

Webinar: [America's Diverse Family Farms: 2021 Edition - YouTube](#)

Good afternoon, everyone, and welcome to our webinar: *America's Diverse Family Farms 2021 Edition*. My name is Valerie Negron, and I will be your host today. As a reminder, this webinar is being recorded and will be posted on the ERS website next week. If at any time during the webinar you have questions, please enter them into the chat feature at the bottom left hand corner of the screen and our speaker will answer them at the end of today's presentation. Today, our presenter is Christine Whitt. Christine is an Agriculture Economist in ERS's farm economy branch in the Research and Rural Economics Division. In addition to being a member of the farm income team, she works on research related to farm production practices and Agri-tourism. Christine earned her master's degree in Applied Economics and Management from Cornell university and bachelor's degrees from Virginia Tech in Applied Economic Management and Animal and Poultry Sciences. Thank you for joining us today, Christine, you may begin your presentation.

Great, thank you, Valerie. So, good afternoon everyone. Again, my name is Christine Whitt and today I'm presenting the findings from the *America's Diverse Family Farm 2021 Edition*, which I wrote along with my co-authors Jessica Todd and Andrew Keller. And just in case you weren't aware, the report was published at 3 p.m. today.

So, the 2021 edition of this report describes characteristics of the 2 million U.S. farms in 2020. Specifically, the report examines what farms produce, how much they profit, and their participation in federal agricultural programs. Report- the report also looks more closely at farm household well-being. And there are a couple new sections to the report. These sections describe farm operating expenses, coronavirus pandemic impacts on direct sales, and farmhouse unemployment, and the distribution of USDA and non-USDA pandemic assistance in 2020. Some sections in the 2021 edition also include a comparison with 2011 which was the first year at the current farm typology was in place. So these 10-year reflections are not comprehensive over the entire decade, but they do give a sense of how little has changed in farm structure, value production, and financial risk, by farm type. So the data for this report comes from the 2020 Agricultural Resource Management Survey or ARMS. ARMS is a unique annual survey conducted by the Economic Research Service and the National Ag- National Agricultural Statistics Service, or NASS. So, ARMS is USDA's primary source of information on farm businesses and associated households of the principal operator. So new research questions related to the pandemic were included in the 2020 ARMS. Therefore, we are able to report on impacts to direct sales and farm household unemployment. The 2020 ARMS covers the farm activities during the 2020 calendar year and the survey was conducted in early 2021 and it's the latest available data.

So, before I get into the findings, I will go over the terminology I will use during the presentation. In this report, a farm is defined as any place that sold, or normally would have sold, at least a \$1,000 of farm products in a given year. This USDA definition is very comprehensive,

and it means many farms- many small farms are included in the farm count, even though many have limited sales. So, using this USDA definition means that the farm sector consists of a wide variety of farms. There are many small farms with little sales, mid-size farms with hundreds of thousands of dollars in sales, and large farms with millions of dollars in sales. Next, the term family farm refers to any farm where the majority of the business is owned and operated by the principal operator and individuals related to a principal operator. The principal operator is a person who makes day-to-day operating decisions for the farm. That means that the family farm definition ties farm management and ownership.

Next, I will go over how we classify the diverse set of farms in the dataset using the ERS farm typology. So, the ERS farms typology classifies farms into more homogeneous groups based on one, whether the farm is a family farm or non-family farm, two, the size of the farm which is measured by gross revenue. I will point out that gross revenue is a measure of income received by the farm and this is a gross- gross measure, so expenses are not netted out in this case. And finally, small family farms are broken out by the occupation of the principal operator.

So next I'll go over the farm typology in more detail. For the ERS farm typology, I will start by defining small family farms. These are farms that report an annual gross cash farm income less than \$350,000 and they are split, and as I said before, small family farms are split by the major occupation of the principal operator. The group where farming is not the major occupation of the principal operator includes retirement and off-farm occupation farms. So, retirement farms are farms with a principal operator who reported they were retired, although they continue to farm on a small scale. Off-farm occupation farms are farms with a principal operator who reports a major occupation other than farming. On the other hand, or for the other group sorry, of small family farms they consider farming to be their major occupation and that includes low-sales farms, who have an annual gross cash farm income less than \$150,000. And moderate sales farms who have an annual gross cash farm income between \$150,000 and less than \$350,000.

