us an estimate of how close we are to reaching a situation where drought conditions match the severity of the Dust Bowl? The outlook you provided was for the next few months, but from your experience, how likely is it that conditions improve substantially for the next growing season or are we in such a deficit in some areas that even improved weather will not help?**

Response:
Observations indicate that for much of the Plains, high temperature and low precipitation over the past few years are similar to the 1930s (multiple years with low precipitation and sustained high temperatures). Precipitation deficits for the period May through August of 2012 were the most severe since official measurements began in 1895, eclipsing the driest summers of 1934 and 1936 that occurred during the height of the Dust Bowl. Much of the dry region also experienced hot temperatures, averaging 3.25 degrees Fahrenheit warmer than usual with several records being broken at local levels, and had the highest temperature on record over the continental United States (U.S.).

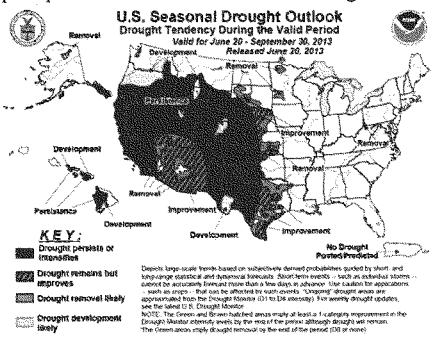
While we are not yet at the climatological stage of the 1930s, higher temperatures and soil moisture decline could lead to sustained drought conditions. Present agricultural practices, much to the credit of the USDA/NRCS and Conservation Reserve Enhancement Programs, have changed dramatically how farms have been impacted by drought in recent years. Thus, current farmers and agricultural producers are in a better position to maintain the quality of their crops than farmers of the Dust Bowl era.

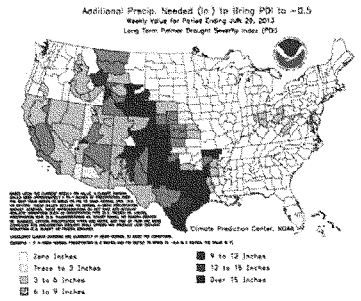
The onset of the drought of the 1930s was strongly linked to cold conditions in the Pacific Ocean, whereas it appears that in the case of the central Great Plains drought during May through August of 2012, the intensification of conditions resulted primarily from natural variations in weather with longer-term trends having a small contribution. Human-driven climate change, including increases in temperature, are expected to exacerbate drought conditions for specific regions, discussed below, into the future.

It is important to note that since this hearing was held in mid-February, the areas in the contiguous U.S. designated as moderate to exceptional drought have been reduced from 56% to 43%, with a more dramatic reduction in the High Plains region of 91% to 67%. The drought outlook for June 20 – September 30, 2013 is based primarily on short-, medium-, and long-range forecasts, initial conditions, and climatology (Figure 1a, b). Drought is forecast to persist for much of the West, except some relief due to monsoon rains is expected for Arizona and surrounding regions. Drought is expected to expand into northern Oregon. Improvement in

conditions is forecast across eastern Kansas, eastern Oklahoma, and eastern Texas, but prospects for improvement decrease further southwest across the southern high Plains and south Texas. During the past four months, major improvement occurred across Georgia and South Carolina. Drought persistence is forecast for the Hawaiian Islands. While conditions have improved somewhat in the central U.S., since mid-February to the present, drought conditions have intensified in the West, with the (Western) area of moderate to exceptional drought, increasing from 65% to 77%.

Figure 1: (a) Seasonal drought outlook through September 30th, 2013, and (b) amount of precipitation needed to ameliorate drought conditions from May 2013 through August 2013.





For additional information, please see the attached National Drought Forum Report with information on the National Drought Early Warning Outlook, a National Integrated Drought Information System (NIDIS) product created with several agencies on an on-going basis.

2.) Question: It is expected that global climate change will exacerbate the length and severity of droughts, can you explain why and how drought is affected by climate change?

Response:
According to a consensus of the most up-to-date peer-reviewed science, global climate change will exacerbate the length and severity of droughts in many regions of the United States in the future. As known from the 1930s and the recent decade, high temperatures can exacerbate drought conditions through land surface feedbacks and higher evapotranspiration. Global climate models continue to be uncertain with respect to precipitation, but they are very consistent with respect to temperature, showing average temperature increasing throughout the U.S. Runoff, streamflow, and soil moisture depend on both temperature and precipitation and are thus less susceptible to global climate model precipitation uncertainty. As such, summer droughts are expected to intensify in most regions of the U.S., with longer-term reductions in water availability in the Southwest, Southeast, and Hawai'i in response to both rising temperatures and changes in precipitation. There is strong confidence based on the observed trends and global climate models agreement that the southern states will continue to experience reductions in streamflow and soil moisture. However, the drought in southern California, the Southwest, and the Southeast over the last several decades is consistent with observed longer-term trends in precipitation, temperature, snow cover, runoff, streamflow, reservoir levels, groundwater recharge and soil moisture.

Impacts of human-driven climate change on drought conditions are not anticipated to be discernible in the Great Plains region until the middle of this century, but previous studies have shown that surface and groundwater supplies may be reduced by declining runoff and groundwater recharge trends in the Southwest, the Southeast, the Great Plains, and the islands of the Caribbean and the Pacific, including the state of Hawaii over the entire present century. The scientific evidence is, however, clear that drought severity will be exacerbated by increases in temperature.

Many southwestern and western watersheds, including the Colorado, Rio Grande, and Sacramento-San Joaquin, are experiencing increasingly drier conditions with even larger runoff reductions (in the range of 10% to 20%) expected over some of these watersheds during the next 50 years. Climate change induced temperature and precipitation conditions are expected to surpass natural variation and land surface feedbacks to become the primary driver of drier conditions and decreased runoff by the middle of the 21st century, especially in the Southwest. In many regions throughout the U.S., declining runoff and groundwater recharge are expected to affect surface and groundwater supplies and increase the risk of water shortages for many off-stream and in-stream water uses. Changes in streamflow timing will exacerbate a growing mismatch between supply and demand (peak flows are occurring earlier in the spring because of increasingly earlier melting of mountain snowpack due to warming, while demand is highest in mid-summer) and will challenge the management of reservoirs, aquifers, and other water infrastructure.

