

SLIDE 1: Good afternoon everyone and welcome to our webinar, America's Diverse Family Farms: 2018 Edition. My name is Kellie Burdette and I will be your host. This webinar is being recorded and will be posted on the ERS website next week. At any time during the webinar you may enter a question into the chat feature at the bottom left corner of your screen, and our speaker will answer at the end of the presentation. Our speaker today is Christopher Burns, Chris is a Research Agricultural Economist in the Farm Economy Branch of the Resource and Rural Economics division of USDA's Economic Research Service. His research examines how U.S. agricultural policy and the farm economy affect U.S. farm business, finances and production, and the well-being of their associated households. He also conducts research on new methodologies for inputting missing data in the agricultural resource management survey. Chris earned his Ph.D. in Resource Economics from the University of Massachusetts-Amherst. I think we're ready to start so Chris, you can now begin the presentation.

Good afternoon, my name is Christopher Burns, I'm a Research Economist in the Farm Economy branch for the Economic Research Service. Today I'd like to present a webinar on a recently released ERS report entitled America's Diverse Family Farms: 2018 Edition. This report was released on Thursday and is available on our website, and I'll point you to a link for that later.

SLIDE 2: To get us started, to give you a brief overview of the report. This report describes the characteristics of the 2 million U.S. farms, including what they produce, the characteristics of their farm operators, farm profitability, government payments, and characteristics of their households. The data for this report come from the 2017 Agricultural Resource Management Survey or ARMS. ARMS is an annual survey of farm businesses and associated households of the principal operator. The principal operator is the operator who is most responsible for running the farm, so you can imagine that some farms have more than one operator, and we survey the households associated with the operator who is conducting the day-to-day operations or is in charge of running that farm. 2017 ARMS covers all farm activities that occurred during the 2017 calendar year and the survey was conducted in early 2018, so this is the latest data that we have available. Finally, I'd like to just make a note about the differences between ARMS and the Census of Agriculture. The 2017 ARMS asks different questions and has a different scope than the 2017 Census of Agriculture, which was due to be released in February of 2019. The 2017 Census of Agriculture, it will include detailed data on farm production and organization, because the census includes records for nearly 2 million American farms it's especially valuable for its coverage of counties and states, and for its deep coverage of a wide range of crop and livestock commodities. America's Diverse Family Farms is based on the 2017 Agricultural Resource Management Survey, which complements the Census, it contains information on farm household well-being, including off-farm sources of income and wealth that cannot be obtained through the Census. It also uses the ERS farm typology, which I'm going to talk about later in the webinar, to provide information on the structure and organization of U.S. farming, and the impacts of government programs on farm household well-being that cannot be obtained from the Census.

SLIDE 3: Okay, so moving on. We're going to before we get into the data we're going to go through a few definitions. First, we're going to define a farm, a farm is any place that sold or normally would have sold at least \$1000 of farm products in a given year. This is the USDA's definition of a farm, and it's a very comprehensive definition, so it means that we count many small farms that have limited sales, and it also means that the farm sector consists of a wide variety of farms, many small farms with little sales, mid-sized farms with hundreds of thousands of dollars in sales, and large farms with millions of dollars in sales. Another definition that's

important for our typology is a family farm, so a family farm is any farm where the majority, at least 50 percent, of the business is owned and operated by an operator and individuals related to the operator. And when we look at the definition we actually find that 98 percent of the 2 million U.S. farms are a family farm. It's important to note that for a family farm to exist the relatives don't need to all live in the same household as the operator, so they could live in a separate house or even in a different state.

SLIDE 4: Next I'm going to talk about how we classify farms at ERS. The ERS farm typology classifies farms into homogeneous groups trying to look at farms that are similar in their characteristics, and so there's really three criteria that we look at. The first is whether the farm is a family farm or a non-family farms; the second is its size, and we measure farm size using gross revenue, so gross revenue is a measure of the income received by the farm and this would include things such as cash receipts for crop and livestock sales, government payments, and other farm related income, and keep in mind that this is a gross measure so we're not netting out expenses when we look at this size this is a measure of farm size. And then for the small farms we also look at the occupation of the principal operator, so we look at whether the principal operator considers farming his or her principal occupation, or whether they consider something else to be their principal occupation.