Moving on to the remaining groups, we see mid-sized family farms have an annual gross cash farm income between \$350,000 and less than 1 million dollars. Our large family farms have an annual gross cash from income between 1 million and less than 5 million. And very large family farms have an annual gross cash income of 5 million or more. Finally, non-family farms are defined as any farm where an operator and the person related to the operator do not own a majority of business. A non-family farm and family farms are not just large farms operated by publicly held corporations. A common example of a non-family farm is a farm operated by related business partners. Another example is a farm operated by a hired manager on behalf of the landowner. In 2020, we found only 18 percent of non-family farms had annual gross cash farm income of 1 million dollars, or more. So, with these definitions in mind, I will now go- now dive into the findings of the report.

So, this first figure shows the distribution of farms, land operated, and value of production by farm type, in 2011 and 2020. So, in 2020, most U.S. farms are small family farms and they

operate almost half of U.S. farmland and account for 20 percent of production. Although the share of small family farm operations in 2020 is similar to that in 2011, the share of operated by these small family farms decreased from 52 percent to 48 percent. And the share of the value production on small family farms declined from 26 percent to 20 percent. Large-scale family farms accounted for 46 percent total value production in 2020, an increase from 35 percent in 2011. These farms also accounted for an increased share of total land operated from 16 percent in 2011, to 24 percent in 2020. Finally, the vast majority of farm operations continue to be family-run operations.

So, now let's look at the distribution of production on selected commodities by farm topology. Just a quick reminder before I discuss the graphic, again small family farms have annual gross cash farm income less than \$350,000 and this group is comprising retirement, off-farm occupation, low sales, and moderate sales farms. Mid-size family- mid-size family farms annual gross cash farm income between \$350,000 and less than 1 million dollars. And finally, large-scale family farms have an annual gross cash farm income of 1 million or more. And this group is comprised of large and very large family farms. So, now back to the figure. Small family farms produced 49 percent of poultry production, including eggs, and 59 percent of hay. Small and large-scale family farms together accounted for 69 percent of beef production. Small family farms generally have cow-calf operations while large-scale family farms are more likely to operate feedlots. We see mid-size and large-scale family farms account for the majority of cotton, cash grains, and soybean production. And large scale family farms also produce the majority of dairy. Finally, we find that non-family and large-scale family farms produce the bulk of specialty crops.

So, since we've gone over what each farm type produces, let's look at the farms by operating profit margin, or OPM, by farm type. So, this figure shows how profitability varies across the farm typology. The OPM measures the ratio of operating profit to gross income. So operating profit is a net- is net income, plus interest, minus an adjustment for unpaid labor, divided by gross farm income. It is but one way to measure a farm's financial health. Farms with low...

Good evening, folks, it appears that we are having audio issues. We're working with IT and we'll resume the webinar in just a moment. Thank you for your patience. Please stand by.

Sorry about that. For some reason I got disconnected from the webinar, but I'm back. I'll just start at the beginning of this slide again. Again, sorry for that. So, since we've gone over what each farm type produces, let's look at the farms by operating profit margin, or OPM, by farm type. So, this figure shows how profitability varies across the farm typology. The OPM measures the ratio of operating profit to gross income. Operating profit is net income, plus interest, minus an adjustment for unpaid labor, divided by gross farm income. So, it is but one way to measure a farm's financial health. And farms with low OPM may be at a high risk of financial stress. The figure breaks OPM into three risk categories. We have a low-risk level category, and this is depicted by the green color in the figure, and these operations have an OPM greater than 25

percent. We have a medium-risk level category, and this is depicted in the yellow color on the figure, and these operations have an OPM between 10 to 25 percent. And finally, we have a high risk level category, and these operations have an OPM below 10 percent, which is depicted by the red color in the figure. So, what is most noticeable here is the small family farm operations. Small family farms have a greater share of farms in the OPM high-risk zone. However, small family farms typically rely on off-farm income which is not included in the OPM measure. So, the fact that many are in that high risk zone, does not necessarily mean the farm is in financial stress. Remember that many of the farms that are classified in that small family farm category are retirement or off-farm occupation farms. So, the farm business being profitable is not necessarily essential to the continued survival of the farm. Generally, we see the share of farms that are in the low-risk zone increases with farm size. Mid-size, large, and very large family farms, have between 37 percent and 45 percent of farms in the low-risk zone. It is also important to note that there is a wide range of farm performance within each zone.

