

# THE CONTRIBUTION OF AGRICULTURE TO NORTHEASTERN CALIFORNIA'S ECONOMY IN 2018

A Report by  
**The Agribusiness Institute**  
College of Agriculture  
California State University, Chico

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# About the Author



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# Executive Summary

The objective of this study is to document the significance of agricultural production, processing, and its related industries to the overall economy of Northeastern California. Although agriculture has played a major role in shaping the landscape and stimulating economic growth in Northeastern California, no other studies have focused exclusively on this region of California. While agriculture contributes to the economy through numerous direct agricultural activities, it also plays an important role through its interactions with other economic sectors. This report addresses all of these impacts in order to show the true value of agriculture in this region.

## Key Findings

- The unemployment rate in Northeastern CA was 6.7% in 2018, this is 2.5% higher than the state and 2.8% higher than the U.S.
- Inflation adjusted per capita personal income has increased by approximately 19% in Northeastern CA from 2009 to 2018.
- The total value of agricultural production was around \$4.2 Billion (\$4,195M) in 2018. It has increased 40% since 2009 and decreased .3% since last year.
- Colusa County had the highest value of production in 2018 (\$897.6M).
- The highest valued commodities in Northeastern CA, were almonds (\$806.4M), rice (\$796.1M), and walnuts (\$489.0M).
- The highest valued commodities in the mountain dominant counties were hay (\$203.2M), timber (\$168.2M), and nursery plants and products (\$163.2M).
- Farm production expenses have increased by around 47% between 2009 and 2018.
- Net farm income has decreased by 28% from 2009 to 2018, this includes a 15% decrease from the previous year.
- Agriculture was responsible for creating 73,067 jobs in Northeastern CA in 2018 (18.5% of all jobs). This includes 52,457 jobs directly in agriculture and an additional 20,610 jobs created through multiplier (indirect and induced) effects.
- Agriculture is responsible for creating \$3,588M in labor income in Northeastern CA in 2018 (17.2% of all labor income).
- Agriculture is responsible for creating \$5,773M in total value added to the Northeastern CA Economy in 2018 (16.7% of the total value added).
- At the statewide level, the overall contribution of agriculture in 2018 was estimated at approximately 1.7 million jobs (7.0% of state total), \$108.6B in labor income (6.1% of state total), and \$171.1B in total value added (5.8% of state total).

# SECTION ONE: OVERVIEW OF NORTHEASTERN CALIFORNIA

## 1.1 Study Area

Figure 1: Northeastern California Study Area Map



Northeastern California is a diverse part of the state with large variations in terrain, weather, and land use. There are large, highly productive valleys that are near sea level and mountains that reach above 14,000 feet. Much of Northeastern California has been developed around the Sacramento River which is the state's largest river.

For the purposes of this study, "Northeastern" California is defined as the region containing the following 13 counties: Butte, Colusa, Glenn, Lassen, Modoc, Plumas, Shasta, Sierra, Siskiyou, Sutter, Tehama, Trinity and Yuba (Figure 1). Because of the diversity of agriculture within this vast region it can be difficult to summarize and describe the industry. As such, the Northeastern California region will occasionally be subdivided into six **Valley Dominant Counties** (Butte, Colusa, Glenn, Tehama, Sutter and Yuba) and seven **Mountain Dominant Counties** (Lassen, Modoc, Plumas, Shasta, Sierra, Siskiyou and Trinity).

Figure 2: Northeastern California Study Area Map



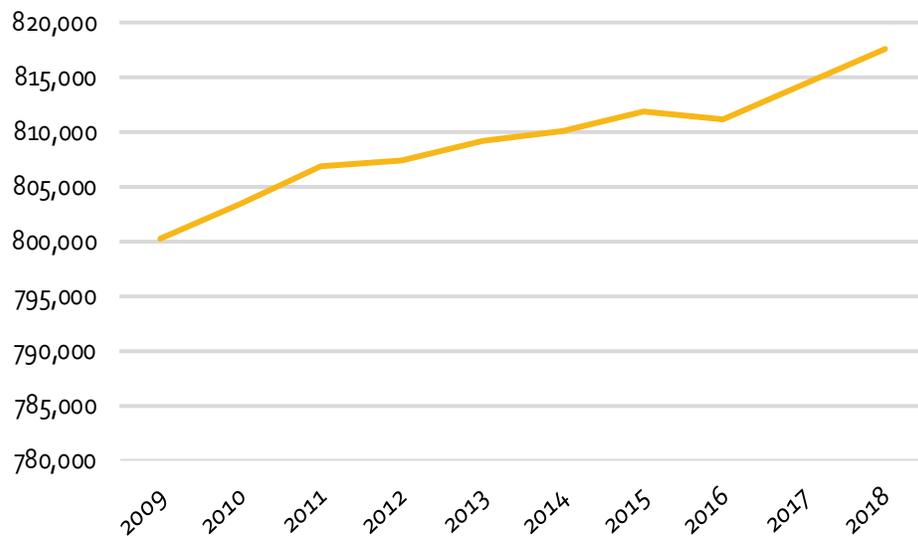


## 1.2 Demographics

The total population in Northeastern California has generally been increasing over the last ten years. Although the population decreased slightly between 2015 and 2016, it began increasing again in 2017 and the region had a total population of 817,613 in 2018 (.4% increase over the previous year). While most of the counties in the region had modest population increases, Siskiyou, Lassen, and Plumas County all experienced a slight decline in population levels. In terms of percentages, Yuba County experienced the largest annual increase of 1.4% and Lassen County had the largest reduction of -.4%.

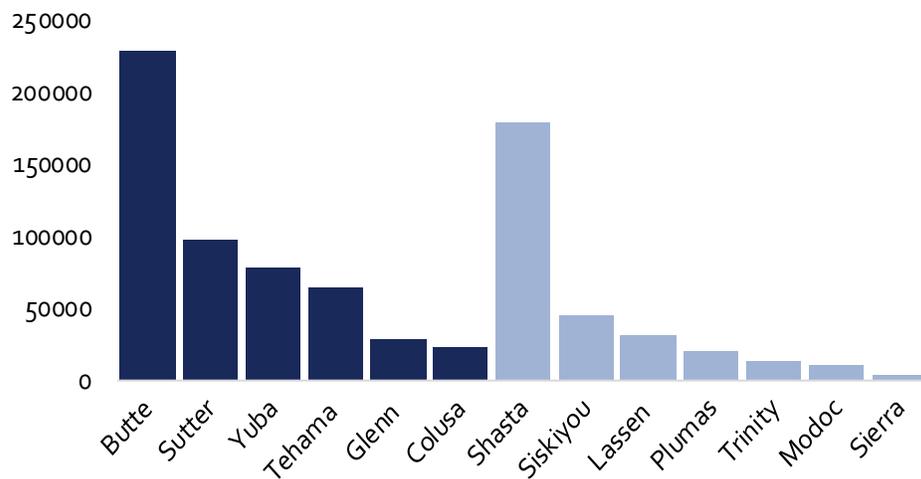
The population in the valley dominant counties is much larger than in the mountain dominant counties (63% compared to 37%). However, Figure 3 shows how both the valley and mountain dominant regions have a single county that provides the majority of its population base (Butte County in the valley and Shasta County in the mountain dominated region). Although the counties in the mountain dominated region tend to be much larger in land area when compared to the state average, this region contains 3 of the 4 least populated counties in the state (Sierra, Modoc, and Trinity).

Figure 3: Northeastern California Population (2009-2018)

