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# U.S. Farm Income Outlook: December 2020 Forecast

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## U.S. Farm Income Outlook: December 2020 Forecast

The U.S. Department of Agriculture (USDA) projects that U.S. farm profitability—as measured by net farm income and net cash income—increased substantially in 2020 from 2019 levels. In nominal dollars (not adjusted for inflation), both income measures are projected to attain their highest levels since 2013. Net farm income (calculated on an accrual basis) was projected to rise 43.1% year-over-year in 2020 to \$119.6 billion, up \$36.0 billion from last year. Net cash income (calculated on a cash-flow basis), was projected at \$134.1 billion in 2020, up \$24.7 billion or 22.6% from 2019.

The year-to-year increase in both net farm income and net cash farm income is primarily due to a substantial increase in direct government payments to a record \$46.5 billion in 2020. At this level, government support payments would account for nearly 39% of net farm income—the highest share since the year 2000, when government subsidies accounted for 46% of net farm income. In contrast with federal direct payments to producers, farm income from cash sales of crop and livestock products and other farm-related activities were forecasted to decline by 0.9% in 2020.

The record government farm assistance in 2020 included \$12.6 billion from farm programs authorized by the 2018 farm bill (P.L. 115-334) and \$33.9 billion in ad hoc (i.e., authorized outside of omnibus farm legislation) program outlays, including \$3.7 billion from the 2019 Market Facilitation Program (MFP) payments, \$5.9 billion from the Paycheck Protection Program (PPP), and \$24.3 billion from the Coronavirus Food Assistance Program (CFAP). If realized, the 2020 government payments of \$46.5 billion would represent a 107.1% increase from 2019's \$22.4 billion in government support, and would nearly double the previous record of \$24.4 billion (nominal dollars) in 2005.

Farm asset values in 2020 were projected at \$3.1 trillion, up 1.5% from 2019. Farm asset values reflect farm investors' and lenders' expectations about long-term profitability of farm sector investments. Another measure of the farm sector's well-being is aggregate farm debt, which was projected to be at a record \$435.2 billion in 2020—up 4.0% from 2019. Both the debt-to-asset and the debt-to-equity ratios have risen for eight consecutive years as both ratios inch upward toward their long-run historical averages. At the farm household level, average farm household incomes have been well above average U.S. household incomes since the late 1990s. However, this advantage derives primarily from off-farm income as a share of farm household total income.

USDA will continue to fine-tune farm income estimates for 2020 as more and better data become available through 2021. USDA released its first forecast of U.S. farm income for 2021 on February 5, 2021. Farm prices for corn, soybeans, wheat, and cotton ended 2020 on an upswing—driven by a declining outlook for carryover stocks and increasing international demand. Despite this hopeful pattern for commodity prices, the outlook for 2021 farm income remains clouded by several critical uncertainties. The potential speed at which the economic effects of the Coronavirus Disease 2019 (COVID-19) pandemic could be abated as vaccination distribution expands nationwide is unknown. This may be critical to when and how the general economy will recover and consumer demand patterns return to normal. Another uncertainty is whether agricultural and food supply chains will emerge in a more resilient and responsive form that revives investment and growth at both the producer and retail levels. Finally, despite the signing of a Phase One trade agreement with China on January 15, 2020, it is unclear how soon—if at all—the United States may resume normal trade with China.

### USDA Farm Income Projections as of December 2, 2020

The most recent aggregate national net farm income projections for calendar year 2020 were issued by USDA's Economic Research Service (ERS) on December 2, 2020. This is the third of three ERS forecasts for 2020: the first farm income forecast was announced on February 5, 2020. The second forecast was released on September 2, 2020.

The first USDA forecast of U.S. net farm income for 2021 occurred on February 5, 2021, and will be discussed in a separate report.

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**Randy Schnepf**

Specialist in Agricultural  
Policy

**Stephanie Rosch**

Analyst in Agriculture  
Policy

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## Introduction

The U.S. Department of Agriculture (USDA) periodically forecasts several economic measures of the U.S. agricultural sector as an aid to Congress and policymakers who monitor and respond to the changing health of the U.S. farm sector. From among these economic measures, annual U.S. net farm income is the most-watched indicator of farm sector well-being. Net farm income measures the profitability of U.S. crop and livestock production.<sup>1</sup> In a single statistic, it captures and reflects the entirety of economic activity across the range of production processes, input expenses, and marketing conditions that have prevailed during the calendar year.<sup>2</sup> When national net farm income is reported together with a measure of the national farm debt,<sup>3</sup> the two summary statistics provide quick and widely referenced indicators of the economic well-being of the national farm economy.

USDA also measures and reports net cash income in tandem with net farm income. Net cash income uses a cash-flow basis to compare cash receipts to cash expenses, while net farm income uses an accrual basis to include the value of farm production as well as noncash balance sheet items, such as capital replacement, implicit rent, home consumption, and other noncash income and expenses.<sup>4</sup>

This report discusses the results of the third of three official USDA national farm income outlook forecasts released for 2020 (see box “ERS’s Annual Farm Income Forecasts” in the **Appendix**) by USDA’s Economic Research Service (ERS).<sup>5</sup> This release of December 2, 2020, provided the most comprehensive view of annual net farm income for the year because harvests were close to completion for most crops, and a substantial share of the harvested crops already had been sold. However, USDA will continue to fine-tune farm income estimates for 2020 as more and better data become available through 2021. This report’s **Appendix** has a discussion of how the December forecast aligns with prior forecasts from earlier in 2020.

## USDA Forecasts Higher Farm Income in 2020

U.S. farm profitability—as measured by net farm income and net cash income—was projected to increase substantially in 2020 from 2019 levels. In nominal dollars (not adjusted for inflation), both measures were projected to attain their highest level since 2013. Net farm income was projected to rise 43.1% year-over-year in 2020 to \$119.6 billion, up \$36.0 billion from last year (**Table 1**). Net cash income (calculated on a cash-flow basis) was projected at \$134.1 billion in 2020, up \$24.7 billion or 22.6% from 2019.

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<sup>1</sup> See the box “Measuring Farm Profitability” in the **Appendix** for definitions of *net farm income* and its companion *net cash income*.

<sup>2</sup> The **Appendix** includes supporting tables and charts that provide additional details on the Economic Research Service’s (ERS’s) farm income forecast.

<sup>3</sup> For example, the debt-to-asset or debt-to-equity ratios are discussed in “Farm Finances: Assets, Debt, and Equity.”

<sup>4</sup> A major difference between the two measures of net income is their different treatment of unsold harvested crops. Net farm income includes a crop’s value after harvest, even if it remains in on-farm storage. In contrast, net cash income includes a crop’s value only when it is sold. Thus, crops placed in on-farm storage are included in net farm income but not net cash income. Net cash income tends to be more stable on a year-to-year basis than net farm income, as farm households will adjust their sales from on-farm inventories to meet both farm business and household cash-flow needs.

<sup>5</sup> USDA, ERS, “Webinar: Farm Income and Financial Forecasts, December 2020 Update,” December 2, 2020, at <https://www.ers.usda.gov/topics/farm-economy/farm-sector-income-finances/webinars-on-forecast-highlights/>.

**Table I. Annual U.S. Farm Income (\$ Billions) Since 2017, Including 2020 Forecasts**

Item	2017	2018	2019	2020F	2019 to 2020	
					Difference	Change (%) <sup>a</sup>
<b>Cash Income Statement</b>						
<b>1. Cash receipts</b>	<b>370.4</b>	<b>371.4</b>	<b>369.7</b>	<b>366.5</b>	<b>-3.2</b>	<b>-0.9%</b>
Crops <sup>b</sup>	194.9	195.1	193.7	200.2	6.5	3.3%
Livestock	175.6	176.3	176.0	166.3	-9.7	-5.5%
<b>2. Government payments<sup>c</sup></b>	<b>11.5</b>	<b>13.7</b>	<b>22.4</b>	<b>46.5</b>	<b>24.0</b>	<b>107.1%</b>
PLC-ARC <sup>d</sup>	7.0	3.2	3.0	6.1	3.1	106.3%
Marketing loan benefits <sup>e</sup>	0.0	0.0	0.0	0.2	0.2	2,154.8% <sup>f</sup>
Conservation	3.8	4.0	3.8	3.8	0.0	0.4%
Disaster and emergency <sup>g</sup>	0.7	0.9	1.4	2.2	0.8	54.0%
All other <sup>h</sup>	0.0	5.6	14.5	34.1	19.6	135.3%
<b>3. Farm-related income<sup>i</sup></b>	<b>31.2</b>	<b>29.1</b>	<b>34.7</b>	<b>34.1</b>	<b>-0.6</b>	<b>-1.8%</b>
4. Gross cash income (1+2+3)	413.2	414.2	426.9	447.1	20.2	4.7%
5. Cash expenses <sup>j</sup>	311.9	311.4	317.5	313.0	-4.5	-1.4%
<b>6. NET CASH INCOME</b>	<b>101.3</b>	<b>102.8</b>	<b>109.4</b>	<b>134.1</b>	<b>24.7</b>	<b>22.6%</b>
<b>Farm Income Statement</b>						
7. Total gross revenues <sup>k</sup>	413.2	414.2	426.9	447.1	20.2	4.7%
8. Non-money income <sup>l</sup>	18.3	19.1	18.4	19.5	1.2	6.3%
9. Inventory adjustment	-6.0	-8.2	-12.9	-3.4	9.5	-73.4%
10. Total gross income	425.4	425.1	432.3	463.2	30.9	7.1%
11. Total production expenses <sup>m</sup>	350.4	343.8	348.7	343.6	-5.2	-1.5%
<b>12. NET FARM INCOME</b>	<b>75.1</b>	<b>81.3</b>	<b>83.6</b>	<b>119.6</b>	<b>36.0</b>	<b>43.1%</b>

**Source:** Congressional Research Service (CRS) using data from USDA, Economic Research Service (ERS), "Farm Income and Wealth Statistics: U.S. and State Farm Income and Wealth Statistics," updated as of December 2, 2020. NA = not applicable.

**Notes:** F = forecast.

- a. Change represents year-to-year projected change between 2019 and the December 2 forecast for 2020.
- b. Includes Commodity Credit Corporation loans under the farm commodity support program.
- c. Government payments reflect payments made directly to all recipients in the farm sector, including landlords. The nonoperator landlords' share is offset by its inclusion in rental expenses paid to these landlords and thus is not reflected in net farm income or net cash income.
- d. PLC = Price Loss Coverage. ARC = Agriculture Risk Coverage.
- e. Includes loan deficiency payments, marketing loan gains, and commodity certificate exchange gains.
- f. In 2020, USDA made Marketing Assistance Loan (MAL) payments of \$169 million compared with \$7 million in 2019.
- g. Includes payments made under the Wildfire and Hurricane Indemnity Program (WHIP).
- h. Includes ad hoc programs such as the Market Facilitation Program (MFP), Coronavirus Food Assistance Program (CFAP), and the cotton ginning cost-share program, as well as the biomass crop assistance program, milk income loss, and other miscellaneous payments.
- i. Income from crop insurance indemnities, custom work, machine hire, agritourism, forest product sales, and other farm sources.
- j. Excludes depreciation and perquisites to hired labor.
- k. Total gross revenue (#7) is the same as gross cash income (#4).
- l. Value of home consumption of farm products plus the imputed rental value of operator and hired labor dwellings.
- m. Cash expenses (#5) plus depreciation and perquisites to hired labor.

The year-to-year increase in both net farm income and net cash farm income is due to record government payments of \$46.5 billion in 2020. At this level, government support payments

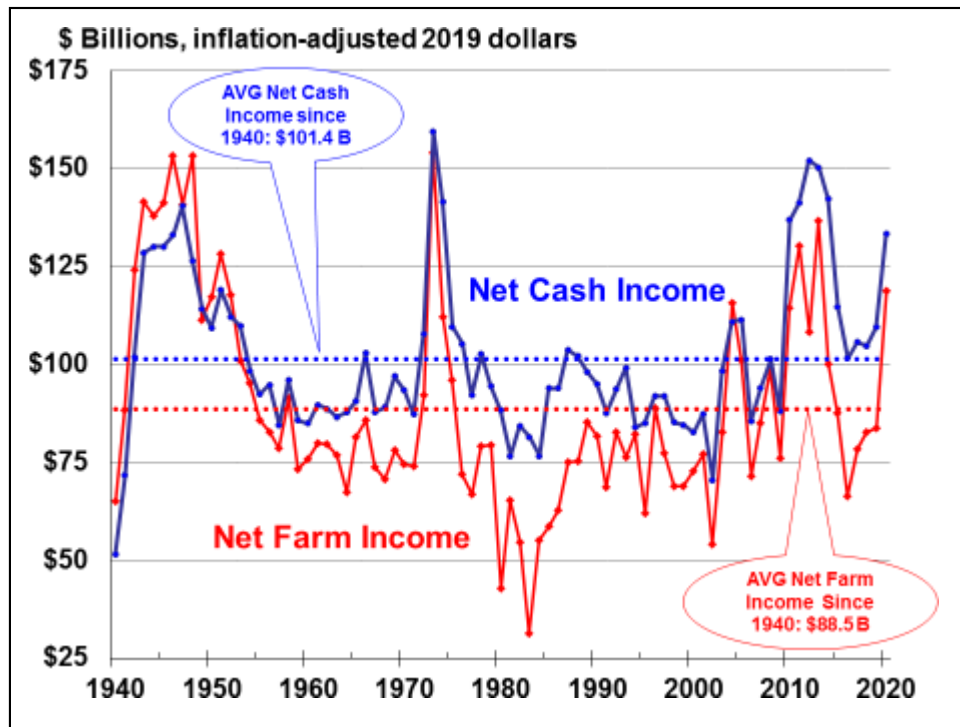
account for nearly 39% of net farm income—the highest share since the year 2000, when government subsidies accounted for 46% of net farm income.

In contrast to federal direct payments, farm income from cash sales of crop and livestock products (-0.9%) and other farm-related activities (-1.8%) were forecasted to decline from 2019.

Additionally, sales from on-farm inventories from prior years' crops are expected to make a smaller contribution to net cash income in 2020 than in 2019 (**Table 1**). The 2020 net cash income forecast of \$134.1 billion included \$3.4 billion in sales from on-farm inventories. In 2019, sales of on-farm crop inventories contributed \$12.9 billion to net cash income.

When adjusted for inflation and represented in 2019 dollars (**Figure 1**), both the net farm income and net cash income for 2020 were projected to be above their average values since 1940 of \$88.5 billion and \$101.4 billion, respectively. The net farm income forecast for 2020 was the third highest in inflation-adjusted terms since 1973.

**Figure 1. U.S. Farm Sector Inflation-Adjusted Income, 1940-2020F**



**Sources:** CRS using data from USDA, ERS, “2020 Farm Sector Income Forecast,” December 2, 2020. All values are adjusted for inflation using the chain-type gross domestic product (GDP) deflator, where 2019 = 100. Bureau of Economic Analysis (BEA), real GDP chained dollars (accessed December 11, 2020), coupled with projections from the Congressional Budget Office, July 2020. Values for 2020 are forecasts.

For historical perspective, both net cash income and net farm income achieved inflation-adjusted peaks three times since 1940: first, in the late 1940s when U.S. exports were flowing into war-torn Europe; second, in the mid-1970s when oil and commodity markets experienced surges in prices; and finally, during the 2011-2014 period when prolonged widespread drought impacted U.S. crop yields and reduced available supplies.

## Farm Sector Revenues

Farms earn revenue from three principal sources: cash receipts from crop and livestock production activities; government direct payments; and other on-farm activities.

### Cash Receipts for Crop and Livestock Production

Cash receipts for crop and livestock production in 2020 were projected to be down 0.9% relative to 2019 (**Table 1**). Crop receipts were forecasted to increase by \$6.5 billion in 2020, but these gains were more than offset by a forecast decline of \$9.7 billion for livestock receipts.

**Table 2. U.S. Farm Sector Cash Receipts from Production of Commodities**

Commodities	Share All	Share Sub <sup>a</sup>	2017	2018	2019	2020F	Change: 2019 to 2020	
							\$ Billion	%
<b>Row Crops</b>	<b>31.1%</b>	<b>59.1%</b>	<b>115.2</b>	<b>117.7</b>	<b>115.0</b>	<b>114.9</b>	<b>-0.2</b>	<b>-0.1%</b>
Corn	12.3%	23.4%	45.6	48.6	49.4	46.9	-2.5	-5.1%
Soybeans	10.4%	19.8%	38.5	37.0	34.2	36.8	2.6	7.5%
Wheat	2.3%	4.5%	8.7	9.5	8.7	8.6	-0.1	-1.0%
Cotton	2.0%	3.9%	7.6	7.5	7.2	6.6	-0.6	-7.8%
Hay	1.7%	3.3%	6.4	6.9	7.6	7.8	0.2	2.9%
Rice	0.7%	1.2%	2.4	2.5	2.8	2.7	0.0	-0.6%
Peanuts	0.4%	0.7%	1.4	1.5	1.1	1.2	0.2	14.4%
Other row crops <sup>b</sup>	1.2%	2.3%	4.6	4.1	4.2	4.3	0.1	2.5%
<b>Specialty Crops</b>	<b>21.5%</b>	<b>40.9%</b>	<b>79.7</b>	<b>77.4</b>	<b>78.7</b>	<b>85.3</b>	<b>6.6</b>	<b>8.4%</b>
Fruits and nuts	8.3%	15.7%	30.6	29.2	28.8	33.4	4.6	16.1%
Vegetables/Melons	5.5%	10.5%	20.5	18.5	18.9	19.6	0.7	3.7%
All other crops <sup>c</sup>	8.1%	15.4%	30.0	31.0	32.0	33.1	1.1	3.5%
<b>Total Crops</b>	<b>53%</b>	<b>100%</b>	<b>194.9</b>	<b>195.1</b>	<b>193.7</b>	<b>200.2</b>	<b>6.5</b>	<b>3.3%</b>
<b>Livestock Products</b>								
Cattle and calves	18.1%	38.1%	66.9	67.0	66.2	62.3	-4.0	-6.0%
Hogs	5.7%	12.0%	21.0	20.9	22.0	20.9	-1.1	-5.1%
All dairy	10.2%	21.6%	7.9	35.2	40.5	40.4	-0.1	-0.2%
Poultry and eggs	11.6%	24.4%	42.8	46.2	40.4	35.8	-4.6	-11.4%
Other livestock <sup>d</sup>	1.9%	3.9%	6.9	6.9	6.9	7.0	0.1	1.2%
<b>Total Livestock</b>	<b>47%</b>	<b>100%</b>	<b>175.6</b>	<b>176.3</b>	<b>176.0</b>	<b>166.3</b>	<b>-9.7</b>	<b>-5.5%</b>
<b>GRAND TOTAL</b>	<b>100%</b>	na	<b>370.4</b>	<b>371.4</b>	<b>369.7</b>	<b>366.5</b>	<b>-3.2</b>	<b>-0.9%</b>

Source: CRS using data from USDA, ERS, "Farm Business Income," December 2, 2020.

Notes: F = forecast.

a. Sub = Subcategory. There are two subcategories: "total crops" and "total livestock."

b. Other row crops include other feed grains, hay, and minor oilseeds.

c. All other crops include sugar beets, sugarcane, hops, mint, mushrooms, and other miscellaneous crops.

d. Other livestock includes aquaculture, sheep and lambs, honey, mohair, wool, pelts, and other miscellaneous animal products.



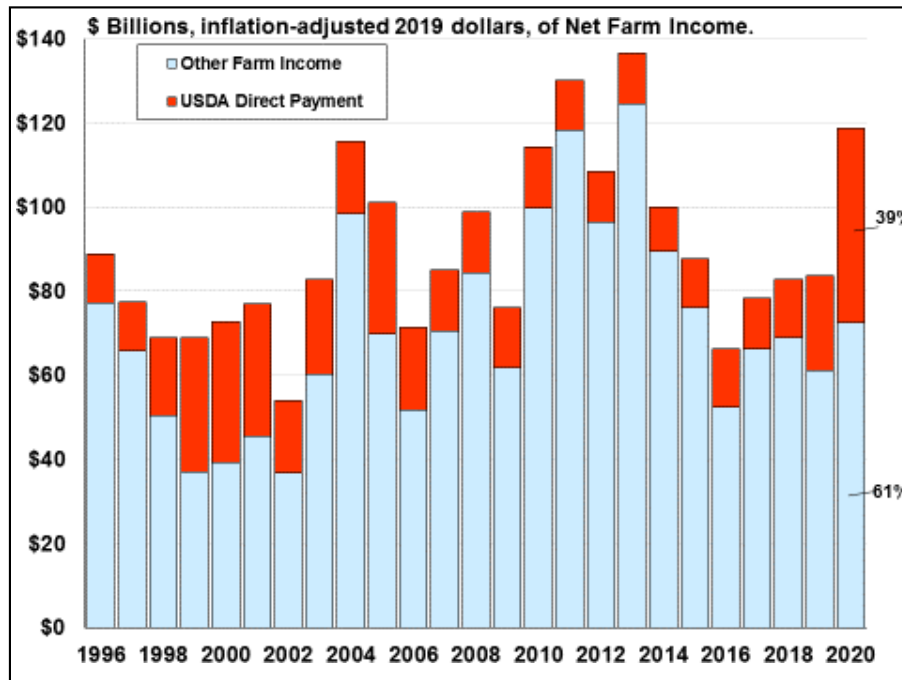
For row crops, cash receipts were forecasted to decline by 0.1%, with the bulk of the decline coming from sales of corn, cotton, and wheat (**Table 2**). USDA forecasts higher prices for corn, cotton, and wheat for the 2020-2021 marketing year (**Table A-2**); however, 2020 cash receipts also include sales for the 2019-2020 marketing year, which had relatively lower prices for these commodities. For specialty crops, cash receipts were forecasted to increase by 8.4%, the bulk of the increase coming from sales of fruits and nuts.

With respect to livestock production, cash receipts were forecasted to be lower for poultry and eggs (-11.4%), for cattle and calves (-6.0%), for hogs (-5.1%), and for dairy (-0.2%). These declines are driven by declines in market prices (**Table A-2**), as domestic production of beef, pork, broilers, and dairy were forecasted to increase in 2020 relative to 2019 levels (**Table 10**).

### Government Payments

USDA projected government direct payments to U.S. farmers and landowners at a record \$46.5 billion in 2020. If realized, the \$46.5 billion would be the largest annual federal subsidy outlay to the agricultural sector on record in both nominal and inflation-adjusted dollars.<sup>6</sup> Furthermore, it accounted for 39% of net farm income (**Figure 2**)—the largest share since 2000, when government payments of \$23.2 billion (nominal dollars) accounted for 46% of net farm income.<sup>7</sup>

**Figure 2. Net Farm Income by Source, 1996-2020F**



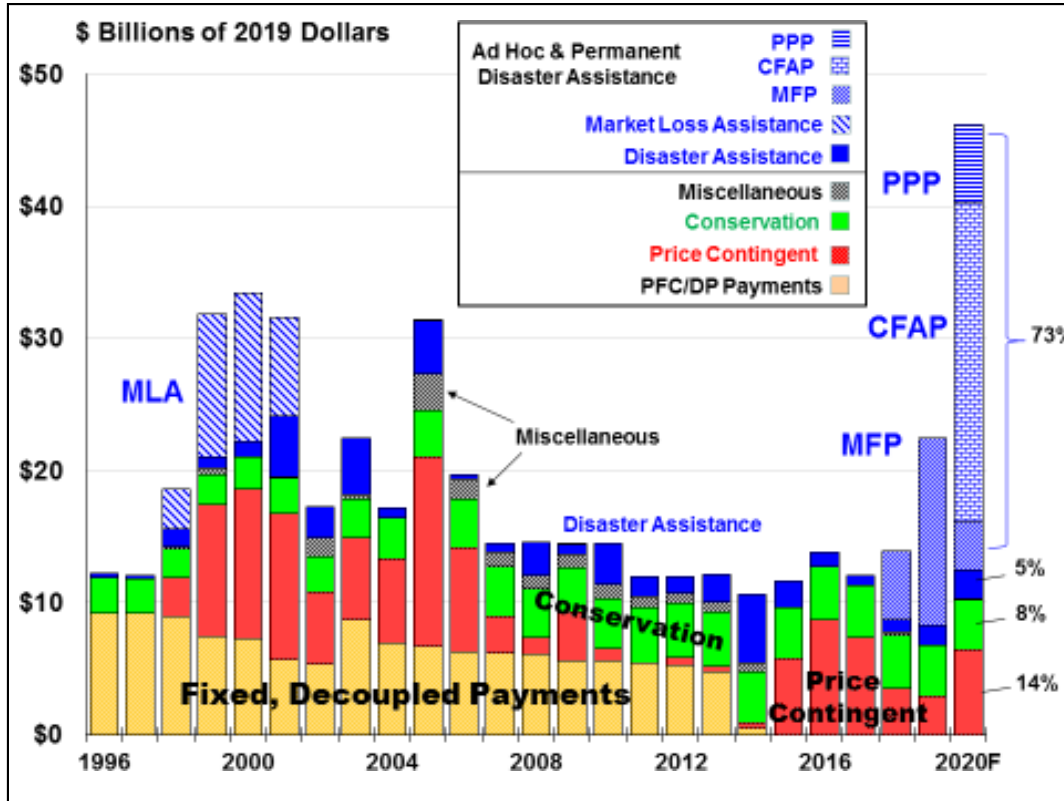
**Source:** CRS using data from USDA ERS, “2020 Farm Sector Income Forecast,” December 2, 2020. Sources of net farm income, expressed as percentage shares (right-hand side), are for 2020. Values for 2020 are forecasts.

<sup>6</sup> Indirect subsidies, such as crop insurance premium subsidies, are not included in the \$46.5 billion subsidy total.

<sup>7</sup> The government share of net farm income peaked at 65.2% in 1984 during the height of the farm crisis of the 1980s.

The record government farm assistance in 2020 included \$12.6 billion from traditional farm programs authorized under the 2018 farm bill (P.L. 115-334)<sup>8</sup> and \$33.9 billion from ad hoc programs—authorized outside of traditional farm omnibus legislation in response to the Coronavirus Disease 2019 (COVID-19) pandemic, as well as continuing support for trade-related market disruptions.<sup>9</sup> If realized, the federal subsidies of \$46.5 billion would represent a 107.1% increase from 2019’s \$22.4 billion in government support and would easily surpass the previous record farm subsidy outlay of \$24.4 billion (nominal dollars; \$31.4 billion in 2019 dollars) in 2005 (Table 1 and Figure 3).

**Figure 3. U.S. Government Farm Support, Direct Outlays, 1996-2020F**



**Source:** CRS using data from USDA ERS, “2020 Farm Sector Income Forecast,” December 2, 2020. All values are adjusted for inflation using the chain-type GDP deflator, where 2019 = 100. Values for 2020 are forecasts. Government payments as percentage shares (right-hand side) are for 2020.

**Notes:** Data are on a calendar-year basis and reflect the timing of the actual payment. “Direct Payments” include production flexibility contract (PFC) payments enacted under the 1996 farm bill and fixed direct payments (DP) of the 2002 and 2008 farm bills. “Price-Contingent” outlays include loan deficiency payments, marketing loan gains, countercyclical payments (CCP), Average Crop Revenue Election (ACRE), Price Loss Coverage (PLC), Agriculture Risk Coverage (ARC), the dairy Margin Protection program (MPP), and Dairy Margin Coverage (DMC) payments. “Conservation” outlays include CRP payments along with other conservation program outlays. “Ad Hoc and Permanent Disaster Assistance” is divided into payments under the 2018 and 2019 Market Facilitation Programs (MFP), Paycheck Protection Program (PPP), both rounds of the Coronavirus Food Assistance Program (CFAP), Market Loss Assistance (MLA), and “Disaster Assistance” programs, each of which is identified with a different blue pattern. “Disaster Assistance” is an aggregate category

<sup>8</sup> CRS Report R45730, *Farm Commodity Provisions in the 2018 Farm Bill (P.L. 115-334)*.

<sup>9</sup> See CRS Report R45310, *Farm Policy: USDA’s 2018 Trade Aid Package*; CRS Report R45865, *Farm Policy: USDA’s 2019 Trade Aid Package*; CRS Report R46395, *USDA’s Coronavirus Food Assistance Program: Round One (CFAP-1)*; and CRS Report R46645, *USDA’s Coronavirus Food Assistance Program: Round Two (CFAP-2)*.

that includes supplemental crop and livestock disaster payments and other emergency payments to the agriculture sector, such as payment made under the Wildfire and Hurricane Indemnity Program (WHIP). “Miscellaneous” outlays include payments under the cotton ginning cost-share, biomass crop assistance, peanut quota buyout, milk income loss contract, tobacco transition, and other miscellaneous payment programs.

### *Traditional Farm Revenue-Support Programs*

Historically, direct government farm program payments have included a mixture of support but have come primarily from programs authorized by omnibus farm legislation.<sup>10</sup> These programs have included the payments listed below.

- Direct payments (decoupled payments based on historical planted acres),<sup>11</sup> which were terminated by the 2014 farm bill (P.L. 113-79).
- Price-contingent payments (both coupled and decoupled program outlays linked to market conditions) include the benefits available under the Marketing Assistance Loan (MAL) program, the Agriculture Risk Coverage (ARC) and Price Loss Coverage (PLC) programs, and the Dairy Margin Coverage (DMC) program. Payments under price contingent programs were projected at \$6.3 billion in 2020—including \$5.0 billion for PLC, \$1.1 billion for ARC, \$184 million for DMC, and \$169 million for MAL.<sup>12</sup>
- Conservation programs include all conservation programs operated by USDA’s Farm Service Agency and the Natural Resources Conservation Service that provide direct payments to producers. Conservation payments were forecasted at \$3.8 billion for 2020, unchanged from 2019.<sup>13</sup>
- Agricultural disaster assistance includes payments under the four permanent disaster assistance programs—the Livestock Indemnity Program (LIP), Livestock Forage Program (LFP), Tree Indemnity Program (TIP), and Emergency Assistance for Livestock, Honey Bees, and Farm-Raised Fish Program (ELAP)—as well as payments under emergency supplemental programs (described below).<sup>14</sup> Outlays under the four permanent disaster assistance programs were projected at \$543 million in 2020.
- Other miscellaneous legislatively authorized payment programs include the biomass crop assistance program, peanut quota buyout, milk income loss, tobacco transition, and other miscellaneous programs. Miscellaneous program outlays were projected at \$29 million in 2020.

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<sup>10</sup> Government farm payments do not include premium subsidies or indemnities paid under the federal crop insurance program—indemnity payments are included as “farm-related income.” Also, government payments do not include USDA loans, which are listed as a liability in the farm sector’s balance sheet.

<sup>11</sup> *Decoupled* means that payments are not linked to current producer behavior and, instead, are based on some other measure outside of the producer’s decisionmaking sphere, such as historical acres planted to program crops. Decoupling of payments is intended to minimize their influence on producer behavior.

<sup>12</sup> For details, see CRS Report R43448, *Farm Commodity Provisions in the 2014 Farm Bill (P.L. 113 -79)*; and CRS Report R46561, *U.S. Farm Policy: Revenue Support Program Outlays, 2014 -2020*.

<sup>13</sup> CRS Report R45698, *Agricultural Conservation in the 2018 Farm Bill*.

<sup>14</sup> Fiscal year payments generally involve outlay commitments incurred during the previous crop year. For example, FY2019 disaster assistance payments are primarily related to disasters for crops that were grown and harvested in 2018. For information on available farm disaster programs, see CRS Report RS21212, *Agricultural Disaster Assistance*.

## *Ad Hoc and Emergency Supplemental Payments*

Since 2018, ad hoc programs initiated by the Trump Administration, outside of traditional farm-bill authorities, have played an increasingly important role in supporting farm incomes.<sup>15</sup> These include the Market Facilitation Program (MFP) payments to offset retaliatory tariff damages (2018-2020) and the Coronavirus Food Assistance Program (2020) in response to the COVID-19 pandemic.

In addition, Congress has frequently authorized emergency supplemental crop and livestock disaster payments—but outside of omnibus farm legislation—that have targeted the agricultural sector in response to natural disasters, such as the Wildfire and Hurricane Indemnity Program (WHIP). Most of the \$2.2 billion in agricultural disaster and emergency payments projected for 2020 were expected to come from WHIP Plus, enacted through the Disaster Relief Act of 2019 (P.L. 116-20).<sup>16</sup>

The 2018 and 2019 MFPs—initiated by USDA using authority under the CCC Charter Act of 1938—represented USDA’s attempt to provide “trade-damage” payments to U.S. producers in response to retaliatory tariffs by other countries, including China.<sup>17</sup> Payments under the two MFPs were expected to total \$23.1 billion spread over 2018 to 2020.<sup>18</sup> On September 9, 2020, USDA announced a new MFP-like program—referred to as the Seafood Trade Relief Program (STRP)—valued at \$530 million targeted U.S. seafood products that had been affected by retaliatory tariffs.<sup>19</sup> However, seafood is not included as part of ERS farm income forecasts. In addition, no further MFP payments have been announced for 2021 by either the Trump Administration or the current Biden Administration.