Next, I will share a historical perspective on OPM from 2011 to 2020, which is a new figure for this edition of the report. So, these two figures depict the share of operations in the OPM low-risk zone, which is the figure on the left hand side, and the high-risk zone, the figure- which is a figure on the right hand side. By farm type over the last decade. So, looking at the figure on the left hand side, you will see the share of small family farms in the OPM are with an OPM greater than 25 percent were in that low-risk zone, declined from about 18 percent, in 2011, to just over 10 percent in 2020. While the share operating in the high-risk zone, which is the figure on the right hand side, with an OPM less than 10 percent rose from about 71 percent to 77 percent. On the other hand, large-scale family farms were the most likely to operate in that low-risk zone, and least likely to operate in the high-risk zone. However, the share of large-scale family farms in the low-risk zone declined still from 48 percent in 2011, to 43 percent in 2020. And the share of large-scale family farms operating the high-risk zone range from about 25- or 27 to 37 percent during the same period.

So, now that we've looked at from- farm profitability, let's look at how different farm expenses have changed between 2011 and 2020 by farm specialization. So, this chart looks at the share of total expenses by expense categories in 2011 and 2020, for selected commodity specializations. So, the big takeaway here is how the distribution of farm operating expenses varies across commodity specializations that remain largely unchanged over the 10-year period from 2011 to 2020. Unlike expenses, such as seed or feed, that follow closely with crop and livestock production, certain expansions- certain expenses, such as machine hire and custom work, fuels and oils, repairs and maintenance, and other variable expenses, has remained relatively consistent shares across all types of farms in 2020. Other than feed, which is specific to livestock operations, fixed costs and labor costs varied the most from across farm specialization. Fixed costs range from 9 percent of dairy costs to 30 percent of field crop costs. Additionally, labor costs shared- shares range from 6 percent for beef cattle operations, to 40 percent for specialty crops.

So now I'm going to focus on farm household income, but before I go over the findings, I will quickly describe the components included in the calculation of farm household income. So, farm household income is composed of farm and off-farm income. And farm income is net expensive and, therefore, can be negative. And we find that self-employment, or wage and salary jobs, are the main source of off-farm income for farm households.

So, with this in mind let's look at median operator household income by farm type in 2020. So, just a quick reminder, the median income refers to the level at which 50 percent of households have greater income, and 50- 50 percent have less income. So, in general, we see that farm households do not have low incomes Retirement family farms, and low sales family farms, are the only two typology classes with median farm household income below both the median for all U.S. households and the median for U.S. households with self-employed income. We compare farm households with all U.S. households with self-employed income because farm households are most similar to other households that own or- own a business. Also, notice the distinct trend in this figure which is median household income increases with farm size. So, even though the data is not on the slide, I think it's important to mention we found farm households are not generally low wealth either. And here, wealth is defined as the net worth of a farmed household and is the sum of all farm and non-farm assets, less farm and non-farm debt. We see that only 3 percent of all family farms had wealth below the U.S. median household in 2020. This is due to the large amount of land that farm households typically own.

So, for the next two figures we'll look at the impacts of the COVID-19 pandemic on direct sales. So, direct sales are the sales of commodities produced, raised, or grown, on the farm and sold either directly to the consumer or to intermediary supply chains that sold directly to individuals. And the supply chain is the sequence of processes involved in the production and distribution of a commodity. So, for these the next two figures, Christmas trees, flowers, nursery products, craft items, processed products: such as jellies, sausages, hams, and commodities produced under production contract, are excluded from the analysis of direct sales. And, finally, direct sales of livestock include selling pre-determined size share of livestock raised on the farm and processed for the consumer.