Uncertainties also exist in present climate variability and how this might change into future. Useful interannual (year to year) predictability of drought events for specific locations in the

U.S. continue to hinge critically on the predictability of natural variations in ocean states which are now themselves showing significant warming (Seager and Hoerling, 2013). The estimate from these studies is that the background anthropogenic trend contributed to about 10% of the present drought signal. Because of the location of the Jet Stream and dry land surface among other factors described above, the Southwest drought signal has a more well-defined human-driven influence than the Great Plains. One aspect of the estimated long-term change in soil moisture due to increased warming is that owing to a regional specificity in signal—with greater temperature rises over the southwestern U.S. together with greater reduction in precipitation—drought events in that region are likely to be more severe now and sustained compared to events elsewhere in the U.S.

Major events with major economic and environmental impacts, such as the 2012 and ongoing drought, offer lessons on planning and practices for anticipating, managing, and reducing future risks.

3.) Question: What are the most frequent information requests that you receive from farmers and ranchers who are using your data to plan their farming operations, are they seeking information as to what, where, and when to plant?

Response:
The most frequent information requests that we receive from farmers and ranchers are for past, current, and predicted drought conditions and the potential for changes in the conditions. Producers are very interested in information that provides historical context for current drought conditions. They are requesting information and analysis about how current drought conditions compare to those experienced in recent recorded history, especially for those that had significant impacts. A common question during the 2012 drought was how those drought conditions compared to the Dust Bowl drought conditions of the 1930s, the 1950s drought, or significant individual drought years such as 1976 or 2002. Understanding analogues have become important for producers as they make decisions about risk and farm and crop investments. Forecasts of seasonal to year-long projections of temperature and precipitation are also requested as primary information by crop producers and water managers. New research is showing that the weather and climate variables on these timescales are also dependent on the background long-term decadal variability (Pacific and Atlantic variations) and trends that change the reliability of the seasonal forecasts (e.g., why no two El Niños have exactly the same impacts over the U.S.). These longer timescales are also critical for resilience measures such as Conservation Reserve Programs.

A March, 2012 survey of almost 5,000 Corn Belt farmers found that almost 60% were concerned or very concerned about the potential for drought on their farms. Concern for drought was higher than concern for crop disease, insects, weeds, flooding, and other potential farm problems. Over 50% reported using drought monitors and regional outlooks as decision support resources. The weekly-produced multiagency U.S. Drought Monitor and the U.S. Monthly / Seasonal (3-month) Drought Outlooks produced by NOAA represent some of the most viewed and utilized products by the agricultural communities. Because timely precipitation and appropriate temperatures heavily influence a crop's yield potential at critical stages of that crop's development (particularly pollination), producers rely heavily on NOAA's precipitation and temperature forecasts, both in the short-term and mid-term.

Ongoing work with ranchers finds that they are very interested in monitoring precipitation and soil moisture throughout the year. When this information is tied to their knowledge of primary forage production timing, they are able to make decisions about stocking rates and other range management strategies in a timely manner. The survey results state, "As a result of monitoring, one rancher described the confidence he felt in making decisions early in the season: 'Our big moisture months are April, May, and June. So . . . if you know you're dry in April and May, you've already lost two-thirds of your growth [window].'"

The following are other weather and drought related forecasts that are relied upon regularly by producers to inform their planting decisions and farm operations:[1]

- NOAA Climate Prediction Center Palmer Drought Index – A long-term drought index that is a measurement of dryness based on recent precipitation and temperature
- NOAA Climate Prediction Center 1- and 3-month Temperature and Precipitation Forecasts
- NOAA National Weather Service (NWS) short range (12 – 48 hour) and medium range (3 – 6 days) forecasts
- U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) and U.S. Geological Survey (USGS) Streamflow forecasts
- NRCS Water supply forecasts
- VegDRI - The University of Nebraska's National Drought Mitigation Center (NDMC) produces VegDRI in collaboration with the USGS Center for Earth Resources Observation and Science (EROS), and the High Plains Regional Climate Center, with sponsorship from the USDA Risk Management Agency. VegDRI maps are produced every two weeks and provide regional to sub-county scale information about drought's effects on vegetation.

Agricultural producers typically do not make requests of NOAA or the NIDIS Program Office regarding what, where, and when to plant crops. This information is sought from USDA, research institutions, local county extension offices, conservation districts, crop consultants, grain consultants, and private sector commodity groups. Ideally, farmers want information applicable to "their" farms. NIDIS supports research institutions and universities through the NOAA Regional Integrated Sciences and Assessments (RISA), NDMC, State Climatologists, and Regional Climate Centers, to address these local needs within each region of concern. USDA's Agricultural Research Service and county extension services provide some of this information at the local level by extrapolating this data from regional data. NIDIS partners extensively with these groups to provide technical support in developing tools and resources to respond to information requests.

Ranking Member Thad Cochran

[1] Forecasts are available at each of the source sites, and visible in one place on the NIDIS U.S. Drought Portal, www.drought.gov

4.) Question: What is the current capability of the National Oceanic and Atmospheric Administration (NOAA) to predict droughts in the near term and how can these capabilities assist farmers in making decisions to mitigate the effects of a drought on their crops?