SLIDE 5: Okay, so this is, now we're looking at the ERS farm typology. I'll start at the top, so we have small family farms and these have a gross revenue of less than \$350,000. We have two categories where the operator doesn't consider farming to be their principal occupation and that would be a retirement farm where a principal operator reports they're retired although they may continue to farm on a small scale, and then we have off-farm occupation farms, these are where the principal operator reports a major occupation other than farming. And then we have our farming occupation small farms, so these are where our principal operator reports farming is their major occupation and we break that out into two groups: our low sales farms, with less than \$150,000 in sales or in revenue, and our moderate size farms with a gross revenue between \$150,000 and \$350,000. Then moving on, we have our mid-size family farms with a gross revenue of between \$350,000 and \$1 million, and finally we have our large-scale family farms and we break those into two categories, we have our large family farms with gross revenues between \$1 million and \$5 million, and very large family farms with a gross revenue of \$5million or more. And then finally we have our non-family farms, and this is where the farm, any farm, where an operator and persons related to the operator do not own a majority of the business. And it's important to note for that final category, non-family farms, they are not just a large publicly held corporation, many are not. A common example of a non-family farm is a farm operated by unrelated business partners, another example is a farm operated by a hired manager for an absentee landowner. In fact if we look into 2017, 72 percent of non-family farms were considered small, meaning they had less than \$350,000 in gross revenue, so just to give you a little better picture about what our non-family farms look like.

SLIDE 6: Now we're going to move into our, with those definitions in mind, we're going to move on to our data. We're going to start to look at some of the findings from the report. Our first chart here, Figure 1, we're looking at the distribution of farms on the far left. Now we're looking at the distribution of land operated in the center pie chart, and we're looking at the distribution of the value of production on the far right pie chart. And here, again, we're using our ERS farm typology to separate out the farm groups. What's striking about this first chart on the left is small farms, small family farms, represented 89 percent of all farms in 2017, they also

operated a little over half of all acres, about 52 percent, and were responsible for about a quarter of all production. In contrast, large-scale family farms represented only 3 percent of all farms, but represented 39 percent of production and they did that on about 18 percent of all land operated. And one of our big takeaways here is that family farms represent 98 percent of all farms and 87 percent of total value of production.

SLIDE 7: Next we're going to look at the distribution of production by the farm typology, and we're also going to look at the types of commodities that are produced. Here we're looking at the distribution of production by commodity groups. We have, on the left there, poultry excluding eggs, and we see hey, beef, hogs, cash grains and soybeans, cotton - very high-value crops, and in our far-right bar chart is all commodities. And the colors correspond to our farm typology, so we have our small family farms with less than \$350,000 in gross revenue, our mid-sized farms with between \$350,000 and \$1 million in revenue, and in our large scale family farms with over \$1 million in revenue, and then our green coloring there is our non-family farms. A few things that stand out about this chart, small family farms produce 60 percent of poultry production, excluding eggs, and 76 percent of hay. Mid-size and large-family farms account for the majority of cotton, cash grain and oilseed production. If we look at those middle bars of cotton, and cash grains and oil seeds, and we look at the yellow and the blue we can see that's over half of all production in those categories. In contrast, large-scale family farms produce a majority of dairy and high-value crops, and when we say high-value crops we mean commodities such as fruits and vegetables, tree nuts, nursery and greenhouse products. You can really see that what's produced or the type of farm that produces certain commodities can really vary - small farms producing very different things from large and mid-sized farms.

SLIDE 8: Next we're going to look at the share of production under contract by commodity. One of the things we wanted to look at this year was production under contract, and we also wanted to see how it had shifted over the last 20 years using the ARMS data. A contract is an agreement that's reached before harvest or the end of a livestock production cycle that governs the quantity marketing outlet and the price, or a pricing formula, for a specific commodity. And contracts are used to manage price and production risks so for a processor, it may help procure farm products with specific quantities or specific attributes. For farmers it helps provide an assured outlet, so they're guaranteed to have someone buy their commodity, and for the buyer it assures that they have a product flow. And what we can see is that in 1996-97, and as well as in 2017, about a third of all production was occurred under contract. However, when we look at the different commodity groups, looking across the figure from left to right, we can see that share that's under contract varies substantially by commodity. We can see that over half of peanuts, tobacco, sugar beets, hogs, and poultry and eggs were produced under contract in 2017. In contrast we can see that wheat, and soybeans, and corn have a relatively low share that's produced under contract between 10 and 17 percent, but there were a few changes over this time period, we can see some of those changes occurred in tobacco and in hogs. With tobacco, cigarette manufacturers switched from cash options to contracts to ensure a sufficient supply of certain types of tobacco. And for hogs, hog processors used contracts to have more control over the characteristics of the hogs that were being produced, so that's another way that the contract can be used.