Because a small share of operations participates in direct sales, and many of the operations are quite small, we use a different gross cash farm income cut-off, or different gross cash firm income cut-offs are used, to group direct sales operations in place of the gross cash from income cutoff used earlier for the overall farm typology. So, the new groups are defined as: one, operations with gross cash farm income less than \$75,000. Two, operations with gross cash farm income greater than or equal to \$75,000 but less than \$350,000. Three. operations with gross cash farm income um equal to or greater than \$350,000. So, that final group is made up of mid-size, large-scale family farms, and some non-family farms. So, with these new cut-offs in mind, I will now go over the value of direct sales by marketing channel and farm size for 2019 and 2020. So, in 2020 we found that 7 percent of farms sold commodities through direct sales. About 7 percent sold directly to consumers and about one percent sold through intermediary supply

chains. So, in 2020 direct sales amounted to almost 10.7 billion dollars, which is a nearly 2.8 billion or 35 percent increase from the value reported in 2019. The increase in direct sales in 2020 occurred across most direct sales marketing channels. Sales at farmers markets and restaurants increased by 11 and 13 percent, respectively. Whereas sales at farm stores, CSAs, and other direct consumer channels, as well as regional distributors, increased by 79 and 73 percent, respectively. However, sales to institutions declined by 86 percent in 2020, relative to 2019, which was likely due to the pandemic closures or restricted operations. So, not all farm size categories experienced an increase in direct sales. We see that farms with less than \$75,000 in gross cash farm income had 2.5 million dollars less in overall direct sales in 2020 than in 2019. These smaller farms accounted for 8 percent of all direct sales in 2020, down from about 10 percent in 2019. Farms with direct sales and gross cash farm income between \$75,000 and less than \$350,000 increase their direct sales by 0.4 billion dollars, which accounted for about 11 percent of all direct sales in 2020. Whereas farms with direct sales and gross cash farm income of \$350,000, or more, increased their direct sales by 2.4 billion, which accounted for 81 percent of all direct sales in 2020.

So, moving on, this figure looks at farm level direct sales in 2020 relative to 2019 direct sales for operations that sold commodities via direct sales in 2020. So, when reporting direct sales in 2020 operators are asked to recall and compare their sales with 2019 sales. So, in this figure, the blue color represents the group of direct sales operations who observed their 2020 sales were greater than their 2019 sales. The yellow color represents the group direct with direct sales- or the group of direct sales operations who observed their 2020 sales were similar to their 2019 sales. And finally, that red color is the represents the group of direct sales operations who observe their 2020 sales were lower than their 2019 sales. So, like the previous figure, not all farms experience increases in all marketing channels. A large share of farms selling at farmers markets, restaurants, and regional distributors, in 2020 reported their 2020 sales were lower compared with 2019. That was the share selling in these same marketing channels that reported their 2020 sales were higher than in 2019. On the other hand, a larger share of farms selling directly to consumers through farm stores, CSAs, and or to grocery stores, reported their 2020 sales were higher compared with 2019 than the share their reported 2020 sales were lower compared with their 2019 sales.

So, now I'm going to shift gears and talk about another new section, which looks at off-farm occupant occupation sorry- off-farm unemployment and receipts of unemployment benefits among farmed households, by farm type in 2020. So, by looking at the largest circle at the top, you find that in 2020 COVID-19 related disruptions caused 11 percent of all farm households to experience the loss, or furlough, of at least one of its family members off-farm jobs. Moving to the small circle, on the bottom left, we see small farm households experience the greatest losses with 12 percent of farm households affected. By looking at the other two small circles, on the bottom row, you will see that 6 percent of households operating mid-size and large-scale family farms experienced a job loss, or furlough. So, back up to the top circle, if you're looking at the

smallest little section um blue color, we see that. in total, 4 percent of households operating small or sorry- looking back down at the small family farm circle down at the left-hand section, in total 4 percent of households operating small farms reported at least one percent or one person receiving unemployment benefits in 2020, while only two and one percent of households operating mid-size and large-scale family farms, respectively, received unemployment benefits. These reports are consistent with a higher- with higher rates of job loss among households operating small family farms.