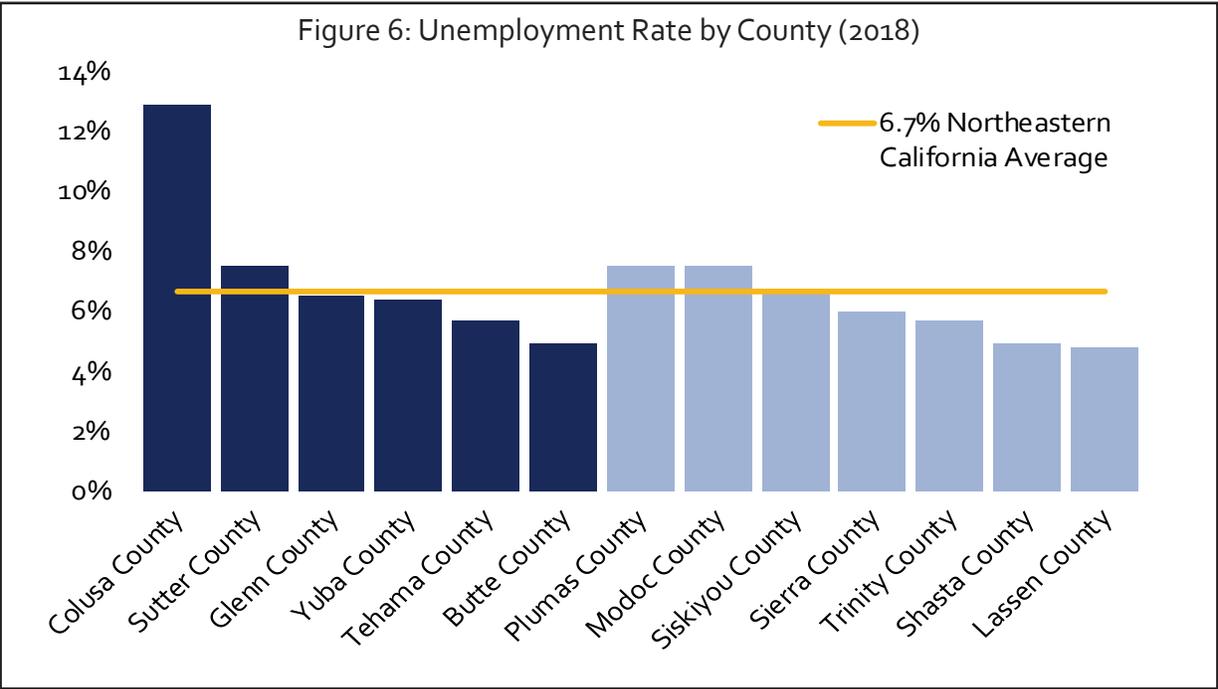
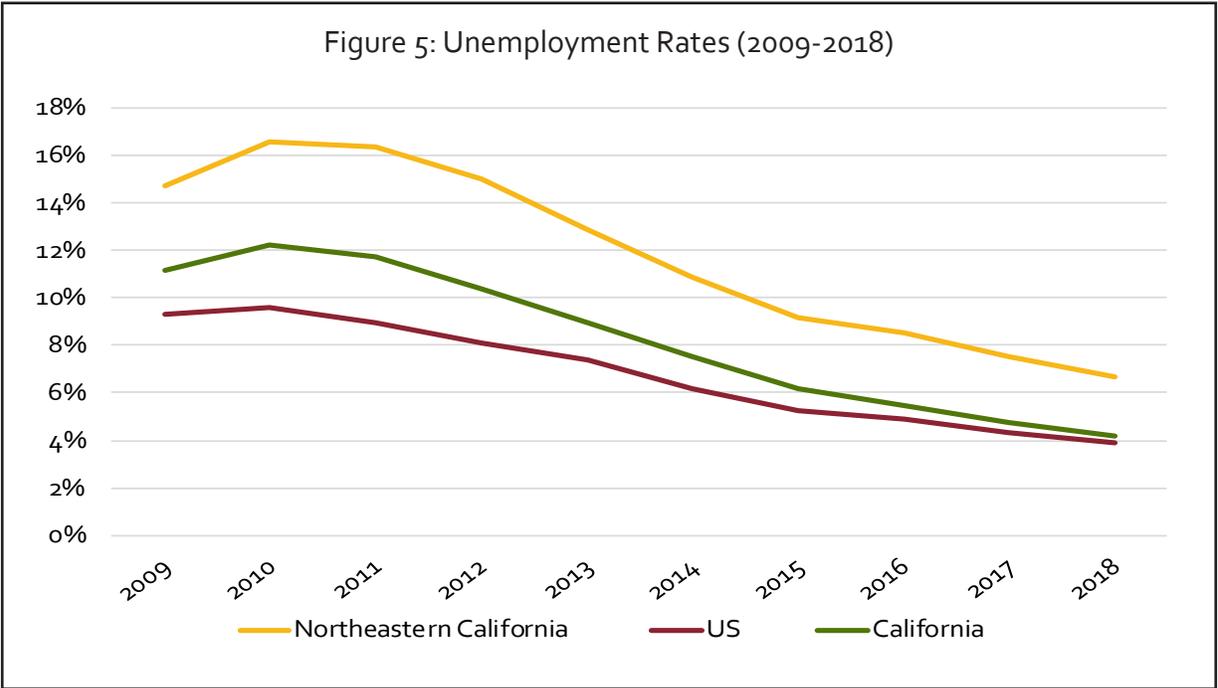


Source: California Department of Finance

Figure 4: Northeastern California Population by County (2018)



Source: California Department of Finance



Source: California Employment Development Department, Labor Market Information Division

Unemployment rates in Northeastern California have followed a similar path as those of the state and nation (Figure 5). However, the region’s unemployment rate of 6.7% in 2018 is significantly higher than both the state and national averages (2.5% higher than the state and 2.8% higher than the U.S.). Unemployment rates in the valley and mountain regions are much more similar to each other, but the mountain dominant counties tend to be slightly lower. Figure 6 shows Colusa County having the highest unemployment rate in the study area (12.9%) and Lassen County having the lowest (4.8%). Although unemployment rates were continuing to decline in Northeastern California, the region continues to lag behind the rest of the state and country.

# Figure 7: Unemployment by County (2018)

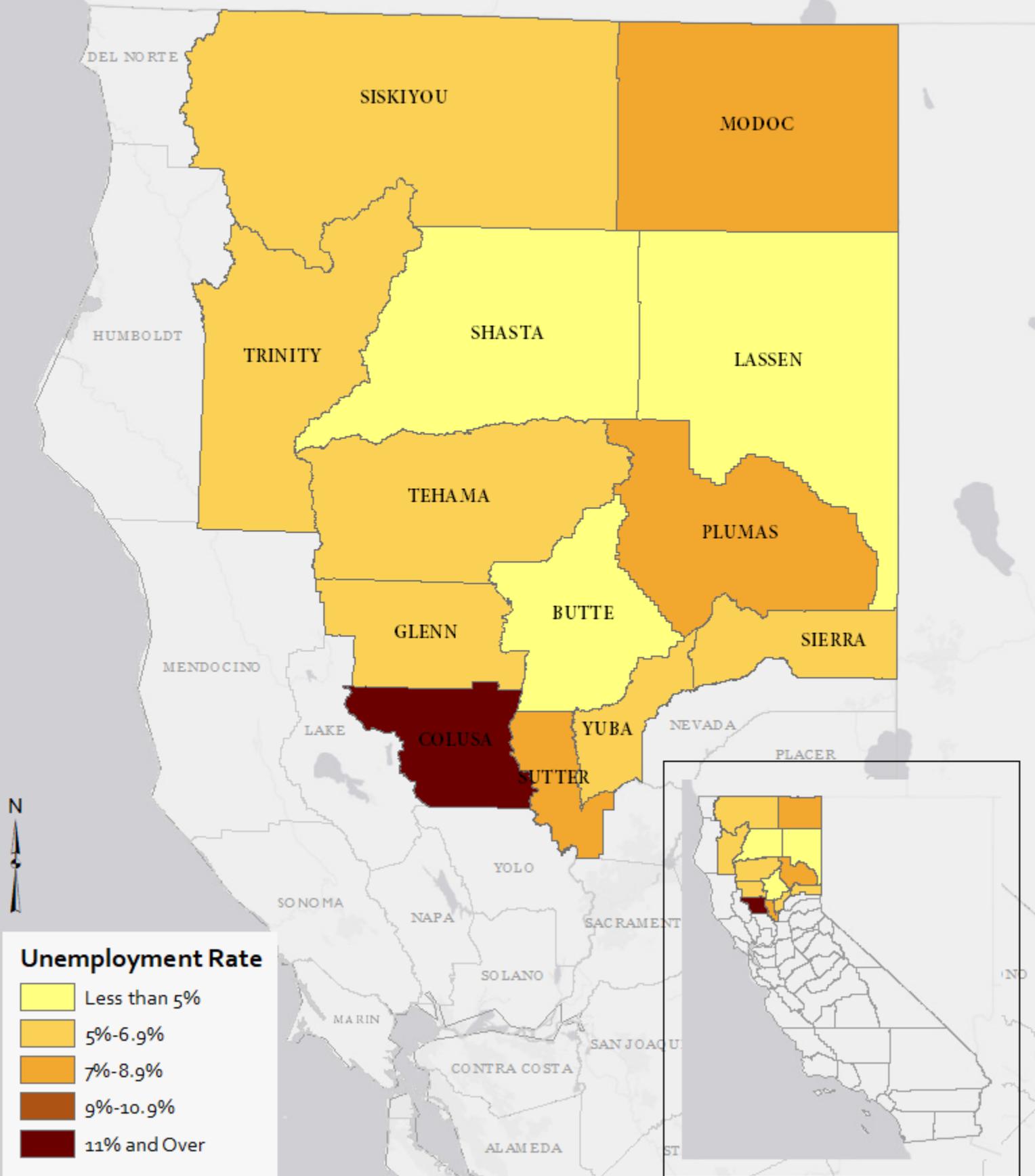
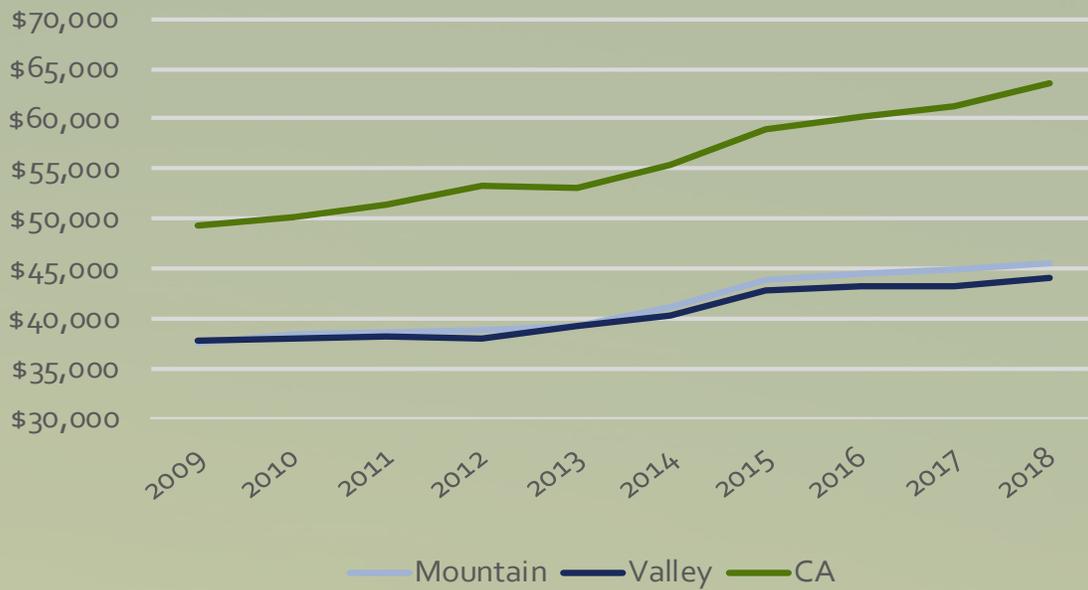


