

THE CONTRIBUTION OF AGRICULTURE TO NORTHEASTERN CALIFORNIA'S ECONOMY IN 2020

A Report by
The Agribusiness Institute
College of Agriculture
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About the Author



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Executive Summary

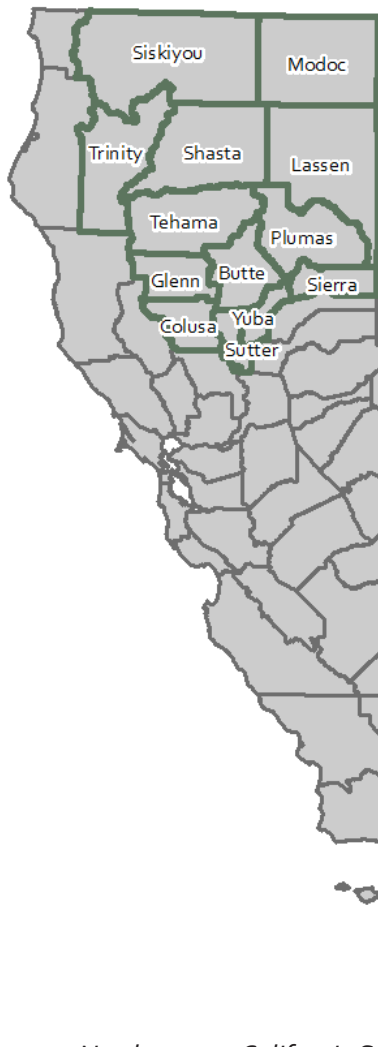
The objective of this study is to document the significance of agricultural production, processing, and its related industries to the overall economy of Northeastern California. Although agriculture has played a major role in shaping the landscape and stimulating economic growth in Northeastern California, 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 10% in 2020, this is 2.8% higher than the State and 1.9% higher than the U.S.
- Inflation adjusted (real) per capita personal income has increased by approximately 27% in the region between 2010 and 2020.
- The total value of agricultural production was around \$4.3 Billion (\$4,260M) in 2020. It has increased 14.3% since 2011, but decreased 7.1% since last year.
- Colusa County had the highest value of production in 2020 (\$943.1M).
- The highest valued commodities in Northeastern CA, were rice (\$915.7M), almonds (\$781.5M), and walnuts (\$498.7M).
- The highest valued commodities in the mountain dominant counties were hay (\$221.4M), cattle (\$191.5M), and nursery plants and products (\$165.4M).
- Farm production expenses have increased by around 23.6% between 2011 and 2020.
- Net farm income has increased by 17.2% between 2010 and 2020, this includes a 54% increase over the last three years.
- Agriculture was responsible for creating 68,974 jobs in Northeastern CA in 2020 (18.1% of all jobs). This includes 48,357 jobs directly in agriculture and an additional 20,617 jobs created through multiplier (indirect and induced) effects.
- Agriculture is responsible for creating \$3,609M in labor income in Northeastern CA in 2020 (16.5% of all labor income).
- Agriculture is responsible for creating \$4,242M in total value added to the Northeastern CA Economy in 2020 (12.7% of the total value added).
- At the statewide level, the overall contribution of agriculture in 2020 was estimated at approximately 1.57 million jobs (6.7% of state total), \$111.4B in labor income (5.8% of state total), and \$144.5 B in total value added (4.8% of state total).