SLIDE 9: Next we're going to look at the distribution of farms and production under contract using the ERS typology. So in Figure 4 we're looking at the share of farms with contracts, so only 8 percent of U.S. farms had contracts in 2017, of those farms over half were small family farms, together, all family farms represented 83 percent of production under contract. The largest

share of production under contract belonged to large-scale family farms at 36 percent, with small family farms representing about a quarter of all production in their contract. Many of those small family farms are in poultry production that is one thing that we found.

SLIDE 10: Okay, so next we're going to shift gears from contracting and take a look at the distribution of profitability using the farm typology. One way we can look at the financial well-being or the financial stress that farms are under, is to look at a measure called the operating profit margin. In Figure 5 we're looking at how profitability, or this operating profit margin, varies across our farm typology. The operating profit margin measures the ratio of operating profit to gross income, now the operating profit is net income plus interest, minus an adjustment for unpaid labor, and it's used as a measure of the resources available to fund the farms business capital. So farm, we might think that a farm with a lower operating profit margin might be at higher risk of financial stress and so we break out our farms here by the operating profit margin into three categories. We have our red category with an operating profit margin of less than 10 percent and we might say that they are at a little bit higher risk, the yellow with the medium risk level as an operating profit margin of 10 to 25 percent, and our green zone with a lower risk level with an operating profit margin of greater than 25 percent. What's noticeable about this figure is, small farms tend to have a greater share in the red zone for the operating profit margin, we can see that as we look across the typology. However, small farms typically rely on off farm income, so the fact that many are in the red zone for the operating profit margin does not necessarily mean that the farm is in financial stress, all farm income is not captured by the operating profit margin. Remember that many small farms are classified as retirement or off-farm occupation farms, so the farm business, the fact that the farm business is not profitable may not be essential to the continued survival of the farm. Other small farms however, are more profitable. We can see that the low sales and moderate sales farms had between 13 and 27 percent in the green zone, and then you can see as you go across the chart that as you go up in farm size, their share in the green zone increases, so mid-size, large and very large farms have between 37 and 45 percent of farms in the green zone. Also note that less than half of farms in each of those groups is in the high-risk red zone, so in contrast with many small farms, larger farms tend to receive a larger share of their income from the farm business, so their total household income, a larger share of that will be coming from the actual farm business itself.

SLIDE 11: Okay, so next we're going to look at the distribution of farms by their legal organization. So shifting gears again, in Figure 6 we're looking at the share of family farms by legal organization on the left, and then the share of family farm production by legal organization. What we can see is that most family farms are organized as a sole proprietorship that's owned by a single individual or family, in fact 89 percent are organized as a sole proprietorship in 2017, and they accounted for 49 percent of all production. The legal organization of a family farm determines how that farms income is taxed, so that's important for understanding the relationship between, you know, tax policy and farm households and their well-being. Going in a little bit deeper, we can see that 76 percent of production on small family farms, and 70 percent of production on mid-sized farms comes from farms that are organized as a sole proprietorship. Another takeaway from these two figures is that relatively few farms are organized as C-corporations, or a regular corporation as we might call it, they were about 2 percent of all farms and accounted for 10 percent of production. Now, it's important to note that a corporation does not necessarily mean non-family, in fact there are many family farms that are organized as a C-corporation. Another take away from these charts, 97 percent of family farms are organized as a

pass-through entity. This includes, a passenger entity includes all farms except C-corps and our other category, that green, I'm sorry, that light blue sliver on the left side. A pass-through entity is where any profits or losses are passed through to the owner, the partner, or the shareholder and the tax is paid at the individual level on their personal tax returns. As opposed to a C-corporation where the farm itself is taxed that would not be a pass-through entity, but what we can see is 97 percent of family farms are organized as these pass-through entities.