Figure 8: Inflation Adjusted Per Capita Personal Income (2009-2018)



Source: U.S. Bureau of Economic Analysis Regional Economic Profiles (CAINC30) and California Department of Finance

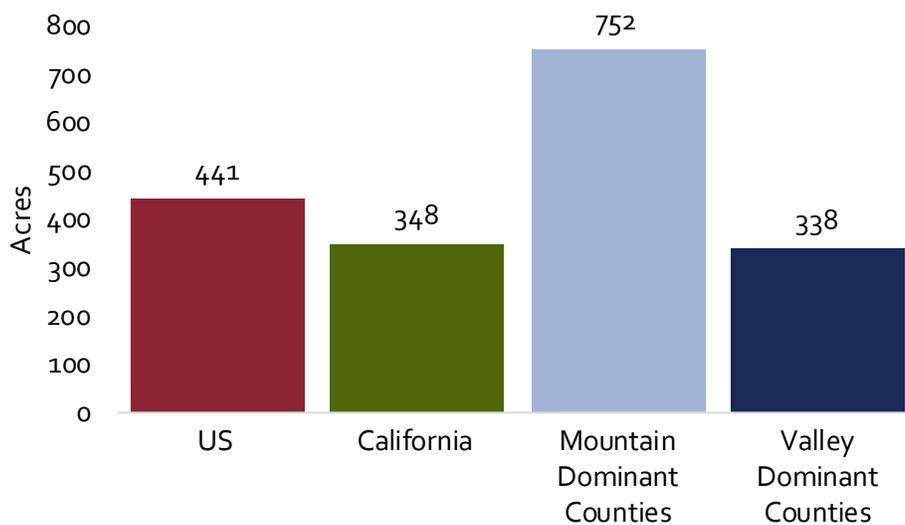
Inflation adjusted (real) per capita personal income has increased by approximately 19% in the region between 2009 and 2018. Both the mountain and valley dominant counties have experienced similar growth rates, while the state experienced a 29% increase during this period. Although the state average is nearly \$19,000 dollars higher than that of Northeastern California, the region does benefit from a relatively lower cost of living. California per capita personal income experienced a decline after the country's financial crisis in 2007. However, per capita income in both the valley and mountain dominant counties was more stable during this period. One of the biggest differences between Northeastern California and the rest of California is that agriculture plays a more significant role in Northeastern California's overall economy (see Section 3). As such, it is believed that the success of the agricultural industry is one of the things that prevented a decline in per capita income during this period. Although Northeastern California is experiencing higher rates of unemployment and below average income, a strong agricultural industry is critical to the overall success of our region's economy.

# 1.3 Land Use and Farms

According to the California Agricultural Statistics, Northeastern California had approximately 6.1 million acres of land in agricultural production in 2018. The total amount of land in agriculture is split nearly equally between the valley dominant counties and the mountain dominant counties. Most of the cropland is located in the valley dominate counties with grazing becoming more common as we move into the foothills and mountains. However, cropland is also found in several mountain valleys that are spread out across the higher elevations. According to the 2017 USDA Census of Agriculture, there were 7,236 farms in the valley dominant counties and 3,267 farms within the mountain dominant counties. However, the average farm size in the mountain dominant counties was more than twice as large as the valley dominant farms (Figure 9). The typical farm in the mountain dominant counties is over a square mile in size due to large amounts of land for livestock. In the valley dominant counties you have a warmer climate, deep, nutrient rich soils that are well suited for fruit/nut production along with soils that are well suited for rice production in some regions. Valley dominant counties are typically able to produce more value with less land because of the higher profit margins that can often be available for fruit, nut, and rice crops.

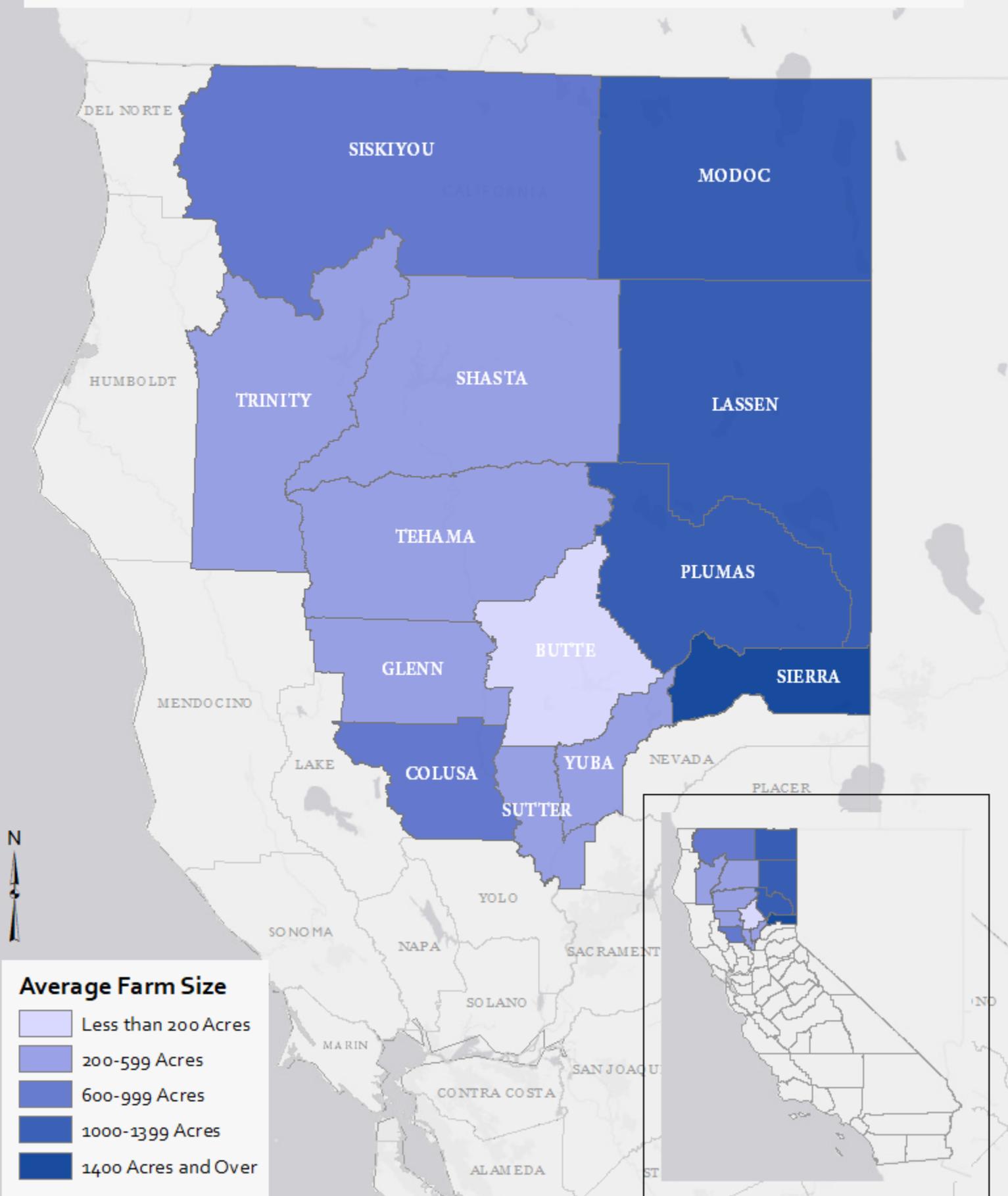


Figure 9: Average Farm Size (2018)