The surge in federal subsidies in 2020 was driven by large ad hoc payments made under three Trump Administration-initiated programs: \$3.7 billion in remaining payments under the 2019 MFP, \$5.9 billion from the Paycheck Protection Program (PPP), and \$24.3 billion from two rounds of payments under the Coronavirus Food Assistance Program (CFAP1 and CFAP2). The PPP and CFAP programs were designed to address COVID-19-related damages that occurred during 2020.

With respect to CFAP, USDA allocated \$16 billion in funding for the first round (CFAP1) and up to an additional \$14 billion for the second round (CFAP2).<sup>20</sup> As of December 28, 2020, \$10.5 billion of CFAP1 and \$13.0 billion of CFAP2 funding had been dispersed.

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<sup>15</sup> Previous historically important ad hoc programs have included the Market Loss Assistance (MLA) payments for relief of low commodity prices (1998-2001) and the Cotton Ginning Cost-Share program (2016 and 2018).

<sup>16</sup> CRS In Focus IF11539, *Wildfires and Hurricanes Indemnity Program (WHIP)*.

<sup>17</sup> USDA initiated the two trade aid packages with up to \$28 billion of financial support designed to partially offset the negative price and income effects of lost commodity sales to major markets. The 2018 trade aid package was valued at up to \$12 billion (see CRS Report R45310, *Farm Policy: USDA’s 2018 Trade Aid Package*), and the 2019 trade aid package was valued at up to \$16 billion (see CRS Report R45865, *Farm Policy: USDA’s 2019 Trade Aid Package*).

<sup>18</sup> The projected \$8.6 billion in 2018 Market Facilitation Program (MFP) payments include \$5.1 billion in 2018 and \$3.5 billion in 2019. The projected \$14.5 billion in 2019 MFP payments were expected to occur as \$10.8 billion in 2019 and \$3.7 billion in 2020.

<sup>19</sup> USDA, “USDA Supports U.S. Seafood Industry Impacted by Retaliatory Tariffs,” press release, September 9, 2020, at <https://www.usda.gov/media/press-releases/2020/09/09/usda-supports-us-seafood-industry-impacted-retaliatory-tariffs>.

<sup>20</sup> For details, see CRS Report R46395, *USDA’s Coronavirus Food Assistance Program: Round One (CFAP-1)*; and CRS Report R46645, *USDA’s Coronavirus Food Assistance Program: Round Two (CFAP-2)*.

Additionally, farmers are projected to receive additional income for COVID-19-related damages from the Small Business Administration's (SBA's) PPP, authorized under the CARES Act (P.L. 116-136). USDA expected that \$5.9 billion of \$7.3 billion of PPP loans to agriculture-related enterprises would be forgiven and counted as farm income in 2020.<sup>21</sup> The December 2020 COVID-19 relief package—contained as Division N within the omnibus Consolidated Appropriations Act, 2021 (P.L. 116-260)—includes new funding for a third round of CFAP (\$11.2 billion) and for a second round of PPP support (\$284 million).<sup>22</sup>

### Income from Other On-Farm Activities

Income from other on-farm activities includes crop insurance indemnities, custom work, machine hire, agritourism, and other farm sources of income (**Table 3**). Net farm income also includes an imputed measure of the rental value of farm dwellings, which is not included in net cash farm income.

Income from other on-farm activities was forecasted to increase by \$0.5 billion or 1% in 2020 as compared with 2019. The bulk of the increase is due to forecast increases in the imputed rental value of farm dwellings, which were forecasted to increase by \$1.1 billion. Indemnities from federal crop insurance were forecasted to decline by \$0.4 billion; however, the declines in indemnities from federal crop insurance were forecasted to be more than offset by gains in indemnities from nonfederal crop insurance policies.

**Table 3. Income from Other On-Farm Activities**

Farm-related Income	2017	2018	2019	2020F	Change:	
					2019 to 2020	
	—\$ Billion—				\$ Billion	%
Forest products sold	0.7	0.7	0.6	0.6	0.0	1%
Gross imputed rental value of farm dwellings	17.9	18.7	17.9	19.0	1.1	6%
Machine hire and custom work	4.6	3.9	4.1	4.0	-0.1	-3%
Federal commodity insurance indemnities	5.2	6.2	10.2	9.8	-0.4	-4%
Non-federal commodity insurance indemnities	1.9	1.4	2.1	2.6	0.5	25%
Net cash rent received by operator landlords <sup>a</sup>	2.3	2.1	2.3	2.3	0.0	2%
Other farm income <sup>b</sup>	16.4	14.8	15.4	14.7	-0.7	-4%
<b>Total</b>	<b>49.1</b>	<b>47.8</b>	<b>52.6</b>	<b>53.1</b>	<b>0.5</b>	<b>1%</b>

**Source:** CRS using data from USDA, ERS, "Farm Business Income," as of December 2, 2020.

**Notes:** The total from this table equals the summation of rows #3 and #8 from **Table 1** adjusted for double counting (e.g., the imputed value of home consumption of farm products counted in cash receipts).

- a. Net cash rent received by operator landlords excludes income from land rented under crop-share agreements. Income from land rented under crop-share agreements is included in income from cash receipts (**Table 2**).
- b. Income from agritourism, recreational activities, and other farm sources.

<sup>21</sup> For information on the Paycheck Protection Program (PPP) loan forgiveness, see CRS Report R46397, *SBA Paycheck Protection Program (PPP) Loan Forgiveness: In Brief*.

<sup>22</sup> John Newton, "What's in the New COVID-19 Relief Package for Agriculture?," *Market Intel*, American Farm Bureau Federation, December 22, 2020; and Jacqui Fatka, "PPP changes in COVID Relief Bill Offer More Aid for Farmers," *Feedstuffs*, December 31, 2020.

## Farm Sector Expenses

Overall, cash expenses for production of farm commodities were forecasted at \$313 billion in 2020, down \$4.5 billion or 1% from 2019 (**Table 4**). Expenses for livestock and poultry purchases (-7%), interest payments (-25%), and fuel and oil (-14%) were projected to decline. These declines were partially offset by increases in expenses for labor (+2%), property taxes and fees (+8%), fertilizer and lime (+5%), and net rent to landlords (+6%).

Projected reductions in expenditure for interest payments, livestock and poultry purchases, and fuel and oil purchases partially reflect reductions in the prices of these items from 2019 to 2020. For example, average interest rates for interest-bearing debt held by the U.S. Treasury declined from 2.4% in December 2019 to 1.7% in November 2020, reflecting the lower interest rate environment generally.<sup>23</sup> Prices for crude oil, gasoline, diesel, and heating oil declined from 2019 to 2020, reflecting the impact of COVID-19-related declines in global demand for these commodities.<sup>24</sup> Price declines for livestock and poultry in 2020 (**Table A-2**) also link to declines in prices for breeding stock as a result of COVID-19-related disruptions in normal operations of meatpacking and livestock processors.

**Table 4. U.S. Farm Sector Cash Expenses**

Expenses	2017	2018	2019	2020F	Change:	
					2019 to 2020F	
	\$ Billion				\$ Billion	%
Feed purchased	54.5	53.8	59.4	59.7	0.2	0%
Labor	35.8	33.8	34.7	35.3	0.6	2%
Livestock and poultry purchases	27.4	29.2	28.7	26.7	-1.9	-7%
Fertilizer and lime	22.0	23.2	22.3	23.5	1.1	5%
Seed	22.5	21.9	21.2	21.3	0.0	0%
Net rent to landlords	19.3	16.8	18.1	19.1	1.0	6%
Pesticides	15.8	15.4	15.5	15.5	0.0	0%
Interest	17.5	19.4	19.7	14.7	-5.0	-25%
Property taxes and fees	12.7	12.7	13.3	14.3	1.0	8%
Fuel and oil	12.8	13.2	13.2	11.3	-1.9	-14%
Electricity	5.8	6.1	5.7	5.8	0.0	0%
Other expenses <sup>a</sup>	65.8	65.8	65.5	65.8	0.3	0%
<b>Total</b>	<b>311.9</b>	<b>311.4</b>	<b>317.5</b>	<b>313.0</b>	<b>-4.5</b>	<b>-1%</b>

**Source:** CRS using data from USDA, ERS, "Farm Income and Wealth Statistics: Net Cash Income," as of December 2, 2020.

**Notes:**

a. Other expenses exclude maintenance for operator dwellings and landlord capital consumption.

<sup>23</sup> U.S. Department of the Treasury, TreasuryDirect, "Average Interest Rates on U.S. Treasury Securities," at <https://www.treasurydirect.gov/govt/rates/avg/avg.htm>.

<sup>24</sup> U.S. Energy Information Administration, *Short Term Energy Outlook*, December 8, 2020, at <https://www.eia.gov/outlooks/steo/report/prices.php>.

USDA does not forecast the extent to which these production expenses vary by farm typology, commodity specialization, or region.<sup>25</sup> For example, most farms benefit from lower fuel and oil prices; however, only operations that purchase livestock and poultry benefit from declines in the prices of these commodities.<sup>26</sup>

Similarly, many farm operations may hold farm debt and therefore benefit from lower interest payments on that debt. The median household debt holdings for residential, intermediate, and commercial farms in 2019 were \$90,025, \$84,697, and \$496,275, respectively.<sup>27</sup> If this pattern were maintained for 2020, then commercial farms likely received the largest share of benefits from lower interest payments on debt holdings.

## Farm Finances: Assets, Debt, and Equity

Farm asset values and debt levels were projected to reach record levels in 2020—asset values at \$3.1 trillion (+1.5% year-over-year) and farm debt at \$435.2 billion (+4.0%)—pushing the projected debt-to-asset ratio up to 13.9%, the highest level since 2002 (Table 5).

**Table 5. Balance Sheet of the U.S. Farming Sector**

Category	Share %	2017	2018	2019	2020F	2019 to 2020F	
		—————\$Billions—————				Change \$Billions	Change %
<b>Assets</b>	<b>100.0%</b>	<b>3,005.9</b>	<b>3,026.7</b>	<b>3,075.2</b>	<b>3,120.6</b>	<b>45.5</b>	<b>1.5%</b>
Real estate	82.1%	2,472.8	2,510.2	2,546.0	2,569.4	23.4	0.9%
Machinery/vehicles	8.8%	272.3	271.0	279.0	287.3	8.4	3.0%
Financial assets	2.9%	81.1	72.6	87.5	108.9	21.4	24.5%
Animals and products	3.7%	107.1	97.1	99.2	92.6	-6.6	-6.6%
Crop inventory	1.9%	56.8	59.7	49.6	48.6	-1.0	-2.1%
Purchased inputs	0.6%	15.8	16.1	13.9	13.8	-0.1	-0.7%
<b>Debt</b>	<b>100.0%</b>	<b>390.4</b>	<b>402.0</b>	<b>418.6</b>	<b>435.2</b>	<b>16.6</b>	<b>4.0%</b>
Real estate	60.2%	236.2	245.7	266.8	283.0	16.2	6.1%
Non-real estate	39.8%	154.2	156.3	151.8	152.1	0.4	0.2%
<b>Equity</b>	<b>100.0%</b>	<b>2,615.5</b>	<b>2,624.7</b>	<b>2,656.6</b>	<b>2,685.4</b>	<b>28.9</b>	<b>1.1%</b>
<b>Debt-to-asset ratio</b>		<b>13.0%</b>	<b>13.3%</b>	<b>13.6%</b>	<b>13.9%</b>	0.3%	2.4%
<b>Debt-to-equity ratio</b>		<b>14.9%</b>	<b>15.3%</b>	<b>15.8%</b>	<b>16.2%</b>	0.4%	2.8%

**Source:** CRS using data from USDA, ERS, “Assets, Debt, and Wealth,” as of December 2, 2020.

**Notes:** Data for 2020 are USDA forecasts.

<sup>25</sup> Robert A. Hoppe and James M. MacDonald, *Updating the ERS Farm Typology*, USDA, ERS, EIB-110, April 2013.

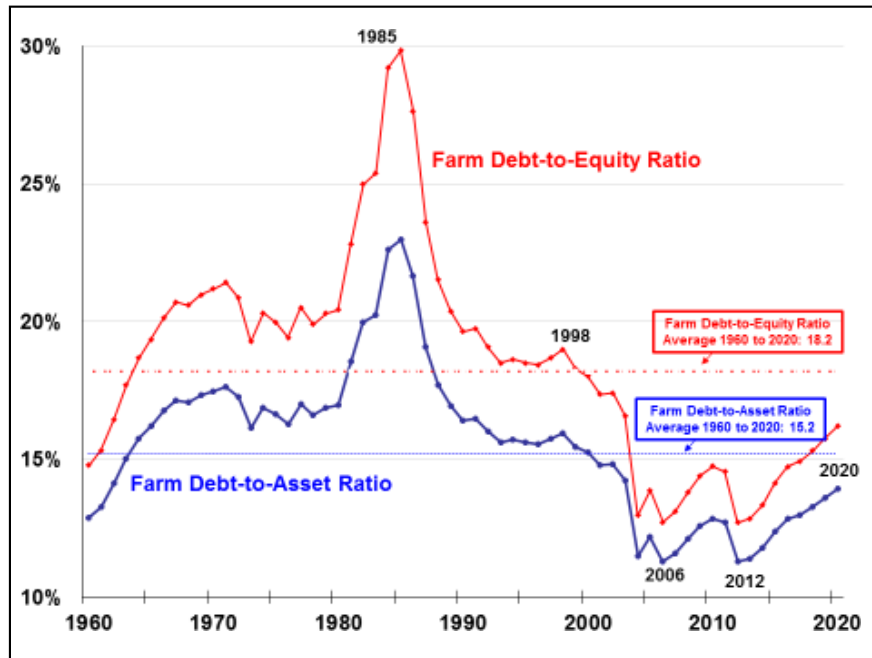
<sup>26</sup> See “Farm Business Income by Location, Commodity Specialization” for a discussion of farm businesses by specialization.

<sup>27</sup> See “Farm Type Varies by Gross Sales and On-Farm Share of Income” for definitions of residential, intermediate, and commercial farm businesses. Household debt statistics are from USDA, ERS, “Farm Household Income and Characteristics,” *Principal farm operator household finances by ERS farm typology, 2019*, December 2, 2020, at <https://www.ers.usda.gov/webdocs/DataFiles/48870/table02.xlsx?v=7167.6>.

The values of financial assets (+24.5%), machinery and vehicles (+3.0%), and real estate (+0.9%) were forecasted to increase from 2019 to 2020, while the values of animals and products (-6.6%), crop inventories (-2.1%), and purchased inputs (-0.7%) were forecasted to decline in 2020. Increases in values for real estate and machinery and vehicles may reflect increasing prices, increasing inventories held, or both.<sup>28</sup> The values of inventories of crops and livestock declined in part because farmers were holding less inventory for a number of commodities relative to previous years (see, for example, **Figure 7** for corn, soybeans, wheat, and cotton).

Debt held by the U.S. agricultural sector also was forecasted to increase in 2020 to \$435.2 billion (up 4%), both for real estate (+6.2%) and non-real estate (+0.9%) loans. These increases likely reflect the lower cost of holding debt—historically low interest rates have reduced the cost of holding more debt.<sup>29</sup> Increases in farm asset values were forecasted to more than offset increases in farm debt, leading to a year-on-year increase in farm equity of 1.1%. The debt-to-asset and debt-to-equity ratios both were forecasted to increase in 2020 (the eighth consecutive year of increase in both ratios); however, both ratios are still low relative to their long-term historical averages (**Figure 4**).

**Figure 4. Farm Sector Debt-to-Asset and Debt-to-Equity Ratios, 1960-2020**



**Source:** CRS using data from ERS, “2020 Farm Sector Income Forecast,” December 2, 2020. 2020 values are forecasts.

**Notes:** Both the farm debt-to-asset and debt-to-equity ratios peaked in the 1980s during the farm loan crisis.

<sup>28</sup> For example, in the Corn Belt, land prices and farm equipment holdings increased in 2020 relative to 2019. David Oppendahl, *AgLetter: November 2020*, Federal Reserve Bank of Chicago, *AgLetter* no. 1990, November 2020, at <https://www.chicagofed.org/publications/agletter/2020-2024/november-2020>.

<sup>29</sup> For example, Corn Belt average loan rates from commercial agricultural lenders for operating loans, feeder cattle, and real estate declined by 1.06 percentage points, 0.98 percentage points, and 0.64 percentage points for July, August, and September 2020, respectively, as compared with the same period in 2019. Oppendahl, *AgLetter: November 2020*.



Annual bankruptcy filings declined for farmers and fishermen between September 30, 2019, and September 30, 2020; however, the rate of the decline was smaller than for all bankruptcy filings overall (**Table 6**).

Loan delinquency rates at commercial banks remained below the long-run average for 2010-2020 for real-estate loans and less than 1% above the long-run average for 2010-2020 for non-real-estate loans.<sup>30</sup> Delinquency rates for the Farm Credit System institutions declined on a year-over-year basis from 0.30% in September 2019 to 0.28% in September 2020.<sup>31</sup>

Although individual farms may be experiencing elevated levels of farm financial stress, the evidence from farm bankruptcy filings and loan delinquencies suggests that the total number of individual farms experiencing financial stress may be on par with recent historical levels.

**Table 6. Bankruptcy Rates for Selected Businesses, 2019-2020**

Bankruptcy Type	12-months ending September 30, 2019	12-months ending September 30, 2020	% Change
All Chapters	776,674	612,561	-21.1%
Chapter 12 (for farmers and fishermen)	580	571	-1.6%

**Source:** CRS using data from United States Courts, “Statistics & Reports,” *Table F-2 Bankruptcy Filings for September 30, 2019, and September 30, 2020*, at <https://www.uscourts.gov/statistics/table/f-2/bankruptcy-filings/2020/09/30>.

## Average Farm Household Income

Farm households may earn income from their farm businesses as well as from off-farm sources—for example, if members of the household work off-farm jobs or the farm’s asset portfolio includes financial assets that have increased in value during the year.

- Average farm household income was forecasted at \$132,558 in 2020, up 7.4% from 2019, with increases in on-farm income (+54.0%) offsetting decreases on off-farm income (-2.5%) (**Table 7**).
- About 25% (\$33,460) of total farm household income in 2020 was projected to be from farm production activities (including government payments), while the overwhelming majority, 75% (\$99,098), was earned off the farm.

Lower off-farm income for farm households in 2020 may be an indicator of lower incomes for rural populations more generally during the COVID-19 pandemic, as farm households and other rural households generally participate in the same labor market. However, counties where employment is concentrated in farming may have experienced lower unemployment rates than counties where employment is concentrated in other sectors of the economy (e.g., mining, manufacturing, recreation).<sup>32</sup> This suggests that the decline in off-farm income forecast for farm households may be less than the decline in incomes for rural households in general.

<sup>30</sup> CRS calculations using data from the Federal Reserve Bank of Kansas City, *Commercial Bank Call Report Data*, December 4, 2020, at [https://www.kansascityfed.org/~/-/media/files/publicat/research/indicatorsdata/agfinance/call\\_report\\_data\\_historical\\_data\\_q3\\_2020.xlsx](https://www.kansascityfed.org/~/-/media/files/publicat/research/indicatorsdata/agfinance/call_report_data_historical_data_q3_2020.xlsx).

<sup>31</sup> Hal Johnson, *Farm Credit System Condition and Performance as of September 30, 2020*, Farm Credit Administration, Office of Examination, at <https://www.fca.gov/template-fca/about/2020DecQuarterlyReportonFCSCCondition.pdf>.

<sup>32</sup> John Cromartie et al., *Rural America at a Glance: 2020 Edition*, USDA ERS, EIB-221, at <https://www.ers.usda.gov/publications/pub-details/?pubid=100088>.

**Table 7. Average Annual Income per U.S. Household, Farm Versus All, 2015-2020**  
(\$ per household)

	2015	2016	2017	2018	2019	2020	Change 2019-2020
<b>Average U.S. farm income by source (nominal dollars)</b>							
On-farm income							54.0%
	24,740	24,731	21,842	18,425	21,730	33,460	
Off-farm income							-2.5%
	95,140	93,187	89,747	93,786	101,638	99,098	
Total farm income							7.4%
	119,880	117,918	111,589	112,210	123,368	132,558	
<b>Average U.S. farm income by source (share as a %)</b>							
On-farm income							54.0%
	21%	21%	20%	16%	18%	25%	
Off-farm income							-2.5%
	79%	79%	80%	84%	82%	75%	
Total farm income							7.4%
	100%	100%	100%	100%	100%	100%	
<b>Avg. U.S. HH income</b>	79,263	83,143	86,220	90,021	98,088	NA	NA
<b>Farm household income as a share of U.S. average household income</b>							
<b>Share (%)</b>	<b>151%</b>	<b>142%</b>	<b>129%</b>	<b>125%</b>	<b>126%</b>	<b>NA</b>	<b>NA</b>

**Source:** CRS using data from ERS, “Farm Household Income and Characteristics,” *Principal farm operator household finances*, data set updated as of December 2, 2020.

**Notes:** HH = household; NA = not available. Data for 2020 are USDA forecasts.

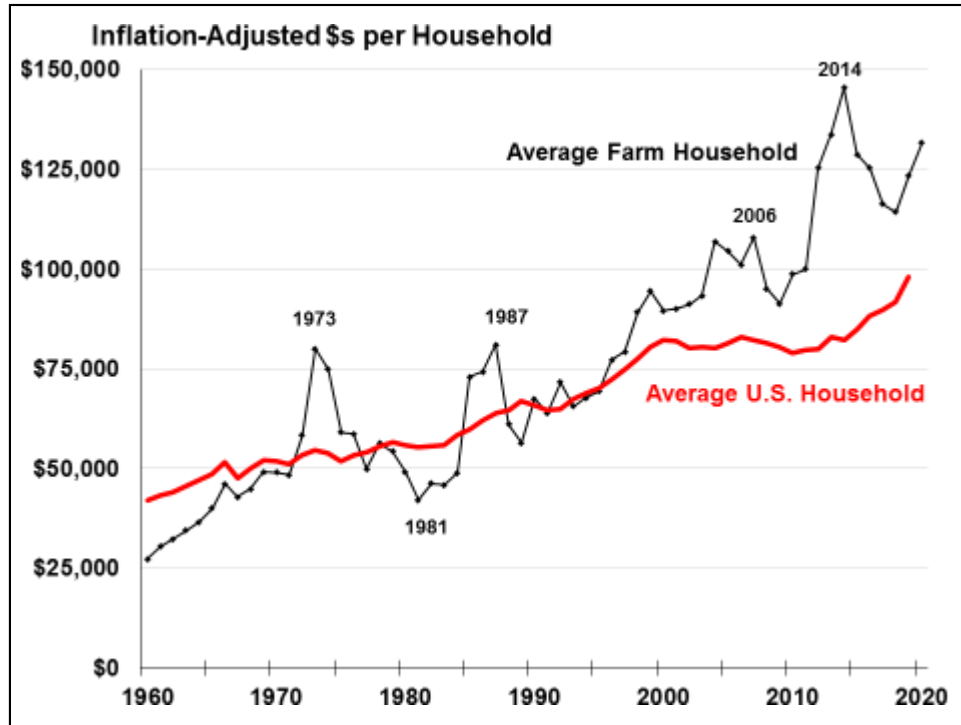
USDA does not forecast average annual income by farm typology.<sup>33</sup> However, in 2019, off-farm income accounted for more than 90% of average farm household income for residential and intermediate farms and more than 20% of average farm household income for commercial farms.<sup>34</sup> If this pattern was maintained for 2020, then average farm household income more likely increased year-over-year for the largest farm business category—commercial farms—than for smaller residential and intermediate farms.

## U.S. Total vs. Farm Household Average Income

Since the late 1990s, farm household incomes have surged ahead of average U.S. household incomes (**Figure 5**). In 2019 (the last year for which comparable data were available), the average farm household income of \$123,368 was about 26% higher than the average U.S. household income of \$98,088 (**Table 7**).

<sup>33</sup> See “Farm Income by Farm Type, Specialization, Region.”

<sup>34</sup> See “Farm Type Varies by Gross Sales and On-Farm Share of Income” for definitions of residential, intermediate, and commercial farm businesses. On- and off-farm income statistics are from USDA, ERS and National Agricultural Statistics Service (NASS), *Principal farm operator household finances, by farm type, 2019*, Agricultural Resource Management Survey, data as of December 2, 2020.

**Figure 5. Average Farm Household Compared with Average U.S. Household Income**

**Source:** ERS, “2020 Farm Sector Income Forecast,” December 2, 2020. All values are adjusted for inflation using the chain-type GDP deflator, 2019 = 100; BEA. Values for 2020 are forecasts.

## Farm Income by Farm Type, Specialization, Region

The U.S. farm sector is vast and varied. It supplies a wide array of markets for food, animal feed, fuel, fibers, and forestry products in the United States and abroad. It encompasses production activities relating to traditional field crops (such as corn, soybeans, wheat, and cotton) and livestock and poultry products (including meat, dairy, and eggs), as well as fruits, tree nuts, and vegetables. In addition, U.S. agricultural output includes greenhouse and nursery products, forest products, custom work,<sup>35</sup> and other farm-related activities. The intensity and economic importance of each of these activities, as well as their underlying market structure and production processes, vary regionally based on the agroclimatic setting, market conditions, and other factors. As a result, farm income and rural economic conditions may vary substantially across the United States.

As seen in the previous section, measures of farm household income, which include income earned on and off of the farm, provide a view into the welfare of farm households and the rural economy. In contrast, measures of farm business income provide a view into the profitability of crop and livestock production.<sup>36</sup> Both types of metrics may be useful to policymakers in understanding the extent of COVID-19-related impacts on the farm sector and on the aggregate supply of food, feed, fuel, fibers, and forestry products for U.S. and international markets.

<sup>35</sup> Custom work involves performing machine operations for another landowner in exchange for a set fee or rate.

<sup>36</sup> ERS forecasts farm business income and farm household income.

## Farm Type Varies by Gross Sales and On-Farm Share of Income

Net farm income and net cash farm income are measures of profitability of the sector overall. However, the profitability of any individual farm can depend on the type of farm business and scale of production of the operation. Additionally, some farms may derive limited income from their farm operations because their operators work primarily in off-farm activities.

USDA reports average net cash farm income (NCFI) for all U.S. farms as well as for specific categories of farms based on farm ownership, gross value of sales, and farm typology (**Table 8**).

- **Farm Ownership.** USDA distinguishes between family farms—operations where the majority of the business is owned by an operator and individuals related to the operator—and nonfamily farms where an operator and persons related to the operator do not own a majority of the business. Family farms account for more than 97% of all U.S. farms.
- **Gross Value of Sales.** USDA classifies farm operations into five categories based on gross sales value. The largest category consists of the more than 80% of U.S. farms earning less than \$100,000 in gross sales.
- **Farm Typology.** USDA classifies farms into three types based on the farm operator’s primary occupation and the farm’s gross cash income—residence farms, intermediate farm businesses, and commercial farm businesses.
  - **Residence farms**—farms operated by those whose primary occupation is something other than farming and where the operation reports gross cash farm income of under \$350,000.
  - **Intermediate farm businesses**—farming is the operator’s primary occupation; the operation reports gross cash farm income of under \$350,000.
  - **Commercial farm businesses**—the farming operation reports gross cash farm income of over \$350,000.

USDA’s Agricultural Resource Management Survey (ARMS) data for 2019 indicate that approximately 10% of U.S. farms are commercial farm businesses, 38% are intermediate farm businesses, and the remaining 52% are residence farms (**Table 8**).<sup>37</sup> According to ERS, farm businesses account for fewer than half of U.S. farms but contribute more than 90% of the farm sector’s value of production and hold most of its assets and debt.<sup>38</sup>

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<sup>37</sup> For more information on the Agricultural Resource Management Survey (ARMS) survey, see USDA, NASS, “ARMS,” at [https://www.nass.usda.gov/Surveys/Guide\\_to\\_NASS\\_Surveys/Ag\\_Resource\\_Management/](https://www.nass.usda.gov/Surveys/Guide_to_NASS_Surveys/Ag_Resource_Management/).

<sup>38</sup> USDA, ERS, “Farm Sector Income and Finances: Farm Business Income,” as of December 2, 2020, at <https://www.ers.usda.gov/topics/farm-economy/farm-sector-income-finances/farm-business-income/>.

**Table 8. Average Net Cash Farm Income for All Farms by Sales Class and Typology**

Farm Characteristics	All Farms <sup>a</sup> Share %	2017	2018	2019	2020F	2019 to 2020F	Change %
		—————\$1,000 per farm—————				Change \$1,000	
<b>All farms</b>	100.0%	39.0	35.5	38.0	51.8	13.8	36.3%
Family farms	97.6%	35.2	31.9	32.6	45.2	12.6	38.7%
<b>Farms by gross sales value</b>							
\$1,000,000 or more	3.9%	657.7	624.2	677.5	858.4	180.9	26.7%
\$500,000 - 999,999	3.5%	183.1	196.9	174.5	239.7	65.2	37.4%
\$250,000 - 499,999	4.4%	92.6	94.3	98.5	132.8	34.3	34.8%
\$100,000 - 249,999	6.5%	47.3	35.9	40.4	58.5	18.1	44.8%
Less than \$100,000	81.8%	-0.3	-2.4	-1.5	0.8	2.3	153.3%
<b>Farm typology</b>							
Farm businesses <sup>b</sup>	47.9%	81.6	76.8	78.8	104.5	25.7	32.6%
Commercial farms <sup>c</sup>	10.4%	333.5	325.9	336.9	435.8	98.9	29.4%
Intermediate farms <sup>d</sup>	37.6%	9.8	6.9	7.5	13.0	5.5	73.3%
Residence farms <sup>e</sup>	52.1%	0.3	-1.2	0.5	3.4	2.9	580.0%

**Source:** USDA, ERS, “Farm Business Income,” as of December 2, 2020.

**Notes:** F = forecast. Net cash farm income does not include off-farm income. The category “All farms” encompasses family farms (97.6% of total farms) and nonfamily farms (2.4% of total farms, not displayed on the table). The total shares of all farms by gross sales value sum to 100%. The category “Farm Typology” encompasses farm businesses (47.9% of total farms) and resident farms (52.1% of total farms). Farm businesses can be subdivided into commercial farms (10.4% of all farms) and intermediate farms (37.6% of all farms). The average net cash income for all farms will be approximately equal to the weighted sum of average net cash income for farm businesses and residence farms, with differences possible due to rounding errors.

- a. USDA estimated 2,015,068 farms in the United States in 2019, including 1,967,617 (97.6%) family farms.
- b. Farm businesses are farms that have annual gross cash farm income of at least \$350,000 or smaller operations in terms of gross sales but where farming is reported as the operator’s primary occupation.
- c. Commercial farm business operations are farms with gross cash farm income of over \$350,000.
- d. Intermediate farm business operations are farms with gross cash farm income < \$350,000 but where farming is reported as the operator’s primary occupation.
- e. Residence farms are small farms (with annual gross cash farm income less than \$350,000) operated by those whose primary occupation is something other than farming.

For U.S. farms overall, average NCFI was forecasted to increase 36.3% in 2020 to \$51,800 per farm from \$38,000 in 2019. Average NCFI was also forecasted to increase for every category of farm (i.e., gross sales value and typology), with the largest increase in dollar terms reported for the largest-scale operations.

- Average NCFI for farms with gross sales value of \$1,000,000 or more was forecasted to increase by \$180,900 from 2019 to 2020 (in nominal dollars), or an increase of 26.7%, while farms with smaller gross sales were forecasted to have smaller year-over-year increases in average nominal NCFI but with larger percentage changes.

- Similarly, commercial farm businesses were forecasted to have greater absolute increases in average NCFI from 2019 to 2020 than either intermediate farm businesses or residence farms.
- Although the largest operations (commercial farms) were forecasted to have the largest year-over-year increase in average NCFI in nominal dollars (+\$98,900), smaller farm operations (intermediate and residence farms) were forecasted to have larger increases in percentage terms.

USDA analyses of farms in 2016 and 2017 indicated that beginning farmers, limited resource farm households, and socially disadvantaged farmers tended to operate smaller farms and, as a result, earned less income from on-farm activities compared with farms that were not operated by beginning, limited resource, or socially disadvantaged farmers.<sup>39</sup> If this pattern was maintained in 2020, it suggests that farms operated by beginning, limited resource, or socially disadvantaged farmers likely received a smaller year-over-year increase in farm income compared with farms whose operators did not fall into any of those categories.