SECTION ONE: OVERVIEW OF NORTHEASTERN CALIFORNIA

1.1 Study Area

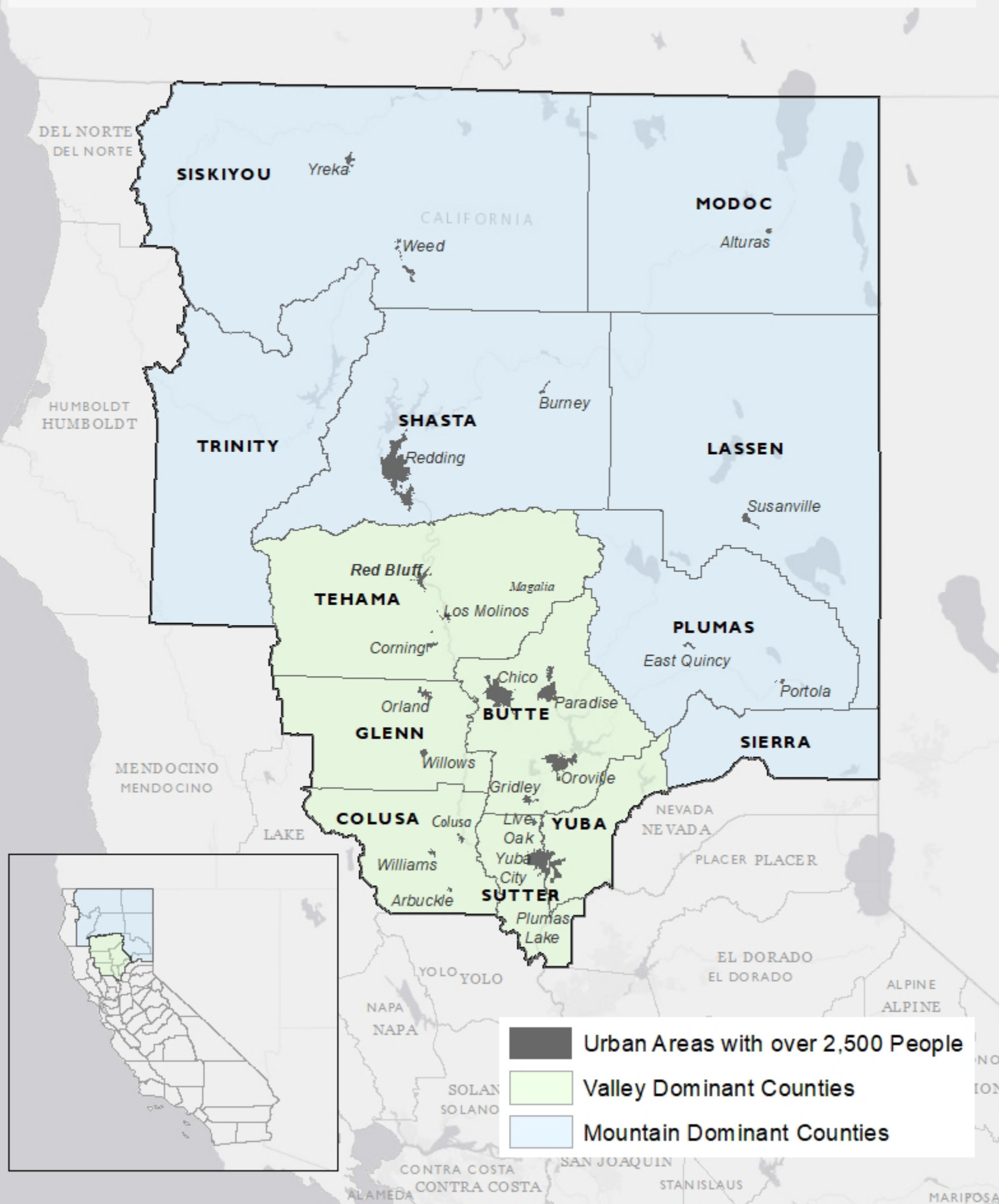


Northeastern California is a diverse part of the state with large variations in terrain, weather, and land use. There are large, highly productive valleys that are near sea level and mountains that reach above 14,000 feet. Much of Northeastern California has been developed around the Sacramento River, 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 1: Northeastern California Study Area Map

Figure 2: Northeastern California Study Area Map





1.2 Demographics

The total population in Northeastern California had generally been increasing over the last ten years. However the population decreased significantly between 2018 and 2020, down to 800,773 (a 1.77% decrease from 2018). During this period, Colusa, Glenn, Plumas, Sutter, Tehama, and Yuba experienced population increases while Butte, Modoc, Lassen, Siera, Shasta, Siskiyou, and Trinity experienced decreases in population ranging in magnitude from minor to significant. Butte experienced the most significant proportional decrease of 7.6%, while Glenn experienced the most significant proportional increase of 3.9%.

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 in the mountain). 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).

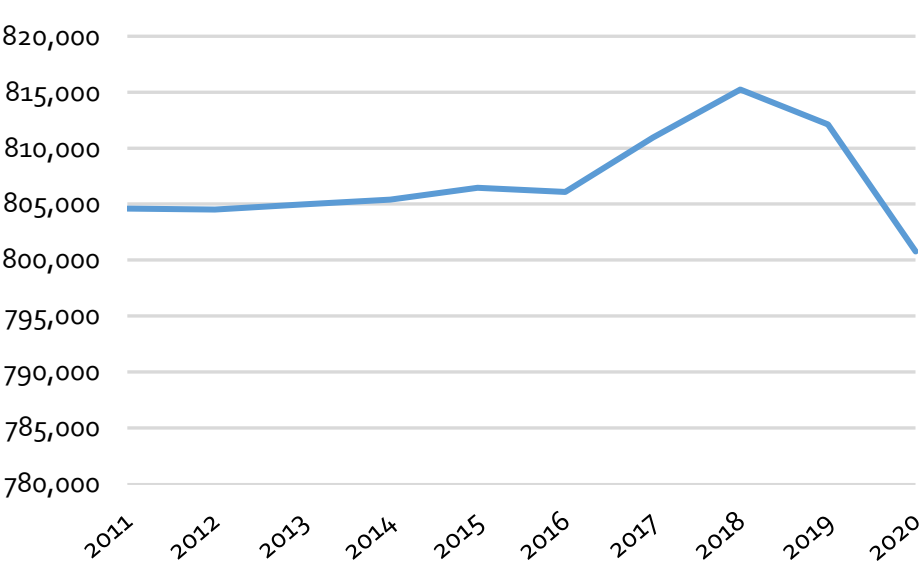


Figure 3: Northeastern California Population (2011-2020)
Source: California Department of Finance

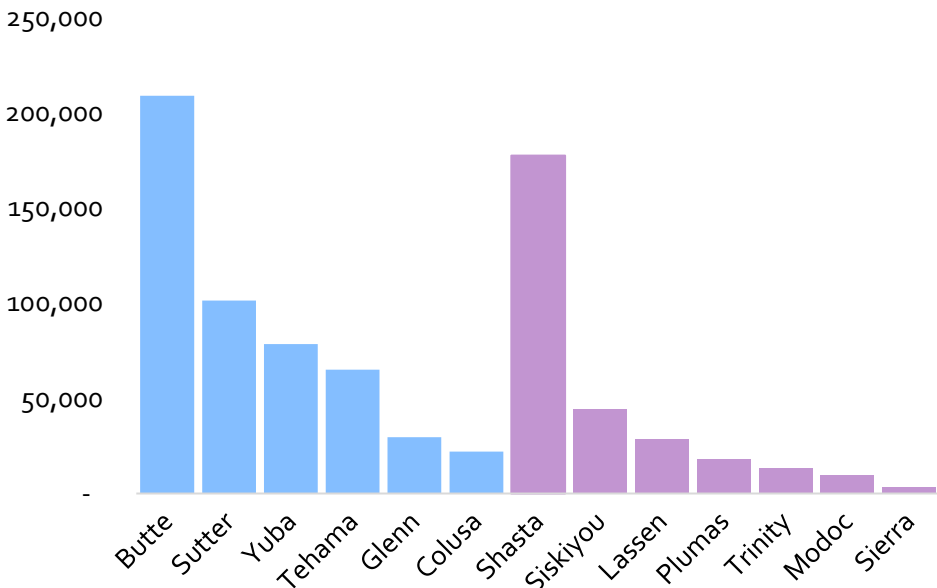


Figure 4: Northeastern California Population by County (2020)
Source: California Department of Finance