Source: USDA 2017 Census of Agriculture

# Figure 10: Average Farm Size by County (2018)



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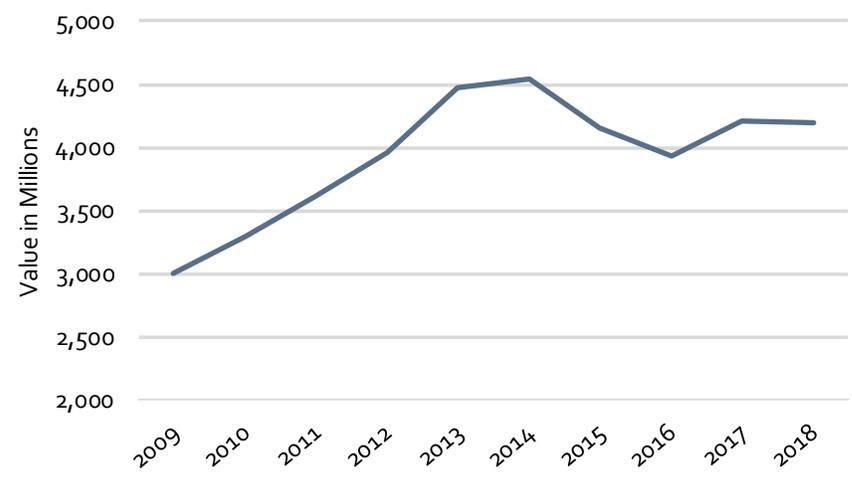


# SECTION TWO: AGRICULTURAL PRODUCTION, EXPENSES, AND NET FARM INCOME

## 2.1 Total Value of Agricultural Production

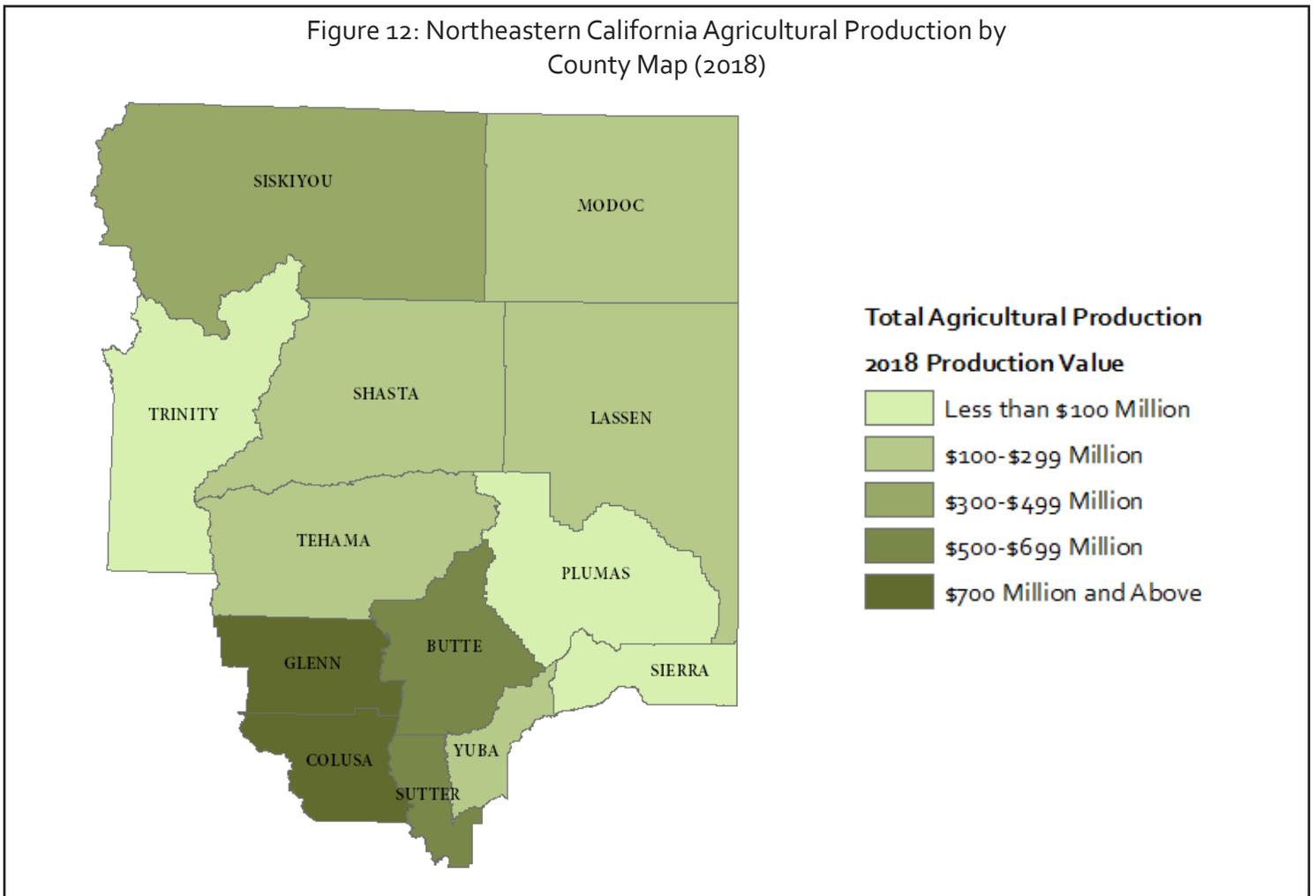
The total value of agricultural production in Northeastern California was estimated at \$4,194,850,816 in 2018 (Figure 11). This is approximately 40% more than was produced in 2009 and reflects a .3% reduction from last year’s value. The total value of production in 2018 is still 7.7% below its peak in 2014. These production estimates only include timber for Modoc County since this county has not provided updated crop reports for several years. The sharp decline in the total value of agricultural production that occurred between 2014 and 2016 was primarily a result of decreased prices, not production. According to the Food and Agriculture Organization (FAO) Food Price Index, world food prices declined by 20% from 2014 to 2016. While the FAO Food Price index increased by 8% from 2016 to 2017, it declined by 3.5% from 2017 to 2018. Some of the primary commodities in this region have experienced even larger price fluctuations during this period. The USDA indicates that walnut prices fell 45% between 2014 and 2016, increased 35% in 2017, and decreased by 48% in 2018.

Figure 11: Total Value of Agricultural Production in Northeastern California (2009-2018)



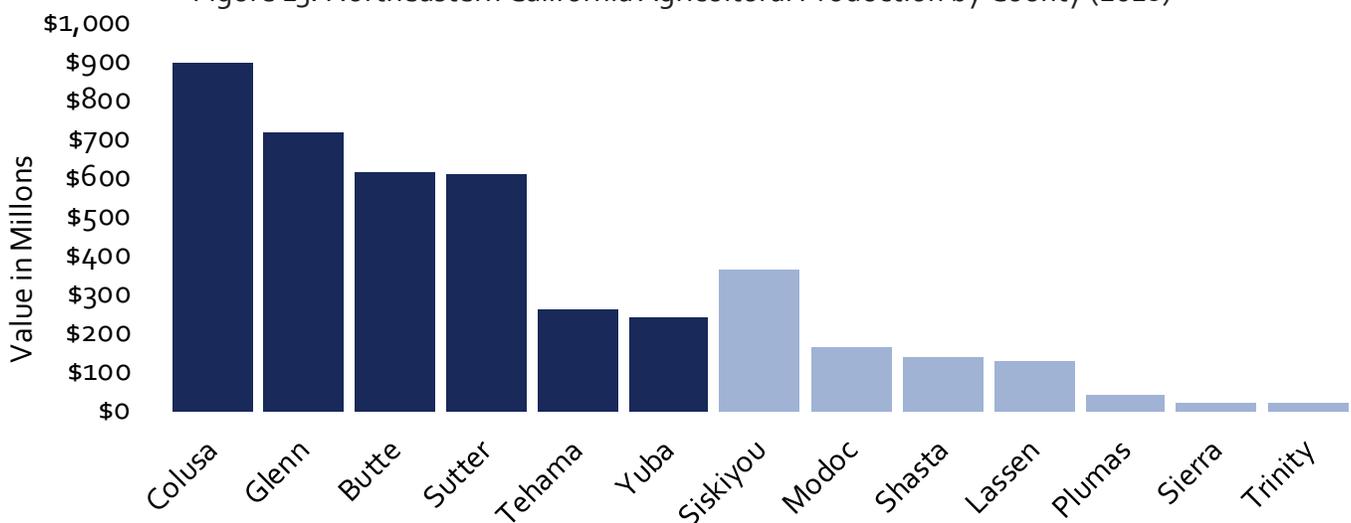
Source: California Agricultural Statistics

Figure 12: Northeastern California Agricultural Production by County Map (2018)



The value of agricultural production is not distributed evenly between the valley and mountain regions. 80% of the total value of production in 2018 occurred in the valley dominant counties, while only 20% occurred in the mountain dominant counties even though these regions have a similar amount of acres in production. Colusa County continued to have the highest value of production in 2018, followed by Glenn and Butte counties with Sierra and Trinity counties documenting the lowest production values (Figure 13).