So, I will finish the presentation by covering the final section of the report, which looks at government payments and federal crop insurance, by farm type. So, this figure examines the distribution of the amount received for selected agricultural program payments, by farm type, in 2020. So, in this figure, government payments are broken into four categories. One, Conservation Reserve Program payments. or CRP payments, which is in the orange color. Two, working land conservation payments, and those are in the green color. Pandemic assistance, which are in red. And all other program payments are in the purple color. And, finally, we graph the value of production in the blue bars as a reference for farm's level of production. And also note that the bars of the same colors add up to 100 percent.

So, as you can see, most payments from all other payments and working land conservation programs go to three farm types, which are moderate sales mid-size and large family farms. These three groups represent 70 percent of working land, and 72 percent of all other payments. Working land conservation payments are aimed at conserving land currently in production. And we see very large family farms, and non-family farms, receive very small amounts of all other payments, which mostly consists of commodity-linked programs in 2020. And this is because the commodities they produce, which are typically fruits, vegetables, and livestock, are not covered by these programs. Conservation Reserve Program payments, on the other hand, are targeted at conservation by taking environmentally sensitive land out of production. And the bulk of these payments are going to retirement, off-farm occupation, and low sales farms. These three groups represent 72 percent of total CRP payments in 2020. Also, it's important to note that the value of production tracks with pandemic assistance, all other programs, and working land conservation payments, but the opposite occurs for operations receiving Conservation Reserve Program payments. Small family farms received a smaller share of pandemic related assistance. 15 percent of all farm level pandemic assistants went to small family farms, which is consistent with their smaller production scales. Whereas large-scale family farms and mid-size family farms receive 72 percent of all farm level pandemic assistance. One more key thing to note here is that most family- most farms receive no payments in 2020. We found that 60 percent of farms received no farm related government payment in 2020.

So, now let's take a deeper look at the distribution of total reported pandemic assistance by farm type and type of assistance in 2020. So, in the topmost bar, you will see that 64 percent of all farm level pandemic assistants reported in ARMS as having been received from the Coronavirus-Coronavirus Food Assistance Program which includes um CFAP programs one and two in 2020.

Therefore, it makes sense that CFAP comprise most of all pandemic assistance reported as have been received by all farm types. Another 21 percent came from loans from the Small Business Association under the Paycheck Protection Program, or PPP, and advances from the Economic Injury Disaster Loan, or EIDL, program. The share of total assistance coming from the SBA was greatest among very large family farms, at about 45 percent. And this is likely due to the fact that these farms have most employees and are also most likely to earn a profit in any given year.

So, the final figure examines the distribution of federal crop insurance, participants, harvested crop plan, and indemnities, in 2020. For those who don't know, federal crop insurance ensures farmers from yield and revenue loss due to events such as bad weather. Indemnities, in the green bars, are payments from crop insurance to common state farmers for losses. These are roughly proportional to acres of harvested cropland depicted in the red bars. These payments are separate from the government payments shown in the previous figure. What is shocking, or most notable, is that 69 percent of indemnities were by mid-size and large family farms in 2020. This reflects a high participation rate, which is depicted in the blue colored bars. The- with the round so these, like I said, these reflect high participation rates of these farms and they have around 38 percent of mid-size and large family farms participating in federal crop insurance. Which is most likely tied to the fact that these mid-size and large family farms produce a large proportion of corn and soybeans.

So, now I'm going to summarize all this information from the *America's Diverse Family Farms 2020-21 Edition*. So, again we find that 98 percent of U.S. farms are small- or sorry, are family farms and they account for 87 percent of farm production. And this has remained largely unchanged when compared with 2011 data. Some small family farms, in each type, operate in the low-risk zone with OPM above 25 percent, as do more than 37 percent of mid-size, large, and very large, family farms. Crop farms allocate a large share of their total expenses to seed and fertilizer. While feed and livestock purchases comprised a large share of total expenses among cattle and livestock operations. Also, how farm specializations allocate their expenses to not dramatically change between 2011 and 2020. In 2020, about 41 percent of farm household had income below that of the median for all U.S. households and 3 percent had wealth below that of the U.S. median wealth. We also see that direct sales institutions saw an 86 percent decline in sales in 2020, which was likely due to institutions shut down in response to a COVID-19 pandemic. And continuing, we see that 11 percent of all farm households reported either a lost or furlough from an off-farm job in 2020 and 4 percent of all farm households received unemployment benefits. Conservation Reserve Program payments mostly go to retirement, farm occupation, and low sales farms while all other programs and working- and payments go to family farms with gross cash farm income over \$150,000. We also see that most of the pandemic assistance was from the Coronavirus Food Assistance Program, or CFAP. However, 60 percent of farms did not receive government payments and are not directly affected by them. Finally, we found indemnities for federal crop insurance were roughly proportional to acres of harvested cropland.