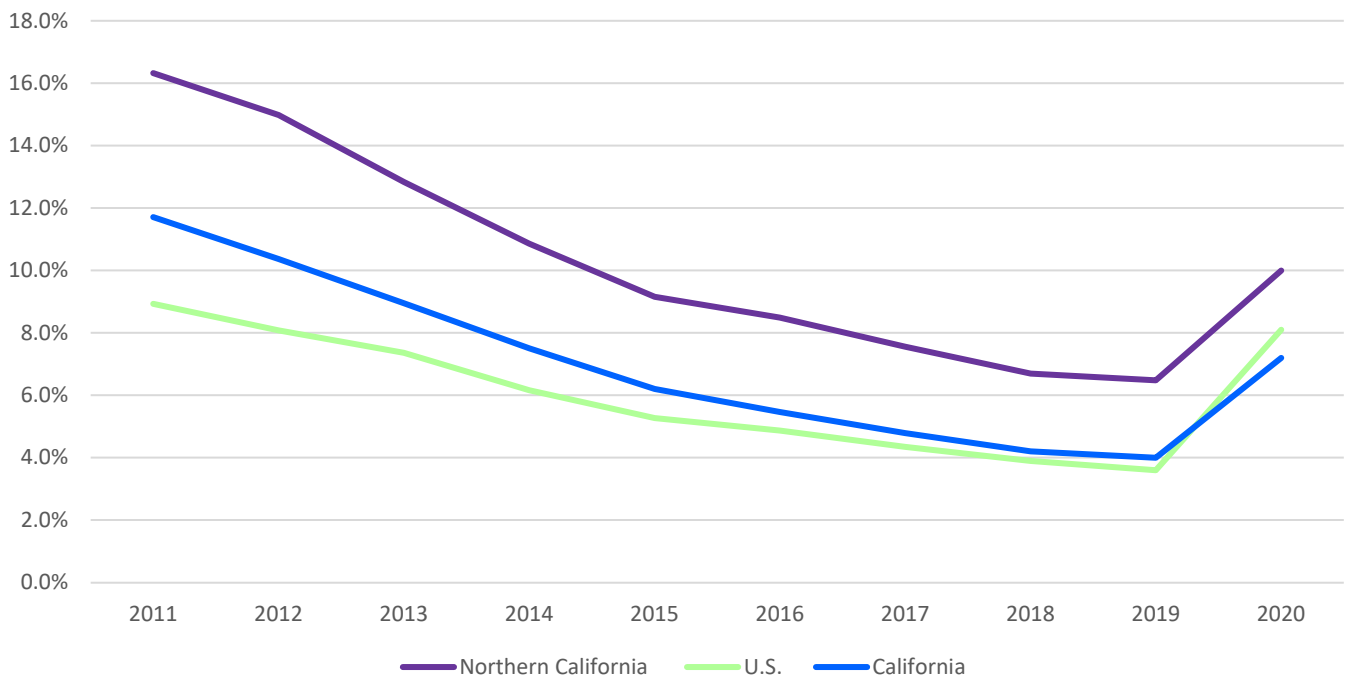


Figure 5: Unemployment Rates (2011-2020)