## Farm Business Income by Location, Commodity Specialization

In addition to forecasting average NCFI for farms based on gross farm sales, USDA forecasts average NCFI for farm businesses by region and by commodity specialization. USDA's regions divide the continental United States into areas that contain similar types of farms and similar physiographic, soil, and climate traits (**Figure 6**).<sup>40</sup> USDA determines commodity specialization for farm businesses where at least 50% of the value of production derives from a particular commodity. However, farm businesses often produce multiple commodities, so average NCFI statistics should not be interpreted as resulting solely from the production and sale of the commodity highlighted as the commodity specialization.

USDA forecasted average NCFI to increase for farm businesses in all regions of the United States in 2020 (**Table 9** and **Figure 6**). The three regions forecasted to gain the most from 2019 to 2020 in dollar terms were the Fruitful Rim, Northern Great Plains, and Mississippi Portal, which also were forecasted to be the regions with the highest average NCFI for farm businesses. The three regions forecasted to gain the most from 2019 to 2020 in percentage terms were the Mississippi Portal (+42.8%), the Northern Great Plains (+41.7%), and the Basin and Range (+40.9%).

USDA forecasted average NCFI to increase from 2019 to 2020 for farm businesses that specialize in wheat, corn, soybeans, cotton, specialty crops, and certain other commodity crops (**Table 9**). The three commodity specializations with the largest increases in dollar terms were cotton, specialty crops, and wheat. The three commodity specializations with the largest increases in percent terms were wheat, cotton, and soybeans. USDA also forecasted average NCFI to increase from 2019 to 2020 for farm business that specialize in most types of livestock production—poultry being the exception (**Table 9**). The livestock specializations with the largest increases in

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<sup>39</sup> According to USDA ERS, *beginning farmers* are defined as farmers who have materially and substantially participated in the operation of any farm or ranch for 10 years or less. *Limited-resource farm households* are defined as households with low farm sales and low household incomes for two years. *Socially disadvantaged farmers* are defined as operators who belong to a group whose members have been subject to racial, ethnic, or gender prejudice because of their identity as members of the group without regard to their individual qualities. See USDA, ERS, “Beginning, Limited Resource, Socially Disadvantaged, and Female Farmers,” at <https://www.ers.usda.gov/topics/farm-economy/beginning-limited-resource-socially-disadvantaged-and-female-farmers/>.

<sup>40</sup> For a description of the ERS resource regions, see ERS, *Farm Resource Regions*, Agricultural Information Bulletin no. 760, September 2000.

dollar terms were dairy and hogs, and the largest increases in percentage terms were other livestock and cattle and calves.

**Table 9. Average Net Cash Income for Farm Businesses by Region and Commodity**

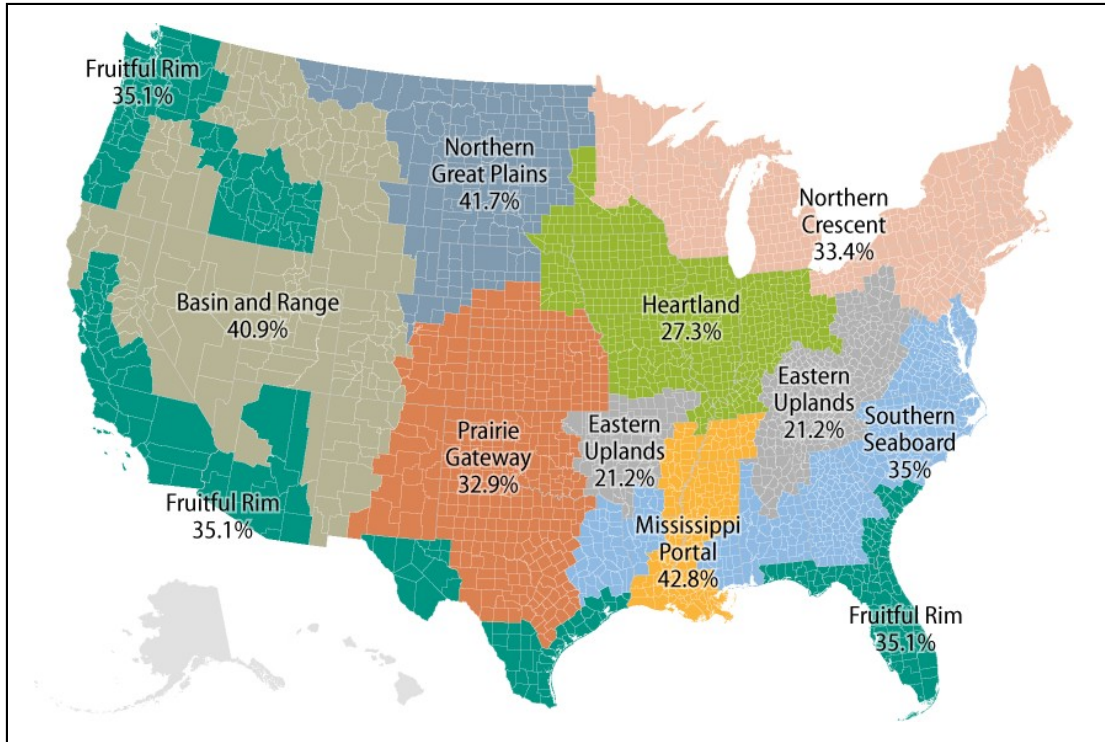
Farm Characteristics	All Farms	2017	2018	2019	2020F	2019 to 2020F	
	Share %	—————\$1,000 per farm—————				Change \$1,000	Change %
<b>Farm Businesses</b>	47.9%	81.6	76.8	78.8	104.5	25.7	32.6%
<b>Resource region<sup>a</sup></b>							
Heartland	10.8%	109.8	110.8	102.5	130.5	28.0	27.3%
Northern Crescent	6.8%	66.3	62.4	59.2	79.0	19.8	33.4%
Northern Great Plains	2.5%	109.5	101.0	113.4	160.7	47.3	41.7%
Prairie Gateway	6.6%	68.9	63.7	76.7	101.9	25.2	32.9%
Eastern Uplands	5.9%	13.6	13.8	32.6	39.5	6.9	21.2%
Southern Seaboard	5.5%	47.9	30.5	36.3	49.0	12.7	35.0%
Fruitful Rim	5.4%	165.0	149.9	149.9	202.5	52.6	35.1%
Basin and Range	2.8%	52.2	71.8	39.6	55.8	16.2	40.9%
Mississippi Portal	1.6%	97.3	88.1	103.4	147.7	44.3	42.8%
<b>Commodity Specialization: Crops</b>							
Wheat	0.5%	82.3	102.3	107.3	160.5	53.2	49.6%
Corn	5.1%	139.1	171.8	143.3	190.9	47.6	33.2%
Soybeans	2.1%	98.8	76.4	77.6	110.5	32.9	42.4%
Cotton	0.3%	259.4	190.2	252.3	366.8	114.5	45.2%
Specialty crops <sup>b</sup>	4.3%	222.6	189.1	196.4	262.2	65.8	33.5%
Other crops <sup>c</sup>	11.4%	67.1	65.2	56.8	80.4	23.6	41.5%
<b>Commodity Specialization: Livestock</b>							
Cattle and calves	16.3%	23.1	23.0	19.6	27.9	8.3	42.3%
Hogs	0.5%	288.6	249.0	341.6	386.7	45.1	13.2%
Poultry	1.8%	96.2	105.5	141.6	139.1	-2.5	-1.8%
Dairy	1.8%	269.3	215.8	260.6	333.3	72.7	27.9%
Other livestock <sup>d</sup>	3.9%	12.8	5.7	12.2	17.8	5.6	45.9%

**Source:** CRS using data from USDA, ERS, "Farm Business Income," as of December 2, 2020.

**Notes:** F = forecast. Commodity specialization is determined by a farm business having at least 50% of the value of production from a particular commodity. Farm businesses often produce multiple commodities, so average net cash farm income statistics should not be interpreted as resulting solely from the production and sale of the commodity highlighted as the commodity specialization.

- For a description of the ERS resource regions, see **Figure 6** and accompanying notes.
- Specialty crops include fruits and tree nuts, vegetables, and nursery and greenhouse products.
- All remaining crops not listed, including feed grains (sorghum, barley, and oats), peanuts, sunflower, minor oilseeds, rice, pulse crops, tobacco, sugar, and other miscellaneous crops.
- All other livestock not listed, including eggs, aquaculture, sheep and lambs, honey, mohair, wool pelts, and other miscellaneous animal products.

**Figure 6. Farm Business Average Net Cash Farm Income by Resource Region**  
2020F compared with 2019



**Source:** CRS using data from USDA, ERS, “Farm Business Income,” as of December 2, 2020.

**Notes:** F = forecast. For a description of the ERS resource regions, see USDA ERS, *Farm Resource Regions*, Agriculture Information Bulletin no. 760, September 2000.

### Sources of Revenue for Commercial and Residential Farms

Individual farms vary widely in the share of revenue they derive from each of the three potential sources—cash receipts, government payments, and other farm income sources. USDA does not forecast the extent to which these sources vary by farm typology, commodity specialization, or region.

Because farm programs provide benefits for specific commodities and producers, the importance of government payments as a percentage of net farm income varies by crop and livestock sector specialization and by region. For example, the USDA direct payment programs CFAP1 and CFAP2 were forecasted to make a large contribution to government payments in 2020.<sup>41</sup> As of December 27, 2020, the largest shares of CFAP1 and CFAP2 payments had been paid to producers of cattle and corn; thus, it is likely that farms that specialize in corn and/or cattle benefited more from increases in government payments in 2020 than farms that specialize in other types of commodities.<sup>42</sup>

<sup>41</sup> See “Government Payments” section.

<sup>42</sup> See CRS Report R46395, *USDA’s Coronavirus Food Assistance Program: Round One (CFAP-1)*; and CRS Report R46645, *USDA’s Coronavirus Food Assistance Program: Round Two (CFAP-2)*.



## Summary of 2020 Farm Income Forecast

The global COVID-19 pandemic disrupted normal operations of markets for a number of agricultural products in the United States and abroad and continues to disrupt operations for markets for some commodities in 2021. Despite these disruptions, production of most agricultural commodities and total farm sector income increased in 2020 on a year-over-year basis. In addition, USDA's farm income forecasts improved with each successive forecast throughout the year (**Table A-1**).

Three key reasons for why farm sector income may have increased in 2020 include the following:

1. **Government payments increased.** Government payments increased by over 100% from 2019 to 2020, constituting the highest levels of government payments on record, the largest share of total farm sector income in more than 30 years, and exceeding the amount of revenue lost from reductions in the value of agricultural output in 2020.
2. **Reductions in income from farm cash receipts were smaller than initially expected.** Although prices for many agricultural commodities declined by more than 5% during the first two quarters of the year, some of these commodities saw full price recoveries by the end of 2020. Because some farmers were able to delay sales of certain commodities by holding crops in storage until later in 2020, the overall impact of early price declines on farm income was less than would have occurred if the price declines had persisted through the end of the year.
3. **Reductions in farm production expenses in 2020 partially offset the decline in output values.** COVID-19-related disruptions to global markets for fuel and credit allowed farmers to benefit from lower prices for fuel and oil to run their farm operations and from lower interest payments on debt.

World trade also impacted farm income in 2020. China's purchases of agricultural commodities, although less than the levels specified under the U.S.-China Phase One trade agreement, contributed to the price recovery of some commodities in late 2020. Farmers also received the final tranche of MFP payments in 2020, along with CFAP payments, which contributed to the total amount of income attributable to government payments. The United States-Mexico-Canada Agreement (USMCA) was signed in 2020; however, its effects on farm income are expected to be modest and to accrue mostly to dairy and poultry.<sup>43</sup>

Even though national farm income increased in 2020, the impact of COVID-19 varied at the individual farm level and was severe for some farms and commodity sectors. USDA's national forecasts do not reflect changes to the range of incomes that individual farms received in 2020.

## 2020 Year in Review for Farm Sector

Several major economic and policy events have occurred since 2018 that helped to shape the U.S. farm income outlook for 2020. These include the U.S.-China trade dispute and subsequent Phase One trade agreement between the two countries, as well as the COVID-19 pandemic and several federal direct payment programs targeting affected producers in response to these events. In addition, the year 2020 saw three major weather events that impacted the U.S. agricultural sector: wet spring conditions in the upper Midwest that resulted in a second year of large prevent-plant acres; an unprecedented derecho wind storm through the heart of the Corn Belt that damaged

<sup>43</sup> CRS Report R45661, *Agricultural Provisions of the U.S.-Mexico-Canada Agreement*.

several million acres of prime cropland; and a late-season drought across the western Corn Belt. Finally, China began making large-scale purchases of U.S. corn and soybeans in the third and fourth quarter of the year. These and other important events of 2020 are briefly reviewed here.

## State of the U.S. Agricultural Sector Heading into 2020

Corn, soybeans, wheat, and cotton are the four largest commercial crops produced annually in the United States in terms of area harvested, volume of output, and value (**Table 2**).<sup>44</sup> Since 2015, these four commodities have experienced relatively strong growth in output, helping to build stockpiles through the 2018 season, while upland cotton saw its end-of-year stocks surge in 2019 (**Figure 7**). The outlook for abundant supplies relative to demand for these four major commodities contributed to weak commodity price outlook heading into 2020.

In 2018, the U.S.-China trade dispute emerged as an impediment to trade and contributed to lower soybean prices.<sup>45</sup> The U.S.-China trade dispute led to declines in U.S. farm exports to China—a major market for U.S. agricultural products—in 2018 and 2019 and added to market uncertainty in 2020. The difficulties associated with the trade dispute were exacerbated in 2018 when U.S. farmers produced a record soybean harvest of 4.4 billion bushels, which resulted in both record end-of-year stocks and a record stocks-to-use ratio (22.9%). The record soybean harvest combined with the sudden loss of the Chinese soybean market kept downward pressure on U.S. soybean prices through 2019 and into early 2020.

In 2019, U.S. producers encountered extremely wet conditions in the spring that delayed planting of major row crops in many regions of the country and resulted in a record 19.6 million acres prevented from being planted.<sup>46</sup> The reduction in planted acres, primarily for corn and soybeans, coupled with unfavorable weather during the fall harvests, resulted in below-average yields and an unexpectedly smaller crop in 2019.<sup>47</sup> Despite a smaller crop and lower stocks in 2019, the reduction in U.S. soybean exports to China prevented a price recovery that year.

In response to the U.S.-China trade dispute, USDA used its authority under the Commodity Credit Corporation (CCC) Charter Act<sup>48</sup> to initiate successive direct payment programs in 2018 and 2019—referred to as Market Facilitation Programs (MFPs)—to partially offset the commodity price effects of the trade dispute on U.S. producers.<sup>49</sup> As of November 23, 2020, USDA had paid out a combined \$23.1 billion under the two MFP programs.<sup>50</sup>

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<sup>44</sup> The U.S. hay crop exceeds the U.S. cotton crop in area, volume, and value but is less commercially traded and is used primarily by the livestock sector. In recent years, two specialty crops—grapes and almonds—have rivaled cotton for fourth place in terms of the value of production, depending on market prices and production.

<sup>45</sup> CRS Report R45929, *China's Retaliatory Tariffs on U.S. Agriculture: In Brief*.

<sup>46</sup> CRS Report R46180, *Federal Crop Insurance: Record Prevent Plant (PPL) Acres and Payments in 2019*.

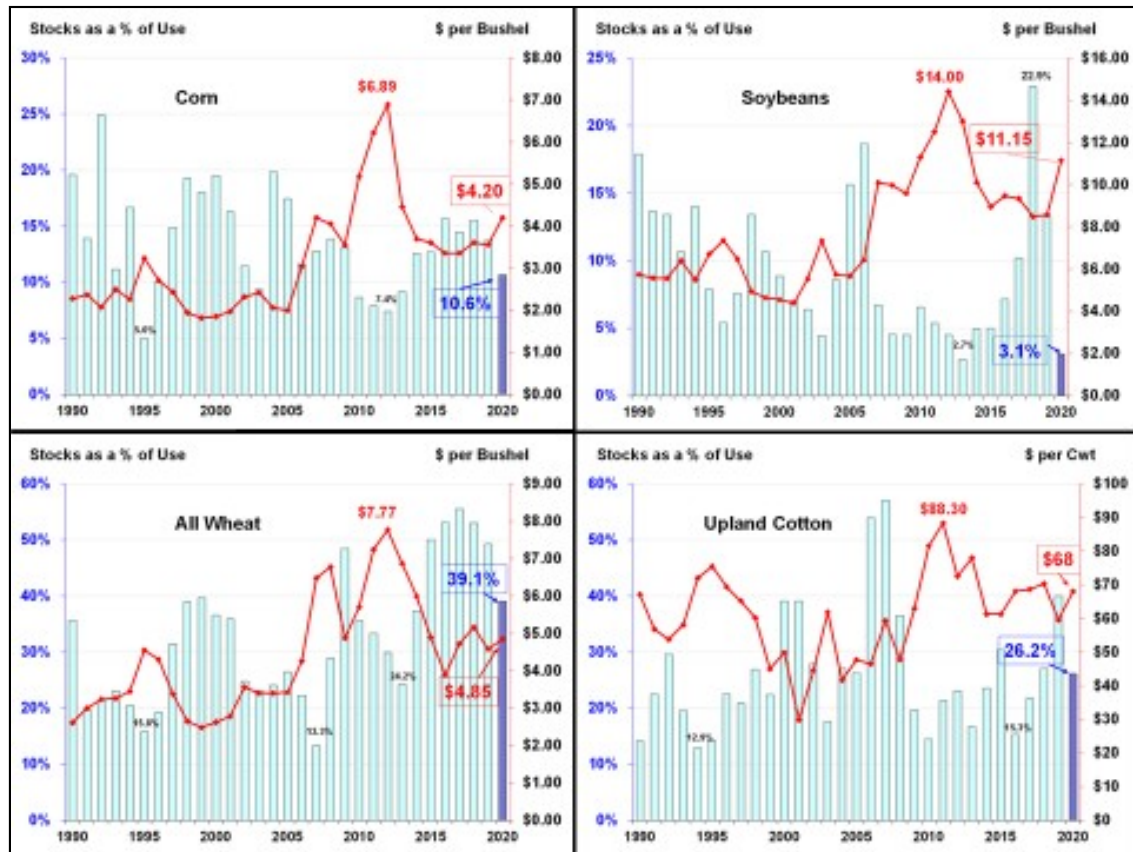
<sup>47</sup> CRS Report R46132, *U.S. Farm Income Outlook: November 2019 Forecast*.

<sup>48</sup> CRS Report R44606, *The Commodity Credit Corporation (CCC)*.

<sup>49</sup> The 2018, MFP was authorized by Agriculture Secretary Sonny Perdue at up to \$12 billion in financial assistance, including up to \$10 billion in direct payments (see CRS Report R45310, *Farm Policy: USDA's 2018 Trade Aid Package*). The 2019, MFP was authorized by Secretary Perdue at up to \$16 billion in financial assistance, including up to \$14.5 billion in direct payments (see CRS Report R45865, *Farm Policy: USDA's 2019 Trade Aid Package*).

<sup>50</sup> Data include \$8.6 billion under the 2018 MFP and \$14.5 billion under the 2019 MFP. See USDA, Farm Service Agency (FSA), "MFP," at <https://www.farmers.gov/manage/mfp>.

**Figure 7. Stocks-to-Use Ratios and Farm Prices: Corn, Soybeans, Wheat, and Cotton**



**Source:** CRS using data from USDA, World Agricultural Outlook Board, *World Agricultural Supply and Demand Estimates*, January 12, 2021. All values are nominal. Values for 2020 are forecasts, are in dark blue, and are separated from historical data.

**Notes:** Stocks-to-use equals the ratio of season-ending stocks relative to the season’s total usage. Data are reported on a market-year basis—the market year is the 12-month period that begins at harvest time, during which the harvested crop is either stored or used on farm or sold in the marketplace. For example, for corn and soybeans, the 2020 market year started on September 1, 2020, and runs through August 31, 2021. Wheat data are on a June-May market year basis, and upland cotton data are on an August-July market year.

## U.S.-China Agree on Phase One Trade Deal in Early 2020

On January 15, 2020, President Trump signed a “Phase One” executive agreement with the Chinese government on trade and investment issues, including agriculture.<sup>51</sup> The agreement was expected to improve market access for U.S. products into China, including a commitment by China to import \$32 billion worth of additional U.S. agricultural products (relative to a 2017 base of \$24 billion) over a two-year period. Most observers expected the Phase One agreement to provide improved opportunity for certain U.S. exporters; however, there is uncertainty over whether the agreement may lead to a rearrangement of global trading patterns or create new market demand.

<sup>51</sup> CRS In Focus IF11412, *U.S.-China Phase I Deal: Agriculture*.

Farmer optimism from the U.S.-China Phase One trade agreement contributed to expectations for large planted acres in March 2020 (discussed below in “Weather Factors Influence Crop Outcomes in 2020”).<sup>52</sup> The large acreage projections, plus the uncertainty over how quickly China might restart large-scale imports of U.S. farm products, hindered market price recovery during the first quarter of 2020. This recovery was also stymied by the emergence of COVID-19 in mid-January 2020.

## COVID-19 Pandemic Impacts Food Supply Chain

In mid-January 2020, COVID-19 first appeared in the United States and spread rapidly through the country. The COVID-19 pandemic produced an aggregate demand shock across the U.S. economy, including the agricultural sector.<sup>53</sup> In particular, the COVID-19 pandemic induced widespread business closures, massive lay-offs, and 2020 GDP declines (annualized basis) of -4.8% for the first quarter and -31.7% for the second quarter.<sup>54</sup> In August 2020, 24.2 million persons were unable to work because their employer closed or lost business due to the pandemic, and the overall U.S. unemployment rate reached 8.4%—up sharply from a seasonally adjusted rate of 3.5% in February.<sup>55</sup>

COVID-19-related lockdowns caused widespread supply chain disruptions that shifted, and in some cases stopped, the flow of agricultural commodities through the various supply chains and led to sharp declines in farm prices and considerable market uncertainty. The principal impact on the U.S. agricultural sector was primarily the result of the COVID-19-related demand shock on food demand, including institutional, hospitality, and retail (i.e., dine-in restaurant) purchasing.<sup>56</sup> The short-run impact was lower farm prices, stock building of grains and oilseeds, and a temporary backup of unmarketable surpluses of market-ready livestock, poultry, and dairy products, as well as perishable fruits and vegetables. Similarly, people canceled travel plans and many businesses and schools shifted to full-time telework, thus dramatically reducing transportation fuel consumption, including of corn-based ethanol (which comprises roughly 10% of all fuel consumption for cars and light trucks and accounts for roughly 30% of U.S. corn usage).

## Congress and USDA Respond to COVID-19 Pandemic with Large-Scale Programs

In response to the COVID-19 pandemic, on April 17, 2020, USDA initiated the Coronavirus Food Assistance Program (CFAP1) valued at \$19 billion, including \$16 billion in direct payments to affected agricultural producers and \$3 billion for food purchases and distribution.<sup>57</sup> As of January 10, 2021, USDA had made \$10.6 billion in direct payments under CFAP1.<sup>58</sup>

<sup>52</sup> USDA, NASS, *Prospective Planting*, March 31, 2020.

<sup>53</sup> CRS Report R46347, *COVID-19, U.S. Agriculture, and USDA’s Coronavirus Food Assistance Program (CFAP)*.

<sup>54</sup> GDP growth estimates are on an annualized basis, from U.S. Bureau of Economic Analysis, “Gross Domestic Product, 2<sup>nd</sup> Quarter 2020 (Second Estimate); Corporate Profits, 2<sup>nd</sup> Quarter 2020 (Preliminary Estimate),” news release no. BEA 20-41, August 27, 2020.

<sup>55</sup> U.S. Bureau of Labor Statistics, “The Employment Situation—August 2020,” USDL-20-1650, September 4, 2020.

<sup>56</sup> Todd Hubbs and Scott Irwin, “Crop Markets Suffer Massive Demand Shock from COVID-19,” *Economic Impact of COVID-19 on Food and Agricultural Markets*, CAST Commentary, June 2020.

<sup>57</sup> For information, see CRS Report R46395, *USDA’s Coronavirus Food Assistance Program: Round One (CFAP-1)*.

<sup>58</sup> USDA, Coronavirus Food Assistance Program Data, “CFAP 1.0 Dashboard,” January 10, 2021, at

On September 18, 2020, USDA announced a second CFAP payment program (CFAP2) with funding of up to an additional \$14 billion.<sup>59</sup> Signup for CFAP2 began on September 21 and ran through December 11, 2020.<sup>60</sup> As of January 10, 2021, USDA had made \$13.1 billion in direct payments under CFAP2.<sup>61</sup>

The Trump Administration announced several other new programs in response to the COVID-19 pandemic, including \$349 billion in funding to support the SBA's lending programs and the new PPP.<sup>62</sup> The PPP provides short-term, low-interest loans that could be forgiven under specified circumstances to qualifying small business (including agricultural firms) and nonprofits. As of August 8, 2020, the PPP had made \$7.3 billion in potentially forgivable loans to agriculture-related enterprises.<sup>63</sup>

The long-run impact of the COVID-19 pandemic will depend on how quickly the economy recovers from Depression-level high unemployment and widespread restaurant and retail business shutdowns. The speed of the vaccination roll out for the COVID-19 pandemic coupled with the speed of the subsequent business reopening is expected to influence the recovery prospects for both the U.S. economy and the U.S. agricultural sector.

## Weather Factors Influence Crop Outcomes in 2020

The early spring outlook for large crop plantings coupled with the demand-depressing impact of the COVID-19 pandemic contributed to plunging commodity prices from January 2020 into July. But, three major weather events—wet spring conditions in the upper Midwest that resulted in a second year of large prevent-plant acres, an unprecedented derecho wind storm through the heart of the Corn Belt that damaged several million acres of prime cropland, and a late-season drought across the western Corn Belt and Plains states—reversed the price decline and contributed to late-year price increases for several major crops, including corn and soybeans. USDA was slow to capture the weather-related supply effects in its monthly crop reports, and this resulted in USDA having to reverse its preliminary optimistic crop outlook. This reversal helped to trigger a strong upward movement in farm prices starting in mid-August.

The early year market optimism—based on the Administration's U.S.-China Phase One trade agreement—contributed to projections in March for large planted acres in 2020, including 97.0 million acres for corn (up 8.1% from 2019), 83.5 million for soybeans (+9.7%), 44.7 million for wheat (-1.1%), 13.7 million for cotton (unchanged), and 319.1 million total acres planted to principal crops (+5.4%).<sup>64</sup> However, eventual planted acres for major field crops in 2020 were

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<https://www.farmers.gov/cfap1/data>.

<sup>59</sup> See CRS Report R46645, *USDA's Coronavirus Food Assistance Program: Round Two (CFAP-2)*.

<sup>60</sup> For more information, see USDA, "USDA to Provide Additional Direct Assistance to Farmers and Ranchers Impacted by the Coronavirus," press release no. 0378.20, September 18, 2020.

<sup>61</sup> USDA, Coronavirus Food Assistance Program Data, "CFAP 2.0 Dashboard," January 10, 2021, at <https://www.farmers.gov/cfap/data>.

<sup>62</sup> For information on the federal response to the COVID-19 pandemic for different sectors of the U.S. economy, visit the CRS COVID-19 Resources page at <https://www.crs.gov/Resources/coronavirus-disease-2019>.

<sup>63</sup> The Small Business Administration (SBA) stopped taking PPP applications on August 8, 2020. Final loan data for PPP reported here were obtained via a Freedom of Information Act request by an anonymous nongovernmental organization and shared with CRS.

<sup>64</sup> USDA, NASS, *Prospective Plantings*, March 31, 2020. Principal crops include corn, sorghum, oats, barley, rye, winter wheat, Durum wheat, other spring wheat, rice, soybeans, peanuts, sunflower, cotton, dry edible beans, chickpeas, potatoes, sugarbeets, canola, proso millet, all hay, tobacco, and sugarcane but also include double cropped acres and unharvested small grains planted as cover crops.

limited by a second year of above-normal prevented planting, estimated at over 10 million acres, compared with a record 19 million acres of prevented planting acres in 2019.<sup>65</sup> By comparison, from 2000 to 2018, prevented planting averaged 4.1 million acres annually. In June, when USDA surveyed farmers for their actual plantings, farmers reported that they had planted 311.9 million acres to principal crops (up 3.1% from 2019 but down over 7 million acres from the March survey of intentions). This total included 92.0 million of corn (+2.6%), 83.8 million of soybeans (+9.7%), 44.3 million of wheat (-2.0%), and 12.2 million of cotton (-11.3%).<sup>66</sup>

Except for the prevent-planting acreage, most principal crops were planted on time and under good soil moisture conditions. However, in mid-July, widespread hot, dry conditions set in over much of the western United States, including portions of the Corn Belt—that is, the Dakotas, Nebraska, Iowa, and northern Illinois (**Figure 4**). The poor growing conditions began to negatively impact yields for corn and soybeans but were slow to impact USDA crop forecasts. For example, in August, USDA’s initial outlook for 2020 crop production projected a record corn crop of 15.3 billion bushels and a near-record large soybean crop of 4.4 billion bushels.<sup>67</sup> Forecasts for both crops included record yields of 181.8 and 53.3 bushels per acre, respectively, for corn and soybeans. This initial forecast included declines in market-year average farm prices (MYAPs) for corn to \$3.10 per bushel (-13.9% from 2019) and for soybeans to \$8.35 per bushel (-2.3%) for 2020.

On August 10, 2020, a large derecho storm system plowed through the Midwest.<sup>68</sup> Early news reports suggested substantial damage, including approximately 10 million acres of corn and soybeans, roughly a third of Iowa’s total cropland, damaged by rain, hail, and wind. Also, starting in mid-August, China began to make large purchases of U.S. corn and soybeans.<sup>69</sup> While much uncertainty remains about the eventual size of Chinese grain and oilseed imports, market optimism about Chinese purchases and concerns about weather-related production losses fueled a rise in commodity prices in the U.S. futures market. The price rally that began on August 12 pushed soybean prices for the nearby futures contract above \$10 per bushel on September 14, 2020, and above \$14 per bushel on January 12, 2021.<sup>70</sup>

Similarly, USDA began to gradually lower its yield and harvested area projections and to raise its price projections in successive monthly crop outlook reports starting in September. For example, in USDA’s September crop report, national corn and soybean yield estimates were reduced to 178.5 and 51.9 bushels per acre, respectively.<sup>71</sup> The harvested-corn acreage estimate was lowered to 83.473 million acres, a reduction of 550,000 acres—all from Iowa. Soybean acres were left unchanged. MYAPs were revised substantially upward to \$3.50 per bushel for corn and \$9.25 per bushel for soybeans. In November, USDA raised the 2020 corn price forecast to \$4.00 per bushel.

<sup>65</sup> USDA, FSA, “FSA Crop Acreage Data Reported to FSA, 2020 Crop Year,” September 1, 2020. See also CRS Report R46180, *Federal Crop Insurance: Record Prevent Plant (PPL) Acres and Payments in 2019*.

<sup>66</sup> USDA, NASS, “Acreage,” June 30, 2020.

<sup>67</sup> USDA, World Agricultural Outlook Board (WAOB), *World Agricultural Supply and Demand Estimates (WASDE)*, released August 12, 2020.

<sup>68</sup> A *derecho* is a weather event caused by severe thunderstorms and often characterized by 70-100 mph straight-line winds. Krissa Welshans, “Derecho storm causes widespread, significant damage,” *Feedstuffs*, August 11, 2020.

<sup>69</sup> Keith Good, “China Could Become Largest Corn Importer, While Soybean Variables Come Into Focus,” *Farm Policy News*, September 10, 2020.

<sup>70</sup> Chicago Mercantile Exchange (CME), Soybean Futures Quotes for nearby contracts: the September 14, 2020, price is for the November 2020 contract (accessed on September 15, 2020); and the January 12, 2021, price is for the January 2021 contract (accessed on January 14, 2021).

<sup>71</sup> USDA, WAOB, WASDE, released September 11, 2020.

In December, USDA raised the soybean farm price to \$10.55 per bushel. In January 2021, USDA raised both corn and soybean prices to \$4.20 per bushel and \$11.15 per bushel (up from the August forecasts of \$3.10 and \$8.35, respectively).<sup>72</sup>

## Commodity Production and Usage in 2020

### New Production of Principal Crops and Livestock

USDA forecasted that production of corn, oats, rice, sorghum, and soybeans would increase in 2020 and that production of barley, cotton, and wheat would decline. Increases in corn, oats, rice, sorghum, and soybean production are driven by year-over-over increases in acreage planted and harvested, and higher yields per acre. Declines in wheat and barley production are driven by year-over-year declines in acreage planted and harvested, and lower yields per acre. Declines in cotton production are driven by declines in acreage planted and harvested.