Response:
NOAA has had success in predicting droughts/dry spells out to three months:
(1) across the southern tier of states during a La Niña event (mainly winter & spring months);
(2) in the Northwest & Ohio Valley during an El Niño event (mainly winter & spring months), although not as statistically significant as (1);

Verification statistics showed some success for predicting the development of drought in the South during the last two La Nina events. NOAA also has been able to demonstrate success in the opposite predictors (e.g., drought-easers, or wetter than normal conditions) during El Niño/La Niña-Southern Oscillation (ENSO) events. Currently, however, during ENSO-neutral conditions (such as now) or in the summer to fall months, NOAA's drought predictive capabilities are much lower. A key issue concerns large-scale oceanic variability on decadal (10-20 year) timescales such as the Pacific Decadal Oscillation and the Atlantic Multidecadal Oscillation. These decadal forcings have been shown to modify the impacts of ENSO events, and in the case of the 2012 drought, have dominated the drought signal in the absences of an ENSO event.

Current weather data and short-term (seasonal) and medium-term (year to year) predictions assist farmers and water managers in their ability to make in-season adjustments on multiple crops to drought conditions, including shifting the timing of irrigation practices on the most critical crops. Short-term predictions can lead to decisions to increase groundwater pumping to offset surface water supply shortages. These predictions also are considered when making decisions on abandoning certain crops and acreage and concentrating limited water supplies on favorable crops.

Some ranchers use this information to set for themselves critical decision-making dates. On that date, the rancher will consider information on precipitation and forage growth to date, and make management decisions appropriate to that time of year.

<u>Senator Sherrod Brown</u>

5.) Question: Dr. Pulwarty, as you may know, the farm bill is about more than just agriculture---it's also about building strong rural communities. Given your expertise in climate and experience integrating research into decision making, what advice would you provide this committee about what a farm bill needs to do to prepare rural communities for the changing temperatures and weather patterns of the future?

Response:
Among other issues, discussions at the multi-agency, multi-stakeholder National Drought Forum (December 2012) convened by NIDIS highlighted the need to:
- Increase public awareness of this year's drought and potential impacts for next year.

- Increase technical assistance for the communication and use of drought-related information in impacted communities including efforts through the NIDIS regional early warning systems in partnership with the NDMC.
- Ensure sustained support for monitoring programs and equipment critical to understand and respond to drought, e.g., the National Resources Conservation Service SNOw TELemetry (SNOTEL) sites and Soil Climate Analysis Network (SCAN) sites; and the Water Census led by the USGS.
- Support the USDA/NOAA Memorandum of Understanding and the recommendations put forth by the National Drought Forum held in D.C. in December 2012. These include improved drought and water resources data acquisition, monitoring networks, and databases, such as a National Soil Moisture Monitoring Network, applications and interpretations of agro-meteorological information for local risk management in connection with droughts and water resources.
- Support programs that promote long-term sustainability, including promoting the improvement of soil health. The conservation programs within USDA NRCS, for example, are both long term drought mitigation strategies and climate change adaptation strategies. The NRCS has 170 practices that promote mitigation of long-term impacts. Soil health provides the buffering capacity to smooth out variability. These practices fall into the categories of water management, land management, and crop management. These could be promoted within the Farm Bill.
- Identify programs within the USDA's Farm Service Agency and Risk Management Agency that can promote long-term resiliency.
- Identify ways to build connections between the climate and weather community and the agricultural sector. This may include promoting more "extension climatologists," who are increasing in number across the U.S. Also continue to support climate- and drought-information services, as well as efforts to provide better information to farmers and others regarding long-term projections for drought as a result of climate change and other factors.
- Support research, especially through the USDA's Agricultural Research Service, NOAA's RISAs, and land grant universities. Oftentimes the long-term research studies that are needed to understand long term impacts and develop resiliency are very difficult to fund under the current funding mechanisms (which usually support 2-year grant programs).
- Support robust, collaborative – partnership focused, and transparent drought preparedness and adaptation, and mitigation planning for rural communities.
- Support our nation's valuable climate and hydrological networks (many of which are multi-agency), which are critical to better understanding climate and weather processes and for initializing and validating our climate and land data assimilation models.
- Support remote sensing efforts that produce products that fill in the gaps of *in situ* monitoring across the U.S. (e.g., soil moisture and vegetation health).
- Support research to better understand the linkages between drought severity, duration and changes in climate, which can lead to better forecasting across climate timescales from seasons to decades for longer term trends.

A copy of the National Drought Forum Report is included as an attachment.

6.) Question: Whether pervasive drought or a severe storm, once a disaster strikes, it is this Committee's job to determine how best to provide assistance to agricultural producers who suffer significant losses. The weather is one of those things we can't control -- but

we can be prepared. Broadly speaking, agricultural research, soil and water conservation, diversification, appropriate risk management could all be seen as investments in prevention. Given your respective areas of expertise, what do you see as essential preventative measures this Committee can take at a time when farmers are facing changing weather patterns AND the federal government is focused on reducing expenditures? How can we do more and better with less?

Response:
For many types of disasters, research from a variety of sources (World Bank, academic research on disaster risk reduction) has shown that for minimal upfront costs in disaster mitigation strategies can save several times those costs in the future. In the case of drought the future is immediate and the benefits and returns on those risk reduction programs can be seen on a year to year basis since drought occurs somewhere in the U.S. almost every year (albeit not always on the scale of the ongoing event). So, yes, there is an upfront cost, but it could save money in the long-term. The long-term consequences of attempting to do more for less needs to be considered in the decision-making process.