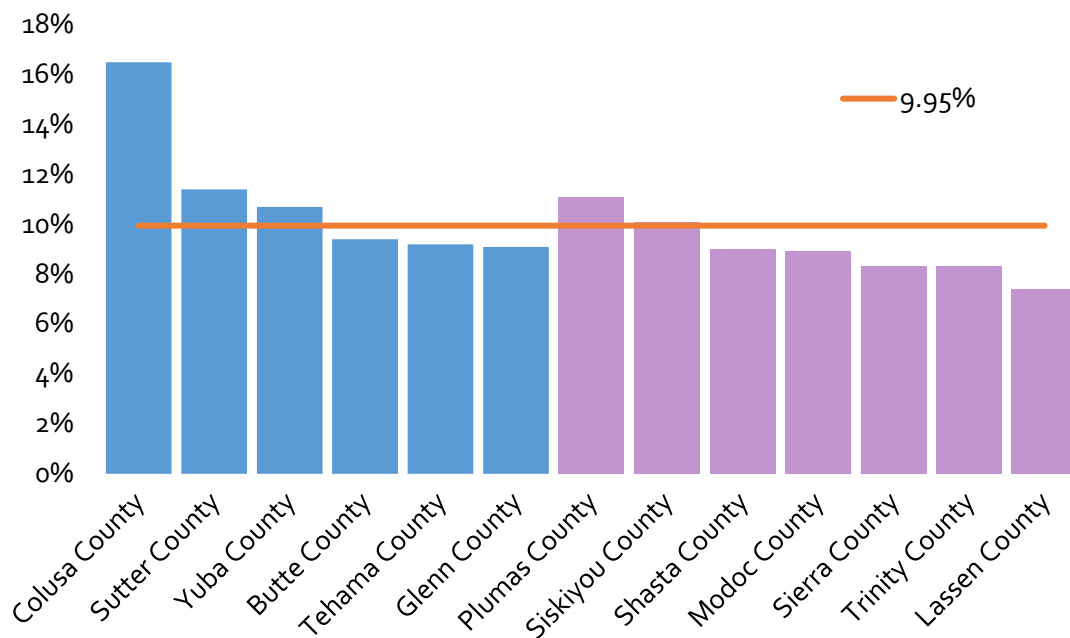
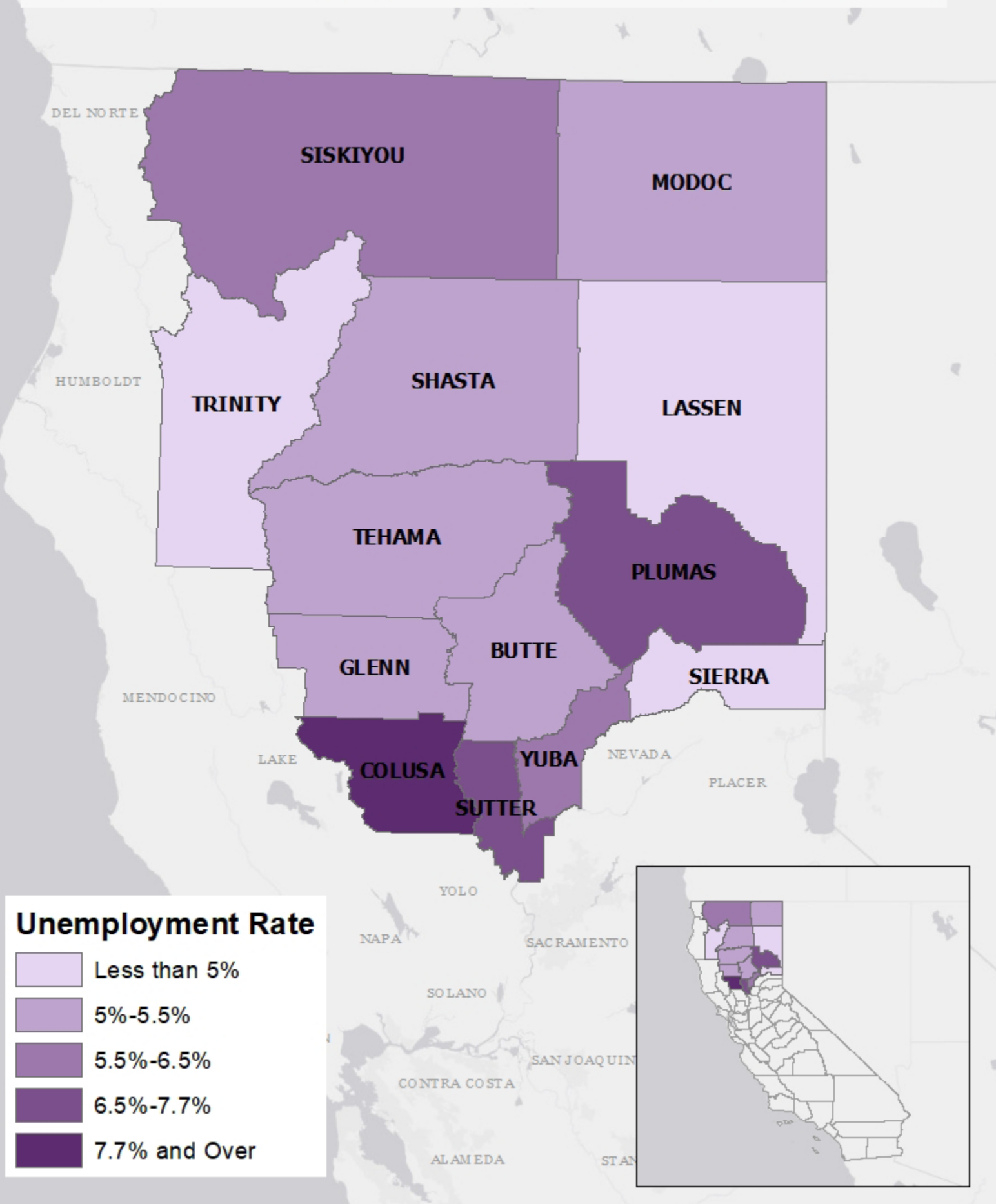


Figure 6: Unemployment Rate by County (2020)

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 10% in 2020 is significantly higher than both the state and national averages (2.8% higher than the State and 1.9% 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 (16.5%) and Lassen County having the lowest (7.4%). Although unemployment rates are continuing to decline in Northeastern California, the region continues to lag behind the rest of the State and Country.

Figure 7: Unemployment by County Map (2020)



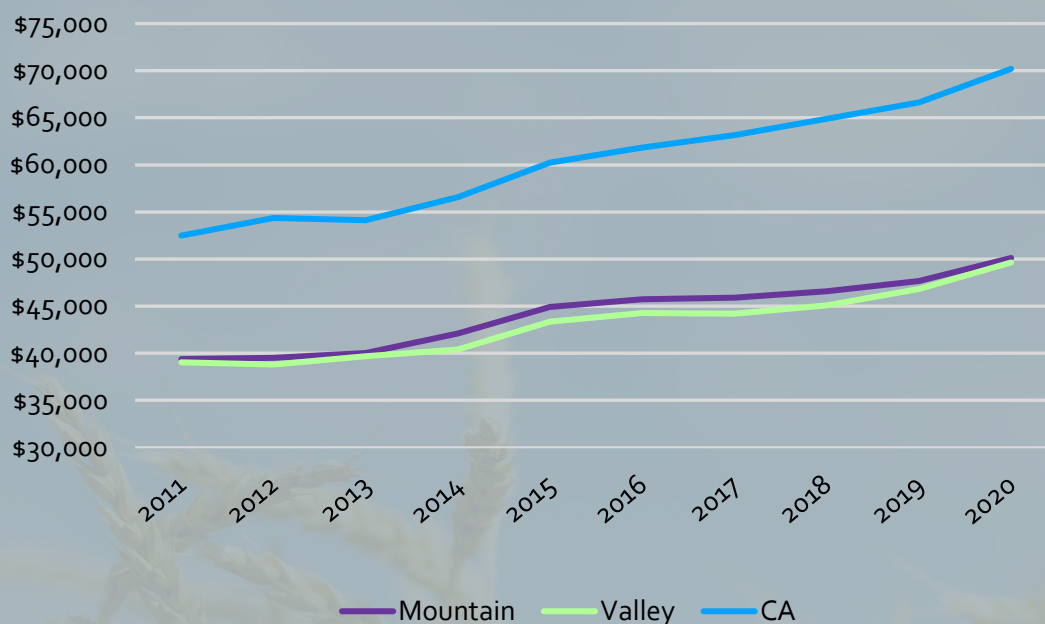


Figure 8: Inflation Adjusted Per Capita Personal Income (2011-2020)

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 27% in the region between 2011 and 2020. Both the mountain and valley dominant counties have experienced similar growth rates, while the state experienced approximately a 34% increase. Although the state average is approximately \$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 4.9 million acres of land in agricultural production in 2017. 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 dominant 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.