Figure 13: Northeastern California Agricultural Production by County (2018)



Source: California Agricultural Statistics

Agriculture throughout the study region is diverse, with around 100 different commodities being reported. The highest valued commodity in the Northeastern California region was almonds in 2018 with a total value of \$806.4 million, followed by rice and walnuts (Table 1). Although walnuts were the highest valued crop in 2017, the decrease in walnut prices in 2018 has resulted in almonds taking over the highest valued position.

Since the valley dominant counties contain the majority of agricultural production, the top ten commodities in the valley dominant counties (Almonds, Rice, Walnuts, etc.) look similar to the entire Northeastern California region (Table 2). However, agricultural production in the mountain dominant counties looks very different. The highest valued commodities in the mountain dominant counties include Hay, Timber, Nursery Plants and Products (mostly strawberry), and Cattle (Table 3). Although Almonds, Rice, and Walnuts make up approximately 50% of the total value of production in the Northeastern California region, the diversity of the valley and mountain regions helps the overall economy to be more resilient to individual commodity price fluctuations.

Table 1: Northeastern California Top 10 Commodities by Value (2018)

Northeastern California Top 10 Commodities by Value	Total Value	Total Acres
Almonds	\$806,404,000	187,800
Rice	\$796,139,000	487,310
Walnuts	\$488,990,000	189,000
Hay	\$247,397,500	247,909
Cattle	\$241,530,000	-
Nursery Plants and Products	\$209,275,500	2,814
Timber	\$206,245,000	-
Plums	\$154,159,000	39,138
Apiary Products	\$113,411,567	-
Fruits and Nuts	\$102,618,600	6,945
Remaining Commodities	\$828,680,649	4,959,276
<b>Total</b>	<b>\$4,194,850,816</b>	<b>6,120,192</b>

Source: California Agricultural Statistics

Table 2 & 3: Valley and Mountain Dominant Counties Top 10 Commodities by Value (2018)

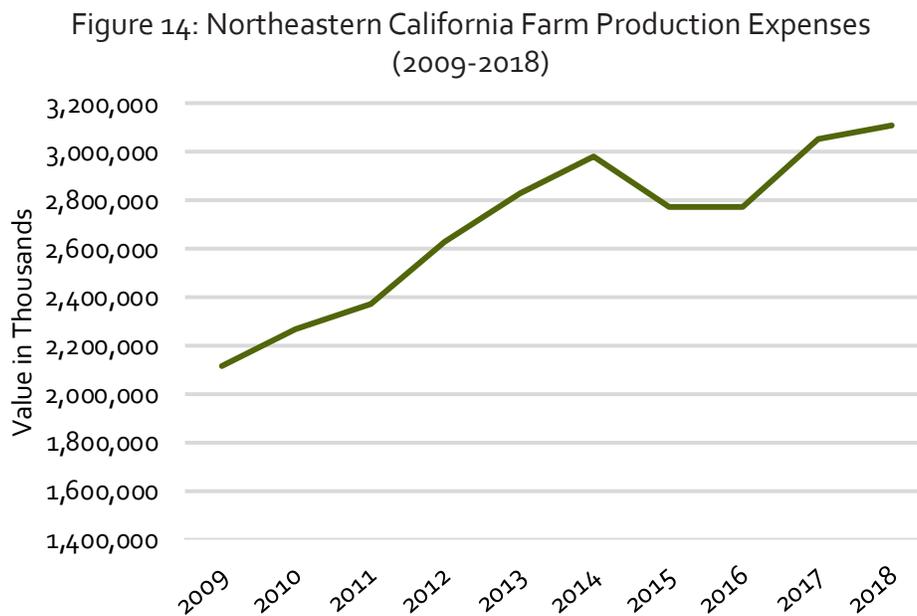
Valley Dominant Counties Top 10 Commodities by Value	Total Value	Total Acres	Mountain Dominant Counties Top 10 Commodities by Value	Total Value	Total Acres
Almonds	\$806,404,000	187,800	Hay	\$203,211,500	209,277
Rice	\$784,918,000	476,920	Timber	\$168,188,000	-
Walnuts	\$486,011,000	187,700	Nursery Plants and Products	\$163,155,500	2,623
Plums	\$154,159,000	39,138	Cattle	\$139,215,000	-
Apiary Products	\$102,605,000	-	Pasture	\$42,283,000	2,925,260
Cattle	\$102,315,000	-	Potatoes	\$35,795,000	8,895
Fruits and Nuts	\$99,411,000	6,938	Vegetables	\$23,811,100	15
Tomato Processing	\$91,290,000	27,170	Rice	\$11,221,000	10,390
Peaches	\$89,591,000	12,620	Apiary	\$10,806,567	-
Milk	\$63,121,000	-	Wheat	\$10,685,000	17,630
Remaining Commodities	\$555,287,600	1,987,234	Remaining Commodities	\$51,366,549	20,582
<b>Total</b>	<b>\$3,335,112,600</b>	<b>2,925,520</b>	<b>Total</b>	<b>\$859,738,216</b>	<b>3,194,672</b>

Source: California Agricultural Statistics



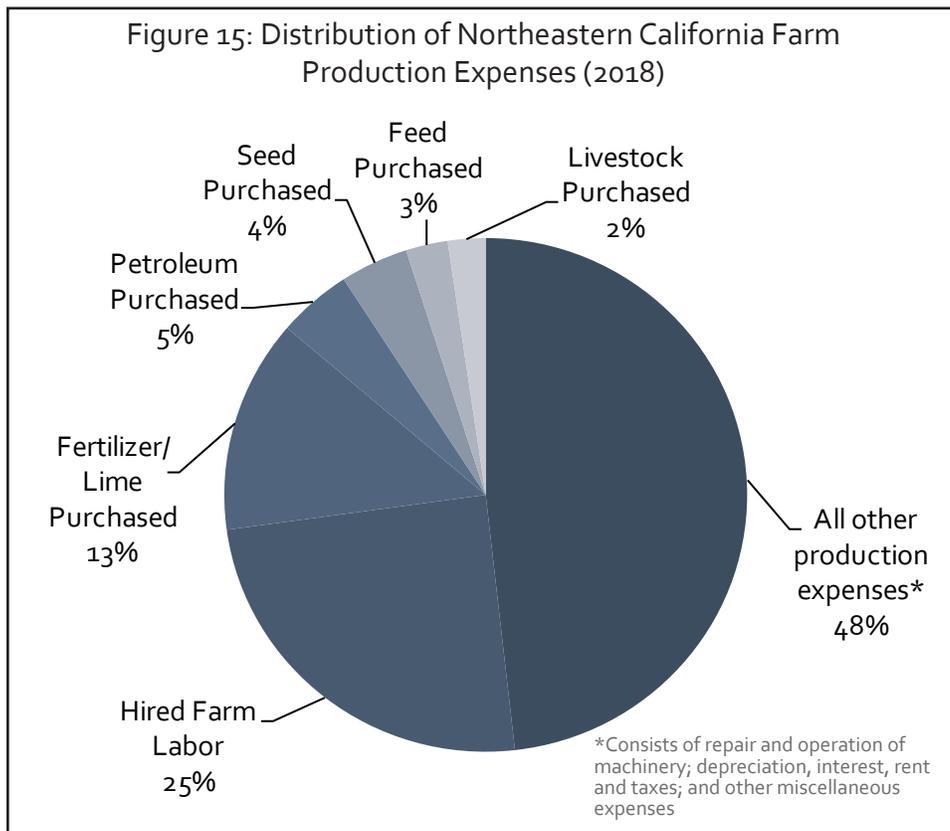
## 2.2 Farm Expenses and Net Farm Income

The total value of agricultural production is significant, but it is also important to look at what is happening to farm expenses and net farm income. Total farm production expenses in Northeastern California are shown in Figure 14. Although farm production expenses have increased by 47% in the last 10 years, we did experience a period of decline from 2014 to 2016 while commodity prices were also declining. However, farm production expenses are once again on the rise and increased by nearly 2% between 2017 and 2018.