One proposal would be to strengthen NIDIS partnerships in early warning and impacts assessments to support resilience to drought including the meeting the objectives of the 2012 USDA Department of Commerce Memorandum of Understanding. The goals would be to:

- Build upon ongoing NIDIS efforts to identify regions or water basins that are particularly vulnerable to drought and make them models for drought preparedness by producing planning guides, tools and networks which will then be transferable to other regions. Coordinate federal drought declarations and assistance programs with drought preparedness plans for maximum benefit based on sound drought information.
- Enhance preparedness and long-term resilience strategies, best practices and technologies for at-risk regions throughout the United States and other relevant areas affecting United States commodities and markets and natural resource management by testing and evaluating weather and crop-yield models and sustaining conservation reserves. These measures would promote resilient agriculture systems, ecosystems, and communities in a changing environment. These form the buffers, similar to reservoir storage systems, which allow the least painful adjustments to be made before a crisis is reached.
- Identify relief programs and provide a portion of those relief programs to promoting mitigation strategies.
- Sustain and improve the health of our soil and plant resources to better resist the effects of extreme weather. Healthy soils and healthy plants can resist weather extremes and be more resilient once more normal weather returns. Combinations of no till and cover crops have been shown during the 2012 drought to allow for better soil moisture management and allows for more available soil water for crops.
- Support extension services: for instance, the Cooperative Extension System Offices, whose federal partner is the USDA's National Institute of Food and Agriculture (NIFA).[2]

[2] http://www.csrees.USDA.gov/Extension/

A coordinated NIDIS, USDA/NIFA and risk management effort improves accessibility, compatibility, and sharing of data, analysis, and expertise. For example, the coordinated effort supports the development of regional drought and disaster early warning information systems to support preparedness and adaptation. In addition, it promotes interagency coordination across economic development and economic statistics offices for the use of datasets. Finally, this effort aids in the development of timely, user-friendly communications tools and processes to inform preparedness, response, and adaptation, building on existing information networks in a multiple hazards framework.

Senator John Thune

7.) Question: How does NIDIS prioritize the regional implementation of Drought Early Warning Systems?

Response:
NIDIS Early Warning System regions are prioritized based on:

- Occurrence of severe drought in the recent past
- Emerging severe drought conditions
- Critical water, agriculture, energy or other water-sensitive economic sectors that are exacerbated during drought

The choice of the first NIDIS early warning system illustrates these criteria, and was developed in the Colorado Basin at the request of the Western Governors and Federal partners. The Colorado River experienced its lowest five-year inflow from 2000-2004, lower than even the Dust Bowl years of the 1930s. It became clear to the states and the federal entities that an improved process was needed to integrate federal, state and local risk assessment and early warning needs for drought impact mitigation.

The period since 2001 to the present has been the second driest 12 year period in the record, having average or below average flows for most years, with 2002 being the lowest year with 25% of average inflow. NIDIS convened a series of stakeholder workshops at different administrative units with water managers/resource specialists from Federal, State, municipal, tribal, and private sector groups in Utah, Wyoming, and Colorado to identify information gaps and initiate the development of decision support tools and processes. Three critical problems were identified as NIDIS priorities: (1) coordinated reservoir operations – low flow shortage triggering criteria on Lakes Powell and Mead, the two largest man-made lakes in the USA; (2) inter- and intra-basin transfers (to the burgeoning Front Range); and (3) ecosystem health/services. Within this, three major efforts are underway: (1) identification of federal and state-level partnerships, the decision support tools and actions needed to improve information development, coordination and flow for risk reduction; (2) assessment and consolidation of drought indicators and triggers used in the Upper Basin; and (3) implementation of an Upper Colorado Basin Drought Early Warning System.

According to the Colorado State Climatologist, the Upper Colorado Basin has become much more engaged in the U.S. Drought Monitor weekly update cycle because of the improved local input. Since the NIDIS Early Warning System has been involved, contributions to the U.S.

Drought Monitor are better coordinated and it is now a more useful product. Due to increased consistency in monitoring and communications, the weekly drought assessment webinars have also improved the level of awareness of drought conditions (physical system and impacts). Thus, the Colorado Basin Early Warning System actively feeds into, and improves the applicability and usefulness of, the national level Drought Monitor by enhancing information about local conditions.

Additional NIDIS Early Warning System activities in California and the Apalachicola-Chattahoochee-Flint River Basin (which is in Georgia, Florida and Alabama) were chosen because both California and the Southeast U.S. had experienced severe droughts in the last decade that caused shortages in municipal water supplies, exacerbated politically charged issues around water allocation, and revealed gaps in communications with the general public and in drought planning. The new early warning system in the Carolinas, which focuses on coastal ecosystems, was also started because of severe drought in the Southeast U.S. in the last decade that challenged both of the Carolinas with water management issues such as reduced municipal water supplies, negative impacts on energy production, and negative impacts on nearshore ecosystems on which local communities and the tourism and recreation industries rely.

NIDIS, along with many partners, responded to the rapidly forming drought in the Southern Plains in the summer of 2011 by holding drought assessment workshops with local and national drought experts to inform and advise decision makers about the current and anticipated drought conditions, particularly in Texas. From these initial workshops grew a bi-weekly drought assessment webinar series that is still providing drought updates to stakeholders, as well as expert presentations on drought impacts in the region, with these efforts essentially functioning as a pilot drought early warning information system.

The Chesapeake Bay area is a target area for NIDIS because it is a densely-populated, urbanized environment with multiple environmental stressors and low water storage capacity and water quality issues during drought (e.g., saltwater intrusion, pollutant concentrations, water temperature leading to fish kills).

8.) Question: Can you please highlight the inter-agency approach that NIDIS takes to drought monitoring and forecasting? In particular, could you discuss the relationship between NOAA, USDA, partners at the state and local level, and the private sector?
NIDIS' External Support and Partnerships

Response:
NIDIS aims to provide directly accessible, timely drought information to users, and as such, has enjoyed strong user support. For example, NIDIS has been acknowledged by the Western Governors Association as a model for federal-state partnerships and provides a natural prototype for achieving effective early warning and drought information to support risk management by, (1) engaging both leadership and the public at regional, state and local levels, and (2) establishing an authoritative basis for integrating monitoring and research products to support risk management.