Despite short-term COVID-19-related shutdowns to slaughterhouses and meatpacking facilities in 2020, total production of beef, broiler chickens, milk, and pork was forecasted to increase on a year-over-year basis. However, production of eggs was forecasted to decline on a year-over-year basis.

**Table 10. U.S. Domestic Production of Key Agricultural Commodities**  
2019 and 2020 crop years

Commodity	Units	2019 Production	2020F Production	Change Quantity	Change %
<b>Row Crops</b>					
Corn	Mil. Bushels	13,620	14,182	562	4%
Soybeans	Mil. Bushels	3,552	4,135	618	16%
Wheat	Mil. Bushels	1,932	1,826	-106	-5%
Sorghum	Mil. Bushels	341	373	32	9%
Rice	Mil. Hundredweight	185	228	43	23%
Barley	Mil. Bushels	172	165	-7	-4%
Oats	Mil. Bushels	53	65	12	23%
Cotton	Mil. 480 lb Bales	19.9	15.0	-4.9	-25%
<b>Livestock, Dairy, Poultry, and Eggs</b>					
Broilers	Mil. Pounds	43,905	44,550	645	1%
Pork	Mil. Pounds	27,638	28,296	658	2%
Beef	Mil. Pounds	27,155	27,158	3	0%
Eggs	Mil. Dozens	9,447	9,258	-189	-2%
Milk	Bil. Pounds	218.4	222.9	4.5	2%

**Source:** CRS using data from USDA, *World Agricultural Supply and Demand Estimates*, released January 12, 2021.

**Notes:** F = forecast values for 2020 production.

<sup>72</sup> USDA, WAOB, WASDE, report releases for November 10, 2020, December 10, 2020, and January 12, 2021.

## End-of-Year Crop Inventories for 2020

By December 2020—after taking into account the downward revisions to acres, yields, and usage—stocks-to-use ratios for corn, soybeans, wheat, and cotton were forecasted to decline in 2020 from 2019 (**Figure 7**). Declining stocks-to-use ratios for corn and soybeans primarily reflect increasing sales to China from both inventories carried over from prior year harvests, as well as from new crop production. Increases in corn sales to China helped to offset lost demand for corn for ethanol production, which paralleled the short-term declines in U.S. gasoline sales related to the COVID-19 pandemic. Declining stocks-to-use for wheat primarily reflects increasing domestic demand for wheat. Declining stocks-to-use for cotton primarily reflects decreasing year-over-year production and COVID-19-related declines in global demand.

## Early 2021 Developments

Two recent developments—U.S. corn and soybean farm prices projected at the highest levels in six years (**Figure 7**) and China’s resurgent interest in buying U.S. corn and soybeans—generated substantial optimism in the U.S. farm sector heading in 2021.<sup>73</sup> Furthermore, if dry weather patterns persist in key South American corn and soybean production zones, they could further tighten global supplies and support U.S. farm prices.

USDA’s first projection of U.S. farm income for 2021 was released on February 5, 2021.<sup>74</sup> Early farm income estimates rely primarily on trends for crop yields and commodity demand from both domestic and international markets. Despite the initial optimism, the U.S. agricultural picture for 2021 is clouded by several major uncertainties related to potential weather and trade developments.

- First, as of early 2021, much of the western United States, including much of the western Corn Belt, remains mired in a prolonged drought that developed in late summer of 2020 (**Figure 8**).

On the positive side, dry conditions allow for early field work activity in the spring and often contribute to greater-than-expected plantings; however, they also signal potential yield loss and above-normal acreage abandonment if precipitation patterns do not return to normal during the crop growing season. The potential extent of weather-related effects on planted acres in 2021 will not be known until spring planting is completed—most likely not before June 2021, while the effect on yields and early crop development is often not known with certainty until harvest.

- A second uncertainty is the extent to which the COVID-19 pandemic may persist in 2021 and how quickly a successful vaccination campaign can be achieved.
- Third, also related to the COVID-19 pandemic, is when and how the general economy will recover and consumer demand patterns return to normal.
- Fourth, it is not yet known whether agricultural and food supply chains might resuscitate themselves in a more resilient and responsive form that revives investment and growth at both the producer and retail ends.
- Finally, despite the signing of a Phase One trade agreement with China, it is unclear if the United States may resume normal trade with China. Also unknown

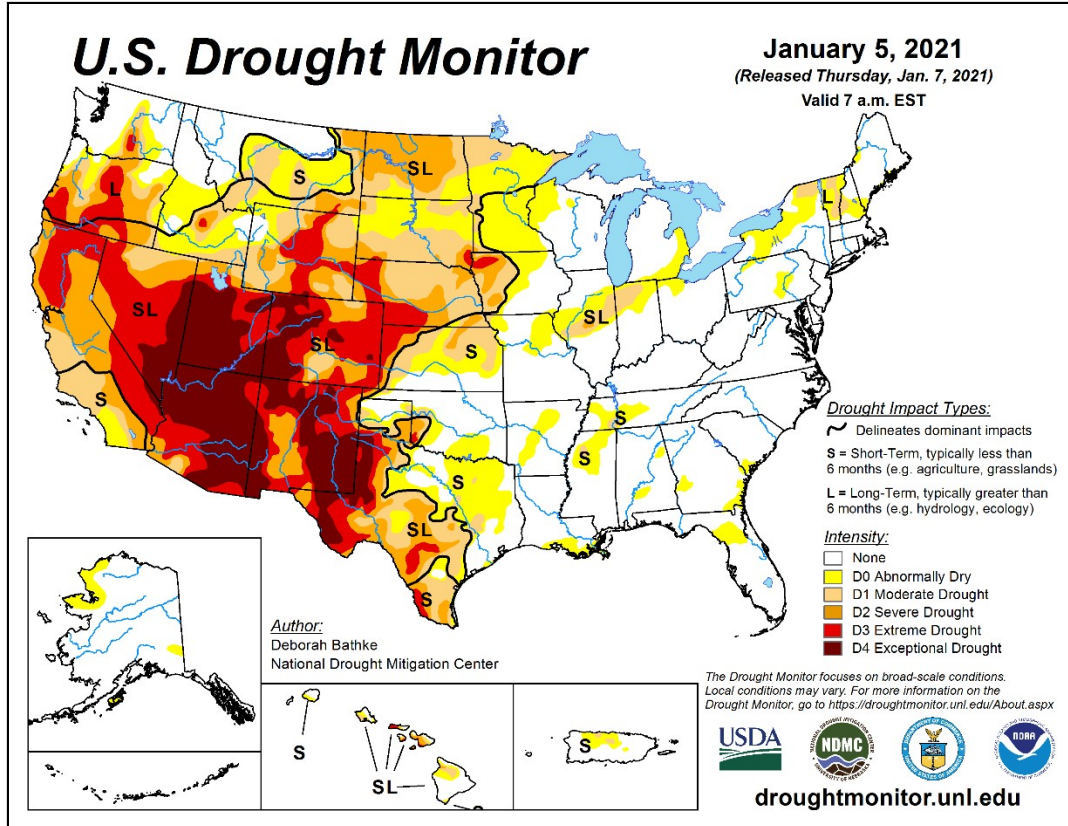
<sup>73</sup> James Mintert and Michael Langemeier, “Farmer sentiment rises as income prospects improve, concerns about key policy issues remain,” Purdue/CME Group, *Ag Economy Barometer*, January 5, 2021.

<sup>74</sup> USDA farm income projections for 2021 are not covered in this report.



is whether Chinese large-scale grain purchases in late 2020 and early 2021 could be one-off events related to the rapid rebuilding of its hog sector following its collapse from the onset of the African Swine Flu in late 2018.

**Figure 8. U.S. Drought Monitor for December**



**Source:** The National Drought Mitigation Center, University of Nebraska-Lincoln, at <https://droughtmonitor.unl.edu/>.

## Appendix. Supporting Material on Farm Income

### Measuring Farm Profitability

Two different indicators measure farm profitability: net cash income and net farm income.

**Net cash income** compares cash receipts to cash expenses. As such, it is a cash flow measure representing the funds that are available to farm operators to meet family living expenses and make debt payments. For example, crops that are produced and harvested but kept in on-farm storage are not counted in net cash income. Farm output must be sold before it is counted as part of the household's cash flow.

**Net farm income** is a more comprehensive measure of farm profitability. It measures value of production, indicating the farm operator's share of the net value added to the national economy within a calendar year independent of whether it is received in cash or noncash form. As a result, net farm income includes the value of home consumption, changes in inventories, capital replacement, and implicit rent and expenses related to the farm operator's dwelling that are not reflected in cash transactions. Thus, once a crop is grown and harvested, it is included in the farm's net income calculation, even if it remains in on-farm storage.

#### Key Concepts Behind Farm Income

- Net cash income is generally less variable than net farm income. Farmers can manage the timing of crop and livestock sales and purchase of inputs to stabilize the variability in their net cash income. For example, farmers can hold crops from large harvests in on-farm storage to sell in the forthcoming year when output may be lower and prices higher.
- Off-farm income and crop insurance subsidies, both of which have increased in importance in recent years, are not included in the calculation of aggregate farm income. Crop insurance indemnity payments are included.

#### National vs. State-Level Farm Household Data

Aggregate data often obscure or understate the diversity and regional variation that occurs across America's agricultural landscape. For insights into the differences in American agriculture, visit the Economic Research Service (ERS) web pages on "Farm Structure and Organization" and "Farm Household Well-Being."<sup>75</sup>

### ERS's Annual Farm Income Forecasts

ERS releases three farm income forecasts each calendar year. The first forecast generally is released in February as part of the President's budget process and coincides with the U.S. Department of Agriculture's (USDA's) annual outlook forum, which convenes toward the end of every February. The initial forecast consists primarily of trend projections for the year since it precedes most agricultural activity, which occurs later in the spring and summer. The initial projections rely heavily on assumptions of trend yields and USDA's baseline forecasts for market conditions.

ERS's second farm income forecast is generally released in late August or early September as part of what USDA refers to as the mid-session budget review. By late August, most planting of major program crops is finished and crop growing conditions are better known, thus contributing to improved yield estimates. Domestic and international market conditions and trade patterns also have been established, thus improving forecasts for most commodity prices and potential farm revenue support outlays. It is not unusual for large variations in farm income projections to occur between the first and second farm income forecasts.

ERS's third farm income forecast is generally released in late November (in 2020, it was released on December 2) and represents a tightening up of the data—preliminary forecasts of planted acres and yields are gradually replaced with estimates based on actual field surveys and crop reporting by farmers to USDA. In most years, only small variations in farm income estimates occur between the second and third forecasts. The farm income forecast cycle then begins anew in the succeeding year. However, changes to estimates from previous years continue to occur for several years as more complete data become available.

This report discusses aggregate national net farm income projections for calendar year 2020 as reported by ERS on December 2, 2020,<sup>76</sup> which is the third of three USDA farm income forecasts for 2020 (**Table A-1**).

<sup>75</sup> U.S. Department of Agriculture (USDA) Economic Research Service (ERS), "Farm Structure and Organization," at <http://www.ers.usda.gov/topics/farm-economy/farm-structure-and-organization.aspx>; and USDA, ERS, "Farm Household Well-Being," at <http://www.ers.usda.gov/topics/farm-economy/farm-household-well-being.aspx>.

<sup>76</sup> For both national and state-level farm income, see USDA, ERS, "U.S. and State Farm Income and Wealth Statistics," <http://www.ers.usda.gov/data-products/farm-income-and-wealth-statistics.aspx>.

**Table A-1. USDA Forecasts of U.S. Farm Income in 2020 (\$ Billions)**

Item	2019	2020 Forecasts			2020:
		2-05-20	9-02-20	12-02-20	Feb. to Dec. (%) <sup>a</sup>
<b>1. Cash receipts</b>	<b>369.7</b>	<b>384.4</b>	<b>358.3</b>	<b>366.5</b>	<b>-4.7%</b>
Crops <sup>b</sup>	193.7	198.6	196.6	200.2	0.8%
Livestock	176.0	185.8	161.7	166.3	-10.5%
<b>2. Government payments<sup>c</sup></b>	<b>22.4</b>	<b>15.0</b>	<b>37.2</b>	<b>46.5</b>	<b>210.0%</b>
CCP-PLC-ARC <sup>d</sup>	2.7	3.9	4.8	6.1	56.4%
Marketing loan benefits <sup>e</sup>	0.0	0.5	0.9	0.2	-60.0%
Conservation	3.8	4.2	4.0	3.8	-9.5%
Ad hoc and emergency <sup>f</sup>	1.4	2.5	1.6	2.2	-12.0%
All other <sup>g</sup>	14.5	4.3	25.8	34.1	693.0%
<b>3. Farm-related income<sup>h</sup></b>	<b>34.7</b>	<b>31.5</b>	<b>33.3</b>	<b>34.1</b>	<b>8.3%</b>
4. Gross cash income (1+2+3)	426.9	430.9	428.8	447.1	3.8%
5. Cash expenses <sup>i</sup>	317.5	321.3	313.5	313.0	-2.6%
<b>6. NET CASH INCOME</b>	<b>109.4</b>	<b>109.6</b>	<b>115.2</b>	<b>134.1</b>	<b>22.4%</b>
7. Total gross revenues <sup>j</sup>	432.3	451.3	446.8	463.2	2.6%
8. Total production expenses <sup>k</sup>	348.7	354.7	344.2	343.6	-3.1%
<b>9. NET FARM INCOME</b>	<b>83.6</b>	<b>96.7</b>	<b>102.7</b>	<b>119.6</b>	<b>23.7%</b>

**Source:** CRS using data from USDA, ERS, "Farm Income and Wealth Statistics: U.S. and State Farm Income and Wealth Statistics," forecasts dated February 5, 2020, September 2, 2020, and December 2, 2020.

**Notes:**

- Change represents the change between the initial February 2 forecast and the December 2 forecast for 2020.
- Includes Commodity Credit Corporation loans under the farm commodity support program.
- Government payments reflect payments made directly to all recipients in the farm sector, including landlords. The nonoperator landlords' share is offset by its inclusion in rental expenses paid to these landlords and thus is not reflected in net farm income or net cash income.
- CCP = countercyclical payments. PLC = Price Loss Coverage. ARC = Agriculture Risk Coverage.
- Includes loan deficiency payments, marketing loan gains, and commodity certificate exchange gains.
- Includes payments made under the Wildfire and Hurricane Indemnity Program (WHIP), as well as the Average Crop Revenue Election (ACRE) program, which was eliminated by the 2014 farm bill (P.L. 113-79).
- Market Facilitation Program (MFP), Coronavirus Food Assistance Program (CFAP), cotton ginning cost-share, biomass crop assistance program, milk income loss, and other miscellaneous payments.
- Income from crop insurance indemnities, custom work, machine hire, agritourism, and other farm sources.
- Excludes depreciation and perquisites to hired labor.
- Gross cash income plus inventory adjustments, the value of home consumption, and the imputed rental value of operator dwellings.
- Cash expenses plus depreciation and perquisites to hired labor.

## USDA Farm Prices Received Indexes for Selected Commodities

**Table A-2** presents the annual average farm price received for several major commodities, including the USDA forecast for the 2020-2021 marketing year for major program crops and 2021 for livestock products.

In addition, **Figure A-1** to **Figure A-4** present USDA data on monthly farm prices received for several major farm commodities—corn, soybeans, wheat, upland cotton, rice, milk, cattle, hogs, and chickens. The data are presented in an indexed format where monthly price data for year 2010 = 100 to facilitate comparisons.

**Table A-2. U.S. Farm Prices and Support Rates for Selected Commodities Since 2018-2019 Marketing Year**

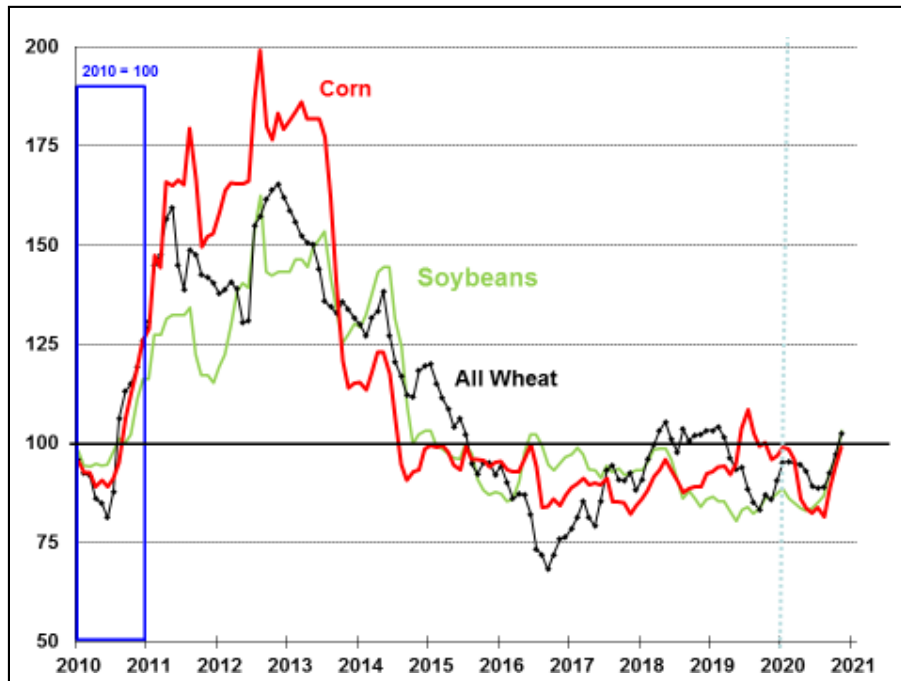
Commodity <sup>a</sup>	Unit	Mkt Yr.	2018-2019	2019-2020	2020-2021 <sup>b</sup>	% Chg. 19/20-20/21	2021-2022 <sup>b</sup>	% Chg. 20/21-21/22	LR <sup>c</sup>	RP
Wheat	\$/bu	Ju-My	5.16	4.58	4.85	5.9%	—	—	3.38	5.50
Corn	\$/bu	S-Ag	3.61	3.56	4.20	18.0%	—	—	2.20	3.70
Sorghum	\$/bu	S-Ag	3.26	3.34	4.70	40.7%	—	—	2.20	3.95
Barley	\$/bu	Ju-My	4.62	4.69	4.60	-1.9%	—	—	2.50	4.95
Oats	\$/bu	Ju-My	2.66	2.82	2.70	-4.3%	—	—	2.00	2.40
Rice	\$/cwt	Ag-Jl	12.60	13.50	13.20	-2.2%	—	—	7.00	14.00
Soybeans	\$/bu	S-Ag	8.48	8.57	11.15	30.1%	—	—	6.20	8.40
Soybean Oil	¢/lb	O-S	28.26	29.65	38.50	29.8%	—	—	—	—
Soybean Meal	\$/st	O-S	308.28	299.5	390.0	30.2%	—	—	—	—
Cotton, Upland	¢/lb	A-Jl	70.3	59.6	68.0	14.1%	—	—	45-52	none
<b>Livestock Products</b>		<b>CY</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>% Chg. 19-20</b>	<b>2021</b>	<b>% Chg. 20-21</b>	—	—
Choice Steers	\$/cwt	Ja-D	117.12	116.78	108.5	-7.1%	115.5	6.4%	—	—
Barrows/Gilts	\$/cwt	Ja-D	45.93	47.95	43.2	-9.9%	49.5	14.6%	—	—
Broilers	¢/lb	Ja-D	97.8	88.6	73.2	-17.4%	81.0	10.7%	—	—
Eggs	¢/doz	Ja-D	137.6	94.0	112.2	19.4%	107.5	-4.2%	—	—
Milk	\$/cwt	Ja-D	16.27	18.63	18.30	-1.8%	17.65	-3.6%	—	—

**Source:** CRS using data from various USDA agency sources as described in the notes below.

**Notes:** Chg = change, CY = calendar year, LR = loan rate, RP = reference price, bu = bushels, cwt = 100 pounds, lb = pound, st = short ton (2,000 pounds), doz = dozen, Ja-D = January to December, Ju-My = June to May, S-Ag = September to August, O-S = October to September, A-Jl = August to July.

- Price for grains and oilseeds are from USDA, *World Agricultural Supply and Demand Estimates (WASDE)*, released January 12, 2021. “—” = no value. USDA’s out-year 2021-2022 crop price forecasts will first appear in the May 2021 WASDE. Soybean and livestock product prices are from USDA, Agricultural Marketing Service: soybean oil—Decatur, IL, cash price, simple average crude; soybean meal—Decatur, IL, cash price, simple average 48% protein; choice steers—Nebraska, direct 1,100-1,300 lbs.; barrows/gilts—national base, live equivalent 51%-52% lean; broilers—wholesale, 12-city average; eggs—Grade A, New York, volume buyers; and milk—simple average of prices received by farmers for all milk.
- Data for 2020-2021 are USDA forecasts. Data for 2021-2022 are USDA projections.
- Loan rates (LRs) and reference prices (RPs) are for the 2020-2021 market year as defined under the 2018 farm bill (P.L. 115-334). The loan rate for upland cotton equals the average market-year-average price for the two preceding crop years but within the range of 45 cents/lb. and 52 cents/lb. See CRS Report R45525, *The 2018 Farm Bill (P.L. 115-334): Summary and Side-by-Side Comparison*.

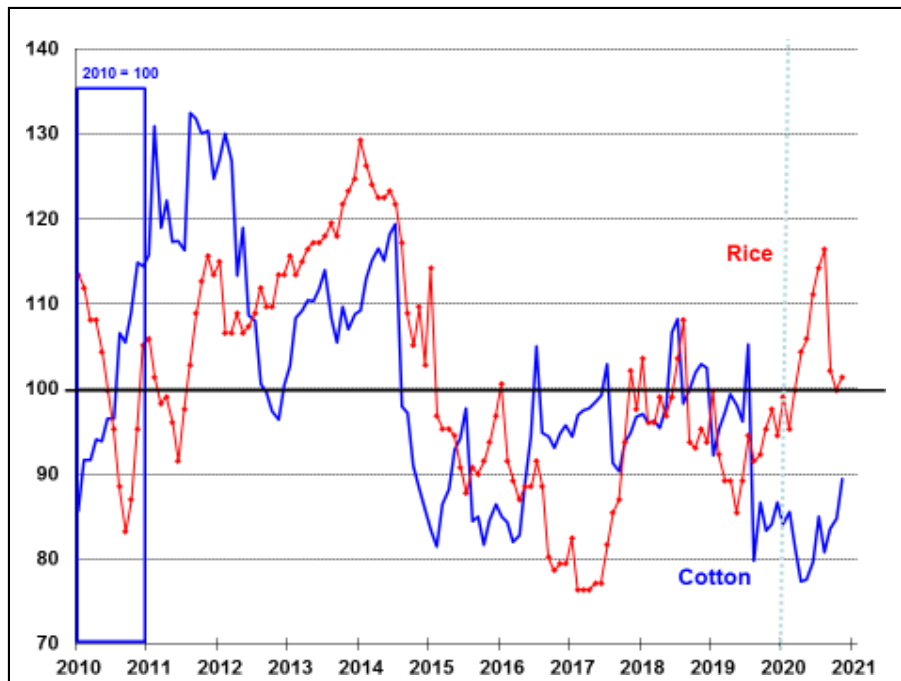
**Figure A-1. Monthly Farm Prices for Corn, Soybeans, and Wheat, Indexed Dollars**



**Source:** USDA, National Agricultural Statistics Service (NASS), *Agricultural Prices*, December 30, 2020. Calculations by CRS.

**Notes:** Monthly farm prices for the 2010-2020 period have been divided by the annual average price for 2010 and multiplied by 100 such that 2010 = 100. Such price indexing facilitates relative comparisons.

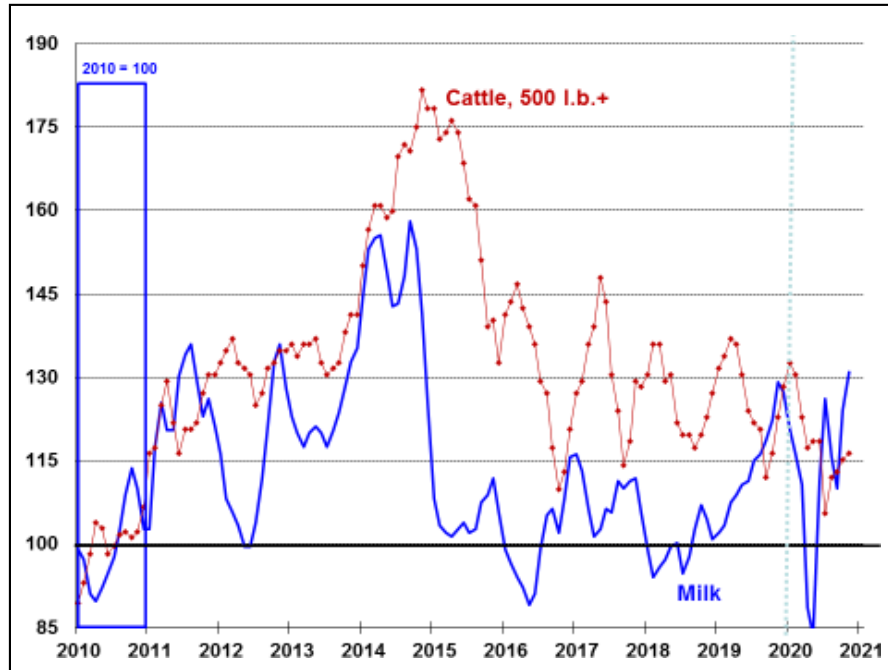
**Figure A-2. Monthly Farm Prices for Cotton and Rice, Indexed Dollars**



**Source:** USDA, NASS, *Agricultural Prices*, December 30, 2020. Calculations by CRS.

**Notes:** Monthly farm prices for the 2010-2020 period have been divided by the annual average price for 2010 and multiplied by 100 such that 2010 = 100. Such price indexing facilitates relative comparisons.

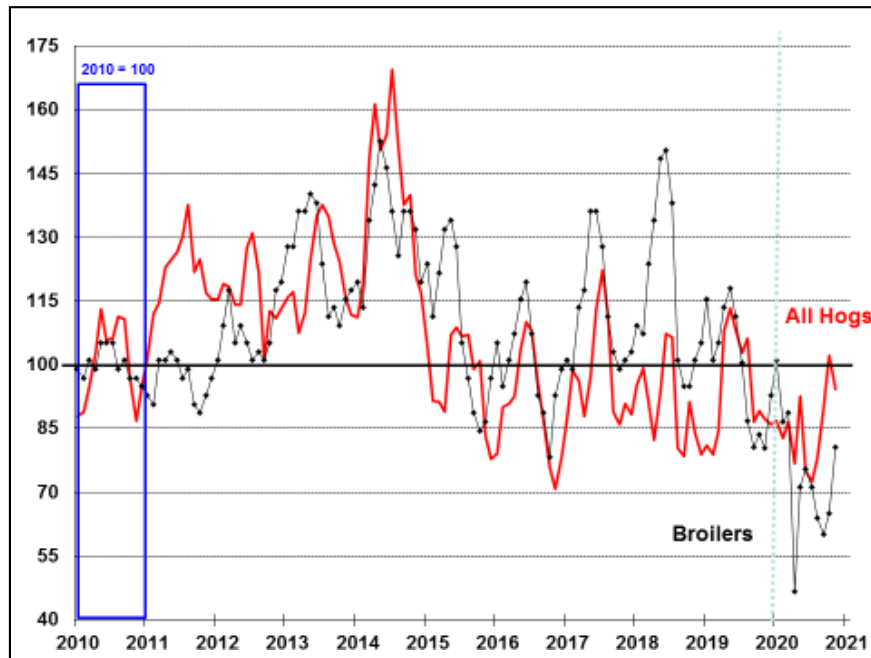
**Figure A-3. Monthly Farm Prices for All-Milk and Cattle (500+ lbs.), Indexed Dollars**



Source: USDA, NASS, *Agricultural Prices*, December 30, 2020. Calculations by CRS.

Notes: Monthly farm prices for the 2010-2020 period have been divided by the annual average price for 2010 and multiplied by 100 such that 2010 = 100. Such price indexing facilitates relative comparisons.

**Figure A-4. Monthly Farm Prices for All Hogs and Broilers, Indexed Dollars**



Source: USDA, NASS, *Agricultural Prices*, December 30, 2020. Calculations by CRS.

Notes: Monthly farm prices for the 2010-2020 period have been divided by the annual average price for 2010 and multiplied by 100 such that 2010 = 100. Such price indexing facilitates relative comparisons.

## **Author Information**

Randy Schnepf  
Specialist in Agricultural Policy

Stephanie Rosch  
Analyst in Agriculture Policy

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# **USDA FARM PROGRAM ELIGIBILITY AND APPEALS: PITFALLS AND POINTERS**

**Mark Daniel Maloney  
Blackburn, Maloney and Schuppert, LLC  
Decatur, Alabama**

## **FARM PROGRAM ELIGIBILITY**

The federal government provides assistance to producers of agricultural commodities through a wide array of conservation, commodity, disaster assistance, and price support programs. Although each particular program establishes particular eligibility rules based upon the subject matter of the program, several rules of general application apply to these programs. Some of these rules address payment eligibility while other rules impose payment limitations.

Among others, payment eligibility rules include the actively engaged in farming rule, rules for non-family joint operations, the cash rent tenant rule, adjusted gross income provisions, and foreign person rules. Among the payment limitation rules are direct attribution rules, common attribution rules, substantive change rules, and inheritance provisions. It must be pointed out that although I have described these rules as rules of “general” applicability, none of these rules apply to all programs. These are simply common rules outside of the eligibility rules of the specific programs that apply only to those programs as designated by law or regulation. For example, the actively engaged in farming rule and the cash rent tenant rule apply only to conservation reserve program contracts approved before October 1, 2008, and the commodity programs while the adjusted gross income provisions apply to all conservation programs, all commodity programs, all disaster assistance programs, and some but not all of the price support programs. (Handbook 6-PL, ¶ 34A.)

The authority for administering these common payment eligibility and payment limitation rules is derived from sections 1001–1001D of the Food Security Act of 1985 as amended, which is codified at 7 U.S.C. §§1308–1308-3. The regulations governing these provisions are found at 7 C.F.R. Part 1400. The agency of the U.S. Department of Agriculture administering these common payment eligibility and payment limitation rules is the Farm Service Agency (FSA). Because these payment eligibility and payment limitation rules must necessarily be applied by FSA employees and farmer committees in hundreds of county and state FSA offices across the country, the FSA publishes additional administrative guidance in the form of a handbook to be distributed to state and county offices. The handbook contains the FSA’s current interpretation of the statutes and regulations governing payment eligibility and payment limitations. As such, the contents of the handbook do not have the force of law because the handbook has not been subject to the regulatory comment and hearing process. Nevertheless, the handbook represents an important source for practitioners by providing the current interpretation of the FSA in more detailed explanation and in examples not found in the regulations.



The current farm program eligibility handbook is Handbook 6-PL, *Payment Limitation, Payment Eligibility, and Average Adjusted Gross Income*. Handbook 6-PL was originally published on September 28, 2020, and was most recently updated on October 28, 2020. Handbook 6-PL can be found online at the following link: [https://www.fsa.usda.gov/Internet/FSA\\_File/6-pl\\_r00\\_a02.pdf](https://www.fsa.usda.gov/Internet/FSA_File/6-pl_r00_a02.pdf). A table of FSA handbooks available online can be found at the following link: <https://www.fsa.usda.gov/programs-and-services/laws-and-regulations/handbooks/index>.

### **Actively Engaged in Farming**

In my practice I am regularly assisting farmers in establishing or maintaining their eligibility for benefits in the annual programs for covered commodities—the Agricultural Risk Coverage (ARC) program and the Price Loss Coverage (PLC) program. To be considered eligible to receive farm program payments under these commodity programs, a person or entity must be “actively engaged in farming” in the farming operation. Actively engaged in farming is a four-part test. A person or entity is actively engaged in farming if:

1. The person or entity makes a significant contribution of capital, equipment, or land, or a combination of capital, equipment, and land to the farming operation;
2. The person or entity makes a significant contribution of active personal labor or active personal management, or a combination of active personal labor and active personal management, to the farming operation;
3. The person’s or entity’s share of the profits or losses from the farming operation is commensurate with the person’s or entity’s contributions to the operation; and
4. The person’s or entity’s contributions to the farming operation are at risk. (7 C.F.R. §1400.201(b).)