Source: Bureau of Economic Analysis Farm Income and Expenses (CAINC45)

Figure 15: Distribution of Northeastern California Farm Production Expenses (2018)

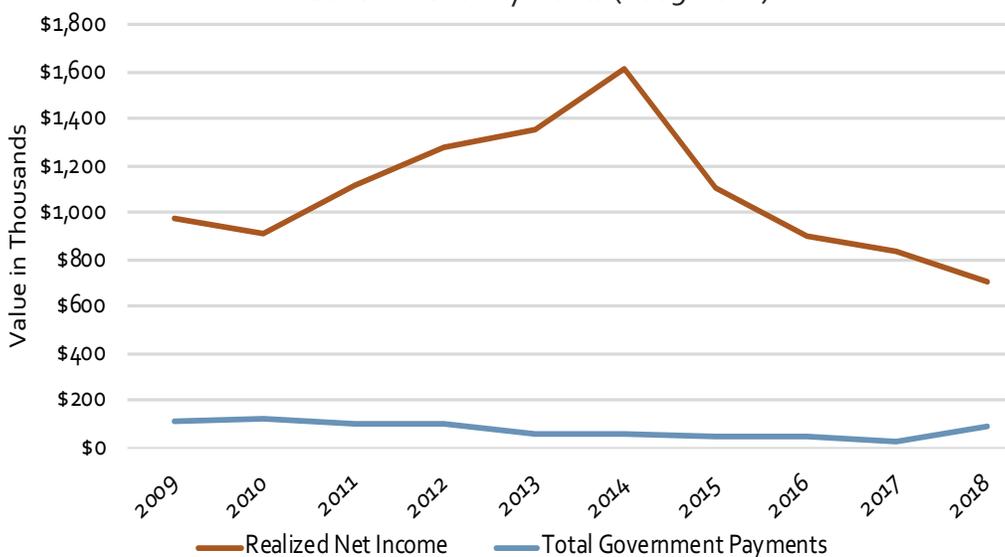


The distribution of farm production expenses can be seen in Figure 15. The largest portion of farm production expenses is “All other production expenses” which includes the repair and operation of machinery, depreciation, interest, rent and taxes, and all other miscellaneous expenses. These expenses are largely driven by how capital intensive farming has become in the region. The next three largest categories of farm production expense are Hired Farm Labor (25%), Fertilizer/Lime Purchased (13%), and Petroleum Purchased (5%).

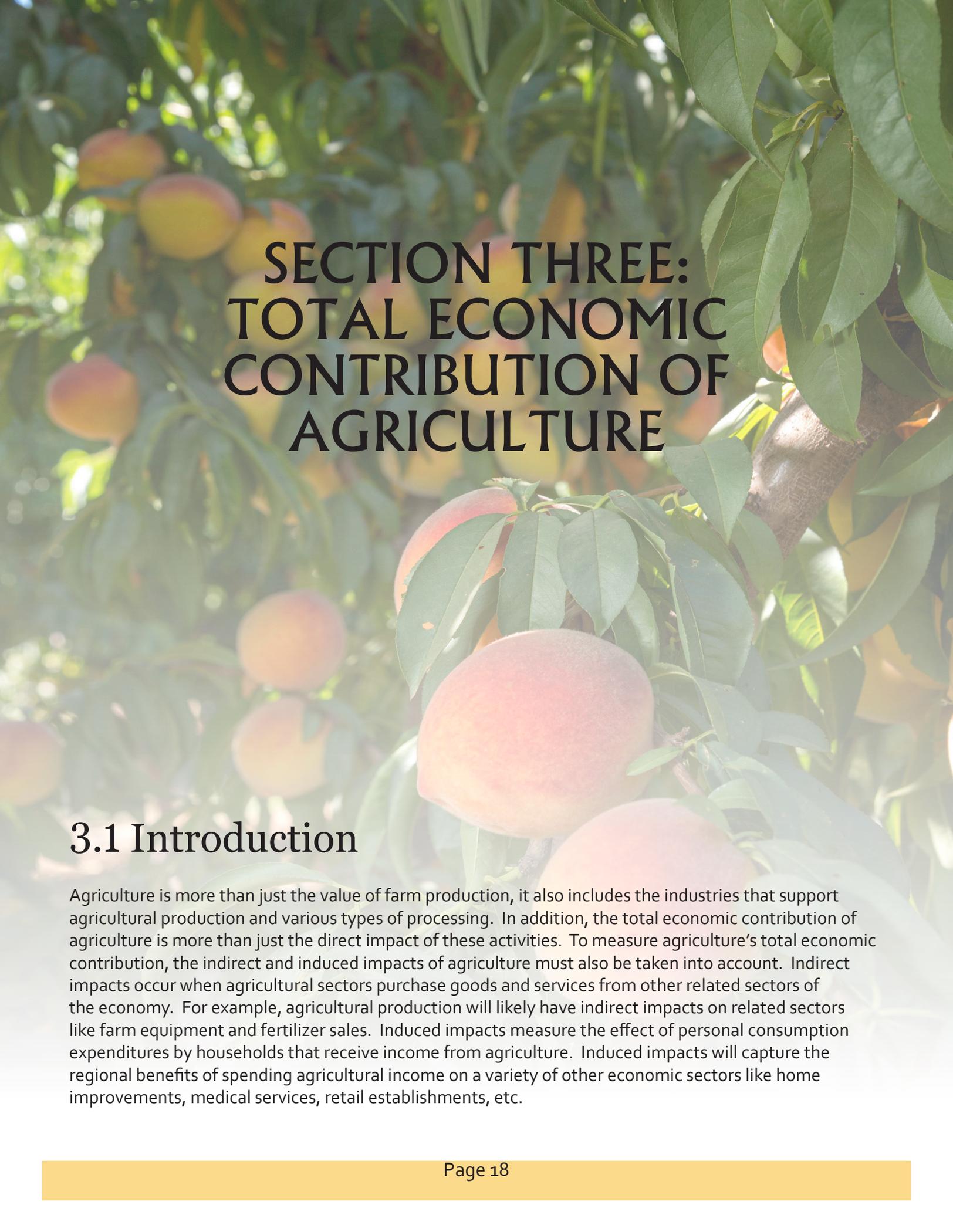
Source: Bureau of Economic Analysis Farm Income and Expenses (CAINC45)

While the value of agricultural production has generally been growing over the last 10 years, it appears that it has not grown enough to offset higher production expenses. Figure 16 shows how net farm income has decreased by approximately 28% from 2009 to 2018 while total government payments started to increase in 2018 after several years of decline. The dramatic decline (56% reduction) in net farm income since its peak in 2014 appears to be due to lower commodity prices and higher production costs. Because of different methods of accounting, the net farm income estimated by the BEA is not exactly equal to the difference between the total value of farm production reported in the county crop reports minus the total farm expenses reported by the BEA.

Figure 16: Northeastern California Net Farm Income and Government Payments (2009-2018)



Source: Bureau of Economic Analysis Farm Income and Expenses (CAINC45)



# SECTION THREE: TOTAL ECONOMIC CONTRIBUTION OF AGRICULTURE

## 3.1 Introduction

Agriculture is more than just the value of farm production, it also includes the industries that support agricultural production and various types of processing. In addition, the total economic contribution of agriculture is more than just the direct impact of these activities. To measure agriculture's total economic contribution, the indirect and induced impacts of agriculture must also be taken into account. Indirect impacts occur when agricultural sectors purchase goods and services from other related sectors of the economy. For example, agricultural production will likely have indirect impacts on related sectors like farm equipment and fertilizer sales. Induced impacts measure the effect of personal consumption expenditures by households that receive income from agriculture. Induced impacts will capture the regional benefits of spending agricultural income on a variety of other economic sectors like home improvements, medical services, retail establishments, etc.



Miller (2013), the economic sectors in IMPLAN were used to define an overall “Agriculture” industry that was made up of three categories of agriculture: Agricultural Production Industries, Agricultural Processing Industries, and Agricultural Related Industries (See Appendix A, Table A.1 for specific sectors included in each category). It is important to recognize that food retail (restaurants, grocery stores, etc.) is not included as a direct component of the overall “Agriculture” industry, although some of this activity will be captured in the indirect and induced effects.