Much of the support that NIDIS has generated, and the program's ability to meet the Nation's needs results from the strong partnerships that the program has with other agencies, outreach

organizations, and an enabling set of programs and observational capabilities such as the Cooperative Observer Program (COOP) Monitoring network, a decentralized citizen-based effort to provide local data; the National Resources Conservation Service SNOw TELemetry (SNOTEL) sites and Soil Climate Analysis Network (SCAN) sites; the Water Census led by the U.S. Geological Survey (USGS) under the Department of the Interior's WATERSMART efforts; and streamflow and reservoir levels from the U.S. Army Corps of Engineers and the Bureau of Reclamation. In addition to these are the state and regional partnerships such as the Western Governors Association, the Western States Water Council, various State Water Conservation Boards; and academic institutions especially the NDMC at the University of Nebraska, Lincoln. These essential partners work actively with NIDIS on improving operational products (i.e., U.S. Drought Monitor, Drought Impact Reporter, Vegetation Drought Response Index), applications (i.e., relevance to drought planning at all levels), and education (i.e., K-12 activities) within the drought research community, media and general public to make our Nation more resilient in the face of drought and its impacts.

In each early warning system, NIDIS works with Federal, State, and tribal partners in monitoring and forecasting, impacts assessment, and communication and preparedness.

NIDIS works to engage agencies or groups that generate information about current and future drought and water supply conditions for the pilot regions. In addition to local experts, NIDIS engages the local agencies or groups that need drought and water supply information, but do not have easy access to it, or have difficulties interpreting the data for their particular needs (often because the spatial scale of many data sets does not have the resolution needed for decision-making). Combining local information with information generated at the national level, such as the NOAA Climate Prediction Center one-month and three-month temperature and precipitation outlooks, allows NIDIS to bring both the larger context and a more customized regional picture to stakeholders. For this to happen, NIDIS engages at the regional, state and local levels through state agencies (e.g., typically the agencies that are responsible for natural resources, such as the Alabama Office of Water Resources), city and county commissions or water authorities, riverkeepers, power companies, formally organized stakeholder groups, emergency managers, ski resorts, members of the local press, state wildlife departments, universities (including extension services), river authorities and state climatologists. Our experience with the private sector has been limited, but private companies and associations (e.g, from the ski industry, Cattlemen Association, insurance companies, etc.) do participate in pilot stakeholder meetings and regional outlook forums.

The USDA contributes to the pilots in the Western U.S. through the NRCS, which provides snowpack, snow cover, reservoir and snow water equivalent data and water supply forecasts, as well as soil moisture and soil temperature monitoring sites in all of the western states. Currently, the collection of some of these critical data sets, which are already limited in geographic scope, are being reduced. The USDA contributes to NIDIS on a national level by providing expertise on how the current drought is affecting crops across the U.S., as well as anticipated conditions for farmers. Information on activities undertaken jointly with the USDA is provided in the Testimony Appendix.

9.) Question: How does NIDIS ensure that the data you provide is useful to the public? What kind of a relationship do you maintain with trade groups or other organizations that could help disseminate actionable information to end-users?

Response:
The NIDIS program office solicited an assessment of services provided by its Drought Early Warning Information System Pilot projects, the drought.gov portal, and other NIDIS components in early 2012. Our partners at the University of Nebraska NDMC led this assessment. The evaluation includes both documenting the process and assessing the outcomes of NIDIS implementation to date. The NDMC has worked with the NIDIS program office to document the process (meetings, workshops, and other activities) of carrying out the NIDIS implementation plan, including participation, products, and outcomes. In addition, the NDMC is gathering information to assess the outcomes of NIDIS implementation from the perspective of NIDIS stakeholders. The first stage of the outcome assessment was accomplished in July 2012, with a survey of NIDIS stakeholders across the country.

Results of this survey indicate that the impact of NIDIS information is multiplied through information sharing, communication, and information repackaging. Of 100 respondents using NIDIS information, 78% said they had shared information with another person; 65% had incorporated information into a presentation or publication; 48% had generated information using a specific product or resource found on the portal; and 21% had incorporated information into a research objective (see Figure 2).

Other individuals responded that they followed droughts nationally, launched a new research project for the planning community, did a better job of educating their clients on drought, and addressed media questions or other questions. Only 9% said they did none of the things we asked about with the NIDIS information.

To ensure information gaps are filled, NIDIS also conducts "state of knowledge" assessments to: (1) determine where major gaps in data, forecasts, communication, and information delivery exist; (2) identify innovations in drought information assessment and management at state and local levels; and (3) engage constituents in improving the effectiveness of NIDIS. Thus, the "early warning information system" in this organizational model does not simply involve the dissemination of a forecast. It allows for major innovations from the research community to incorporate new, locally specific information and technologies for detecting and communicating drought risks and warnings to be tested and introduced. For example, the NRCS updated the Surface Water Supply Index for Colorado stakeholders and the NWS's Southeast River Forecast Center developed a new easy-to-understand one-month and three-month streamflow forecast graphic for the Apalachicola-Chattahoochee-Flint River Basin stakeholders. These products were identified and developed through collaboration between NIDIS partners in research, monitoring, and water resources management. There are a growing number of positive examples of such partnerships, and, in line with its implementation plan NIDIS is developing similar Regional Drought Early Warning Information Systems in others watersheds across the country.

The number of watershed, state and local drought and water plans using NOAA-based information has significantly increased since NIDIS was initiated. Drought preparedness advice

and planning are carried out by water-dependent managers such as State Engineers, Water Availability Task Forces, farmers, agribusinesses, land managers, city councils, and others. However, the results of drought-related research, including data analyses, are not always disseminated in a timely fashion or through easily accessible or compatible modes for incorporation into risk management.

Identification and development of drought triggers and indicators requires active engagement among research, information brokers, and stakeholders in various sectors responsible for managing drought-related risks. Many of the lessons-learned following drought events can be documented with post-drought assessments to ensure that these critical lessons are not lost. Post-drought assessments are a key step within the drought planning process, and NIDIS is learning from existing networks, such as Cooperative Extension, and has been engaged by the American Planning Association to help address and reduce the urban impacts of drought. One key product developed specifically in response to this need by NIDIS, the Sectoral Applications Program, and the NDMC, is a Drought-Ready Communities guidebook to improve drought planning.