A person or entity makes a significant contribution of capital, equipment, or land if the person provides at least 50% of the person’s or entity’s commensurate share of (1) the total value of the capital, (2) the total rental value of the equipment, or (3) the total rental value of the land necessary to conduct the farming operation during the crop year. If making a significant contribution of a combination of capital, equipment, and land, the person or entity must provide a contribution with a total value equal to at least 30% of the person’s or entity’s commensurate share of the total cost of the farming operation for the crop year. (7 C.F.R. §1400.3.) To qualify as a significant contribution, the capital, equipment, or land must be owned or, with respect to equipment or land, leased by the person or entity making the contribution. If the contributed capital, land, or equipment is acquired as a result of a loan, the loan must not be made to, guaranteed, co-signed, or secured by any other person or entity that has an interest in the farming operation. (7 C.F.R. §§1400.202(c), 1400.203(b), 1400.204(d), 1400.205(e), and 1400.206(b).) A person or entity has an interest in the farming operation if the person or entity, either directly or indirectly as a partner of a general

partnership, is an owner, lessor, or lessee of land in the farming operation, or has an interest in the agricultural products, commodities, or livestock produced by the farming operation. (7 C.F.R. §1400.3.) The FSA handbook provides an exception to this financing rule if the other persons or entities that have an interest in the farming operation making, guaranteeing, co-signing, or securing the loan are all of the members of the joint operation or all of the shareholders of the legal entity to which the loan is made. (Handbook 6-PL, ¶¶ 144E, 145D, and 146D.)

A person makes a significant contribution of active personal labor if the person provides the lesser of 1,000 hours of labor per calendar year or 50% of the total hours that would be necessary to conduct a farming operation comparable in size to such person's commensurate share in the farming operation. Except for a general partnership or joint operation in which at least one owner is not a family member, a person makes a significant contribution of active personal management if the person provides management activities that are "critical to the profitability of the farming operation," which management is performed in one or more of the categories of capital, labor, agronomics, and marketing. If neither of the foregoing contributions has been made, a person will make a significant contribution of a combination of active personal labor and active personal management if the person provides labor and management activities which, when made together, result in a "critical impact on the profitability of the farming operation" in an amount at least equal to either the significant contribution of active personal labor or active personal management as set forth above. (7 C.F.R. §1400.3.) Furthermore, for a partner of a general partnership or a member of a joint operation, to qualify as a significant contribution, the labor or management must not be provided for compensation in the form of a salary or guaranteed payment. The only compensation that can be provided is the commensurate share of the profit or loss of the farming operation. (7 C.F.R. §1400.201(d)(4); Handbook 6-PL, ¶¶147-48.) In addition, for a joint operation or a legal entity the contribution of labor or management must be made by all of the partners, stockholders, or members. If any partner, stockholder, or member fails to contribute the required labor or management, the program payments otherwise payable to the joint operation or legal entity will be reduced by an amount commensurate with the ownership share held by that partner, stockholder, or member. (7 C.F.R. §§1400.203(a)(1)(ii) and 1400.204(b).)

**How can the farming operation's financing arrangements adversely affect farm program eligibility?**

### **Cash Rent Tenant Rule**

To establish or maintain eligibility in the ARC and the PLC programs, farmers who are cash renting land must satisfy an additional eligibility requirement to receive payments with respect to the cash-rented land. For those farmers who, like many of my clients, cash rent all of the land they farm, this additional eligibility requirement applies to their entire farming operation.

In the case of cash-rented land, the owners or partners of a farming operation must make a significant contribution to the farming operation of either (1) active personal labor, or (2) a combination of a significant contribution of active personal management and a significant contribution of equipment. As with the requirement to be actively engaged in farming, for a joint operation or a legal entity, if the contribution of labor or management is not made by all of the partners, stockholders, or members, the program payments otherwise payable to the joint operation or legal entity will be reduced by an amount commensurate with the ownership share held by that partner, stockholder, or member. (7 C.F.R. §§1400.214(a), (d), and (e).)

In the situations for which a significant contribution of equipment is required to satisfy the cash rent tenant rule, additional restrictions are imposed that are not necessary for achieving a significant contribution of equipment to satisfy the actively engaged in farming eligibility requirement. If the equipment is leased from a landlord owning land farmed in the farming operation, the lease must reflect the fair market value of the equipment leased with a payment schedule considered reasonable and customary for the area. If the equipment is leased from the same person or legal entity that is providing hired labor to the farming operation, then the contracts for the lease of the equipment and for the hired labor must be two separate contracts. And in both situations, the tenant must exercise complete control over the leased equipment, including exclusive access and use by the tenant, during the entire crop year. (7 C.F.R. §§1400.214(b) and (c).)

### **How can certain equipment leasing arrangements adversely affect program eligibility?**

#### **Limited Liability Companies**

Payment limitations are imposed per person or legal entity. (7 C.F.R. §1400.1(f).) A person is an individual “natural person” and does not include a legal entity. A legal entity is an entity created under federal or state law that owns land or owns or produces an agricultural commodity, product, or livestock. (7 C.F.R. §1400.3.) Therefore, payments for a particular program to an individual or to an entity cannot exceed the dollar limitation set forth in the regulations. (7 C.F.R. §1400.1(f).) However, the regulations provide a separate definition for one type of entity – a joint operation. A joint operation is a general partnership, joint venture, or other similar business organization in which the members are jointly and severally liable for the obligations of the organization. (7 C.F.R. §1400.3.)

The critical difference between a joint operation and other legal entities for farm program payment purposes is the level of the organization at which payment limitations are applied. Whether a business entity (other than a joint operation), a trust, or an estate, the payment limitation is imposed at the entity level. (7 C.F.R. §§1400.204, 1400.205, and 1400.206.) For joint operations, such as general partnerships and joint ventures, the payment limitation is applied at the partner or member level. (7 C.F.R. §1400.203.) The key distinction is, as stated in the regulatory definition of a joint operation, the joint and several liability of all of the members for the obligations of the organization. If the entity affords liability protection to some or all of its members, then the payment limitation is

applied at the entity level and the entity is eligible for payments not exceeding one limitation. If, on the other hand, the entity affords no liability protection to its members, then such joint operation may receive payments for each of its members to the extent such members are otherwise eligible. Essentially, a general partnership is the only form of business organization that permits a single farming operation to receive farm program payments in excess of a single payment limitation. All other business organizations, including limited partnerships, limited liability partnerships, limited liability companies, and corporations, are limited to one payment limitation each.

### **Watch out for farming operations conducted as limited liability companies!**

#### **Non-Family Members**

As noted in the discussion on actively engaged in farming above, a person makes a significant contribution of active personal management if the person provides management activities that are “critical to the profitability of the farming operation.” Many family farming operations involve members of the family in a general partnership and maintain the eligibility of some or all of the partners by such partners contributing active personal management as described in the preceding sentence. This can be particularly important to maintain the eligibility of partners who are no longer physically able to perform labor in the farming operation or whose circumstances prevent them from meeting the minimum hours requirement for a significant contribution of labor. However, qualifying multiple members of a joint operation as being actively engaged in farming through a significant contribution of active personal management is only permitted for farming partnerships in which all of the partners or the owners of partners are family members. For payment limitation and payment eligibility purposes, federal law defines a family member to be a person to whom another member in the farming operation is related as lineal ancestor, lineal descendant, sibling, first cousin, niece, nephew, spouse, or otherwise by marriage. (7 U.S.C. §1308(a)(2).)

Significant restrictions are imposed upon the ability of more than one partner or owner of a partner to maintain payment eligibility in a joint operation in which at least one partner or owner of a partner is not a family member as defined above (a non-family operation). Normally, a non-family operation is limited to only one person maintaining eligibility through a significant contribution of active personal management. One additional person may maintain eligibility with a significant contribution of management if the farming operation is either large or complex. Two additional persons, for a maximum of three managers, can be eligible through a significant contribution of management if the farming operation is **both** large and complex. A large farming operation is an operation that (1) produces and markets crops on 2,500 acres or more of cropland, (2) produces honey with more than 10,000 hives, or (3) produces wool with more than 3,500 ewes. A farming operation will be deemed complex only if approved by the FSA State Committee with the concurrence of the FSA Deputy Administrator for Farm Programs in Washington. In no case may more than three persons in the same non-family operation maintain farm program eligibility through a significant contribution of management. (7 C.F.R. §1400.602.)

Even if a non-family operation is large or can establish itself as complex, more stringent requirements are imposed to be considered to be making a significant contribution of active personal management, such that each manager must perform at least 25% of the total management hours required for the farming operation annually or at least 500 hours of management for the farming operation annually. Detailed records must be maintained to establish the management performed by each partner seeking to qualify by making a significant contribution of management and by each other individual providing management to the farming operation. (7 C.F.R. §§1400.601(b) and 1400.603.) Frankly, these requirements are so onerous that among my clients all non-family farming operations are limiting themselves to no more than one person making a significant contribution of management or have divided themselves into smaller operations with all of the members of each such operation being family members.

### **How can the death of a spouse or the divorce of a married couple adversely affect farm program eligibility?**

#### **Substantive Change**

To prevent the proliferation of eligible persons in farming operations, there is a system of rules requiring that any change in a farming operation that would increase the number of persons subject to payment limitations must be bona fide and substantive. The addition of a family member to a farming operation, if bona fide, is always a substantive change. Therefore, the substantive change rules principally impact non-family operations. Substantive changes that permit an increase in the number of persons to which payment limitations apply include:

1. The addition of land used for agricultural production not previously involved in the farming operation of at least 20% or more in the total land previously involved in the farming operation. Normally, the addition of such amount of land will be considered a substantive change for the increase of only one person or legal entity to the farming operation.

2. A change in ownership by sale or gift of equipment from a person or legal entity previously engaged in a farming operation to a person or legal entity that has not been involved in the farming operation. The amount of the equipment transferred must be commensurate with the new person's share of the farming operation, the sale or gift of equipment must be based on the equipment's fair market value, the former owner must have no direct or indirect control over the equipment, the transaction must not be financed by the former owner, and preference cannot be given to the former owner to repurchase the equipment at a later date.

3. A change in ownership by sale or gift of land or livestock from a person or legal entity previously engaged in a farming operation to a person or legal entity that has not been involved in the farming operation. The amount of the land or livestock transferred must be commensurate with the new person's share of the farming operation, the sale or gift of land or livestock must be based on the land or livestock's fair market value, the former owner must have no direct or indirect control

over the land or livestock, the transaction must not be financed by the former owner, and preference cannot be given to the former owner to repurchase the land or livestock at a later date. (7 C.F.R. §1400.104.)

Whether there is an increase in the number of persons to which payment limitations would apply is measured between the current year's farming operation and the prior year's farming operation. (Handbook 6-PL, ¶ 125B.) The substantive change rules apply only if there is an overall increase in the number of persons, both within the farming operation and outside the farming operation, subject to payment limitations. Therefore, if a member of a farming operation retires and ceases farming and is replaced by a new person who has not farmed before, the substantive change rules do not apply. On the other hand, if a person departs a farming operation but continues to farm separately and such person is replaced by a new person in the original farming operation, the substantive change rules do apply. (Handbook 6-PL, ¶ 126B.) Therefore, the continuity of the number of persons within a farming operation from year to year can be very important to avoid the application of the substantive change rules.

**How can the unexpected departure of a member of a farming operation affect farm program eligibility?**

## **FARM PROGRAM APPEALS**

The U.S. Department of Agriculture provides a system of appeals by which farmers and the FSA can resolve disputes regarding farm program eligibility. This system begins with an informal appeals process within the FSA itself and continues with more formal administrative appeals to the National Appeals Division (NAD), an independent agency within the office of the Secretary of Agriculture. Mediation may be requested, but only once, at any stage in the appeal process prior to a hearing before NAD. (7 C.F.R. §780.9.)

The regulations governing the informal appeals process within the FSA can be found at 7 C.F.R. Part 780. The regulations governing appeals to NAD can be found at 7 C.F.R. Part 11. The current FSA appeals handbook is Handbook 1-APP (Revision 2), *Program Appeals, Mediation, and Litigation*. Handbook 1-APP was originally published on June 3, 2008, and was most recently updated on September 12, 2016. Handbook 1-APP can be found online at the following link: [https://www.fsa.usda.gov/Internet/FSA\\_File/1-app\\_r02\\_a15.pdf](https://www.fsa.usda.gov/Internet/FSA_File/1-app_r02_a15.pdf).

Depending upon the level within the FSA at which an adverse determination has been made, the following procedures are available:

1. Appeal to the FSA county committee of decisions made by county office personnel;
2. Reconsideration by the FSA county committee;

3. Appeal to the FSA state committee; and
4. Reconsideration by the FSA state committee. (7 C.F.R. §780.6(a).)

A farmer can choose to begin the appeal process at the lowest available level or begin at any higher level. (Handbook 1-APP, ¶ 13.)

If a farmer is not satisfied with a determination obtained through the FSA informal appeals process, after receiving the final adverse determination from the FSA state committee or at any other point in the appeals process after at least receiving a determination from the county committee, the farmer may appeal the most recent determination to NAD. (7 C.F.R. §780.6(a)(5).)

In the FSA informal appeals process and the administrative appeal procedures before NAD, there are three points that I suggest practitioners keep in mind.

**Keep in mind the 30-day appeal deadline.** A request for reconsideration, mediation, or appeal must be submitted in writing no later than 30 calendar days from the date a participant **receives** written notice of the decision. (7 C.F.R. §§780.15(c) and 11.6(b)(1).) Many times the attorney will not be consulted about an adverse determination until many days after the determination was issued. The first thing an attorney should do when consulted about an adverse determination is to obtain a copy of the determination letter to determine the date it was issued and, if possible, to figure out the date the determination letter was received. The date upon which an adverse determination is deemed received by the farmer is the earlier of physical delivery by hand, by facsimile with electronic confirmation of receipt, actual stamped record of receipt on a transmitted document, or 7 calendar days following deposit for delivery by regular mail. (7 C.F.R. §780.15(e)(2).) Therefore, an appeal or request for reconsideration based upon an adverse determination letter sent by regular mail should be timely if it is filed within 37 days after the date of the determination letter.

**Use of mediation.** My experience is that mediation is not effective in resolving issues during the informal appeals process. For determinations appealable to the FSA state committee, the FSA personnel attending the mediation have not had the authority to reach any conclusions on behalf of the state committee. I have not been able to achieve any resolution or narrowing of the issues in the mediations in which I have been involved. Nevertheless, mediation can be valuable if more time is needed to gather information about the case and particularly to obtain more information from the FSA itself. Remember that mediation merely tolls the 30-day period for filing an appeal within the FSA; it does not restart the appeal clock. Accordingly, if mediation is unsuccessful in resolving all issues, you will have only the balance of the days remaining within the appeal period to file an appeal. (Handbook 1-APP, ¶ 14E.)

**The farmer must personally sign a request for appeal to NAD.** Within the FSA informal appeals process, a request for reconsideration or appeal may be signed either by the farmer or by the farmer’s authorized representative. (7 C.F.R. §§780.7(a), 780.8(a), and 780.10(a).) To the contrary, an appeal of an adverse decision to NAD must be “personally signed by the participant.” (7 C.F.R. §11.6(b)(2).) Be sure your farmer client is available to sign the request for appeal to NAD in time to meet the filing deadline.

3-25500-3.417





United States  
Department of  
Agriculture

Office of the  
General  
Counsel

Washington,  
D.C.  
20250-1400

  
STEPHEN ALEXANDER VADEN  
GENERAL COUNSEL

May 28, 2019

MEMORANDUM

SUBJECT: EXECUTIVE SUMMARY OF NEW HEMP AUTHORITIES

On December 20, 2018, President Trump signed into law the Agriculture Improvement Act of 2018, Pub. L. 115-334 (2018 Farm Bill). The 2018 Farm Bill legalized hemp production for all purposes within the parameters laid out in the statute.

The Office of the General Counsel (OGC) has issued the attached legal opinion to address questions regarding several of the hemp-related provisions of the 2018 Farm Bill, including: a phase-out of the industrial hemp pilot authority in the Agricultural Act of 2014 (2014 Farm Bill) (**Section 7605**); an amendment to the Agricultural Marketing Act of 1946 to allow States and Indian tribes to regulate hemp production or follow a Department of Agriculture (USDA) plan regulating hemp production (**Section 10113**); a provision ensuring the free flow of hemp in interstate commerce (**Section 10114**); and the removal of hemp from the Controlled Substances Act (**Section 12619**).

The key conclusions of the OGC legal opinion are the following:

1. As of the enactment of the 2018 Farm Bill on December 20, 2018, hemp has been removed from schedule I of the Controlled Substances Act and is no longer a controlled substance.
2. After USDA publishes regulations implementing the new hemp production provisions of the 2018 Farm Bill contained in the Agricultural Marketing Act of 1946, States and Indian tribes may not prohibit the interstate transportation or shipment of hemp lawfully produced under a State or Tribal plan or under a license issued under the USDA plan.
3. States and Indian tribes also may not prohibit the interstate transportation or shipment of hemp lawfully produced under the 2014 Farm Bill.
4. A person with a State or Federal felony conviction relating to a controlled substance is subject to a 10-year ineligibility restriction on producing hemp under the Agricultural Marketing Act of 1946. An exception applies to a person who was lawfully growing hemp under the 2014 Farm Bill **before December 20, 2018**, and whose conviction also occurred before that date.

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With the enactment of the 2018 Farm Bill, hemp may be grown only (1) with a valid USDA-issued license, (2) under a USDA-approved State or Tribal plan, or (3) under the 2014 Farm Bill industrial hemp pilot authority. That pilot authority will expire one year after USDA establishes a plan for issuing USDA licenses under the provisions of the 2018 Farm Bill.

It is important for the public to recognize that the 2018 Farm Bill preserves the authority of States and Indian tribes to enact and enforce laws regulating the **production** of hemp that are more stringent than Federal law. Thus, while a State or an Indian tribe cannot block the shipment of hemp through that State or Tribal territory, it may continue to enforce State or Tribal laws prohibiting the growing of hemp in that State or Tribal territory.

It is also important to emphasize that the 2018 Farm Bill does not affect or modify the authority of the Secretary of Health and Human Services or Commissioner of Food and Drugs to regulate hemp under applicable U.S. Food and Drug Administration (FDA) laws.

USDA expects to issue regulations implementing the new hemp production authorities in 2019.

Attachment



United States  
Department of  
Agriculture

Office of the  
General  
Counsel

Washington,  
D.C.  
20250-1400

  
STEPHEN ALEXANDER VADEN  
GENERAL COUNSEL

May 28, 2019

MEMORANDUM FOR SONNY PERDUE  
SECRETARY OF AGRICULTURE

SUBJECT: LEGAL OPINION ON CERTAIN PROVISIONS OF THE  
AGRICULTURE IMPROVEMENT ACT OF 2018 RELATING TO  
HEMP

This memorandum provides my legal opinion on certain provisions of the Agriculture Improvement Act of 2018 ("2018 Farm Bill"), Pub. L. No. 115-334, relating to hemp.

As explained below, this memorandum concludes the following:

1. As of the enactment of the 2018 Farm Bill on December 20, 2018, hemp has been removed from schedule I of the Controlled Substances Act ("CSA") and is no longer a controlled substance. Hemp is defined under the 2018 Farm Bill to include any cannabis plant, or derivative thereof, that contains not more than 0.3 percent delta-9 tetrahydrocannabinol ("THC") on a dry-weight basis.
2. After the Department of Agriculture ("USDA" or "Department") publishes regulations implementing the hemp production provisions of the 2018 Farm Bill contained in subtitle G of the Agricultural Marketing Act of 1946 ("AMA"), States and Indian tribes may not prohibit the interstate transportation or shipment of hemp lawfully produced under a State or Tribal plan or under a license issued under the Departmental plan.
3. States and Indian tribes may not prohibit the interstate transportation or shipment of hemp lawfully produced under the Agricultural Act of 2014 ("2014 Farm Bill").
4. A person with a State or Federal felony conviction relating to a controlled substance is subject to a 10-year ineligibility restriction on producing hemp under subtitle G of the AMA. An exception applies to a person who was lawfully growing hemp under the 2014 Farm Bill before December 20, 2018, and whose conviction also occurred before that date.

This memorandum also emphasizes two important aspects of the 2018 Farm Bill provisions relating to hemp. First, the 2018 Farm Bill preserves the authority of States and Indian tribes to enact and enforce laws regulating the **production** (but not the interstate transportation or shipment) of hemp that are more stringent than Federal law. For example, a State law prohibiting the growth or cultivation of hemp may continue to be enforced by that State. Second, the 2018 Farm Bill does not affect or modify the authority of the Secretary of Health and Human Services or Commissioner of Food and Drugs under applicable U.S. Food and Drug Administration laws.

## I. BACKGROUND

The 2018 Farm Bill, Pub. L. No. 115-334, enacted on December 20, 2018, includes several provisions relating to hemp.<sup>1</sup> This legal opinion focuses on sections 7605, 10113, 10114, and 12619, summarized below.

- **Section 7605** amends section 7606 of the 2014 Farm Bill (7 U.S.C. § 5940), which authorizes institutions of higher education or State departments of agriculture to grow or cultivate industrial hemp under certain conditions — namely, if the hemp is grown or cultivated for research purposes in a State that allows hemp production. Among other things, section 7605 amends 2014 Farm Bill § 7606 to require the Secretary of Agriculture (“Secretary”) to conduct a study of these hemp research programs and submit a report to Congress. Section 7605 also repeals 2014 Farm Bill § 7606, effective one year after the date on which the Secretary establishes a plan under section 297C of the AMA.<sup>2</sup>
- **Section 10113** amends the AMA by adding a new subtitle G (sections 297A through 297E) (7 U.S.C. §§ 1639o – 1639s) relating to hemp production. Under this new authority, a State or Indian tribe that wishes to have primary regulatory authority over the production of hemp in that State or territory of that Indian tribe may submit, for the approval of the Secretary, a plan concerning the monitoring and regulation of such hemp production. *See* AMA § 297B. For States or Indian tribes that do not have approved plans, the Secretary is directed to establish a Departmental plan concerning the monitoring and regulation of hemp production in those areas. *See* AMA § 297C. The

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<sup>1</sup> The 2014 Farm Bill defines “**industrial hemp**” as “the plant *Cannabis sativa* L. and any part of such plant, whether growing or not, with a delta-9 tetrahydrocannabinol concentration of not more than 0.3 percent on a dry weight basis.” 7 U.S.C. § 5940(a)(2). The 2018 Farm Bill added a new, slightly different definition of “**hemp**” in section 297A of the AMA, defined as “the plant *Cannabis sativa* L. and any part of that plant, including the seeds thereof and all derivatives, extracts, cannabinoids, isomers, acids, salts, and salts of isomers, whether growing or not, with a delta-9 tetrahydrocannabinol concentration of not more than 0.3 percent on a dry weight basis.” 7 U.S.C. § 1639o(1). Both definitions require a THC concentration of not more than 0.3 percent for a *Cannabis sativa* L. plant to be considered hemp versus marijuana. For purposes of this legal opinion, I use the terms “**hemp**” and “**industrial hemp**” interchangeably.

<sup>2</sup> The Conference Report accompanying the 2018 Farm Bill explains the effect of the repeal as follows: “The provision also repeals the hemp research pilot programs one year after the Secretary publishes a final regulation allowing for full-scale commercial production of hemp as provided in section 297C of the [AMA].” H.R. REP. NO. 115-1072, at 699 (2018).

Secretary is also required to promulgate regulations and guidelines implementing subtitle G. *See* AMA § 297D. The new authority also provides definitions (*see* AMA § 297A) and an authorization of appropriations (*see* AMA § 297E).

- **Section 10114** (7 U.S.C. § 1639o note) is a freestanding provision stating that nothing in title X of the 2018 Farm Bill prohibits the interstate commerce of hemp or hemp products. Section 10114 also provides that States and Indian tribes shall not prohibit the interstate transportation or shipment of hemp or hemp products produced in accordance with subtitle G through the State or territory of the Indian tribe.
- **Section 12619** amends the CSA to exclude hemp from the CSA definition of marijuana. Section 12619 also amends the CSA to exclude THC in hemp from Schedule I.<sup>3</sup>

In passing the 2018 Farm Bill, Congress legalized hemp production for all purposes within the parameters of the statute but reserved to the States and Indian tribes authority to enact and enforce more stringent laws regulating production of hemp.

## II. ANALYSIS

### A. As of the Enactment of the 2018 Farm Bill on December 20, 2018, Hemp Has Been Removed from Schedule I of the Controlled Substances Act and Is No Longer a Controlled Substance.

CSA § 102(6) defines “controlled substance” to mean “a drug or other substance, or immediate precursor, included in schedule I, II, III, IV, or V of part B of this title. . . .” 21 U.S.C. § 802(6). Marijuana<sup>4</sup> is a controlled substance listed in schedule I of the CSA. *See* CSA § 202(c)(10), schedule I (21 U.S.C. § 812(c), Schedule I (c)(10)); 21 C.F.R. § 1308.11(d)(23).

The 2018 Farm Bill amended the CSA in two ways.

- First, 2018 Farm Bill § 12619(a) amended the CSA definition of marijuana to exclude hemp. Before enactment of the 2018 Farm Bill, CSA § 102(16) (21 U.S.C. § 802(16)) defined marijuana as follows:

(16) The term ‘marihuana’ means all parts of the plant *Cannabis sativa* L., whether growing or not; the seeds thereof; the resin extracted from any part of such plant; and every compound, manufacture, salt, derivative, mixture, or preparation of such plant, its seeds or resin. Such term does not include the mature stalks of such plant, fiber produced from such stalks, oil or cake made from the seeds of such plant, any other compound, manufacture, salt, derivative, mixture, or preparation of such mature stalks (except the resin extracted therefrom), fiber, oil, or cake,

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<sup>3</sup> For additional background on hemp production prior to enactment of the 2018 Farm Bill, *see* Congressional Research Service, “Hemp as an Agricultural Commodity” (RL32725) (updated July 9, 2018), *available at* <https://crsreports.congress.gov/product/pdf/RL/RL32725>.

<sup>4</sup> This opinion uses the common spelling of “marijuana” except when quoting the CSA, which uses the “marihuana” spelling.

MEMORANDUM FOR THE SECRETARY OF AGRICULTURE

May 28, 2019

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or the sterilized seed of such plant which is incapable of germination.

As amended by the 2018 Farm Bill, the CSA definition of marijuana now reads:

(A) Subject to subparagraph (B), the term ‘marihuana’ means all parts of the plant *Cannabis sativa* L., whether growing or not; the seeds thereof; the resin extracted from any part of such plant; and every compound, manufacture, salt, derivative, mixture, or preparation of such plant, its seeds or resin.

(B) The term ‘marihuana’ does not include—

(i) hemp, as defined in section 297A of the Agricultural Marketing Act of 1946; or

(ii) the mature stalks of such plant, fiber produced from such stalks, oil or cake made from the seeds of such plant, any other compound, manufacture, salt, derivative, mixture, or preparation of such mature stalks (except the resin extracted therefrom), fiber, oil, or cake, or the sterilized seed of such plant which is incapable of germination.

- Second, 2018 Farm Bill § 12619(b) amended the CSA to exclude THC in hemp from the term “tetrahydrocannabinols” in schedule I. As amended by the 2018 Farm Bill, CSA § 202(c)(17), schedule I (21 U.S.C. § 812(c)(17), schedule I) now reads:

Tetrahydrocannabinols, except for tetrahydrocannabinols in hemp (as defined under section 297A of the Agricultural Marketing Act of 1946).

By amending the definition of marijuana to exclude hemp as defined in AMA § 297A, Congress has removed hemp from schedule I and removed it entirely from the CSA. In other words, hemp is no longer a controlled substance. Also, by amending schedule I to exclude THC in hemp, Congress has likewise removed THC in hemp from the CSA.

It is important to note that this decontrolling of hemp (and THC in hemp) is self-executing. Although the CSA implementing regulations must be updated to reflect the 2018 Farm Bill amendments to the CSA, neither the publication of those updated regulations nor any other action is necessary to execute this removal.

I address here two principal objections to the view that the decontrolling of hemp is self-executing. The first objection is that, because regulations have not been published under CSA § 201, the legislative changes to schedule I regarding hemp are not effective. This objection is not valid.

The typical process for amending the CSA schedules is through rulemaking. Under CSA § 201(a), the Attorney General “may by rule” add to, remove from, or transfer between the schedules, any drugs or other substances upon the making of certain findings. 21 U.S.C. § 811(a). However, the schedules also can be amended directly by Congress through changes to the statute; and Congress has done so several times.<sup>5</sup>

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<sup>5</sup> See, e.g., Pub. L. 112-144, § 1152 (amending schedule I to add cannabimimetic agents); Pub. L. 101-647, § 1902(a) (amending schedule III to add anabolic steroids).

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The second objection is that, because the legislative changes to schedule I regarding hemp are not yet reflected in 21 C.F.R. § 1308.11, the removal is not yet effective. This objection also is not valid.

It is axiomatic that statutes trump regulations. See *Nat'l Family Planning & Reprod. Health Ass'n, Inc. v. Gonzales*, 468 F.3d 826, 829 (D.C. Cir. 2006) (“[A] valid statute always prevails over a conflicting regulation[.]”). Congress established the five CSA schedules in statute, providing that “[s]uch schedules shall initially consist of the substances listed in this section.” 21 U.S.C. § 812(a).<sup>6</sup> Congress further provided that “[t]he schedules established by this section shall be updated and republished on a semiannual basis during the two-year period beginning one year after October 27, 1970, and shall be updated and republished on an annual basis thereafter.” 21 U.S.C. § 812(a). The requirement to update and republish the schedules, however, is not a prerequisite to the effectiveness of the schedules “established by [the statute].” *Id.* In other words, where Congress itself amends the schedules to add or remove a controlled substance, the addition or removal of that controlled substance is effective immediately on enactment (absent some other effective date in the legislation); its addition to or removal from a schedule is not dependent on rulemaking.<sup>7</sup>

To illustrate, Congress amended the CSA in 2012 to add “cannabimimetic agents” to schedule I. That amendment was enacted as part of the Synthetic Drug Abuse Prevention Act of 2012 (Pub. L. 112-144, title XI, subtitle D), which was signed into law on July 9, 2012. Almost six months later, the Drug Enforcement Administration (“DEA”) published a final rule establishing the drug codes for the cannabimimetic agents added to schedule I by Congress and making other conforming changes to schedule I as codified in 21 C.F.R. § 1308.11. See 78 Fed. Reg. 664 (Jan. 4, 2013). In explaining why notice-and-comment rulemaking was unnecessary, DEA noted that “the placement of these 26 substances in Schedule I **has already been in effect since July 9, 2012.**” *Id.* at 665 (emphasis added). In other words, the legislative changes to schedule I were effective immediately upon enactment. The reflection of those changes in 21 C.F.R. § 1308.11, although required by 21 U.S.C. § 812(a), was not necessary for the execution of those changes to schedule I.

Accordingly, enactment of the 2018 Farm Bill accomplished the removal of hemp (and THC in hemp<sup>8</sup>) from the CSA. Conforming amendments to 21 C.F.R. § 1308.11, while required as part

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<sup>6</sup> “Marihuana” and “Tetrahydrocannabinols” were both included in the initial schedule I established by Congress in 1970.

<sup>7</sup> Cf. *United States v. Huerta*, 547 F.2d 545, 547 (10th Cir. 1977) (“[F]ailure to publish the ‘updated’ schedules as required by Section 812(a) had no effect upon the validity of those substances initially listed in the five schedules.”); *United States v. Monroe*, 408 F. Supp. 270, 274 (N.D. Cal. 1976) (“Thus, while section 812(a) clearly orders the controlled substance schedules to be republished, it is clear that Congress did not intend republication to serve as a reissuance of the schedules, which if done improperly would cause those schedules to lapse and expire. . . . [T]he requirement that the schedules, once ‘updated,’ be ‘republished’ was solely for the purpose of establishing one list which would reflect all substances which were currently subject to the Act’s provisions. . . .”).

<sup>8</sup> Schedule I, as published in 21 C.F.R. § 1308.11, includes a definition of “tetrahydrocannabinols” in paragraph (d)(31) that does not appear in the CSA. Notwithstanding the presence of that definition in the current regulations, I

of DEA's continuing obligation to publish updated schedules, are not necessary to execute the 2018 Farm Bill changes to schedule I.<sup>9</sup>

**B. After the Department of Agriculture Publishes Regulations Implementing the Hemp Production Provisions of the 2018 Farm Bill Contained in Subtitle G of the Agricultural Marketing Act of 1946, States and Indian Tribes May Not Prohibit the Interstate Transportation or Shipment of Hemp Lawfully Produced Under a State or Tribal Plan or Under a License Issued Under the Departmental Plan.**

AMA § 297D(a)(1)(A) directs the Secretary to issue regulations and guidelines "as expeditiously as possible" to implement subtitle G of the AMA. 7 U.S.C. § 1639r(a)(1)(A). These regulations will address the approval of State and Tribal plans under AMA § 297B and the issuance of licenses under the Departmental plan under AMA § 297C. As explained below, once these regulations are published, States and Indian tribes may not prohibit the transportation or shipment of hemp (including hemp products) produced in accordance with an approved State or Tribal plan or produced under a license issued under the Departmental plan.