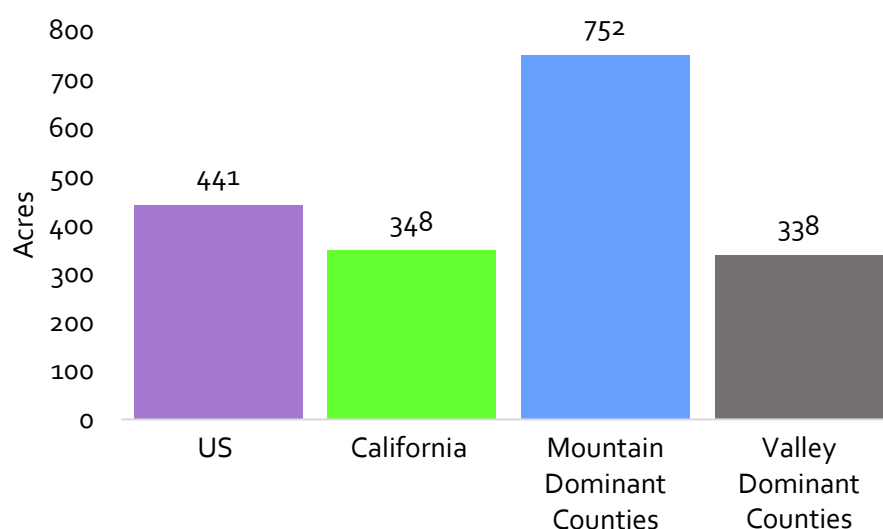
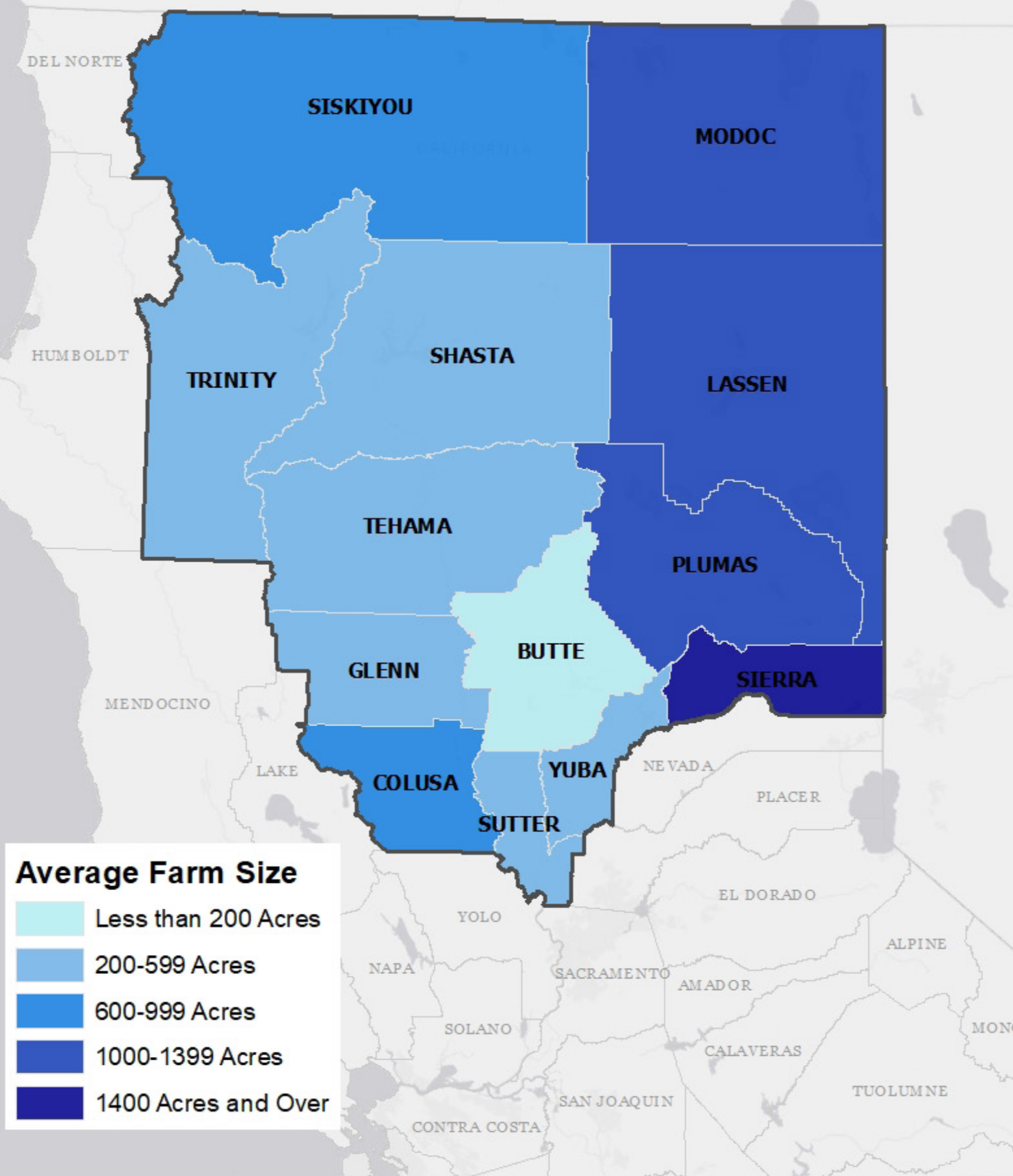