10.) Question: What kind of feedback have you received from agricultural businesses and trade groups on your drought forecast products? Are they able to use these forecasts to better manage their businesses?

Response:
NIDIS has sought and received significant feedback from formal surveys and user needs assessments, through personal communication at stakeholder meetings, and congressional testimonies. For example, as part of a drought information assessment being undertaken for the 2011-2012 Southern Plains drought, we asked the NDMC to conduct a survey of participants that attended a series of workshops on drought management tools in Texas and New Mexico in 2010 just prior to the onset of drought. One of the purposes of the survey was to learn the overall changes in drought preparedness or decision-making that might have resulted from the workshops on drought management tools. The audience for the workshops was largely agricultural, but included people working in groundwater management, drinking water supplies, and emergency management. Respondents had been affected by the recent drought in several ways. When asked how the recent drought had affected them, crop and livestock-related losses, water supply problems, fire, and damage to plants were the most frequent responses. The survey asked respondents to indicate their level of agreement/disagreement with a number of statements. Overall, we found an increase in capacity for dealing with drought among survey respondents. Eighty-six percent said they agreed/strongly-agreed that they had a *"better understanding of drought monitoring and management information, tools, and resources"*. Sixty-three percent agree/strongly-agreed they had *"used additional drought information and/or resources to make decisions during the recent drought"*. And over half (52%) agreed/strongly-agreed that the *"decisions they had made during recent drought were better than before the workshop"*. Respondents were split on whether or not they had been able to *"find appropriate people to help make decisions during drought"*, with 43% saying they either disagreed or were neutral on the statement, and 43% saying they agreed or strongly-agreed (Figure 2).

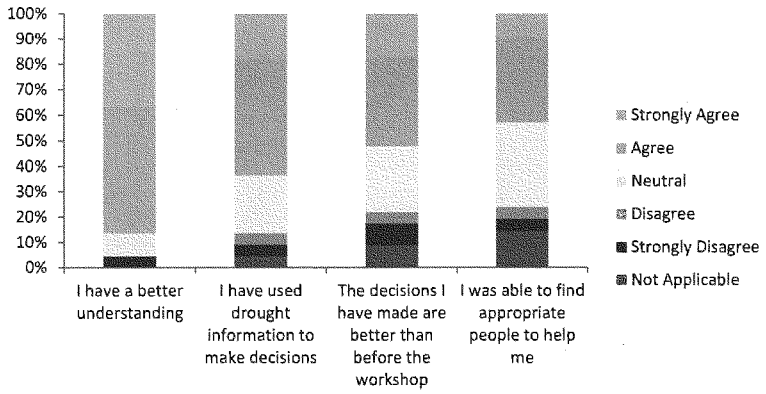


Figure 2: Survey Respondents' reported change in capacity as a result of workshops.

Several people have also provided examples or comments as to how their needs had or had not been met by new drought risk management tools, or about what they would like to see in the future. Comments are included below:

- "The cattle deal is serious...we had already been in declining numbers for several years, then the drought took it into a nose dive. There are lots of ranches that had to sell all the cattle...and are trying to figure out what to do next. You are on the right track and the webinars are a fantastic tool at a reasonable cost (I have gotowebinar) and it is fantastic for board meetings and even small groups because of the visual aspects. You guys do great work and I appreciate everything you do for me and my business...a picture is worth much more than a thousand words...but someone has to collect the data to make it an accurate picture (and you guys do both). I use as many tools as I have time to get my hands on and the neat thing about what you do and the format, it's concise and tells a story visually. The customers I work with rave about what I send them and I am only touching the tip of the iceberg." -----Mark Hodges, Plains Grains, Inc.
- "I have used it to help me explain what it is looking like for the future. My industry, although not agribusiness, relies on rain to survive. During the Bastrop fire, many friends lost all. I have a much better appreciation of what lies ahead for Texas if we do not address future water needs."
- "I love what little geospatial data and datasets you offer via the National Drought Mitigation Center site. Would love to see more, and more OGC [Open Geospatial Consortium]-compliant services of the information for additional 'carving' and 'mashing up.' Keep up the good work!"
- "Helped me immensely in decisions about stocking rates for cattle, hay and forage decisions, to fertilize or not. Wish there was some way to help out the dead tree problems. I've literally lost hundreds of trees due to drought - hickory, oak, cedar and even yaupon."

- "The use of the online Drought Monitor provided the basis for making better feed and forage harvest plans. In addition, it was very helpful in identification of other areas of the country that were also experiencing extreme and severe drought conditions.

11.) Question: How has NIDIS's worked to build capacity, leadership, and partnerships to increase drought preparedness paid off during the most recent drought?

Response:
NIDIS: (1) coordinates drought research, monitoring, (2) develops decision-support products and services delivery, and (3) fosters capacity and coordination. Without an explicit focus by NIDIS on the third component, the benefits of the first two actions would not have been realized.

Currently, NIDIS supports two grants programs in the NOAA Climate Program Office- the Sectoral Applications Research Program (SARP) and RISA under its (NIDIS') Coping with Drought activities. SARP projects identify socioeconomic impacts of drought and data information needs of resource managers and policy/decision makers and develop new tools, methodologies and knowledge to address these needs. RISA Coping with Drought Initiative supports regionally-specific efforts to test tools and methodologies to cope with drought and funds one drought-focused RISA.

Some examples of outcomes from Coping with Drought grants and the institutions that led these studies include:

- Creating guidebooks on water resources reliability (University of Arizona), river restoration (Briggs), and community drought preparedness (NDMC at the University of Nebraska);
- Linking NOAA climate forecasts to dynamic vegetation models to produce seasonal predictions for fire management (University of Nevada, Reno – Desert Research Institute – Western Regional Climate Center);
- Conducting workshops on using climate information in drought decisions (University of Nebraska, Lincoln, University of Arizona);
- Transferability of the University of South Carolina's Dynamic Drought Index Tool to other regions; and,
- Reconciling projections of future Colorado River stream flow (multiple Universities).