Transportation of hemp is addressed in 2018 Farm Bill § 10114.<sup>10</sup> Subsection (a) provides:

(a) RULE OF CONSTRUCTION.—Nothing in this title or an amendment made by this title prohibits the interstate commerce of hemp (as defined in section 297A of the Agricultural Marketing Act of 1946 (as added by section 10113)) or hemp products.

7 U.S.C. § 1639o note. This provision states that nothing in title X of the 2018 Farm Bill

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am of the opinion that THC in hemp is excluded from THC as a schedule I controlled substance under the CSA by virtue of the 2018 Farm Bill amendments.

<sup>9</sup> Schedule I, as reflected in 21 C.F.R. § 1308.11, includes a separate listing of "marihuana extract" in paragraph (d)(58). Marijuana extract is not reflected in schedule I in the statute because it was added after 1970 by regulation under CSA § 201. The term "marihuana extract" is defined in regulation as "an extract containing one or more cannabinoids that has been derived from any plant of the genus *Cannabis*, other than the separated resin (whether crude or purified) obtained from the plant." The 2018 Farm Bill amended the definition of "marihuana" to exclude hemp, but because the regulatory definition of "marihuana extract" in schedule I does not use the words "marihuana" or "tetrahydrocannabinols" to define the term, a question arises whether **hemp extract** is still considered to be listed as a schedule I controlled substance. While the issue is not further addressed in this opinion, I think that the revised statutory definition of "marihuana" has effectively removed hemp extract from schedule I, and that reflecting such in 21 C.F.R. § 1308.11(d)(58) would be merely a conforming amendment.

<sup>10</sup> Hemp transportation is also addressed in annual appropriations acts, which restrict Federal appropriated funds from being used to prohibit the transportation of hemp. However, those provisions are limited in scope because they address only hemp produced under the 2014 Farm Bill authority, and they address only Federal government actions. That is, while the provisions prohibit Federal actors from blocking the transportation of so-called "2014 Farm Bill hemp," they do not restrict State action in that regard. See Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2019, Pub. L. 116-6, div. B, § 728 (prohibiting funds made available by that Act or any other Act from being used in contravention of 2014 Farm Bill § 7606 or "to prohibit the transportation, processing, sale, or use of industrial hemp, or seeds of such plant, that is grown or cultivated in accordance with [2014 Farm Bill § 7606], within or outside the State in which the industrial hemp is grown or cultivated"). See also Commerce, Justice, Science, and Related Agencies Appropriations Act, 2019, Pub. L. 116-6, div. C, § 536 ("None of the funds made available by this Act may be used in contravention of [2014 Farm Bill § 7606] by the Department of Justice or the Drug Enforcement Administration.").



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prohibits the interstate commerce of hemp. However, this provision, standing alone, does not have the effect of sanctioning the transportation of hemp in States or Tribal areas where such transportation is prohibited under State or Tribal law.

Subsection (b), however, specifically prohibits States and Indian tribes from prohibiting the transportation of hemp through that State or Tribal territory. Subsection (b) provides:

(b) TRANSPORTATION OF HEMP AND HEMP PRODUCTS.—No State or Indian Tribe shall prohibit the transportation or shipment of hemp or hemp products produced in accordance with subtitle G of the Agricultural Marketing Act of 1946 (as added by section 10113) through the State or the territory of the Indian Tribe, as applicable.

7 U.S.C. § 1639o note. In effect, this provision preempts State law to the extent such State law prohibits the interstate transportation or shipment of hemp that has been produced in accordance with subtitle G of the AMA.

As a matter of constitutional law, “[t]he Supremacy Clause provides a clear rule that federal law ‘shall be the supreme Law of the Land; and the Judges in every State shall be bound thereby, any Thing in the Constitution or Laws of any [S]tate to the Contrary notwithstanding. . . .’ Under this principle, Congress has the power to preempt [S]tate law.” *Arizona v. United States*, 567 U.S. 387, 398-99 (2012) (citing U.S. Const. art. VI, cl. 2). “Under the doctrine of federal preemption, a federal law supersedes or supplants an inconsistent [S]tate law or regulation.” *United States v. Zadeh*, 820 F.3d 746, 751 (5th Cir. 2016).

Federal courts generally recognize three categories of preemption: (1) express preemption (where Congress “withdraw[s]” powers from the State through an “express preemption provision”);<sup>11</sup> (2) field preemption (where States are “precluded from regulating conduct in a field that Congress, acting within its proper authority, has determined must be regulated by its exclusive governance”);<sup>12</sup> and conflict preemption (where State laws are preempted when they conflict with Federal law, which includes situations “where ‘compliance with both federal and [S]tate regulations is a physical impossibility’” or situations “where the challenged [S]tate law ‘stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress’”).<sup>13</sup> *Arizona*, 567 U.S. at 399-400 (citations omitted); *see also Zadeh*, 820 F.3d at 751.

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<sup>11</sup> *See, e.g.*, 7 U.S.C. § 1639i(b) (“(b) Federal preemption.—No State or a political subdivision of a State may directly or indirectly establish under any authority or continue in effect as to any food or seed in interstate commerce any requirement relating to the labeling of whether a food (including food served in a restaurant or similar establishment) or seed is genetically engineered (which shall include such other similar terms as determined by the Secretary of Agriculture) or was developed or produced using genetic engineering, including any requirement for claims that a food or seed is or contains an ingredient that was developed or produced using genetic engineering.”).

<sup>12</sup> *See, e.g., Pac. Gas & Elec. Co. v. State Energy Res. Conservation & Dev. Comm’n*, 461 U.S. 190, 212 (“[T]he federal government has occupied the entire field of nuclear safety concerns, except the limited powers expressly ceded to the [S]tates.”).

<sup>13</sup> *See, e.g.*, 21 U.S.C. § 903 (“No provision of this subchapter shall be construed as indicating an intent on the part of Congress to occupy the field in which that provision operates, including criminal penalties, to the exclusion of any State law on the same subject matter which would otherwise be within the authority of the State, unless there is

Section 10114(b) of the 2018 Farm Bill satisfies the definition of conflict preemption because a State law prohibiting the interstate transportation or shipment of hemp or hemp products that have been produced in accordance with subtitle G of the AMA would be in direct conflict with section 10114(b), which provides that no State may prohibit such activity.<sup>14</sup> Therefore, any such State law has been preempted by Congress. The same result applies to Indian tribes.<sup>15</sup>

In sum, once the implementing regulations are published, States and Indian tribes may not prohibit the shipment of hemp lawfully produced under an approved State or Tribal plan or under a license issued under the Departmental plan.

**C. States and Indian Tribes May Not Prohibit the Interstate Transportation or Shipment of Hemp Lawfully Produced Under the Agricultural Act of 2014.**

Because the 2018 Farm Bill does not immediately repeal the hemp pilot authority in 2014 Farm Bill § 7606 — and because the publication of regulations implementing the hemp production provisions of the 2018 Farm Bill will likely not occur until later in 2019 — the question arises whether States and Indian tribes are prohibited from blocking the interstate transportation or shipment of hemp (including hemp products) lawfully produced under the 2014 Farm Bill. The answer depends on the meaning of the phrase “in accordance with subtitle G of the Agricultural Marketing Act of 1946” in 2018 Farm Bill § 10114(b) (7 U.S.C. § 1639o note). Only hemp produced in accordance with subtitle G is covered by the preemption provision discussed above. As explained below, it is my opinion that the answer to this question is yes, by operation of AMA § 297B(f).

AMA § 297B(f) states the legal effect of the provisions authorizing States and Indian tribes to develop plans for exercising primary regulatory authority over the production of hemp within that State or territory of the Indian tribe. Specifically, section 297B(f) provides:

(f) EFFECT.—Nothing in this section prohibits the production of hemp in a State or the territory of an Indian tribe—

(1) for which a State or Tribal plan is not approved under this section, if the production of hemp is in accordance with section 297C or other Federal laws (including regulations); and

(2) if the production of hemp is not otherwise prohibited by the State or Indian tribe.

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a positive conflict between that provision of this subchapter and that State law so that the two cannot consistently stand together.”).

<sup>14</sup> Alternatively, section 10114(b) might be considered an express preemption provision because the statute expressly withdraws the power of a State to prohibit the transportation or shipment of hemp or hemp products through the State.

<sup>15</sup> AMA § 297B(a)(3) contains an anti-preemption provision stating that nothing in § 297B(a) “preempts or limits any law of a State or Indian tribe” that “regulates the production of hemp” and “is more stringent than [subtitle G].” 7 U.S.C. § 1639p(a)(3). However, that anti-preemption provision is limited to the production of hemp — not the transportation or shipment of hemp — and thus does not conflict with 2018 Farm Bill § 10114(b).

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7 U.S.C. § 1639p(f) (emphasis added).

This provision addresses the production of hemp in a State or Tribal territory for which the State or tribe does not have an approved plan under AMA § 297B. This provision acknowledges that, in such a scenario, the production of hemp in that State or Tribal territory is still permissible if it is produced **either** in accordance with the Departmental plan under AMA § 297C **or** in accordance with other Federal laws, and the State or tribe does not otherwise prohibit its production.

The plain language of subtitle G of the AMA, as added by the 2018 Farm Bill, thus clearly contemplates a scenario in which hemp is neither produced under an approved 297B plan nor under a license issued under the Department's 297C plan, but is still legally produced under "other Federal laws." It is my opinion that "other Federal laws" encompasses 2014 Farm Bill § 7606.<sup>16</sup>

To my knowledge, before enactment of 2014 Farm Bill § 7606, the CSA was the only Federal law that authorized the production of hemp. Indeed, the production of hemp — as the "manufacture" of a schedule I controlled substance — was generally prohibited under the CSA except to the extent authorized under a registration or waiver under the CSA. *See* 21 U.S.C. §§ 802(15), 802(22), 822, and 823; 21 C.F.R. part 1301. Given (1) the removal of hemp as a controlled substance under the CSA, (2) the delayed repeal of the 2014 Farm Bill § 7606 authority, and (3) the enactment of the new hemp production authorities in subtitle G of the AMA, it is my opinion that "other Federal laws" refers to the provisions of 2014 Farm Bill § 7606, which are still in effect. Such an interpretation gives immediate effect to the phrase "other Federal laws." It is a "cardinal principle of interpretation that courts must give effect, if possible, to every clause and word of a statute." *See, e.g., Loughrin v. United States*, 573 U.S. 351, 358 (2014) (internal quotations and citations omitted).

Therefore, reading AMA § 297B(f) in harmony with 2018 Farm Bill § 10114(b), if the hemp is legally produced in accordance with 2014 Farm Bill § 7606 ("other Federal law"), then, by virtue of AMA § 297B(f), its production is not prohibited. Such hemp would have been produced "in accordance with subtitle G," which specifically addresses just such a scenario, as AMA § 297B(f) is part of subtitle G. Accordingly, under 2018 Farm Bill § 10114(b), a State or Indian

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<sup>16</sup> That Congress envisioned such a scenario is apparent given the language in 2018 Farm Bill § 7605(b) delaying the repeal of 2014 Farm Bill § 7606 until 12 months after the Secretary establishes the 297C plan. Accordingly, this interpretation is not precluded by AMA § 297C(c)(1), which provides: "[i]n the case of a State or Indian tribe for which a State or Tribal plan is not approved under section 297B, it shall be unlawful to produce hemp in that State or the territory of that Indian tribe without a license issued by the Secretary under subsection (b)." Given the reference to "or other Federal laws" in AMA § 297B(f)(1) — and the fact that 2014 Farm Bill § 7606 is still in effect — it would be an absurd reading of AMA § 297C(c)(1) to conclude that hemp produced in accordance with Federal law (2014 Farm Bill § 7606) is, at the same time, unlawful without a separate license issued by the Secretary under the 297C plan. As courts have long recognized, statutory interpretations that "produce absurd results are to be avoided if alternative interpretations consistent with the legislative purpose are available." *Griffin v. Oceanic Contractors, Inc.*, 458 U.S. 564, 575 (1982).

tribe may not prohibit the transportation or shipment of so-called “2014 Farm Bill hemp” through that State or Tribal territory.<sup>17</sup>

### Recent Developments

I acknowledge that this conclusion is in tension with a recent decision in a case in the District of Idaho, but it also is consistent with a recent decision in a case in the Southern District of West Virginia. Neither court addressed the “other Federal laws” language in AMA § 297B(f)(1), which I find conclusive.

In *Big Sky Scientific LLC v. Idaho State Police*, Case No. 19-CV-00040 (D. Idaho), a magistrate judge found that a shipment of Oregon hemp bound for Colorado and interdicted by Idaho State Police could not have been produced “in accordance with subtitle G” because the State of origin does not yet have an approved plan under AMA § 297B and the Secretary has not yet established a plan under AMA § 297C.<sup>18</sup> The magistrate acknowledged Oregon law authorizing the cultivation of hemp, noting the plaintiff’s assertion that the hemp was produced by a grower licensed by the Oregon Department of Agriculture (and, thus, presumably in compliance with 2014 Farm Bill § 7606 requirements).<sup>19</sup> However, in denying the plaintiff’s motion for a preliminary injunction, the magistrate concluded that, in enacting the 2018 Farm Bill, Congress intended to “create a regulatory framework around the production and interstate transportation of hemp for purposes of federal law, and that framework is to be contained in the federal (or compliant [S]tate or [T]ribal) plan for production of hemp found in the 2018 Farm Bill.”<sup>20</sup> Although the 2018 Farm Bill allows hemp to be transported across State lines, the magistrate found those interstate commerce protections apply only to hemp produced under regulations promulgated under the authority of the 2018 Farm Bill.<sup>21</sup> Therefore, because those regulations do not yet exist, the interdicted hemp is subject to Idaho law prohibiting its transportation.

USDA is not a party in the *Big Sky* case, and this office does not concur with the reasoning of the magistrate regarding the shipment of hemp lawfully produced under the 2014 Farm Bill. In

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<sup>17</sup> This conclusion seems to be supported in the legislative history as well. In explaining the effect of the preemption provision, the Conference Report states: “While [S]tates and Indian tribes may limit the production and sale of hemp and hemp products within their borders, the Managers, in Sec. 10112 [sic], agreed to not allow [S]tates and Indian tribes to limit the transportation or shipment of hemp or hemp products through the [S]tate or Indian territory.” H.R. REP. NO. 115-1072, at 738 (2018). Notably, the Managers referred to hemp generally, not merely hemp produced under a plan developed under subtitle G of the AMA.

<sup>18</sup> See *Big Sky*, ECF Doc. #32, Memorandum Decision and Order Re: Plaintiff’s Motion for Preliminary Injunction; see also ECF Doc. #6, Memorandum Decision and Order Re: Plaintiff’s Emergency Motion for Temporary Restraining Order and Preliminary Injunction and Plaintiff’s Motion to File Overlength Brief (*available at* 2019 WL 438336 (Feb. 2, 2019)).

<sup>19</sup> *Big Sky*, ECF Doc. #32, at 5, 7-8.

<sup>20</sup> *Id.* at 3.

<sup>21</sup> *Id.* at 19-26.

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interpreting the statutory language, the magistrate correctly noted the well-recognized principle of statutory construction that statutes should not be interpreted “in a manner that renders other provisions of the same statute inconsistent, meaningless, or superfluous.”<sup>22</sup> However, seemingly ignoring that guiding principle of interpretation, the magistrate did not address the effect of the “other Federal laws” language in AMA § 297B(f) or attempt to give that language any meaning. The Idaho court failed to read the statute as a whole and did not consider the “other Federal laws” clause that I find conclusive. Given the preliminary nature of the magistrate’s ruling, I find his opinion denying a preliminary injunction unpersuasive.<sup>23</sup>

Conversely, the interpretation of 2018 Farm Bill § 10114 advanced by this legal opinion is consistent with a decision issued in the Southern District of West Virginia. In *United States v. Mallory*, Case No. 18-CV-1289 (S.D. W. Va.), the Department of Justice filed a civil action to seize hemp allegedly grown in violation of the CSA and also outside the scope of the 2014 Farm Bill. At issue in that case was hemp purportedly grown by a producer licensed by the State of West Virginia under a 2014 Farm Bill § 7606 pilot program, where the hemp seeds were shipped from a Kentucky supplier licensed by the Commonwealth of Kentucky under a 2014 Farm Bill § 7606 pilot program. The court relied on a combination of laws — the 2014 Farm Bill, the appropriations acts provisions,<sup>24</sup> and the 2018 Farm Bill — to dissolve a preliminary injunction against the defendant<sup>25</sup> and to dismiss entirely the government’s case.<sup>26</sup> In dissolving the preliminary injunction, the court permitted the defendants to transport the hemp product across State lines to Pennsylvania for processing and sale.<sup>27</sup>

Although the *Mallory* court did not have occasion to address any State attempts to block the transportation of hemp, the court did reference 2018 Farm Bill § 10114, noting that it “expressly allows hemp, its seeds, and hemp-derived products to be transported across State lines.”<sup>28</sup> The district judge’s opinion addressed hemp produced under 2014 Farm Bill § 7606 and not hemp produced under State, Tribal, or Departmental plans. The conclusion reached by the *Mallory* court is consistent with my interpretation that States cannot block the shipment of hemp, whether

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<sup>22</sup> *Id.* at 21-22 (citing *Padash v. I.N.S.*, 258 F.3d 1161, 1170-71 (9th Cir. 2004)). The magistrate continued:

It is a cardinal principle of statutory construction that a statute ought, upon the whole, to be so construed that, if it can be prevented, no clause, sentence, or word shall be superfluous, void, or insignificant. . . . It is our duty to give effect, if possible, to every clause and word of a statute.

*Id.* at 23 (internal quotations and citations omitted).

<sup>23</sup> Indeed, the magistrate’s ruling is under appeal. See *Big Sky Sci. LLC v. Bennetts*, Case No. 19-35138 (9th Cir.).

<sup>24</sup> See *supra* footnote 10.

<sup>25</sup> *Mallory*, ECF Doc. #60, Memorandum Opinion and Order, 2019 WL 252530 (S.D. W. Va. Jan. 17, 2019).

<sup>26</sup> *Mallory*, ECF Doc. #72, Memorandum Opinion and Order, 2019 WL 1061677 (S.D. W. Va. Mar. 6, 2019).

<sup>27</sup> *Mallory*, ECF Doc. #60, 2019 WL 252530, at \*3.

<sup>28</sup> *Mallory*, ECF Doc. #72, 2019 WL 1061677, at \*6.

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that hemp is produced under the 2014 Farm Bill or under a State, Tribal, or Departmental plan under the 2018 Farm Bill. It is also a final judgment of the Southern District of West Virginia court, and not a preliminary ruling as with the District of Idaho magistrate's opinion.<sup>29</sup>

In matters of statutory interpretation, the text of the statute governs. One must read that text in its entirety and give every word meaning. The reference to "other Federal laws" must be given meaning, and that language clearly refers to the Federal law that currently authorizes the production of hemp — 2014 Farm Bill § 7606. Therefore, hemp produced under that pilot authority is hemp produced in accordance with subtitle G of the AMA. States and Indian tribes may not prohibit the transportation or shipment of such hemp through that State or Tribal territory.

**D. The 2018 Farm Bill Places Restrictions on the Production of Hemp by Certain Felons.**

The 2018 Farm Bill added a new provision addressing the ability of convicted felons to produce hemp. The 2014 Farm Bill is silent on the issue. AMA § 297B(e)(3)(B) (hereafter, "Felony provision"), as added by the 2018 Farm Bill, provides:

(B) FELONY.—

(i) IN GENERAL.—Except as provided in clause (ii), any person convicted of a felony relating to a controlled substance under State or Federal law before, on, or after the date of enactment of this subtitle shall be ineligible, during the 10-year period following the date of the conviction—

(I) to participate in the program established under this section or section 297C; and

(II) to produce hemp under any regulations or guidelines issued under section 297D(a).

(ii) EXCEPTION.—Clause (i) shall not apply to any person growing hemp lawfully with a license, registration, or authorization under a pilot program authorized by section 7606 of the Agricultural Act of 2014 (7 U.S.C. 5940) before the date of enactment of this subtitle.

7 U.S.C. § 1639p(e)(3)(B) (emphasis added). The references to "the date of enactment of this subtitle" are to subtitle G of the AMA, as added by section 10113 of 2018 Farm Bill. Therefore, the "date of enactment of this subtitle" is the date of enactment of the 2018 Farm Bill — December 20, 2018.

In explaining the Felony provision, the Conference Report notes:

Any person convicted of a felony relating to a controlled substance shall be ineligible to participate under the [S]tate or [T]ribal plan for a 10-year period following the date of the conviction. However, this prohibition shall not apply to producers who have been lawfully participating in a [S]tate hemp pilot program as authorized by the Agricultural Act of 2014, prior to enactment of this subtitle. Subsequent felony convictions after the date of enactment of this subtitle will trigger a 10-year

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<sup>29</sup> *Mallory*, ECF Doc. #72, 2019 WL 1061677, at \*9 (denying the United States' motion to amend and granting the defendants' motion to dismiss). *Big Sky*, ECF Doc. #32, at 28 (denying the plaintiff's motion for preliminary injunction and noting that the court will separately issue an order setting a scheduling conference to govern the case going forward).

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nonparticipation period regardless of whether the producer participated in the pilot program authorized in 2014.

H.R. REP. NO. 115-1072, at 737 (2018).

In sum, a person convicted of a State or Federal felony relating to a controlled substance — regardless of when that conviction occurred — is ineligible to produce hemp under subtitle G of the AMA for a period of 10 years following the date of the conviction. An exception exists in clause (ii) of the Felony provision that applies to a person who was lawfully producing hemp under the 2014 Farm Bill **before December 20, 2018**, and who had been convicted of a felony relating to a controlled substance before that date. States and Indian tribes now have a responsibility to determine whether a person wishing to produce hemp in that State or Tribal territory has any Federal or State felony convictions relating to controlled substances that would make that person ineligible to produce hemp.

### III. OTHER ISSUES

There are two additional important aspects of this issue that should be emphasized.

First, the 2018 Farm Bill preserves the authority of States and Indian tribes to enact and enforce laws regulating the production of hemp that are more stringent than Federal law. *See* AMA § 297B(a)(3) (7 U.S.C. § 1639p(a)(3)) (“Nothing in this subsection preempts or limits any law of a State or Indian tribe that . . . (i) regulates the production of hemp; and (ii) is more stringent than this subtitle.”). For example, a State may continue to prohibit the growth or cultivation of hemp in that State.<sup>30</sup> As discussed above, however, while a State or Indian tribe may prohibit the production of hemp, it may not prohibit the interstate shipment of hemp that has been produced in accordance with Federal law.

Second, the 2018 Farm Bill does not affect or modify the authority of the Secretary of Health and Human Services (“HHS Secretary”) or Commissioner of Food and Drugs (“FDA Commissioner”) under the Federal Food, Drug, and Cosmetic Act (21 U.S.C. § 301 et seq.) and section 351 of the Public Health Service Act (42 U.S.C. § 262). *See* AMA § 297D(c) (7 U.S.C. § 1639r(c)). While AMA § 297D(b) provides that the Secretary of Agriculture shall have “sole authority” to issue Federal regulations and guidelines that relate to the production of hemp, this authority is subject to the authority of the HHS Secretary and FDA Commissioner to promulgate Federal regulations and guidelines under those FDA laws. 7 U.S.C. § 1639r(b).

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<sup>30</sup> Certain states continue to prohibit the cultivation of hemp. *See* National Conference of State Legislatures, “State Industrial Hemp Statutes,” available at <http://www.ncsl.org/research/agriculture-and-rural-development/state-industrial-hemp-statutes.aspx#state> (updated Feb. 1, 2019).

#### IV. CONCLUSION

I have analyzed the hemp provisions enacted as part of the 2018 Farm Bill and reach the following conclusions:

1. As of the enactment of the 2018 Farm Bill on December 20, 2018, hemp has been removed from schedule I of the CSA and is no longer a controlled substance.
2. After USDA publishes regulations implementing the hemp production provisions of the 2018 Farm Bill contained in subtitle G of the AMA, States and Indian tribes may not prohibit the interstate transportation or shipment of hemp lawfully produced under a State or Tribal plan or under a license issued under the Departmental plan.
3. States and Indian tribes may not prohibit the interstate transportation or shipment of hemp lawfully produced under the 2014 Farm Bill.
4. A person with a State or Federal felony conviction relating to a controlled substance is subject to a 10-year ineligibility restriction on producing hemp under subtitle G of the AMA. An exception applies to a person who was lawfully growing hemp under the 2014 Farm Bill before December 20, 2018, and whose conviction also occurred before that date.

The 2018 Farm Bill preserves the authority of States and Indian tribes to enact and enforce laws regulating the production of hemp that are more stringent than Federal law. Additionally, the 2018 Farm Bill does not affect or modify the authority of the HHS Secretary or FDA Commissioner to regulate hemp under applicable FDA laws.





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# The National Bioengineered Food Disclosure Standard: Overview and Select Considerations

**Genevieve . Croft**

Analyst in Agricultural Policy

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**Congressional Research Service**

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# The National Bioengineered Food Disclosure Standard: Overview and Select Considerations



In July 2016, Congress enacted P.L. 114-216 (2016 Act), comprehensive legislation to govern the labeling of bioengineered foods. The 2016 Act required the U.S. Department of Agriculture (USDA) to establish the National Bioengineered Food Disclosure Standard (the Standard). The Standard regulates labeling of bioengineered foods, a term defined in the 2016 Act. The act does not address or define other terms that some members of the public might associate with bioengineered foods, such as *genetically engineered* (GE), *genetically modified*,

and *genetically modified organism* (GMO). The Standard guides the mandatory labeling of foods to indicate the presence of GE ingredients. As such, foods meeting requirements identified in the Standard must bear a bioengineered disclosure. Implementation began on January 1, 2020, and mandatory compliance begins on January 1, 2022.

The Standard provides details under the three key issues of applicability, disclosure options, and administrative provisions:

- *Applicability* discusses the definition of *bioengineered food* and the USDA-maintained List of Bioengineered Foods (List). The Standard applies to foods that are or may be derived from bioengineered ingredients, with some exclusions and exemptions. It does not apply to refined products, such as oils or sugars, that derive from GE plants but no longer contain detectable modified deoxyribonucleic acid (DNA). Many groups interpret the Standard as not applying to foods derived from gene editing and other new technologies that do not use recombinant DNA. The Standard exempts from disclosure foods served in restaurants. Some have endorsed such exclusions and exemptions, and others have criticized them.
- *Disclosure Options* outlines acceptable disclosure options for regulated entities, as well as additional options available for specific entities and types of food packages. Most regulated entities may disclose by text, symbol (pictured above), electronic or digital link, or text message. In some cases, a telephone number or website address may be acceptable. Some groups have praised the flexibility that this range of options provides regulated entities, while others have criticized these options as confusing.
- *Administrative Provisions* reviews compliance dates, recordkeeping requirements, and enforcement mechanisms, which include audits, examinations, hearings, and release of public findings. The 2016 Act provided few enforcement mechanisms to promote compliance. The Standard establishes how USDA may investigate accusations of non-compliance and how it may publicly release its findings.

The Standard does not affect how foods derived from biotechnology are regulated for safety and approval for human consumption. The *Coordinated Framework for Regulation of Biotechnology*, a policy the White House issued in 1986, continues to govern how federal agencies, including USDA, evaluate and approve products developed using modern biotechnology. More generally, USDA and the U.S. Food and Drug Administration (FDA) continue to ensure that foods sold in the United States are safe and properly labeled.

USDA's Agricultural Marketing Service (AMS) developed the Standard within a broader societal context. Before the 2016 Act, some members of the public had demanded *mandatory* labeling of the *presence* of GE ingredients in foods, based on the consumer's right to know. Other members of the public had opposed any GE labeling because of the scientific consensus that GE foods are safe to eat and concern that labeling may introduce unwarranted doubts about food safety. Before the 2016 Act, several states had enacted GE labeling laws, creating concerns among industry and consumer groups. In response, Congress debated this and other federal GE labeling legislation. GE labeling programs may be voluntary or mandatory and may indicate the presence or absence of GE ingredients. Several voluntary labeling programs predate the Standard's mandatory labeling requirements. Public and private programs for the *voluntary* labeling of foods continue to indicate the *absence* of GE ingredients in foods. These include the Non-GMO Project and the USDA National Organic Program.

Future considerations for Congress may include ongoing questions consumers may have concerning what it means for a food to be labeled as *bioengineered*, how regulated entities will respond to the Standard's new requirements, how USDA will implement its responsibilities under the Standard, potential market impacts as demand for GE versus non-GE foods may change, and how the Standard aligns with international labeling requirements. Congress may choose to monitor implementation of the new Standard in accordance with its oversight responsibilities.

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**Genevieve K. Croft**  
Analyst in Agricultural  
Policy  
-re-acte--@crs.loc.gov

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## Introduction

The United States has been a global leader in developing advanced genetic technologies and applying them to crops and livestock.<sup>1</sup> Federal regulators first approved a genetically engineered (GE) food, the Flavr Savr tomato, for sale in 1994.<sup>2</sup> As additional GE crops gained federal approval, farmers rapidly adopted them. Today, about 90% of canola, corn, cotton, soybean, and sugarbeet acres in the United States are planted with GE varieties.<sup>3</sup> GE foods predominantly enter commerce as processed foods and food ingredients (e.g., soybean oil, corn syrup, and sugar).<sup>4</sup> Some members of the public seek to avoid consuming GE foods, as advances in biotechnology have outpaced their acceptance.

In July 2016, Congress enacted P.L. 114-216 (the 2016 Act), requiring the U.S. Department of Agriculture (USDA) to establish a National Bioengineered Food Disclosure Standard (the Standard) within two years.<sup>5</sup> The 2016 Act followed decades of societal debate about genetic engineering, and it marked the first time that the federal government would require the disclosure of GE foods to consumers. (The 2016 Act defined these as *bioengineered foods*.) With the 2016 Act, the United States joined more than 60 countries that require some form of *GE labeling*, or on-package disclosure of GE foods or food ingredients.<sup>6</sup>

The Standard provides a mandatory national standard for disclosure of the presence of bioengineered foods and food ingredients to consumers. It details who is responsible for making disclosures, what they must look like, and when they are and are not required. The Standard provides U.S. food manufacturers, importers, and retailers with a voluntary compliance period and a mandatory compliance deadline. The more than 126,000 comments that USDA received during the rulemaking process demonstrate significant public interest in its formulation.<sup>7</sup> USDA released the final rule in December 2018, and phased implementation began in January 2020.<sup>8</sup>

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<sup>1</sup> For a history of the development of genetic engineering in agriculture and related regulatory policies, see National Academies of Science, Engineering, and Medicine (NASEM), *Genetically Engineered Crops: Experiences and Prospects*, 2016, pp. 65-96.

<sup>2</sup> The U.S. Food and Drug Administration (FDA) approved the Flavr Savr tomato, genetically engineered to stay firm after harvest, for sale in 1994.

<sup>3</sup> Daniel Hellerstein, Dennis Vilorio, and March Ribauda (eds.), *Agricultural Resources and Environmental Indicators, 2019*, U.S. Department of Agriculture (USDA), Economic Research Service (ERS), Economic Information Bulletin no. 208, May 2019, pp. 30-34.

<sup>4</sup> Gregory Jaffe, *Straight Talk on Genetically Engineered Foods: Answers to Frequently Asked Questions*, Center for Science in the Public Interest, 2015.

<sup>5</sup> P.L. 114-216, “An Act to Reauthorize and Amend the National Sea Grant College Program Act, and for Other Purposes,” enacted July 29, 2016. Congress used the reauthorization of the National Sea Grant College Program Act as a legislative vehicle to enact GE labeling legislation. The 2016 Act amended the Agricultural Marketing Act of 1946 (7 U.S.C. §1621 et seq.) to add the Standard as a new subtitle.

<sup>6</sup> A *disclosure* may be a discrete statement or symbol, while a *label* may provide more comprehensive information about a product. This report may use *labeling* as a proxy for *disclosure*. For a summary of international laws, see Center for Food Safety (CFS), “International Labeling Laws,” <https://www.centerforfoodsafety.org/issues/976/ge-food-labeling/international-labeling-laws>. This CFS summary may not be comprehensive.