Figure 9: Average Farm Size (2017)
Source: USDA 2017 Census of Agriculture

Figure 10: Average Farm Size by County Map (2020)



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 \$4,259,991,722 in 2020 (Figure 11). This is approximately 14.3% more than was produced in 2011 but reflects a 7.1% decrease over last year's value. The total value of production in 2020 is still 8.9% below its peak in 2014. No new crop data was provided by Trinity County in 2020, while Lassen County did not provide data on wheat production. 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. However, the FAO Food Price index has increased by 6.7% from 2016 to 2020. Some of the primary commodities in this region have experienced much larger price fluctuations during this period. The region experienced frequent and drastic

shifts, from year to year, in terms of the total value of walnuts. The most significant change was between 2017 and 2018 where total value of walnuts for the region decreased by 42.7%.

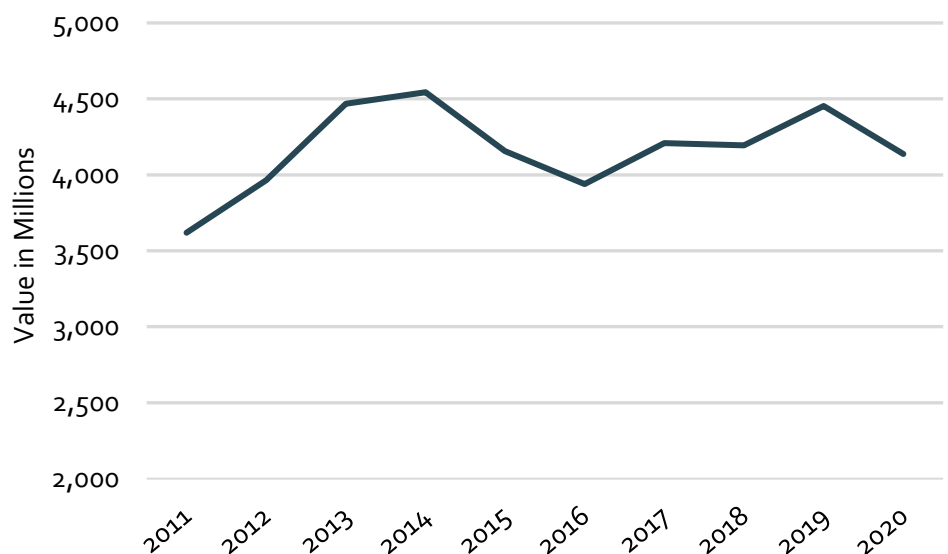
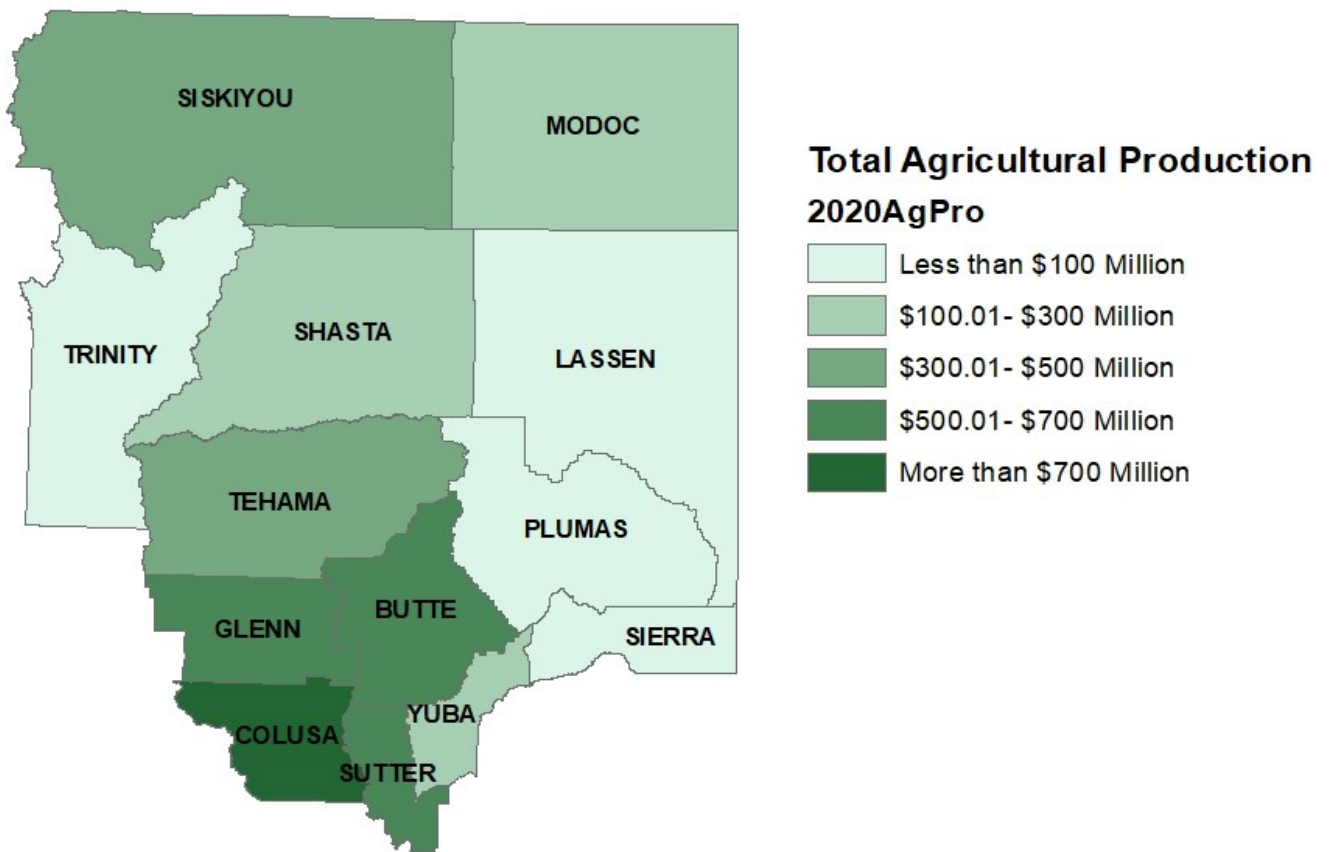