So, thank you so much for attending today's webinar. Again, apologies for my minor cell phone technology lapse. I have listed my email address as well- as well as my co-author's emails if you would like to reach out to us after the webinar. I've also included the link to the ERS website, which you can find the new edition of the report. And if you're interested in learning a little bit more about farm structure and organization, I have included a link to that topic page. So, thank you for listening and now I think we're ready to take some questions.

Thank you, Christine. Yes, we'll go ahead and open the floor for questions now. So, Christine, for your first question: Does the farm owner self-report whether the principal operator is a family member? And if that person makes the day to day- day-to-day decisions?

So, that's a really great question so on the survey itself, I can't necessarily speak to who is filling out the survey. It doesn't necessarily have to be the principal operator, but we do ask that respondents identify one of the- the people they mentioned who works on the farm to- as the principal operator. And usually, there's a second part of that question, and in that question there's a follow-up question. If there's multiple people listed- where I think we're there we up asked are- we asked up to four names um and then there's another follow-up question that asks if one of those people is in the- in the household of the rest of the people listed. And, I guess, if you would like to look more you can go on the ERS website, actually, and you can look at the Agricultural Resource Management Surveys, on our website. We post all of them for back from 20- I'm sorry back from to 1996. So, that might be a resource if you- if you'd like to learn more about the survey itself.

Thank you, Christine. For your next question: what percent of all farm operations are family farms and how much do they contribute to the total value of production? Additionally, as part of that question, has that changed much since 2011?

Sure, so we see that family farms make up 98 percent of all farm operations and they account for 87 percent of production in 2020. And these have- these values have remained fairly stable when compared to 2011 data.

Thank you, Christine. For your next question: Can you provide examples of what are direct sales and what are not direct sales?

Sure, so I'm going to quickly change slides because a lot of this information is in our notes section. So, for farm stores and CSAs that is some examples are roadside stands, U-pick operations, and other informal direct to consumer sales. We have regional distributors, which are food hubs, and internet aggregators that sell directly to consumers. And, for institutions, those are typically schools, hospitals, or other businesses providing dining services to consumers. So, an example of not direct sales, I guess in this case, would be a Christmas tree farm, because we're- Christmas trees are excluded from this analysis.

Thank you, Christine. How does total farm household income compare to income for all U.S. households?

Sure, so when comparing median total farm household income to U.S. median household income we see that only two farm categories: retirement and low sales farms, have median total farm household income below the- the U.S. median household income. And, additionally, only about- or about 41 percent of farm households had income below that of the median for all U.S. households.

Thanks, Christine. As a reminder to folks, feel free to drop in your questions at the bottom left hand side of the screen. Christine for your next question: Did the total value of direct sales go up or down in 2020 compared to 2019?

Sure, so um compared to 20- or since 2019, direct sales increased by nearly 2.8 billion dollars to reach 10.7 billion dollars in 2020. And sales in all direct sales marketing channels increased, except for sales to institutions, which declined by 86 percent in 2020 relative to 2019. Similarly, the increase in direct sales was not experienced by all direct sales farms. Some saw increases, and some saw decline, but in total, again, direct sales were up in 2020.

All right, Christine, those are all the questions we have for today. Thank you for sharing your report with us and thank you to all our listeners for taking their time to join us today. As a reminder, a recording and transcript of this webinar will be available on the ERS webpage next week. Thanks again everyone and this concludes our webinar.