Starting in 2010 with the beginning of the Southern Plains drought and going through 2012 with the Midwest event, NIDIS has been working with a variety of partners to predict and communicate both short and long-term potential risks associated with drought. NIDIS has also provided training for State Climatologists and others on assessing drought impacts and information needs.

Southern Plains Climate Outlook Forums
As the drought developed in the Southern Plains region, NIDIS conducted a series of drought outlook forums (July 2011, November 2011, April 2012, October 2012) in partnership with the states of Texas, Oklahoma, New Mexico, and others. The drought/climate outlook forums are a new approach to improve communication and delivery of drought early warning information for planning and risk management. The work has been highlighted in national media (e.g., the Wall

Street Journal, 2 January 2012). While the Forums were in progress, we conducted a survey to learn more about the impact of the information we were providing. Overall, we found an increase in capacity for dealing with drought among survey respondents. We specifically asked about the participants' experience with the seasonal climate outlook products that were featured at all of the outlook forums. In a typical forum, we discuss how to interpret the forecast and our confidence that it could verify. NIDIS is continuing the Forum and has held them in areas of the Southern Plains where drought has persisted (Oklahoma Panhandle) or is expected to intensify (Rio Grande/Bravo River Basin). We also expect to continue evaluating how effective the information is at communicating risk and how decision-makers are actually using it to inform decisions.

Midwest Climate Assessment Webinars

The Midwest provides an illustrative example of how NIDIS is supporting existing efforts to communicate both flood and drought information. In the NIDIS Act of 2006, NIDIS was charged with developing a drought early warning information system using existing networks and partnerships. The partnership between NOAA and the South Dakota State Climatologist is a good example of an existing partnership that has built an extensive network in the Midwest around a series of webinars. The webinars started initially in response to the widespread floods in 2011. As the floods gave way to an intense drought in May 2012, the webinar organizers began providing information on the expected duration of the drought and whether it would intensify. NIDIS is working with the webinar organizers to use the network they have developed to further improve sources of early warning information that could help reduce economic losses due to drought. The webinar series has been well received. A recent survey of participants showed 95% of respondents wanted the webinars to continue. Some examples of how the information was used for decision-making are below:

- "Very helpful in planning staff time dedicated towards flood issues and advising elected officials on what to expect."
- "In response and preparedness it has helped me plan for future responses and educate the team on future expectations based off of some of the information gathered from the webinars."
- "I think a monthly webinar to look at general climatic conditions in the basin is appropriate. Perhaps consider going to weekly if there is an emergent issue (flood, drought). Take away the flooding focus per se, and focus on the current issues. This could be drought, extreme events, and/or flooding in different parts of the basin. Bring in others to present regularly on such topics as: water quality, forestry, agriculture impacts/outlook, in addition to the climatic perspective. Go around the horn and have everyone chime in. Maybe a little less on the climate, and more on impacts (even if it appears to be no impact, have them on the call to say that)."
- "I am working for USDA-NRCS in State Office in Missouri. Your webinars have been useful to us over the past months, even back when we were talking about long duration flooding and not drought. I was able to take about 15 bulleted short notes from your presentation yesterday, provide quickly to our state leadership. That simple data relay works great to provide our leadership with up to date forecast information as they are being faced with constant questions and concerns from our customers."
- "I am a reinsurance underwriter that focuses exclusively on crop insurance. So, perhaps my interest in NOAA climate information webinars are obvious but, if not, weather and

long range forecasts are of great concern financially to my company. As far as how we would use the information, it would be one component in our underwriting process."

In order for the public to make optimal use of NIDIS data, warnings and forecasts, NIDIS:

- Identifies appropriate partners and representatives;
- Works with them to set goals and priorities (i.e. problem definition);
- Engages professionals from relevant agencies/communities, etc. to build common ground;
- Produces multi-agency authored gaps assessments for monitoring, forecasting and impacts-agreement on the way forward; and
- Builds capacity and long-term collaborative partnerships for co-production of drought risk reduction information.

NIDIS has also begun developing a network of state-based drought information coordinators to: (a) ensure strong links among Federal, state, private and tribal information providers and users, as well as (b) develop closer cross-sectoral collaboration between meteorological and hydrological services and agencies that work in urban and rural areas, such as extension services, development projects, community-based and non-governmental organizations.

NIDIS will continue to improve through measurement of the program's effectiveness and achievements. Measures may include:

- Number and type of projects that conduct and update risk and vulnerability assessments and assessment of user needs;
- Number of institutions with increased capacity and opportunities to inform drought risk management and reduce exposure to drought risks;
- Number of staff trained to respond to and mitigate impacts of climate related events; and
- Increased percent of the U.S. population covered by adequate drought risk and early warning information systems.

Senate Committee on Agriculture, Nutrition & Forestry
Drought, Fire and Freeze: The Economics of Disasters for America's Agricultural Producers
Questions For The Record
February 14, 2013
Mr. Jeff Send

Senator Michael Bennet

1.) You and other witnesses on this panel have described some the best ways to keep American agriculture competitive: crop insurance, conservation, sensible disaster programs, and research. We should add one more item to that list: a steady workforce. I certainly agree.

The current work visa program for agriculture is falling short. Labor shortages and administrative complications are holding back fruit growers on Colorado's Western Slope and dairies along our Front Range. Do you think reforming agriculture's work visa program would help you and other cherry farmers? I would say no. We need a workable guest worker program so seasonal workers can come, work and go home.

Senator John Thune

1) How does the drought monitor affect planning for perennial crops such as your cherry trees? Are there mitigation practices you can employ when a drought is predicted? We already mulch young trees which is the only thing that can be done other than irrigation.