Figure 11: Total Value of Agriculture Production in Northeastern California (2011-2020)

Figure 12: Northeastern California Agricultural Production by County Map (2020)



The value of agricultural production is not distributed evenly between the valley and mountain regions. 78.8% of the total value of production in 2020 occurred in the valley dominant counties, while only 21.2% 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 2020, followed by Glenn and Butte counties with Sierra and Trinity counties documenting the lowest production values (Figure 13).

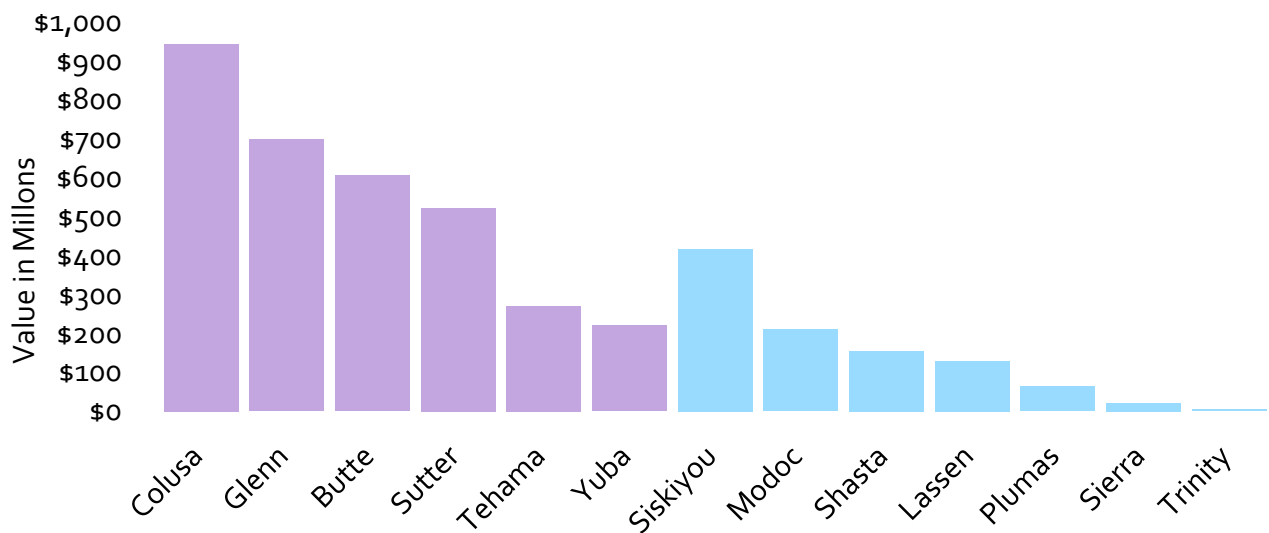


Figure 13: Northeastern California Agricultural Production by County (2020)

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 rice in 2020 with an approximate total value of \$915.7 million, followed by almonds and walnuts (Table 1). The total value of rice produced in northeastern California rose by over \$100,000,000 between 2018 and 2019, bringing it to a high unmatched since 2013. While almonds experienced a decrease in total value by approximately \$30,000,000 in 2019, but have risen by over \$15,000,000 in 2020. Reports were received from 52 of the 58 counties for 2019. Six County Agricultural Commissioners' Reports for Alameda, Del Norte, Humboldt, Lassen, Mariposa, and Trinity counties, were not available at the time of publication. Therefore, 2018 data was used for Alameda County and data for Lassen and Mariposa counties came from their 2017 publications.

Table 1: Northeastern California Top 10 Commodities by Value (2020)

Northeastern California Top 10 Commodities by Value		
	Total Value	Total Acres
Rice	\$915,672,000	476,750
Almonds	\$781,542,000	199,430
Walnuts	\$498,662,000	200,100
Cattle	\$284,619,000	
Hay	\$253,927,000	248,283
Nursery Plants and Products	\$246,153,130	3,188
Timber	\$124,968,000	
Forest Products	\$109,540,710	
Tomato Processing	\$106,386,000	27,020
Plums	\$104,152,000	35,720
All remaining commodities	\$834,369,882	5,238,211
Total	\$4,259,991,722	6,428,702

Source: California Agricultural Statistics

Since the valley dominant counties contain the majority of agricultural production, the top ten commodities in the valley dominant counties (Rice, Almonds, 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, Cattle, Nursery Plants and Products (mostly strawberry), and Timber (Table 3). Although Rice, Almonds, and Walnuts make up approximately 54% 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.