SLIDE 12: Okay, so moving on. We're going to look at the distribution of government payments for a couple of different programs. Again, we're looking at the distribution across our farm typology, we have our small family farms on the left side with a gross revenue of less than 350,000, our mid-size family farms in the center there which between \$350,000 and \$1 million, and then our large family farms with over \$1 million in gross revenue. So what we're looking at here is the distribution, so those bars each color should sum to 100 percent. So we're looking at the Conservation Reserve Program payments, working-land conservation payments, commodity-related payments, and harvested acres of program crops. So let's break that down a little bit, most payments from commodity-related and working-land conservation programs go to three groups we can see in those blue, the light purple color, and the sort of orange or salmon colored bars that the majority of those payments go to moderate sales, midsize and large farms. Those three groups represented 73 percent of working-land conservation payments, and 75 percent of commodity-related payments. A commodity-related payments are targeted at production specific commodities, and they're based on historical production. And what we can see is those salmon colored bars is that they are roughly proportional to the acres of program crops that were harvested, the green bars you can see that those two line up pretty well as we would expect. Also, we can see that the working-land conservation programs, as well, are focused on those three groups, moderate sales, midsize and large farms. So working-land conservation programs are aimed at conserving land that's currently in production, in contrast, the Conservation Reserve Program or CRP is targeted at conserving environmentally sensitive land by taking it out of production. And you can see there's a really a very distinct difference in the trend, the blue bars which are the CRP program payments are focused on three groups in our farm typology of retirement, off-farm occupation, and the low sales farms. Together, these three groups represented 73 percent of total CRP payments in 2017. It's also important to note that many farms don't receive farm related government payments. In fact, 70 percent of farms received no farm related government payments in 2017.

SLIDE 13: Next we're going to look at the another government program, we're going to look at the distribution of crop insurance indemnities, and acres harvested and crop land, I'm sorry, participation across our farm typology. This is a similar figure as the previous one, we're looking at the distribution across our farm typology and those bars for each color should sum to 100 percent. Federal crop insurance ensures farmers from yield and revenue losses caused by events such as bad weather, the indemnities, shown in red, are payments from crop insurance to compensate farmers for their losses. And as we can see from the chart, these indemnities are roughly proportional to the acres of harvested cropland, the green bars in our chart here. It's important to note these are separate payments from the government programs we showed in the previous figure. What's striking about this figure is that 68 percent of indemnities were received by a mid-size and large family farms in 2017. This reflects the high participation rates of these farms, approximately two-thirds of mid-sized and three-quarters of large farms participate in the federal crop insurance program, and it also reflects the types of commodities that are produced

on mid-size and large family farms - cash grain and oilseed farms represented 57 percent of farms in the federal crop insurance program in 2017. Participation in the federal crop insurance program has increased substantially over the last few decades. Just as a historical note, in 1989 the program covered approximately 100 million acres and in 2017 it covers about 300 million acres, so it's really grown in size over the last 25 years.

SLIDE 14: Okay, moving on we're now going to take a look at the farm household. We want to look at the distribution of farm household income across our farm typology, and in this case we're going to look at median household income for our various groups in the ERS farm typology. Farm household income is composed of farm and off-farm income, and farm income is a net measure, so it can be negative, its net of expenses. The off-farm income, much of it comes from self-employment, or wages or salary jobs and that's the main source of off-farm income for most farm households. Other potential sources of off-farm income would include transfer income such as social security, investments, pensions, 401k plans, and income from capital gains. If we look at that far-right bar we can see that in general, farm households do not have low income, the median farm household had an income that was above the median for all U.S. households in 2017. So median income for all U.S. households was about \$61,400, and median household income for all farms was \$67,000 in 2017. If we look at the median income for all U.S. households with a self-employed head, we can see that it was a little bit above the median for all farm households, and we use that as another comparison because we think about farms as being similar to a household that owns a business. And if we look across our typology, we can also see that five out of our seven typology classes had a median income above the median for all U.S. households, with the exceptions of our retirement and our low sales farm groups. You can also note that there's a very distinct trend as you go up and farm size, as you go up in gross revenue size you can see that median household income increases significantly. We also found that farm households in general are not low wealth, only 4 percent of family farms had a wealth below the U.S. medium in 2017 and a lot of this is due to the large amount of farmland that they typically own.