The Direct Impacts for each agricultural category (Production, Processing, and Related) and the Indirect and Induced Impacts for the entire Agriculture Industry is reported in terms of Employment, Labor Income, and Value Added. Employment is presented as the number of wage and salary employees, as well as self-employed jobs. Labor Income consists of proprietary income (income received by self-employed individuals including private business owners and owner-operators) and wages (includes all worker salaries, payments, and fringe benefits paid by employers). Value Added represents all labor income plus taxes on production/imports and other property-type income, such as payments for rents, royalties, and dividends. The Total Value Added for the study area is comparable to Gross Regional Product (GRP). Economists generally prefer using value added as the measure for assessing the contribution of a given industry to a region’s economy since the total value of output can be misleading (Olson and Lindall, 2009). The total value of output represents the dollar value of an industry’s production and can result in double counting when production, processing, and agricultural related sectors have been included. For example, including both the total value of rice output from farm production and the total value of processed rice cakes would result in double counting of the rice output value (once as a farm output and again as a processed output). Rather we should only look at the value added by the rice producer and the value added to the rice by the processor to provide a better estimate of the total economic contribution of the activity.

## 3.2 Methods

The total economic contribution of agriculture was modeled using the Impact Analysis for Planning (IMPLAN) System (IMPLAN Group, 2020). IMPLAN is a computer package that is used to construct regional economic input-output (I-O) models. Input-output analysis uses a mathematical modeling approach to capture the relationships between various sectors of an economy. The IMPLAN model uses more than 500 different sectors that are based on the Bureau of Economic Analysis’s (BEA) national Input-Output study. These economic sectors are similar to those identified by the 6-digit North American Industry Classification System (NAICS). Following a similar approach that was used by English, Popp, and

## 3.3 Results

The agricultural industry is making significant contributions to the economy in terms of employment, wages and value added (Table 4). The overall agriculture industry, including indirect and induced effects, is responsible for an estimated 73,067 jobs or 18.5% of total employment in the region. That is, nearly one in five jobs in the region can be attributed to agriculture. This includes 52,457 jobs directly within agricultural production, processing, and related sectors and an additional 20,610 jobs through the indirect and induced effects. The total value of labor income as a result of the overall agriculture industry was estimated at \$3.6 billion, or 17.2% of all labor income in the region. In terms of total value added, \$5.8 billion was added to the Northeastern California economy as a result of the direct, indirect, and induced effects of the agricultural industry. This represents 16.7% of all economic value that was created by the Northeastern California economy in 2018. The techniques that were used in this report to estimate the economic contribution of agriculture in Northeastern California was also applied to the state as a whole (See Appendix B, Table B.1 for detailed results). The total contribution of agriculture to the entire state of California was estimated to approximately 1.7 million jobs (7.0% of state total), \$108.6 B in labor income (6.1% of state total), and \$171.1 B in total value added (5.8% of state total) in 2018. These results are similar in magnitude in terms of employment and labor income to a previous report from the University of California (UC) Agricultural Issues Center (AIC). However, the current study shows California's agriculture industry contributing to a much larger portion of the overall state economy when including multiplier effects. Relative to the state as a whole, the economy of Northeastern California is significantly more dependent upon agriculture in terms of employment, labor income, and value added.

Table 4: The Contribution of Agriculture to Northeastern California's Economy in 2018

	Employment		Labor Income		Value Added	
	# Jobs <sup>1</sup>	% NE CA Jobs <sup>2</sup>	Million \$	% NE CA Labor Income <sup>3</sup>	Million \$	% NE CA Value Added <sup>4</sup>
<b>Direct Impacts</b>	52,457	13.3%	\$2,560	12.3%	\$3,929	11.4%
Production Direct <sup>5</sup>	32,715	8.3%	\$1,496	7.2%	\$2,328	6.7%
Processing Direct <sup>5</sup>	10,642	2.7%	\$599	2.9%	\$1,080	3.1%
Ag Related Direct <sup>5</sup>	9,100	2.3%	\$465	2.2%	\$521	1.5%
<b>Indirect Impacts</b>	7,737	2.0%	\$433	2.1%	\$702	2.0%
<b>Induced Impacts</b>	12,873	3.3%	\$595	2.8%	\$1,142	3.3%
<b>Total Contribution of Agriculture</b>	73,067	18.5%	\$3,588	17.2%	\$5,773	16.7%

<sup>1</sup> Includes Full-Time Equivalent (FTE) jobs

<sup>2</sup> Total number of jobs in Northeastern California (NE CA) estimated at 395,637

<sup>3</sup> Total labor income in Northeastern California (NE CA) estimated at \$20,879 million

<sup>4</sup> Total value added in Northeastern California (NE CA) estimated at \$34,548 million

<sup>5</sup> Appendix A, Table A.1 defines the economic sectors for each category



## SECTION FOUR: LITERATURE CITED

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# Appendix A

Table A.1: IMPLAN Sectors Defining Agricultural Production, Processing, and Related Industries Sectors (Sectors identified in bold are Active (non-zero) within the Northeastern California Economy)

Category	IMPLAN Sector	IMPLAN Sector Title	Category	IMPLAN Sector	IMPLAN Sector Title
Agricultural Production Industries	<b>1</b>	<b>Oilseed Farming</b>	Agricultural Processing Industries (Continued)	<b>108</b>	<b>Distilleries</b>
	<b>2</b>	<b>Grain Farming</b>		109	Tobacco product manufacturing
	<b>3</b>	<b>Vegetable and melon farming</b>		110	Fiber, yarn, and thread mills
	<b>4</b>	<b>Fruit farming</b>		111	Broadwoven fabric mills
	<b>5</b>	<b>Tree nut farming</b>		112	Narrow fabric mills and schiffli machine embroidery
	<b>6</b>	<b>Greenhouse, nursery, and floriculture production</b>		113	Nonwoven fabric mills
	7	Tobacco farming		114	Knit fabric mills
	<b>8</b>	<b>Cotton farming</b>		<b>115</b>	<b>Textile and fabric finishing mills</b>
	9	Sugarcane and sugar beet farming		116	Fabric coating mills
	<b>10</b>	<b>All other crop farming</b>		117	Carpet and rug mills
	<b>11</b>	<b>Beef cattle ranching and farming</b>		118	Curtain and linen mills
	<b>12</b>	<b>Dairy cattle and milk production</b>		<b>119</b>	<b>Textile bag and canvas mills</b>
	<b>13</b>	<b>Poultry and egg production</b>		120	Rope, cordage, twine, tire cord, and tire fabric mills
	<b>14</b>	<b>Animal production, except cattle, poultry, and eggs</b>		<b>121</b>	<b>Other textile product mills</b>
	<b>15</b>	<b>Forestry, forest products, &amp; timber tract production</b>		<b>122</b>	<b>Hosiery and sock mills</b>
	<b>16</b>	<b>Commercial logging</b>		<b>123</b>	<b>Other apparel knitting mills</b>
	<b>17</b>	<b>Commercial fishing</b>		<b>124</b>	<b>Cut and sew apparel contractors</b>
	<b>18</b>	<b>Commercial hunting and trapping</b>		<b>125</b>	<b>Mens and boys cut and sew apparel manufacturing</b>
Agricultural Processing Industries	63	Dog and cat food manufacturing	Agricultural Related Industries	<b>126</b>	<b>Womens and girls cut and sew apparel mfg.</b>
	<b>64</b>	<b>Other animal food manufacturing</b>		<b>127</b>	<b>Other cut and sew apparel manufacturing</b>
	<b>65</b>	<b>Flour milling</b>		<b>128</b>	<b>Apparel accessories and other apparel mfg.</b>
	<b>66</b>	<b>Rice milling</b>		129	Leather and hide tanning and finishing
	67	Malt Manufacturing		130	Footwear manufacturing
	68	Wet corn milling		<b>131</b>	<b>Other leather and allied product manufacturing</b>
	<b>69</b>	<b>Soybean and other oilseed processing</b>		<b>132</b>	<b>Sawmills</b>
	<b>70</b>	<b>Fats and oils refining and blending</b>		<b>133</b>	<b>Wood preservation</b>
	71	Breakfast cereal manufacturing		<b>134</b>	<b>Veneer and plywood manufacturing</b>
	72	Beet sugar manufacturing		<b>135</b>	<b>Engineered wood member and truss manufacturing</b>
	73	Sugar cane mills and refining		<b>136</b>	<b>Reconstituted wood product manufacturing</b>
	<b>74</b>	<b>Nonchocolate confectionery manufacturing</b>		<b>137</b>	<b>Wood windows and door manufacturing</b>
	<b>75</b>	<b>Chocolate &amp; confectionery mfg. from cacao beans</b>		<b>138</b>	<b>Cut stock, resawing lumber, and planing</b>
	<b>76</b>	<b>Confectionery mfg. from purchased chocolate</b>		<b>139</b>	<b>Other millwork, including flooring</b>
	77	Frozen fruits, juices, and vegetables manufacturing		<b>140</b>	<b>Wood container and pallet manufacturing</b>
	78	Frozen specialties manufacturing		141	Manufactured home (mobile home) manufacturing
	<b>79</b>	<b>Canned fruits and vegetables manufacturing</b>		<b>142</b>	<b>Prefabricated wood building manufacturing</b>
	80	Canned specialties		<b>143</b>	<b>All other miscellaneous wood product mfg.</b>
	<b>81</b>	<b>Dehydrated food products manufacturing</b>		144	Pulp mills
	<b>82</b>	<b>Cheese manufacturing</b>		145	Paper mills
	83	Dry, condensed, & evaporated dairy product mfg.		146	Paperboard mills
	84	Fluid milk manufacturing		<b>147</b>	<b>Paperboard container manufacturing</b>
	<b>85</b>	<b>Creamery Butter Manufacturing</b>		148	Paper bag and coated and treated paper mfg.
	86	Ice Cream and frozen dessert manufacturing		<b>149</b>	<b>Stationery product manufacturing</b>
	<b>87</b>	<b>Frozen cakes and other pastries manufacturing</b>		150	Sanitary paper product manufacturing
	88	Poultry processing		151	All other converted paper product manufacturing
	<b>89</b>	<b>Animal, except poultry, slaughtering</b>		<b>365</b>	<b>Wood kitchen cabinet and countertop mfg.</b>
	<b>90</b>	<b>Meat processed from carcasses</b>		366	Upholstered household furniture manufacturing
	<b>91</b>	<b>Rendering and meat byproduct processing</b>		<b>367</b>	<b>Nonupholstered wood household furniture mfg.</b>
	<b>92</b>	<b>Seafood product preparation and packaging</b>		370	Wood office furniture manufacturing
	<b>93</b>	<b>Bread and bakery product, except frozen, mfg.</b>		<b>371</b>	<b>Custom architectural woodwork and millwork</b>
	<b>94</b>	<b>Cookie and cracker manufacturing</b>		<b>19</b>	<b>Support activities for agriculture and forestry</b>
	95	Dry pasta, mixes, and dough manufacturing		167	Nitrogenous fertilizer manufacturing
	96	Tortilla Manufacturing		<b>168</b>	<b>Phosphatic fertilizer manufacturing</b>
	<b>97</b>	<b>Roasted nuts and peanut butter manufacturing</b>		<b>169</b>	<b>Fertilizer mixing</b>
<b>98</b>	<b>Other snack food manufacturing</b>	170	Pesticide and other agricultural chemical mfg.		
<b>99</b>	<b>Coffee and tea manufacturing</b>	171	Medicinal and botanical manufacturing		
<b>100</b>	<b>Flavoring syrup and concentrate manufacturing</b>	<b>260</b>	<b>Farm machinery and equipment manufacturing</b>		
101	Mayonnaise, dressing, and sauce manufacturing	261	Lawn and garden equipment manufacturing		
102	Spice and extract manufacturing	266	Food product machinery manufacturing		
<b>103</b>	<b>All other food manufacturing</b>	<b>267</b>	<b>Sawmill, woodworking, and paper machinery</b>		
<b>104</b>	<b>Bottled and canned soft drinks &amp; water</b>				
<b>105</b>	<b>Manufactured ice</b>				
<b>106</b>	<b>Breweries</b>				
<b>107</b>	<b>Wineries</b>				