2) What types of insurance or disaster assistance are currently available for the fruit trees and other crops you grow on your farm? What crop insurance or disaster assistance products would be most helpful for your operation in the future? We can purchase crop insurance for sweet cherries but only a NAP policy is available for tart cherries. That has a $100,000. cap which does not cover expenses in a disaster season. We need crop insurance for tarts and a disaster program like SURE or improved NAP policies without the cap.

3) How will last year's drought affect your management decisions for the upcoming seasons? I need to look at putting in irrigation on new plantings which is not cost effective considering our slim profit margins. Irrigating new trees would not increase production but just help trees to survive. We can also lose mature trees to drought but it is totally unreasonable to irrigate all trees.

Senate Committee on Agriculture, Nutrition & Forestry
Drought, Fire and Freeze: The Economics of Disasters for America's Agricultural Producers
Questions For The Record
February 14, 2013
Mr. Ben Steffen

Ranking Member Thad Cochran

1.) In your testimony, you mentioned diversification as an important part of your risk management plan. How has a diversified operation helped you deal with the drought and economic swings of recent years?

Diversification between crop production and dairy production has spread our risk between different sectors of agriculture. Furthermore, each enterprise complements the other in several ways. For example, our employees in the dairy enterprise can help with some of the field operations. Manure from the dairy has helped to offset fertilizer costs and improve soil quality making our soils more productive and resilient particularly when under stress.

Senator Kirsten Gillibrand

1.) Thank you for your testimony Mr. Steffen. I understand that you have 135 cows on your dairy farm in Nebraska. Your herd size is just about the same size as the average New York dairy farm. Based on the math (20,071 lbs. of milk/cow/year X135 cows = 2,709,585), you fall under the MILC (Milk Income Loss Contract) cap. What has your experience been with the program? What are your thoughts on the new margin insurance and market stabilization program? For your size farm, would the new program offer an equivalent safety net for your milk?

You are correct. We are beneath the MILC cap on our farm. We have participated and benefited from the program.

I am concerned that the proprosed program will limit my ability to change our operation. I want to be able to increase or decrease the size of my cow herd based on economics and opportunities for my family and employees. Trading that ability for a "safety net" is a poor choice and one I would not make.

2.) Mr. Steffen, I would also like to ask you about hay and grain shortages and skyrocketing prices. You mentioned that hay prices have risen dramatically due to shortages. I am hearing from farmers in New York that in some cases, it isn't possible to purchase hay at all– no matter the cost. The shortage is that severe. You also mentioned that the only solution in these situations is to cull cows. Since this is a consequence of the feed shortage, it occurs to me that dairy farmers deserve the same level of support which commodity farmers receive to keep their businesses viable. What do you think about the idea of having crop insurance for hay, alfalfa

and other forms of animal feed? Would such a program be helpful in keeping your dairy farm in business?

I recognize the shortages you have noted. I would point out that culling cattle is not the only possible response to a feed shortage. We have changed feed ingredients in our ration, utilizing alterative forages that are lower in quality and cost. This is not a wholly satisfactory option but it helps. I did mention education and research as tools that help mitigate these situations and in our case both have helped our survival. We plan ahead. We try to stockpile feed. We budget for good and bad senarios.

I am not certain that a crop insurance type program can be applied to forages. Measuring production, quality, and value are all critical to that type of program and are extremely difficult with forages. I would urge caution in this arena.

Senate Committee on Agriculture, Nutrition & Forestry
Drought, Fire and Freeze: The Economics of Disasters for America's Agricultural Producers
Questions For The Record
February 14, 2013
Ms. Anngie Steinbarger

Senator Michael Bennet

1.) In your testimony, you mentioned that you have been involved not only in farming and ranching, but also in the farm supply and crop insurance business. Many people forget that a healthy farm economy is good for everyone—retail, transportation, banking, and other sectors. Given your broad experience in agriculture, what would you like to communicate to lawmakers questioning whether or not reauthorizing the Farm Bill should be a priority here in Washington?

The health of rural America is dependent upon the farm economy in many ways. Not only does agriculture provide jobs in the local community. Farmers rely on these jobs as a source of income for family members so the farm can stay financially viable. In most cases, both husband and wife work full time jobs and farm on the side. Farming requires a great deal of capital and farm products are commodities that do not allow the farmer to sell at prices that cover the cost of production. A farm bill assures the nation they will have a safe and secure food supply and protects the economic health of rural America. Without a farm bill we run the risk of the nation being dependent on other nations for our food and fiber. Other countries do not have the food safety regulations or food supply programs in place that can guarantee our nation a safe and secure food supply.

Senator John Thune

1.) To what degree does each of you use the USDA/NOAA drought monitor to make decisions for your farms? How could the drought monitor be made more useful to you in your business planning?

We use the drought monitor as a decision making tool and I think including soil moisture as a component of the drought monitor would be helpful. Please remember predictions are not always correct and the window for planting is very narrow.

2.) What level of crop insurance do you generally purchase for your farm? What is your greatest concern regarding the future of crop insurance?

We purchase revenue protection coverage at a level that covers 80% of our average corn yield and 75% of the soybean yield. My greatest concern is that there will be reductions in the government subsidy level. The insurance is expensive and this is the first year farmers are required to pay for the insurance before the crop is harvested. Budgeting for the extra expense is always challenging but without subsidy purchasing crop insurance would be impossible. I also feel the current method of crop insurance delivery and adjustment is effective and efficient. Agents and Adjusters alike work long hours to assure the farmer is billed and paid accurately. The delivery of the program requires much more than a 9 to 5 workday.

3.) How will last year's drought affect your management decisions for the upcoming seasons?

We are exploring the purchase of additional irrigation pivots to provide protection against another drought event. Unfortunately, we haven't been able to find a water source that would support another pivot. We are also looking at reduced fertilizer usage as a result of the drought as well as other ways to reduce production expenses as another dry season is predicted.

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