<sup>7</sup> USDA delegated development and implementation to the USDA Agricultural Marketing Service (AMS). In June 2017, AMS sought preliminary public input by issuing 30 questions related to the future standard. The public responded with more than 112,000 replies. In May 2018, AMS issued a Notice of Proposed Rulemaking in the *Federal Register*. AMS received approximately 14,000 comments on this proposed rule.

<sup>8</sup> USDA, “National Bioengineered Food Disclosure Standard,” 83 *Federal Register* 65814, December 21, 2018 (hereinafter 83 *Federal Register* 65814, December 21, 2018), p. 65835. The final rule adds the Standard as a new Part

Stakeholder reactions to the final Standard have been mixed. Several organizations immediately criticized the final rule, while others supported it. The Organic Trade Association (OTA), the Center for Food Safety (CFS), the Non-GMO Project, and the Institute for Agriculture and Trade Policy (IATP) each released statements with critical comments. OTA remarked that it is “deeply disappointed in the U.S. Department of Agriculture’s final GMO labeling rule and calls on companies to voluntarily act on their own to provide full disclosures on their food products about GMO content.”<sup>9</sup> CFS stated that “the USDA has betrayed the public trust by denying Americans the right to know how their food is produce[d].”<sup>10</sup> The Non-GMO Project commented that it “is disappointed by the content of the final rule, which jeopardizes GMO transparency for Americans.”<sup>11</sup> IATP stated that “unfortunately, the final rule fails to fix the most egregious provisions of the draft rule and is practically useless in conveying accurate information about food ingredients to consumers while they are shopping.”<sup>12</sup>

In contrast, the National Corn Growers Association (NCGA), the American Soybean Association (ASA), and the Food Marketing Institute (FMI) provided supportive comments. NCGA commented that “America’s corn farmers need a consistent, transparent system to provide consumers with information without stigmatizing important, safe technology. Thus, we are pleased with the issuance of these rules and look forward to reviewing the details in the coming days.”<sup>13</sup> ASA stated, “we believe that it allows transparency for consumers while following the intent of Congress that only food that contains modified genetic material be required to be labeled bioengineered under the law, with food companies having the option of providing additional information if they choose.”<sup>14</sup> FMI stated, “the rule provides a consistent way to provide transparency regarding the foods we sell and allow[s] our customers across the country the means to learn more about grocery products containing bioengineered ingredients.”<sup>15</sup>

This report provides background information on agricultural biotechnology; reviews major provisions of the Standard (related to applicability, disclosure options, and administrative provisions); and concludes with potential considerations for Congress. The **Appendix** provides definitions of select scientific and related terms used in this report.

## **Agricultural Biotechnology Background**

People have been changing plants, animals, and other edible organisms since before agriculture began more than 10,000 years ago. Before people planted crops and raised farm animals, hunting and gathering changed the genetic composition of species. The pace of these changes accelerated with the onset of agriculture. Selective breeding helped create and improve agricultural varieties

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66 of Title 7 of the *Code of Federal Regulations*.

<sup>9</sup> OTA, “Position on GMO Labeling Standard: Response to the National Bioengineered Food Disclosure Standard,” press release, December 20, 2018 (hereinafter OTA, press release, December 20, 2018).

<sup>10</sup> CFS, “Long-Awaited Final Regulations for GMO Food Labeling Leave Millions of Americans in the Dark,” press release, December 20, 2018 (hereinafter CFS, press release, December 20, 2018).

<sup>11</sup> Non-GMO Project, “Americans Deserve Better than the USDA’s GMO Labeling Law,” press release, December 20, 2018 (hereinafter Non-GMO Project, press release, December 20, 2018).

<sup>12</sup> IATP, “USDA’s GMO Disclosure Rule Designed to Cover Up, Not Inform,” press release, December 20, 2018 (hereinafter IATP, press release, December 20, 2018).

<sup>13</sup> NCGA, “NCGA Pleased by USDA Issuing Bioengineered Food Disclosure Standard Labeling Rule,” press release, December 20, 2018 (hereinafter NCGA, press release, December 20, 2018).

<sup>14</sup> ASA, “Soybean Growers Support USDA’s Bioengineered Food Disclosure Rule,” press release, December 20, 2018.

<sup>15</sup> FMI, “FMI Applauds Rule Establishing a Single Bioengineered Food Disclosure Standard,” press release, December 20, 2018 (hereinafter, FMI, press release, December 20, 2018).

to meet farmer and consumer needs. Conventional (traditional) breeding created hybrid varieties with enhanced size, growth rate, and other valuable characteristics. Since the mid-20<sup>th</sup> century, laboratory-based breeding techniques have further strengthened the ability to modify agricultural varieties. In recent decades, genetic engineering has allowed for increasingly specific genetic manipulation. These techniques can change plants and animals in ways that, with conventional breeding, would not be possible or could take decades to achieve.

The public has come to recognize plants and animals altered through modern biotechnology and genetic engineering as *genetically modified organisms (GMOs)*.<sup>16</sup> Scientific and federal government experts identify the term *genetically modified* as more general than *genetically engineered*, and as such *genetically modified* may include conventional breeding.<sup>17</sup> In this report, *genetic engineering* refers to genetic modification techniques other than conventional breeding.

The Standard addresses food labeling, and it does not change how foods derived from biotechnology are regulated for safety and approval for human or animal consumption. The federal government's 1986 *Coordinated Framework for Regulation of Biotechnology* (the Coordinated Framework) governs how USDA, the U.S. Food and Drug Administration (FDA), and the U.S. Environmental Protection Agency (EPA) apply existing statutes to evaluate biotechnology products.<sup>18</sup> USDA regulates plants under the Plant Protection Act (7 U.S.C. §7701 et seq.). FDA regulates food, animal feed additives, and human and animal drugs, primarily under the Federal Food, Drug, and Cosmetic Act (21 U.S.C. §301 et seq.) and the Public Health Service Act (42 U.S.C. §201 et seq.). EPA registers and approves the use of pesticides, including those incorporated into plants through biotechnology, under the Federal Insecticide, Fungicide and Rodenticide Act (7 U.S.C. §136 et seq.). A key principle of the Coordinated Framework is to regulate products according to their characteristics and unique features rather than the processes used to develop them.

More generally, FDA and the USDA Animal and Plant Health Inspection Service (APHIS) have responsibilities for assuring that foods sold in the United States are safe, with respect to human and agricultural health, and properly labeled.<sup>19</sup> FDA released a policy statement on GE foods in 1992, indicating that in most cases they are “substantially similar” to non-GE foods and do not require additional regulation or labeling beyond what is required for comparable non-GE foods.<sup>20</sup>

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<sup>16</sup> *Modern biotechnology* includes the tools of genetic engineering, in addition to other approaches (e.g., fusion of cells from different types of organisms to create new varieties). See Codex Alimentarius Commission, *Principles for the Risk Analysis of Foods Derived from Modern Biotechnology*, Doc CAC/GL 44-2003, World Health Organization and Food and Agriculture Organization, 2003.

<sup>17</sup> FDA, “Questions & Answers on Food from Genetically Engineered Plants,” January 4, 2018, <https://www.fda.gov/food/food-new-plant-varieties/questions-answers-food-genetically-engineered-plants>; NASEM, *Genetically Engineered Crops: Experiences and Prospects*, 2016; and Institute of Medicine and National Research Council, *Safety of Genetically Engineered Foods: Approaches to Assessing Unintended Health Effects*, 2004.

<sup>18</sup> FDA, “Clarifying Current Roles and Responsibilities Described in the Coordinated Framework for the Regulation of Biotechnology and Developing a Long-Term Strategy for the Regulation of the Products of Biotechnology; Public Meeting,” 51 *Federal Register* 23302, June 26, 1986.

<sup>19</sup> For more information, see CRS In Focus IF10650, *Understanding Process Labels and Certification for Foods*.

<sup>20</sup> FDA, “Statement of Policy: Foods Derived from New Plant Varieties,” 57 *Federal Register* 22984, May 29, 1992. Through this document, FDA permitted voluntary labeling to indicate that foods have or have not derived from genetically engineered plants or animals. See updated draft guidance documents: FDA, “Guidance for Industry: Voluntary Labeling Indicating Whether Foods Have or Have Not Been Derived from Genetically Engineered Plants,” Regulations.gov, FDA-2000-D-0075-0017, updated March 3, 2019; and FDA, “Voluntary Labeling Indicating Whether Food Has or Has Not Been Derived from Genetically Engineered Atlantic Salmon: Guidance for Industry,” Regulations.gov, FDA-2015-D-4272, revised March 11, 2019.

A legal decision in 2000 upheld this policy.<sup>21</sup> FDA requires labeling of GE foods that (1) have nutritional characteristics that differ from comparable non-GE foods, (2) contain GE material from known allergenic sources, or (3) have elevated levels of toxic compounds. This labeling is not required to indicate the GE status of the food.

APHIS reviews GE organisms on the basis of whether they pose plant pest risks to agriculture. In 2019, the agency issued a proposed rule to exempt several categories of GE plants from review, citing 30 years of evidence indicating that “genetically engineering a plant with a plant pest as a vector, vector agent, or donor does not in and of itself result in a GE plant that presents a plant pest risk.”<sup>22</sup> The proposed rule further stated that new GE technologies, such as gene editing, do not engage with plant pests in any way.<sup>23</sup>

## The National Bioengineered Food Disclosure Standard

The Standard provides a mandatory national standard for disclosure of the presence of bioengineered foods and food ingredients to consumers. It provides U.S. food manufacturers, importers, and retailers with a voluntary compliance period and a mandatory compliance deadline.

Following enactment of the 2016 Act, USDA delegated development and implementation of the Standard to the USDA Agricultural Marketing Service (AMS), which oversees many other USDA food-labeling programs, including mandatory Country of Origin Labeling (COOL), the voluntary National Organic Program (NOP), and the voluntary Process Verified Program (PVP). AMS developed the Standard through federal rulemaking, and issued the final rule in December 2018. The final rule defines key terms and interprets issues arising from the 2016 Act. The text box below includes terms defined in the Standard.

The Standard identifies *regulated entities* as the food manufacturers, importers, and retailers responsible for making disclosures under the Standard.<sup>24</sup> All regulated entities must comply with the Standard by January 1, 2022, although disclosures may begin during the voluntary compliance period, which started on January 1, 2020.

As required for economically significant regulations, AMS prepared and published a regulatory impact analysis (RIA) of the Standard.<sup>25</sup> The RIA estimates that implementation will cost between \$570 million and \$3.9 billion in the first year, and between \$52 million and \$118 million in each following year. It attributes most first year costs to those incurred by manufacturers analyzing the applicability of the rule and their compliance with the rule (\$401 million to \$3.1 billion). After the first year, the RIA attributes most ongoing costs to regulated entities avoiding mandatory disclosures by verifying that foods are not subject to the Standard (\$0 to \$59 million) and replacing bioengineered ingredients with non-bioengineered ingredients (\$41 million to \$44 million). The RIA estimates annual financial benefits of \$190 million to \$565 million, mostly attributed to costs avoided: the costs of complying with a patchwork of state laws, which are

<sup>21</sup> *Alliance for Bio-Integrity v. Shalala*, 116 F.Supp.2d 166 (D.D.C. 2000).

<sup>22</sup> APHIS, “Movement of Certain Genetically Engineered Organisms,” 84 *Federal Register* 26514, June 6, 2019.

<sup>23</sup> Under the proposed rule change, APHIS may evaluate new plant varieties created through gene editing for noxious weed risk.

<sup>24</sup> 7 C.F.R. §66.2.

<sup>25</sup> AMS, “Regulatory Impact Analysis,” National Bioengineered Food Disclosure Standard, Regulations.gov, Docket ID AMS-TM-17-0050, October 30, 2019, (hereinafter AMS, Regulatory Impact Analysis, October 30, 2019).

avoided and by implementation of the federal Standard. The RIA does not anticipate that the new Standard will provide any benefits to human health or the environment.

Key provisions of the Standard, along with associated issues raised by stakeholders, are identified below within three categories: (1) applicability, (2) disclosure options, and (3) administrative provisions. Many components of the Standard remain controversial. Public reactions are discussed after each category.

### Select Definitions from the National Bioengineered Food Disclosure Standard

The National Bioengineered Food Disclosure Standard (7 C.F.R. §66.1) defines the terms included in this list, as well as others that are not listed here.

**Bioengineered food.** (1) Subject to the factors, conditions, and limitations in paragraph (2) of this definition: (i) A food that contains genetic material that has been modified through in vitro recombinant deoxyribonucleic acid (rDNA) techniques and for which the modification could not otherwise be obtained through conventional breeding or found in nature; provided that (ii) Such a food does not contain modified genetic material if the genetic material is not detectable pursuant to §66.9. (2) A food that meets one of the following factors and conditions is not a bioengineered food. (i) An incidental additive present in food at an insignificant level and that does not have any technical or functional effect in the food, as described in 21 CFR 101.100(a)(3).

**Bioengineered substance.** Substance that contains genetic material that has been modified through in vitro recombinant deoxyribonucleic acid (rDNA) techniques and for which the modification could not otherwise be obtained through conventional breeding or found in nature.

**Food.** A food (as defined in Section 201 of the Federal Food, Drug, and Cosmetic Act [21 U.S.C. §321]) that is intended for human consumption.

**Information panel.** Part of the label of a packaged product that is immediately contiguous to and to the right of the principal display panel as observed by an individual facing the principal display panel, unless another section of the label is designated as the information panel because of package size or other package attributes (e.g. irregular shape with one usable surface).

**Label.** A display of written, printed, or graphic matter upon the immediate container or outside wrapper of any retail package or article that is easily legible on or through the outside container or wrapper.

**Principal display panel.** That part of a label that is most likely to be displayed, presented, shown, or examined under customary conditions of display for retail sale.

**Regulated entity.** The food manufacturer, importer, or retailer that is responsible for making bioengineered food disclosures under §66.100(a).

**Similar retail food establishment.** A cafeteria, lunch room, food stand, food truck, transportation carrier (such as a train or airplane), saloon, tavern, bar, lounge, other similar establishment operated as an enterprise engaged in the business of selling prepared food to the public, or salad bars, delicatessens, and other food enterprises located within retail establishments that provide ready-to-eat foods that are consumed either on or outside of the retailer's premises.

**Small food manufacturer.** Any food manufacturer with annual receipts of at least \$2,500,000, but less than \$10,000,000.

**Very small food manufacturer.** Any food manufacturer with annual receipts of less than \$2,500,000.

**Small package.** Food packages that have a total surface area of less than 40 square inches.

**Very small package.** Food packages that have a total surface area of less than 12 square inches.

## Applicability

The Standard addresses its applicability to specific types of foods and types of entities involved in the manufacture, sale, and distribution of food.<sup>26</sup> These issues were debated in policy discussions

<sup>26</sup> AMS created an online decision tool to assist regulated entities in determining when they must comply with the Standard, available at <https://www.ams.usda.gov/rules-regulations/be/zingtree>.



about GE food labeling, and they range from how the Standard defines a bioengineered food to which entities must comply with the Standard and which are exempt.

## Bioengineered Food Definition and Exclusions

The 2016 Act defined *bioengineering*, with respect to food, as a food “(A) that contains genetic material that has been modified through in vitro recombinant deoxyribonucleic acid (DNA) techniques; and (B) for which the modification could not otherwise be obtained through conventional breeding or found in nature.”<sup>27</sup> It did not identify any specific technologies that would meet the definition of *bioengineering*.<sup>28</sup> The 2016 Act specified that *bioengineering* referred to foods “intended for human consumption,” and the act left open the possibility that USDA could use additional similar terms in the Standard.<sup>29</sup>

When issuing the Standard, USDA added detail to some statutory definitions and did not provide explicit definition of some other terms. While the Standard builds on the definition of *bioengineering* by describing the applicability of term, it does not define component parts of the definition, including *conventional breeding* or *found in nature*. Nor does it specify whether foods developed through specific technologies, such as gene editing, require disclosure to consumers.<sup>30</sup> The Standard requires use of the term *bioengineering* rather than similar terms, such as *genetic engineering*, *genetically modified*, or *GMO*.

The final rule sets boundaries for the foods that require disclosure. Based on the definition of *bioengineering* in the 2016 Act, AMS determined that certain products that derive from GE sources do not require labeling. The Standard identifies these exclusions in its definition of *bioengineered food*. They include animal feed, which is not considered food because it is not intended for human consumption; foods in which modified DNA is not detectable (e.g., refined oils and sugars); and incidental additives, as described in 21 C.F.R. 101.100(a)(3).<sup>31</sup> The Standard expressly exempts other foods and substances described below. The text box at the end of this section summarizes exclusions and exemptions from the Standard.

## Exemptions

The Standard identifies five exemptions from disclosure.<sup>32</sup> The 2016 Act explicitly identified two of these: food served at restaurants or similar retail food establishments, and food produced by very small food manufacturers. The act called for the Standard to set a third exemption: foods containing an amount of a bioengineered substance below a certain threshold. The final two

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<sup>27</sup> 7 U.S.C. §1639(1).

<sup>28</sup> For AMS’s response to public comments calling for the final Standard to broadly interpret the statutory definition of *bioengineering* to include existing gene editing technologies, including its assertion that “AMS is not making a blanket statement regarding the scope of technologies that are covered by” the Standard, see 83 *Federal Register* 65814, December 21, 2018, p. 65835.

<sup>29</sup> 7 U.S.C. §1639(2) and 7 U.S.C. §1639(1).

<sup>30</sup> *Gene editing* is defined as “a technique that allows researchers to alter the DNA of organisms to insert, delete, or modify a gene or gene sequences to silence, enhance, or otherwise change an organism’s specific genetic characteristics,” in NASEM, *Gene Drives on the Horizon: Advancing Science, Navigating Uncertainty, and Aligning Research with Public Values*, 2016, p. 182. For additional information on gene editing, see CRS Report R44824, *Advanced Gene Editing: CRISPR-Cas9*. In a personal communication with CRS on January 23, 2019, AMS stated that it intends to address gene editing, with respect to applicability of the Standard, on a case-by-case basis.

<sup>31</sup> 7 C.F.R. §66.1.

<sup>32</sup> 7 C.F.R. §66.5.

exemptions are for foods derived from animals solely because they consumed bioengineered feed, and food certified under the USDA National Organic Program (NOP).

### ***Food Served in a Restaurant or Similar Retail Food Establishment***

The 2016 Act exempts from disclosure food served in a restaurant or *similar retail food establishment*.<sup>33</sup> The Standard defines this term as follows:

A cafeteria, lunch room, food stand, food truck, transportation carrier (such as a train or airplane), saloon, tavern, bar, lounge, other similar establishment operated as an enterprise engaged in the business of selling prepared food to the public, or salad bars, delicatessens, and other food enterprises located within retail establishments that provide ready-to-eat foods that are consumed either on or outside of the retailer's premises.<sup>34</sup>

### ***Very Small Food Manufacturers***

The 2016 Act exempts from disclosure food produced by a *very small food manufacturer*. The Standard defines this term as “any food manufacturer with annual receipts of less than \$2,500,000.”<sup>35</sup>

### ***Foods with Unintentional Bioengineered Ingredients Under a Presence Threshold***

The 2016 Act called for USDA to “determine the amounts of a bioengineered substance that may be present in food, as appropriate, in order for the food to be a bioengineered food.”<sup>36</sup> The Standard exempts “food in which no ingredient intentionally contains a bioengineered (BE) substance, with an allowance for inadvertent or technically unavoidable BE presence of up to five percent (5%) for each ingredient.”<sup>37</sup>

### ***Foods Derived from Animals That Consumed Bioengineered Feed***

The 2016 Act specified that the Standard should not consider food derived from animals to be *bioengineered food* solely because those animals consumed bioengineered feed.<sup>38</sup> The Standard exempts such foods. Food products such as meat, eggs, or milk derived from animals that consumed bioengineered feed do not require disclosure solely because the animals consumed bioengineered feed.<sup>39</sup>

### ***Foods Certified Under NOP***

The 2016 Act specified that NOP certification “shall be considered sufficient to make a claim regarding the absence of bioengineering in the food, such as ‘not bioengineered,’ ‘non-GMO,’ or

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<sup>33</sup> 7 U.S.C. §1639b(b)(2)(G)(i).

<sup>34</sup> 7 C.F.R. §66.1.

<sup>35</sup> 7 C.F.R. §66.1.

<sup>36</sup> 7 U.S.C. §1639b(b)(2)(B).

<sup>37</sup> 7 C.F.R. §66.5(c).

<sup>38</sup> This is codified at 7 U.S.C. §1639b(b)(2)(A).

<sup>39</sup> A food derived from an animal that consumes bioengineered feed may not require disclosure on its own, but a multi-ingredient food containing such a food ingredient may require disclosure due to the presence of other bioengineered ingredients.

another similar claim.”<sup>40</sup> The Standard explicitly exempts foods certified under NOP. NOP is a voluntary food labeling program managed by AMS and operated as a public-private partnership. NOP certifies that agricultural products have been produced using approved organic methods listed in statute.<sup>41</sup> Among NOP’s diverse criteria, genetic engineering is an excluded method: NOP-certified products may not be produced or handled with genetic engineering. Thus, such products are not bioengineered and are exempted from the Standard.

### Exclusions and Exemptions from the Standard

**Exclusions: products that do not meet the definition of food or bioengineered food, and do not require disclosure (the Standard identifies exclusions at 7 C.F.R. §66.1)**

- Animal feed (which is not food intended for human consumption)
- Foods in which modified DNA is not detectable (e.g., refined oils and sugars)
- Incidental additives<sup>42</sup>

**Exemptions: products that may or may not meet the definition of bioengineered food and do not require disclosure (the Standard identifies exemptions at 7 C.F.R. §66.5)**

- Food served in restaurants and similar retail food establishments
- Food from very small manufacturers (with annual receipts less than \$2.5 million)
- Foods with up to 5% presence, per ingredient, of unintentional or technically unavoidable bioengineered substances
- Foods derived from animals, based solely on the fact that the animal consumed bioengineered feed
- Foods certified under the National Organic Program

## List of Bioengineered Foods

The 2016 Act directed USDA to establish “such requirements and procedures as the Secretary [of Agriculture] determines necessary to carry out the standard.”<sup>43</sup> During rulemaking, AMS requested public comment on the utility of maintaining a list of potentially regulated foods, for entities to consult when determining whether a food is subject to disclosure. The final Standard includes a List of Bioengineered Foods (the List), that identifies foods that are available in a bioengineered form.<sup>44</sup> While there are bioengineered and non-bioengineered versions of all foods on the List, only the bioengineered versions may require disclosure. The final rule details how AMS considered including on the List, but ultimately did not include, enzymes, yeasts, and other microorganisms produced in controlled environments. The rule states that regulated entities would need to make determinations on whether these substances require recordkeeping or disclosure on a case-by-case basis.<sup>45</sup>

<sup>40</sup> This statement is codified at 7 U.S.C. §6524.

<sup>41</sup> 7 C.F.R. §205.105 and 7 C.F.R. §205.2. In 1990, Congress authorized USDA to establish NOP to enforce uniform national standards for organically produced agricultural products. It became operational in 2002, and AMS manages it. For more information, see CRS In Focus IF10278, *U.S. Farm Policy: Certified Organic Agricultural Production*.

<sup>42</sup> “As described in 21 CFR 101.100(a)(3), incidental additives that are present in food at an insignificant level and do not have any technical or functional effect in the food are exempt from certain labeling requirements under the FDCA.” 83 *Federal Register* 65814, December 21, 2018, p. 65821.

<sup>43</sup> 7 U.S.C. §1639b(a)(2).

<sup>44</sup> The current List is codified at 7 C.F.R. §66.6.

<sup>45</sup> 83 *Federal Register* 65814, December 21, 2018, p. 65839.

AMS also publishes the List and associated details on its website.<sup>46</sup> Beginning in early 2020, AMS plans to update the List annually, with associated opportunities for public comment.<sup>47</sup> AMS plans to notify the public of the review via the *Federal Register* and the AMS website. If needed, AMS plans to update the List through the federal rulemaking process. See the text box below for foods on the List as of January 2020.

### Foods on the List of Bioengineered Foods (January 2020)

**Alfalfa.** Canada and the United States produce bioengineered alfalfa, with varieties including herbicide-tolerant and low-lignin (for improved digestibility by animals) traits. Alfalfa is primarily produced to feed animals, though people consume alfalfa sprouts, seeds, and leaves.

**Apple (Arctic™ varieties).** The United States produces bioengineered apples, with varieties including a non-browning trait.

**Canola.** Australia, Canada, and the United States produce bioengineered canola, with herbicide-tolerant, high-laureate (for oil quality), pollination-control, reduced-phytate (for quality), and male-sterility (non-functional pollen) traits. People consume canola oil, and canola meal and protein are used in food and animal feed.

**Corn.** Fifteen countries, including the United States, produce bioengineered corn, with traits for herbicide-tolerance, insect-resistance, increased-ear-biomass, alpha amylase (for quality), increased-lysine (for quality), male-sterility (non-functional pollen), pollination-control, and fertility-control.

**Cotton.** Twelve countries, including the United States, commercially produce bioengineered cotton, with herbicide-tolerant and insect-resistant traits. People consume refined cottonseed oil, and animals consume cottonseed as a feed supplement.

**Eggplant (BARI Bt Begun varieties).** At present, only Bangladesh commercially produces bioengineered eggplant, with an insect-resistant trait. The USDA Animal and Plant Health Inspection Service (APHIS) does not currently admit fresh eggplant fruit from Bangladesh into the United States.

**Papaya (ringspot virus-resistant varieties).** The United States and China produce bioengineered papaya, with ringspot virus-resistance traits.

**Pineapple (pink flesh varieties).** Costa Rica produces bioengineered pineapple, with increased-carotenoid-level (yielding pink-colored flesh) and flowering-inhibition traits. Bioengineered pineapple is not currently available for sale in the United States, although it is approved for sale.

**Potato.** The United States and Canada produce bioengineered potatoes, with traits that reduce bruising, free-asparagine levels, sugars, and traits that offer virus resistance and insect resistance.

**Salmon (AquAdvantage®).** Panama produces bioengineered salmon for sale to Canada with a trait that increases growth rates. As of 2019, bioengineered salmon is approved for food use in the United States but is not commercially available.

**Soybean.** Eight countries, including the United States, produce bioengineered soybean, with traits for herbicide tolerance, insect resistance, altered oil-profiles, and altered growth-properties.

**Squash (summer).** The United States produces bioengineered summer squash with virus-resistant traits.

**Sugarbeet.** Canada and the United States produce bioengineered sugarbeet with traits for herbicide tolerance. Sugarbeets are refined into sucrose for use in foods and animal feeds.

**Source:** Compiled by CRS from 7 C.F.R. §66.6; USDA, “List of Bioengineered Foods,” <https://www.ams.usda.gov/rules-regulations/be/bioengineered-foods-list>; and other sources.

<sup>46</sup> AMS, “List of Bioengineered Foods,” <https://www.ams.usda.gov/rules-regulations/be/bioengineered-foods-list>. This website links each food on the list to a summary document, which includes information on the crop or animal’s *BE events* (specific approved bioengineered versions), production, safety reviews, and references.

<sup>47</sup> Processes related to updating the List are codified at 7 C.F.R. §66.7. In a personal communication with CRS on January 2, 2020, AMS stated that it anticipates publishing the first update in early 2020.

## Public Response to Applicability Provisions of the Standard

The Standard's definition of *bioengineered food*, and what it applies to, remains controversial. Some areas of disagreement among stakeholders include the use of *bioengineered* rather than alternative terms, the definition's treatment of gene editing and new genetic technologies, the definition's treatment of refined food products, and the disclosure threshold for inadvertent or technically unavoidable presence of GE ingredients. Some farmer and industry groups have praised the Standard, contending that it provides consumers and regulated entities with needed consistency and transparency.<sup>48</sup> Some advocates of stricter GE labeling argue that it is too permissive because many foods they consider genetically engineered do not require disclosure.<sup>49</sup> These issues are addressed below.

**Alternative terms.** The terminology used in the Standard has been a point of contention. While USDA had statutory authority to use alternative terms to *bioengineered*, it did not do so. Some stakeholder groups argue that most consumers are unfamiliar with the term *bioengineered*. They assert that using other terms, such as *GMO*, *genetically modified organism*, or *genetically engineered*, would be less confusing for consumers.<sup>50</sup> Other groups contend that the Standard's language is precise.<sup>51</sup>

**Gene editing and new genetic technologies.** The Standard's definition of *bioengineered food* does not identify specific technologies used to create such foods. AMS states that the Standard's definition "focuses primarily on the products of technology, not the technology itself."<sup>52</sup> During rulemaking, some stakeholders had called for the Standard to explicitly address the status of foods derived from new genetic technologies that may not meet the statutory definition of *bioengineering*.<sup>53</sup> For example, foods derived from gene editing may not meet the statutory definition of *bioengineering* if (a) they do not contain recombinant DNA or (b) AMS considers that their modifications could be achieved through conventional breeding or found in nature. Other new genetic technologies may arise that do not meet the Standard's definition of *bioengineering* for these or other reasons.

Because the Standard does not address specific technologies, consumers and regulated entities may lack clarity about whether or not foods derived from new genetic technologies must be disclosed under the Standard. In the absence of this information, many have interpreted the bioengineering definition as broadly excluding foods derived from gene editing.<sup>54</sup> Under this interpretation, gene-edited foods would not require disclosure. Other interpretations of the Standard simply note that the final rule does not explicitly address gene editing or other new genetic technologies.<sup>55</sup> Advocates of stricter GE labeling requirements contend that even though

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<sup>48</sup> Anna-Lisa Laca, "Ag Groups Praise National Bioengineered Food Disclosure Standard," *Ag Professional*, December 20, 2018.

<sup>49</sup> See for example, IATP, press release, December 20, 2018; CFS, press release, December 20, 2018; and Non-GMO Project, press release, December 20, 2018.

<sup>50</sup> See, for example, CFS, press release, December 20, 2018; and OTA, press release, December 20, 2018.

<sup>51</sup> See, for example, FMI, press release, December 20, 2018.

<sup>52</sup> 83 *Federal Register* 65814, December 21, 2018, p. 65835.

<sup>53</sup> For AMS's discussion of comments on including gene editing in the definition of *bioengineered food*, see 83 *Federal Register* 65814, December 21, 2018, p. 65835.

<sup>54</sup> For interpretations of how the Standard treats gene edited foods, see, for example, Russ LaMotte, Alan Sachs, and Matt Schneider, "USDA Issues Final Bioengineered Food Disclosure Standard," *Beveridge and Diamond*, January 3, 2019; and see OTA, press release, December 20, 2018, and Non-GMO Project, press release, December 20, 2018.

<sup>55</sup> See, for example, Melvin S. Drozen, Evangelia C. Pelonis, and Samuel D. Jockel, "USDA AMS National

gene-edited foods seem to be excluded from the Standard's definition of *bioengineering*, such foods meet the common understanding of *genetic engineering* and therefore should be required to bear disclosures.<sup>56</sup>

**Refined foods exclusion.** The Standard excludes refined food products that do not contain detectable amounts of modified DNA from required disclosure.<sup>57</sup> Food without detectable modified genetic material does not meet the statutory definition of *bioengineered*. Examples include soybean oil, canola oil, and refined sugar. The Standard does not require regulated entities to test every product for the presence of detectable modified genetic material. Rather, manufacturers, importers, and retailers can demonstrate the absence of modified genetic material with records of a validated refining process.<sup>58</sup> Some groups that favor a more expansive definition of *bioengineered foods* argue that consumers want to know whether the foods they eat derive from GE plants and animals, and thus the Standard should have required disclosures for these refined foods.<sup>59</sup> In contrast, some industry groups, including the Consumer Brands Association (formerly the Grocery Manufacturers Association), commended the Standard for providing regulated entities with the option to voluntarily disclose such foods if desired.<sup>60</sup>

**Disclosure threshold.** The Standard does not require disclosures for foods with up to 5% presence, per ingredient, of unintentional or technically unavoidable bioengineered substances. In comparison, the European Union applies a threshold of 0.9% per ingredient, and Australia and New Zealand use a threshold of 1% per ingredient.<sup>61</sup> Foods in Japan must be labeled if a GE ingredient is among the top three ingredients and accounts for more 5% of the total product by weight.<sup>62</sup> AMS selected the 5% threshold for the Standard to “appropriately balance providing disclosure to consumers with the realities of the food supply chain.”<sup>63</sup> Some advocates of stricter GE labeling, such as OTA, argue that the threshold in the Standard is too high and is “inconsistent with accepted private standards, most of our major global trading partners and unacceptable to consumers.”<sup>64</sup>

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Bioengineered (BE) Food Disclosure Standard Final Rule,” *National Law Review*, December 28, 2018.