SLIDE 15: Before I wrap up and go to our conclusions, I just want to point out a really great resource that we have. If you go to the ERS website, or if you go to this specific link here, you can dig in more onto some of these areas that I've talked about during the webinar. We basically, we've put the ARMS data in an aggregated form and made it available for the public. If you have other questions you'd like to explore with the data, you can you can go in and look at things such as farm household income, you can actually plot it over time, we have data going back to 1996 on the web tool, and there's a lot of interesting things you can do with the data, it's a really great resource. I encourage anybody listening, if you have more questions, you know, feel free to submit them and I'll try to answer them, but also there's this great web tool that we have now available that you can explore and really dig into the data some more.

SLIDE 16: Okay, wrapping up looking at our conclusions and implications. First we found that farming, U.S. farming is still overwhelmingly made up of family businesses, 98 percent of U.S. farms were family farms in 2017. Small farms accounted for 89 percent of all farms, they operated a little over half of all lands and produced about a quarter of all production. We also found that about a third of U.S. farm output is produced under contract that was roughly the same as it was in 1996-97, but as we saw earlier, if you look at specific commodities there have been some changes, particularly in hogs and in tobacco. When we looked at government programs, we saw that the Conservation Reserve Program payments generally go to different

farms than other farm related government payments. We also saw that the distribution of federal crop insurance indemnities is roughly proportional to the cropland that's harvested, and that's something we would expect given what it targets. We also see that farm households, in general, have neither low income nor low wealth, although we saw that there was variation when we look at across the farm typology.

SLIDE 17: That concludes the webinar. If you have questions, feel free to contact myself or my co-author Jim MacDonald, our ERS email addresses are posted here. I also have a link to the report on that second bullet point, which has a lot more information and it includes all these charts that I showed you, plus more. And if you're interested in learning more about the structure of U.S. farming and how it has changed over time, there's a vast resource, if you go to this link we have a lot of reports that have been written, you know, on this topic and I would encourage you to visit that link if you have more questions about the changing structure and U.S. farming. I think with that we'll turn it over to Kelly, and we'll answer some questions.

Thank you, Chris. We do have a few questions for you. The first one is, what types of farms account for the majority of beef production?

Yes, hang on a second. So small and large-scale farms together, both small and large-scale farms accounted for 60 percent of beef production in 2017. Small farms generally have cow-calf operations, while large-scale farms are more likely to operated feedlot.

All right. Here's another question, what kinds of contracts are used in production agriculture?

Yeah, that's a great question. We focus on two different types of contracts when we talk about contract production. The first one is a marketing contract, and that's where ownership of the commodity remains with the farmer during the production process. This contract, which is reached prior to the harvest, sets a price or pricing formula, the product quantities, the qualities in a delivery schedule, and in a marketing contract there's typically little involvement from the contractor. The other type of contract that we talk about when we say "contract production" is a production contract, and this is commonly used in say poultry production. In this case, the contractor owns the commodity during the production process and the farmer is paid a fee for the services rendered. The contract will specify the farmer and contractor responsibilities for inputs and for production practices, and the contractor will often provide specific types of inputs, like seed and services, like veterinary services, and will also provide production guidelines and technical advice.

Thanks, and we have another question: Why do farm to use contracts instead of selling their commodities on the market?

Yeah, so contracts are a way for producers or for farmers to reduce their price risk. It essentially allows them to lock-in a price and oftentimes an outlet for their commodities. It helps lower their risks of, you know, say commodity prices dropping in the future.

There is another question, with row crop prices down, have you seen a decrease in the number of large family farms following ERS typology?

That's a great question. We didn't look at that in the report, but I can get back to you. I don't know that off the top of my head, but I could get back to you about that. We have your email address, so we can get back.

In your classification you're not paying attention to on-farm diversification such as structural diversification, such as Agri-tourism, do you have any data about the contribution of off farm activities to farm revenues?

Yeah, we do. The ARMS survey collects data on off farm or, you know, all sources of income both on and off the farm so we do have data on that. If there's something specific that you like more data on we can, you know, send me an email, we can we can try to look it up for you or try to get you an answer on that.

All right. We have a comment, it's not really a question it says: Some crops, like sugar beets are 100% contracted, there's no option.

Yeah, that's true. Just like poultry, it's all contract production. Yeah, I agree.

All right, and I'd like to remind everybody that this webinar is being recorded, and we will be posting it on our web site about a week after this. You can view all our previous webinars at www.ers.usda.gov/multimedia. Well, that's all the questions we have so this concludes our webinar. I'd like to thank you all for joining us everybody, and have a great day.