# Appendix B

Table B.1: The Contribution of Agriculture to California's Economy in 2018

	Employment		Labor Income		Value Added	
	# Jobs <sup>1</sup>	% CA Jobs <sup>2</sup>	Million \$	% CA Labor Income <sup>3</sup>	Million \$	% CA Value Added <sup>4</sup>
<b>Direct Impacts</b>	970,404	4.0%	\$58,149	3.3%	\$85,195	2.9%
Production Direct <sup>5</sup>	293,330	1.2%	\$17,904	1.0%	\$25,422	0.9%
Processing Direct <sup>5</sup>	418,247	1.7%	\$27,515	1.5%	\$44,679	1.5%
Ag Related Direct <sup>5</sup>	258,827	1.1%	\$12,730	0.7%	\$15,094	0.5%
<b>Indirect Impacts</b>	323,767	1.3%	\$26,089	1.5%	\$40,767	1.4%
<b>Induced Impacts</b>	397,847	1.7%	\$24,361	1.4%	\$45,110	1.5%
<b>Total Contribution of Agriculture</b>	1,692,018	7.0%	\$108,599	6.1%	\$171,072	5.8%

<sup>1</sup> Includes Full-Time Equivalent (FTE) jobs

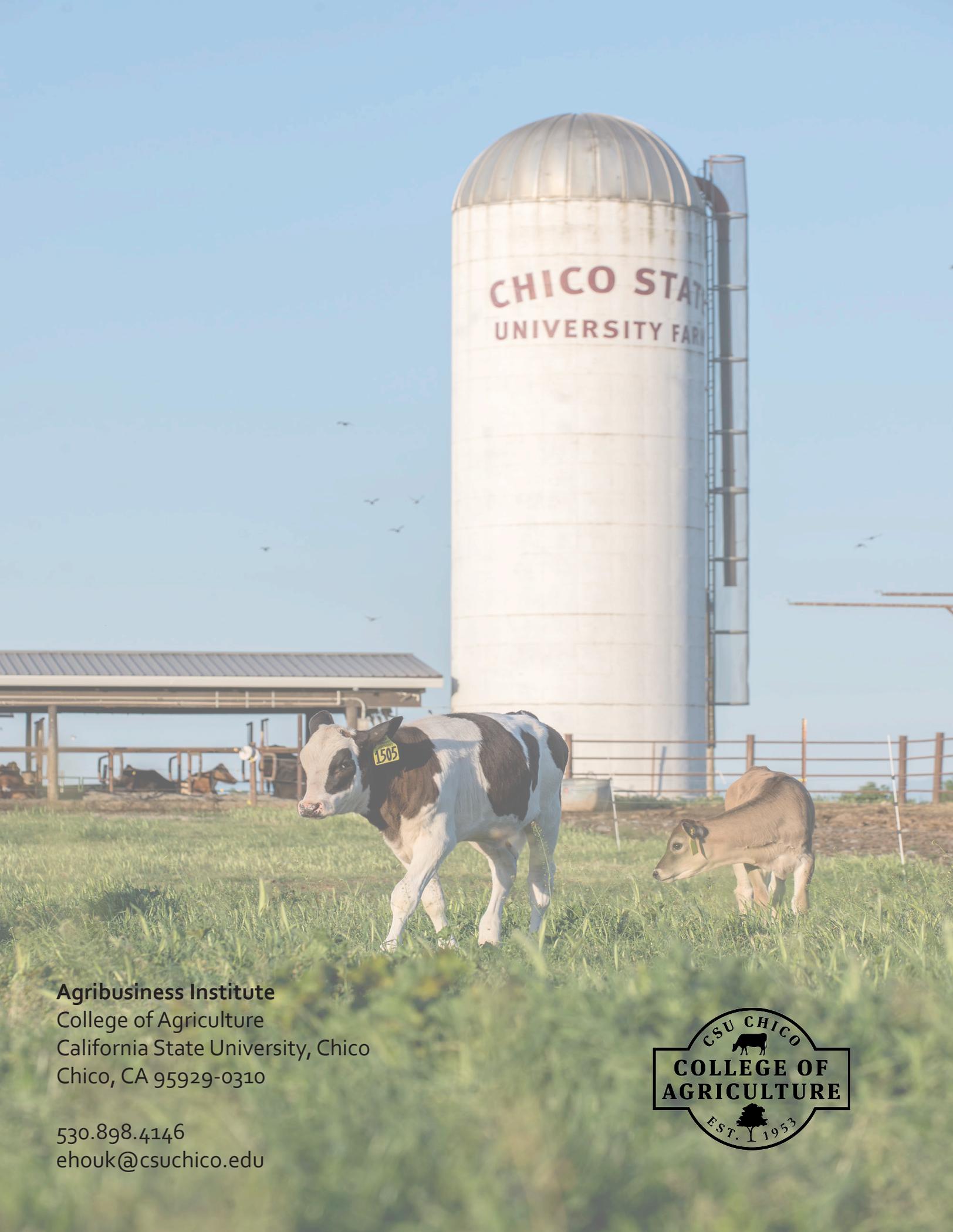
<sup>2</sup> Total number of jobs in California (CA) estimated at 24,064,566

<sup>3</sup> Total labor income in California (CA) estimated at \$1,787,170 million

<sup>4</sup> Total value added in California (CA) estimated at \$2,949,032 million

<sup>5</sup> Appendix A, Table A.1 defines the economic sectors for each category





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