<sup>56</sup> See, for example, OTA, press release, December 20, 2018.

<sup>57</sup> 7 C.F.R. §66.5.

<sup>58</sup> The Standard outlines validated refining processes and standards of performance for detectability testing at 7 C.F.R. §66.9(b)-(c). USDA issued public notice of draft instructions for the validation of refining processes in USDA, “National Bioengineered Food Disclosure Standard; Validation of Refining Processes,” 84 *Federal Register* 68815, December 17, 2019.

<sup>59</sup> The final rule (83 *Federal Register* 65814, December 21, 2018) discusses different views at length on pages 65833-65834. See also OTA, press release, December 20, 2018; and CFS, press release, December 20, 2018.

<sup>60</sup> Elaine Watson, “Final GMO Labeling Rule Does Not Require Labeling of Highly Refined Ingredients from GM Crops, if No Modified Genetic Material Is Detectable,” *Food Navigator*, December 20, 2018. The Grocery Manufacturers Association changed its name to the Consumer Brands Association effective January 2020.

<sup>61</sup> See European Union, “Traceability and Labeling,” [https://ec.europa.eu/food/plant/gmo/traceability\\_labelling\\_en](https://ec.europa.eu/food/plant/gmo/traceability_labelling_en); and Food Standards Australia New Zealand, “Genetically Modified (GM) Food Labeling,” <https://www.foodstandards.gov.au/consumer/gmfood/labelling/Pages/default.aspx>.

<sup>62</sup> Japan's regulation is currently under review, with a proposal to reduce this threshold. Kazuhito Yamashita, “The US Approaches Japan in Regulations on GM Foods – Mistake to Think that the TPP Lowers Food Safety Standards,” *Canon Institute for Global Studies*, November 5, 2018.

<sup>63</sup> 83 *Federal Register* 65814, December 21, 2018, p. 65824.

<sup>64</sup> OTA, press release, December 20, 2018.

## Disclosure Options

The Standard identifies permissible options for on-package disclosure of bioengineered foods. All disclosures must be “of sufficient size and clarity to appear prominently and conspicuously on the label, making it likely to be read and understood by the consumer under ordinary shopping conditions.”<sup>65</sup> Regulated entities must place the disclosure in one of three places: within the information panel close to details about the manufacturer, on the principle display panel, or on another panel the consumer is likely to see. In most cases, only one form of disclosure is required per package. Some disclosure options are available to all regulated entities for required disclosures (text, symbol, electronic or digital link, and/or text message), while others are available only to small food manufacturers (telephone number or website address) or in cases of voluntary disclosure (voluntary version of the BE disclosure symbol). Each option is described below.

### Standard Disclosure Options

The 2016 Act specified that the Standard should provide several types of disclosure options.<sup>66</sup> The final rule gives additional detail to their implementation.

**Text.**<sup>67</sup> “Bioengineered food” is the required text to disclose foods for which all ingredients either meet the definition of *bioengineered food* or lack records that indicate whether or not they are bioengineered. “Contains a bioengineered food ingredient” is the text required to disclose multi-ingredient foods for which some ingredients are not bioengineered while others are bioengineered or are of undetermined status. For foods distributed solely within a U.S. territory where the predominant language is not English, the appropriate text disclosure may be displayed in the territory’s predominant language.

**Symbol.**<sup>68</sup> Regulated entities may use color or black-and-white versions of the disclosure symbols shown in **Figure 1**. The symbol that incorporates the word *bioengineered* is for products that require disclosure. The symbol that incorporates the phrase *derived from bioengineering* may be placed voluntarily on packages of food that do not meet the bioengineered food definition but contain food that is derived from bioengineered food (such as refined foods without detectable modified DNA). Disclosures must not be false or misleading. Entities that are exempt from mandatory disclosure (e.g., very small food manufacturers and restaurants) may make voluntary disclosures using the appropriate symbol.

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<sup>65</sup> 7 C.F.R. §66.100(c).

<sup>66</sup> 7 U.S.C. 1639b(b)(2)(D).

<sup>67</sup> 7 C.F.R. §66.102.

<sup>68</sup> 7 C.F.R. §66.104.

Figure I. Disclosure Symbols for the Standard



**Source:** CRS from USDA, “BE Symbols,” <https://www.ams.usda.gov/rules-regulations/be/symbols>.

**Notes:** Foods that meet criteria in the Standard must display the “bioengineered” symbol. The “derived from bioengineering” symbol may be displayed on foods that do not meet the bioengineered food definition yet derive from bioengineered food (e.g., refined foods that do not contain detectable modified deoxyribonucleic acid). Entities may use the appropriate symbol in color or in black and white (not shown). Entities exempt from disclosure (e.g., very small food manufacturers and restaurants) may make voluntary disclosures using the appropriate symbol.

**Electronic or digital link.**<sup>69</sup> Entities may disclose bioengineered food via electronic or digital links, which are codes that consumers can scan to access more information. Current examples include Quick Response (QR) codes and digital watermarks that consumers may scan with a smart phone or in-store scanner. The code may embed product information or a link to a website with this information presented on the first webpage. The 2016 Act and the Standard require that any electronic or digital link disclosure on a package must be accompanied by the text “Scan here for more food information” or equivalent language consistent with technological changes. They also require that such disclosures be accompanied by a telephone number that consumers may call to receive additional information.

Providing disclosure via these technologies was among the most controversial aspects of the 2016 Act. In the 2016 Act, Congress required USDA to solicit public comment and conduct a study to determine if electronic or digital links would provide consumers with sufficient access to information while shopping. If USDA were to determine that these disclosure methods were insufficient in this regard, then the Standard would need to provide additional disclosure options.

AMS contracted with Deloitte Consulting to conduct the study. The resulting report identified several challenges that would need to be overcome for consumers to access information through digital or electronic link disclosures.<sup>70</sup> AMS determined that the Deloitte study indicated that electronic and digital links would not provide consumers with sufficient access to this information.<sup>71</sup>

**Text message.**<sup>72</sup> In response to public comments and the results of the Deloitte study, the Standard adopts disclosure by text message as an option in addition to those identified in the 2016

<sup>69</sup> 7 C.F.R. §66.106.

<sup>70</sup> Deloitte Consulting, *Study of Electronic or Digital Link Disclosure: A Third-Party Evaluation of Challenges Impacting Access to Bioengineered Food Disclosure*, USDA, July 2017.

<sup>71</sup> 83 *Federal Register* 65814, December 21, 2018, p. 65828.

<sup>72</sup> 7 C.F.R. §66.108.



Act. Regulated entities choosing this option must include a clear statement on the food package describing how to receive a text message.

## **Disclosure Options for Small Food Manufacturers**

The Standard defines a *small food manufacturer* as one with annual receipts of between \$2.5 million and \$10 million. As directed in the 2016 Act, the Standard allows small food manufacturers to select from additional disclosure options. These consist of providing a telephone number or an internet website address to allow consumers to access more information.<sup>73</sup> Such disclosures must be accompanied by the text “Call [number] for more food information” or “Visit [Uniform Resource Locator of the website] for more food information.”

## **Alternative Disclosure Options for Specific Circumstances**

The Standard specifies additional considerations for small and very small packages as well as food sold in bulk containers. The additional disclosure options for small packages mirror the standard options but allow for abbreviated on-package text: “Scan for info,” “Text [number] for info,” and “Call [number] for info.”<sup>74</sup> For very small packages, regulated entities may use a label’s preexisting telephone number or website address in lieu of other disclosures. Retailers are responsible for disclosures for food sold in bulk containers (e.g., display case, bin, carton, and barrel), and they must use the primary disclosure options.

## **Voluntary Disclosure**

The Standard allows for voluntary disclosure in some cases.<sup>75</sup> Exempt entities (very small food manufacturers and restaurants and similar retail food establishments) may voluntarily disclose bioengineered foods and food ingredients using any of the options provided. Additionally, the Standard permits both regulated and exempt entities to voluntarily disclose foods that do not require mandatory disclosure. Such foods include refined foods that derive from bioengineered foods but do not have detectable modified DNA. Voluntary disclosures should indicate that ingredients are “derived from bioengineering” rather than “bioengineered.” The Standard does not permit voluntary disclosure in most other circumstances.

## **Public Response to Disclosure Options of the Standard**

During the rulemaking process for the Standard, some advocates for strict GE labeling provisions were seeking a single, easily identifiable, on-package disclosure. These respondents have criticized the disclosure options in the Standard as confusing and uninformative. In contrast, some other groups sought flexible disclosure options that regulated entities could adapt easily to different circumstances. Such industry groups have supported the disclosure options in the Standard as informative and flexible enough for manufacturers to meet.

Among critics, the Organic Trade Association (OTA) argued that the Standard does not provide for meaningful disclosure. It stated that the Standard “allows for the option of digital/electronic disclosures rather than requiring on-pack plain English text disclosure” and that the “stylized GMO symbol with a four-pointed starburst does not reflect a neutral symbol as Congress intended

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<sup>73</sup> 7 C.F.R. §66.110.

<sup>74</sup> 7 C.F.R. §66.112.

<sup>75</sup> 7 C.F.R. §66.116.

and is misleading.”<sup>76</sup> The Center for Food Safety (CFS) found that “both disclosure methods [electronic and digital disclosure], as well as 800 numbers, are unwieldy, time-consuming, and clearly designed to inhibit rather than facilitate access to GE content information.”<sup>77</sup>

The International Dairy Foods Association (IDFA) provided a mixed reaction, approving of some aspects of the Standard while further stating, “the rule does not provide the level of transparency IDFA and consumers were hoping for.”<sup>78</sup> Among other perceived limitations, IDFA added that the Standard does not require disclosure of highly refined ingredients deriving from GE foods, although it allows for voluntary disclosure of these products.

Among supporters of the Standard, the Food Marketing Institute and the National Corn Growers Association welcomed the disclosure consistency that the Standard provides.<sup>79</sup>

The Standard’s inclusion of a voluntary disclosure option elicited mixed responses. While the Consumer Brands Association praised this option, the Center for Science in the Public Interest (CSPI) commented that voluntary disclosure could introduce confusion.<sup>80</sup> CSPI identified the potential for consumers to encounter a single type of product, derived from bioengineering, that one company chose to voluntarily disclose and another company did not. OTA called on food companies to voluntarily disclose all foods produced with genetic engineering.<sup>81</sup>

## **Administrative Provisions**

Stakeholders have also focused on the administrative provisions of the Standard. Key administrative issues include the speed at which regulated entities must comply with the Standard, recordkeeping requirements and burdens, and the enforceability of the Standard. These topics are addressed below.

### **Compliance Deadline**

The 2016 Act did not specify compliance dates for the Standard. The final rule allows for phased implementation before requiring all regulated entities to comply with the Standard (see **Table 1**). It sets January 1, 2020, as the date on which most regulated entities may begin implementation. Small food manufacturers have an additional year to begin implementation, with a start date of January 1, 2021.<sup>82</sup> All regulated entities must fully comply with the Standard by January 1, 2022.

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<sup>76</sup> OTA, press release, December 20, 2018.

<sup>77</sup> CFS, press release, December 20, 2018.

<sup>78</sup> IDFA, “USDA Releases National Bioengineered Food Disclosure Standard,” press release, December 20, 2018 (hereinafter IDFA, press release, December 20, 2018).

<sup>79</sup> FMI, press release, December 20, 2018; and NCGA, press release, December 20, 2018.

<sup>80</sup> Elaine Watson, “Final GMO Labeling Rule Does Not Require Labeling of Highly Refined Ingredients from GM Crops, if No Modified Genetic Material Is Detectable,” Food Navigator, December 20, 2018.

<sup>81</sup> OTA, press release, December 20, 2018.

<sup>82</sup> As required by the 2016 Act, at 7 U.S.C. §1639b(b)(2)(F)(i).

**Table 1. National Bioengineered Food Disclosure Standard Implementation Dates**

Milestone	Date	Comments
Effective date	February 19, 2019	This is 60 days after publication of the final rule. <sup>83</sup>
Implementation (other than small food manufacturers)	January 1, 2020	Regulated entities, other than small food manufacturers, <i>may</i> begin disclosure.
Implementation (small food manufacturers)	January 1, 2021	Small food manufacturers <i>may</i> begin disclosure.
Voluntary compliance period	<i>Until</i> December 31, 2021	Regulated entities <i>may</i> meet disclosure standards.
Mandatory compliance	January 1, 2022	Regulated entities <i>must</i> meet disclosure standards.

**Source:** CRS, from U.S. Department of Agriculture, “National Bioengineered Food Disclosure Standard,” 83 *Federal Register* 65814, December 21, 2018.

## Recordkeeping

In the RIA, AMS commented that it provides the List of Bioengineered Foods to “simplify and minimize analysis and recordkeeping burden on regulated entities.”<sup>84</sup> The Standard requires regulated entities that sell foods on the List, including both bioengineered and non-bioengineered versions, to maintain records documenting whether or not those foods or their ingredients are bioengineered. The Standard does not require potentially regulated entities to maintain records for foods that are not on the List unless they know that a food is bioengineered. This situation could occur if AMS has not yet identified the food as commercially available and has not yet added the food to the List. In such cases, the entity must disclose the food and must maintain records.

Regulated entities may determine what records to keep and how to manage them, as long as they contain sufficient detail for AMS to understand and audit them under the Standard. Entities must maintain these records for two years after sale or distribution of the food.

## Enforcement

Failure to make a required disclosure is prohibited under the 2016 Act.<sup>85</sup> However, the act limited the scope of potential enforcement mechanisms and remained silent on others. The 2016 Act explicitly prohibited USDA from recalling food for known or suspected violations of the Standard.<sup>86</sup> It did not address or authorize potential civil penalties for violations. The act allowed USDA to enforce compliance through records audits, examinations, hearings, and public disclosure of findings.

The Standard identifies procedures for carrying out these enforcement mechanisms. AMS does not continuously and proactively verify compliance with the Standard. Rather, the Standard creates a mechanism for the public to file statements or complaints to the AMS Administrator about possible violations of the Standard, and it outlines how AMS may respond to these written statements or complaints. If AMS determines that a complaint warrants further investigation, AMS may audit or examine the records of the entity responsible for disclosure and make its findings available to the entity. The entity may then request a hearing if it objects to the findings.

<sup>83</sup> This date is consistent with Congressional Review Act requirements for a major rule (5 U.S.C. §801 et seq.).

<sup>84</sup> AMS, Regulatory Impact Analysis, October 30, 2019, p. 15.

<sup>85</sup> 7 U.S.C. §1639b(g)(1).

<sup>86</sup> 7 U.S.C. §1639b(g)(4).

The Standard allows for AMS to revise the findings if warranted and provides that AMS will make the final results of the investigation publicly available.

## Public Response to Administrative Provisions of the Standard

While most stakeholder responses to the final Standard have focused on applicability and disclosure options, some interested groups have commented on its administrative provisions. Before release of the Standard, advocates of strict GE labeling had called for an early start to the mandatory compliance period.<sup>87</sup> However, some industry groups supported the delay of mandatory compliance, citing the need to allow sufficient time for regulated entities to adjust labels and recordkeeping procedures.<sup>88</sup> Echoing comments that AMS received during the federal rulemaking process, some critics of the Standard have continued to assert that its enforcement mechanisms are weak.<sup>89</sup>

## Other GE Labeling Approaches

The National Bioengineered Food Disclosure Standard was developed within a broader societal context. State-level approaches to GE labeling predated the federal 2016 Act. These were driven by public interest in knowing the GE status of their foods. In addition, some private and federal voluntary labeling programs that provide information on the GE status of foods are expected to continue after implementation of the Standard.

## Public Opinion and State-Level GE Labeling Before the Standard

When foods containing GE ingredients were first introduced in the 1990s, some members of the public called for banning them based on concerns about potential harm to human health.<sup>90</sup> Research has repeatedly found no difference between foods developed with and without genetic engineering, in terms of the health and safety of the people consuming them.<sup>91</sup>

Even so, some consumers remain concerned about genetic engineering, citing health, personal preference, religious, economic system, and other objections.<sup>92</sup> Moving on from calls to ban GE foods for human health reasons, many consumers began to demand a government role in making GE foods easily identifiable via GE labeling. Before establishment of the Standard, some surveys

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<sup>87</sup> See public comments on the proposed rule at Regulations.gov, Docket ID AMS-TM-17-0050, for example, IATP, July 10, 2018, <https://www.regulations.gov/document?D=AMS-TM-17-0050-8837>.

<sup>88</sup> See public comments on the proposed rule at Regulations.gov, Docket ID AMS-TM-17-0050, for example, GMA, July 3, 2018, <https://www.regulations.gov/document?D=AMS-TM-17-0050-12345>; and see IDFA, press release, December 20, 2018.

<sup>89</sup> For example, Non-GMO Project, press release, December 20, 2018.

<sup>90</sup> Bloomberg BNA, “Group Encourages Consumer Support for U.S. Ban on Genetically Altered Food,” *Daily Report for Executives (BNA)*, August 31, 1999; and Alan Yonan Jr., “Environmentalists Escalate Fight Against Altered Crops,” *Dow Jones*, August 24, 1999.

<sup>91</sup> See FDA, “Questions & Answers on Food from Genetically Engineered Plants,” January 4, 2018; NASEM, 2016; and IOM and NRC, *Safety of Genetically Engineered Foods: Approaches to Assessing Unintended Health Effects*, 2004.

<sup>92</sup> For reviews of some of these concerns, see Emmanuel B. Omobowale, Peter A. Singer, and Abdallah S. Daar, “The Three Main Monotheistic Religions and GM Food Technology: An Overview of Perspectives,” *BMC International Health and Human Rights*, vol. 9, no. 18 (August 2009); and Stefaan Blacke, “Why People Oppose GMOs Even Though Science Says They Are Safe,” *Scientific American*, August 18, 2015. See also Non-GMO Project, “GMO Facts,” <https://www.nongmoproject.org/gmo-facts/>.

reported that the majority of consumers wanted GE foods to be labeled.<sup>93</sup> Various proposed GE labeling laws and initiatives at the state and federal levels provided for *mandatory* or *voluntary* labeling. Mandatory labeling requires companies to disclose the presence of GE ingredients. Voluntary labeling can allow companies to certify the absence of GE ingredients (as discussed in “Continuing Voluntary Labeling Programs and GE-Absence Claims”) or to disclose the presence of GE ingredients.

The 2016 Act preempted state laws and initiatives and instituted mandatory labeling of the presence of GE ingredients in foods.<sup>94</sup> In the years preceding the introduction and passage of the 2016 Act, state laws and ballot initiatives on GE labeling began to proliferate.<sup>95</sup> In 2014, Vermont became the first state to enact a mandatory GE labeling law, with an effective date of July 1, 2016. Other states enacted similar laws, while others still considered similar legislation or voted on state ballot initiatives. Michigan and North Dakota enacted legislation urging the U.S. Congress to pass a uniform GE labeling standard.

Most GE labeling proponents strongly supported mandatory labeling standards, citing consumers’ right to know, even if safety were not an issue.<sup>96</sup> Some GE labeling opponents argued that no scientific basis existed for requiring mandatory GE labeling, and that such labeling may unnecessarily introduce doubt about the quality or safety of labeled foods and could cause costly and unnecessary market disruption.<sup>97</sup> Before the 2016 Act, some GE labeling proponents and opponents called for a federal law to preempt development of an uncertain and confusing patchwork of state laws with different GE labeling requirements.<sup>98</sup>

In the absence of federal legislation in 2015, USDA experimented with adapting an existing voluntary USDA labeling program to meet consumer and producer interests in GE labeling. That year, AMS used its Process Verified Program (PVP) to certify the absence of GE ingredients in food products from a single company, which had requested this service.<sup>99</sup> Some anticipated that this would lead to a voluntary USDA program to certify the absence of GE ingredients in foods.<sup>100</sup> GE-labeling proponents responded that, although this would be a step in the right direction, a voluntary program would fail to meet consumer demands, and only mandatory labeling would do so.<sup>101</sup> This application of PVP to certify the absence of GE ingredients in foods did not expand beyond a single company.

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<sup>93</sup> For example, Consumer Reports National Research Center, “Consumer Support for Standardization and Labeling of Genetically Engineered Food: 2014 Nationally-Representative Phone Survey,” 2014, [https://advocacy.consumerreports.org/wp-content/uploads/2014/06/2014\\_GMO\\_survey\\_report.pdf](https://advocacy.consumerreports.org/wp-content/uploads/2014/06/2014_GMO_survey_report.pdf).

<sup>94</sup> 7 U.S.C. §1639i.

<sup>95</sup> For an overview of GE labeling legislation in 2016, see CRS In Focus IF10376, *Labeling Genetically Engineered Foods: Current Legislation*. See also an overview of state laws enacted in 2015 at National Conference of State Legislators, *State Legislation Addressing Genetically Modified Organisms*, July 7, 2015.

<sup>96</sup> CFS, “About GE Food Labeling,” <https://www.centerforfoodsafety.org/issues/976/ge-food-labeling/about-ge-labeling>.

<sup>97</sup> *Scientific American*, “Labels for GMO Foods Are a Bad Idea,” September 1, 2013.

<sup>98</sup> Elaine Watson, “NPA Calls for National GMO Labeling Standard as State-Level Initiatives Proliferate,” *Food Navigator*, March 19, 2013; and Grocery Manufacturers Association, “Vermont GMO Labeling Bill Critically Flawed and Bad for Consumers,” press release, April 23, 2014.

<sup>99</sup> Tom Vilsack, Secretary of Agriculture, letter to USDA employees, May 1, 2015, <https://www.faregred.com/webfiles/Vilsack-Letter.pdf>.

<sup>100</sup> Mary Clare Jalonick, “USDA Develops New Government Label for GMO-Free Products,” *Washington Post*, May 14, 2015.

<sup>101</sup> Just Label It, “Statement from Gary Hirshberg on USDA Plan to Create Voluntary Certification System,” press release, May 14, 2015; and CFS, “Center for Food Safety Statement on New USDA GMO-Free Label,” press release,

## Continuing Voluntary Labeling Programs and GE-Absence Claims

Voluntary labeling programs that identify the absence of GE ingredients predate legislation to require mandatory labels on foods that contain GE ingredients. On-package symbols from these private and public-private programs indicate to consumers that foods do not contain GE ingredients. They may either make a direct GE-absence claim (certifying that the food does not contain GE ingredients) or indicate that the food was produced with processes that do not include genetic engineering (e.g., certified organic production methods). Food producers and manufacturers may choose to opt into these programs and to bear associated costs.

One example is the Non-GMO Project, which a non-profit organization manages to provide third-party verification for processed foods that do not contain GE ingredients.<sup>102</sup> Companies sign agreements with the Non-GMO Project to have their processes reviewed and to have any high-risk products tested by third-party laboratories. Once the Non-GMO Project verifies a company's processes and products, the company can display the Non-GMO Project Verified symbol on its food packaging. This symbol on food packaging makes a GE-absence claim.

Another example is the USDA National Organic Program (NOP), a public-private program for voluntary labeling that, among other things, indicates the absence of GE ingredients. NOP, which is administered by AMS, certifies that agricultural products have been produced using approved organic methods listed in statute.<sup>103</sup> Genetic engineering is an excluded method: NOP-certified products may not be produced or handled with genetic engineering. The NOP symbol indicates that a food meets diverse criteria, including production methods that exclude genetic engineering.

These *voluntary labeling programs* are expected to continue after implementation of the Standard. They differ from the Standard's *voluntary disclosure option*, which permits voluntary disclosure of foods that derive from bioengineering yet no longer have the characteristics of bioengineered foods, and is discussed in this report's section on "Voluntary Disclosure." The voluntary labeling programs provide opportunities to identify foods that affirmatively do not derive from bioengineering. The Standard does not address GE-absence claims, and the final rule states that FDA (and the USDA Food Safety and Inspection Service, depending on the food at issue) "retain authority over absence claims."<sup>104</sup>

## Select Considerations for Congress

Implementation of the Standard over the next two years and beyond will affect consumers, regulated entities, and AMS. Many potential issues arising from the Standard will become clear only as implementation continues. The below text summarizes potential and stated concerns related to applicability, disclosure options, administrative provisions, and other issues. Congress may choose to monitor the new Standard's implementation in accordance with its oversight responsibilities.

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May 15, 2015.

<sup>102</sup> This program considers GE presence of less than 0.9% to be below its "action threshold"—that is, products with GE content below this threshold are compliant with the program.

<sup>103</sup> These methods are codified in regulation at 7 C.F.R. §205.105 and 7 C.F.R. §205.2. In 1990, Congress authorized USDA to establish NOP to enforce uniform national standards for organically produced agricultural products. For more information, see CRS In Focus IF10278, *U.S. Farm Policy: Certified Organic Agricultural Production*.

<sup>104</sup> 83 *Federal Register* 65814, p. 6544. See also FDA, "Guidance for Industry: Voluntary Labeling Indicating Whether Foods Have or Have not Been Derived from Genetically Engineered Plants," *Regulations.gov*, FDA-2000-D-0075-0017, updated March 3, 2019.

A key question for Congress is whether AMS's implementation of the 2016 Act meets congressional intent regarding the scope of applicability and the degree of disclosure required. In the final rule, AMS asserted that it balanced flexibility for regulated entities and information to consumers regarding the bioengineered status of their foods. Stakeholders who question AMS's decisions in the rulemaking process, as described above, may question the extent to which AMS's implementation aligns with congressional intent.

**Applicability.** Groups that have criticized the definition of *bioengineered* in the 2016 Act may call on Congress to amend the definition to include highly refined products derived from GE organisms and/or include products that do not meet the current definition, such as those derived from gene editing and other new technologies. Other interested groups may continue to advocate for a definition that restricts the number and types of foods to which the definition applies.

AMS has committed to maintaining and updating the List through annual public reviews, and on an interim basis as needed. Such reviews can provide opportunities to add to the List any bioengineered food products that have entered commerce. Additionally, during these reviews, stakeholders with differing views may encourage the agency to adopt either a more expansive or a more restrictive listing of bioengineered foods.

**Disclosure.** Another issue in the context of disclosure is the degree of familiarity with the required labels that consumers may have. Consumers unfamiliar with the term *bioengineered* may have questions about what this means on foods bearing disclosure. Public reaction to implementation of the various types of disclosure may generate calls for these options to be revised based on their success or failure to provide consumers with easily accessible and useful information.

**Administrative provisions.** An issue for potential consideration is the extent to which additional federal resources will be required to implement the Standard in both the voluntary and mandatory compliance periods. In its regulatory impact analysis (RIA), AMS broadly estimated that it may need \$2 million annually to implement the Standard, without differentiating potential expenses during the voluntary and mandatory compliance periods. AMS proposed that it would use such funds to update the List; conduct audits and hearings; manage complaints and inquiries; and provide training, education, outreach and programmatic support.<sup>105</sup>

AMS may need to assign staff and develop new processes to implement the Standard's provisions related to audits, examinations, hearings, and publications of findings. Congress may be asked to consider allocating new resources to support continued implementation of the new Standard.

In addition, Congress may assess the cost and administrative overhead that regulated entities expend to identify and maintain records on foods subject to disclosure and to adjust labels on food packaging. Estimates for administrative costs to regulated entities, which AMS presents in its RIA, range from a lower bound of \$459 million to an upper bound of nearly \$3.6 billion for the first year.<sup>106</sup> AMS anticipates that these costs will greatly reduce in subsequent years as potentially regulated entities replace bioengineered ingredients with non-bioengineered ingredients.

Regarding enforcement, the rule largely relies on a public notification mechanism to influence the compliance of regulated entities and correct violations of the Standard. Stakeholders may or may not view this mechanism as successful, depending on the extent and frequency of any such

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<sup>105</sup> AMS, Regulatory Impact Analysis, October 30, 2019, p. 38.

<sup>106</sup> AMS, Regulatory Impact Analysis, October 30, 2019, p. 30 (Table 14).

violations. Interested parties may petition Congress to strengthen existing enforcement mechanisms or identify new ones to enhance compliance with the new Standard.

**Market demand for bioengineered versus non-bioengineered products.** In the RIA, AMS indicates that it cannot accurately predict how consumers will react to bioengineered disclosures on food labels.<sup>107</sup> Consumers may avoid foods labeled as bioengineered, they may prefer them, or such labels may make no difference to consumer purchasing behaviors. In the RIA, AMS assumes that manufacturers will avoid labeling 20% of their products as bioengineered, by replacing bioengineered with non-bioengineered ingredients, due to potential consumer reactions. AMS selected 20% for purposes of estimating costs and benefits in the RIA following consideration of existing studies and surveys of consumer behavior and consideration of the requirements of the Standard. Depending on how consumers respond, implementation of the Standard may influence manufacturer and retailer demand for bioengineered and non-bioengineered foods. Congress may respond to stakeholder concerns about any market shifts resulting from the Standard.

**Interactions with international trade.** Unexpected issues may arise as implementation begins. For example, AMS states that it does not expect the Standard to impact foreign trade.<sup>108</sup> However, it also notes that the USDA Foreign Agriculture Service is prepared to work closely with foreign countries that export food and agricultural products to the United States, to facilitate their understanding of the Standard. If trade issues arise, Congress may choose to address harmonization of labeling requirements with foreign trading partners by amending applicability, disclosure, or administrative requirements in the 2016 Act, or by other means.

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<sup>107</sup> AMS, Regulatory Impact Analysis, October 30, 2019, pp. 30-32.

<sup>108</sup> USDA, AMS, “BE Frequently Asked Questions—General,” <https://www.ams.usda.gov/rules-regulations/be/faq/general> (accessed on February 2, 2020). See also 7 U.S.C. §1639c(a), a provision in the act that states, “This subchapter shall be applied in a manner consistent with United States obligations under international agreements.”



## Appendix. Glossary of Select Scientific and Related Terms

Many terms are used when describing human alterations of plants and animals over time. Unless otherwise noted, the definitions in this glossary derive from USDA's online *Agricultural Biotechnology Glossary* and are used for the purposes of this report.<sup>109</sup>

**Agricultural biotechnology.** A range of tools, including traditional breeding techniques, that alter living organisms, or parts of organisms, to make or modify products; improve plants or animals; or develop microorganisms for specific agricultural uses. Modern biotechnology today includes the tools of genetic engineering.

**Conventional breeding.** Undefined in USDA's *Agricultural Biotechnology Glossary*. USDA defines the similar term, *traditional breeding*, as "modification of plants and animals through selective breeding. Practices used in traditional plant breeding may include aspects of biotechnology such as tissue culture and mutational breeding."

**Gene editing.** A technique that allows researchers to alter the DNA of organisms to insert, delete, or modify a gene or gene sequences to silence, enhance, or otherwise change an organism's specific genetic characteristics.<sup>110</sup>

**GE labeling.** On-package disclosure of genetically engineered foods or food ingredients.<sup>111</sup>

**Genetically engineered (GE).** Produced through genetic engineering.<sup>112</sup>

**Genetic engineering.** Manipulation of an organism's genes by introducing, eliminating or rearranging specific genes using the methods of modern molecular biology, particularly those techniques referred to as recombinant DNA techniques.

**Genetic modification.** The production of heritable improvements in plants or animals for specific uses, via either genetic engineering or other more traditional methods. Some countries other than the United States use this term to refer specifically to genetic engineering.

**Genetically modified organism (GMO).** An organism produced through genetic modification.

**Recombinant DNA.** A molecule of DNA formed by joining different DNA segments using recombinant DNA technology.

**Recombinant DNA technology.** Procedures used to join together DNA segments in a cell-free system (e.g., in a test tube outside living cells or organisms). Under appropriate conditions, a recombinant DNA molecule can be introduced into a cell and copy itself (replicate), either as an independent entity (autonomously) or as an integral part of a cellular chromosome.

**Selective breeding.** Making deliberate crosses or matings of organisms so the offspring will have particular desired characteristics derived from one or both of the parents.

**Transgenic organism.** An organism resulting from the insertion of genetic material from another organism using recombinant DNA techniques.

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<sup>109</sup> Available at <https://www.usda.gov/topics/biotechnology/biotechnology-glossary>.

<sup>110</sup> NASEM, *Gene Drives on the Horizon: Advancing Science, Navigating Uncertainty, and Aligning Research with Public Values*, 2016, p. 182.

<sup>111</sup> CRS.

<sup>112</sup> CRS.

**Variety.** A subdivision of a species for taxonomic classification also referred to as a “cultivar.” A variety is a group of individual plants that is uniform, stable, and distinct genetically from other groups of individuals in the same species.

## **Author Contact Information**

Genevieve K. Croft  
Analyst in Agricultural Policy  
[redacted]@crs.loc.gov-....

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