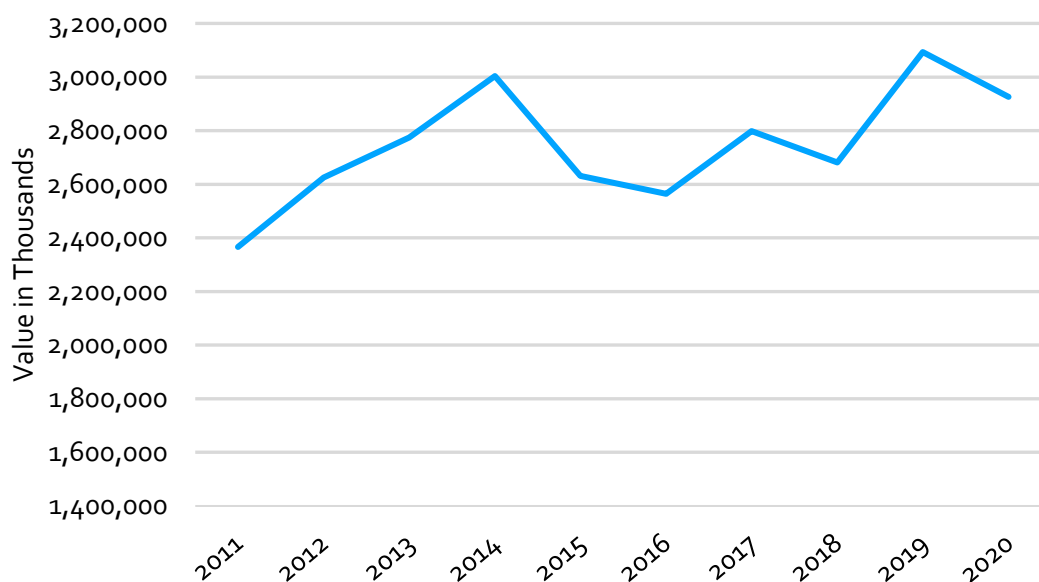
Tables 2 & 3: Valley and Mountain Dominant Counties Top 10 Commodities by Value (2020)

Valley Dominant Counties Top 10 Commodities by Value			Mountain Dominant Counties Top 10 Commodities by Value		
	Total Value	Total Acres		Total Value	Total Acres
Rice	\$906,446,000	465,820	Hay	\$221,436,000	218,929
Almonds	\$781,542,000	199,430	Cattle	\$191,481,000	
Walnuts	\$496,034,000	198,700	Nursery Plants and Products	\$165,360,830	2,463
Tomato Processing	\$106,386,000	27,020	Timber	\$104,239,000	
Plums	\$104,152,000	35,720	Forest Products	\$89,725,710	
Cattle	\$93,138,000	-	Pasture	\$48,501,000	3,280,560
Nursery Plants and Products	\$80,792,300	725	Vegetables	\$47,974,100	68
Apiary (All)	\$79,445,000	-	Potatoes	\$29,133,000	7,110
Peaches	\$78,926,000	11,250	Onions	\$20,623,000	4,510
Milk	\$75,033,000	-	Wheat	\$17,905,000	26,420
All remaining commodities	\$457,696,800	1,923,018	All remaining commodities	\$64,021,982	26,959
Total	\$3,259,591,100	2,861,683	Total	\$1,000,400,622	3,567,019

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 29.2% in the last 10 years, we experienced a period of decline from 2014 to 2016 while commodity prices were also declining. Farm production expenses experienced a significant 15.3% increase between 2018 and 2019, followed by a much less drastic decline of 5.4% between 2019 and 2020.



*Figure 14: Northeastern California Farm Production Expenses
(2011-2020)*

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

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 four largest categories of farm production expense are Hired Farm Labor (26%), Fertilizer/ Lime Purchased (17%), Livestock Purchased (3%), and Feed Purchased (3%).

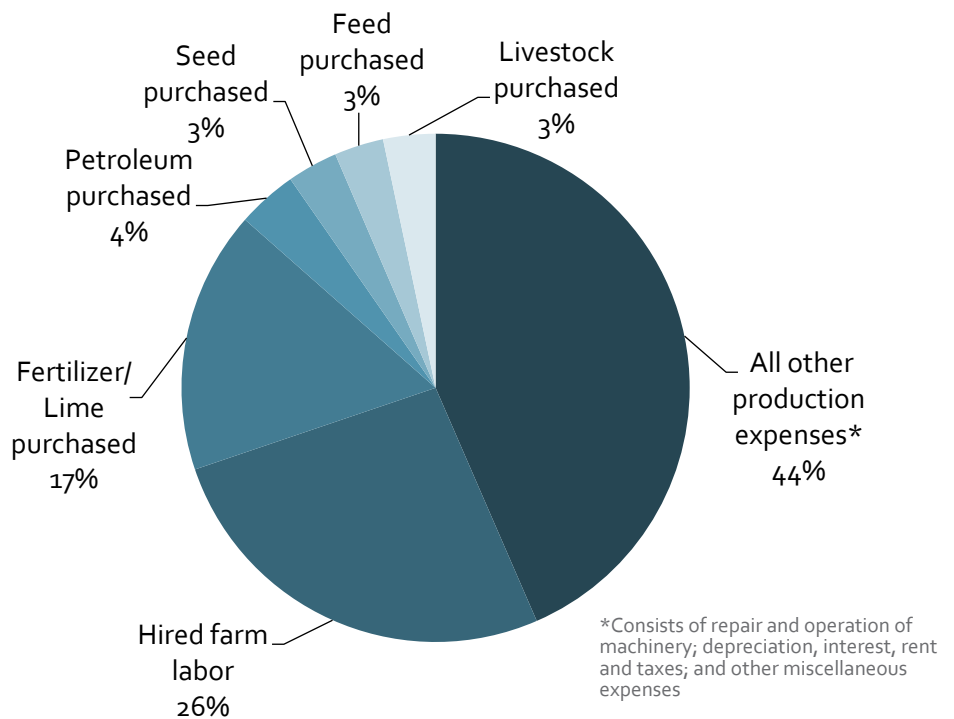


Figure 15: Distribution of Northeastern California Farm Production Expenses (2020)

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

The value of agricultural production has generally been growing at a faster rate than production expenses over the last 10 years, with the exception of 2020 due to the impacts of the COVID-19 pandemic. Figure 16 shows how net farm income has increased by approximately 17.2% from 2011 to 2020 while total government payments have continued to decrease, with the exception 2018. The dramatic decline in net farm income (33% reduction) from 2014 to 2017 was primarily due to a decrease in commodity prices. However, improved prices along with strong production levels helped boost net farm income in this region by 54% from 2017 to 2020. 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.

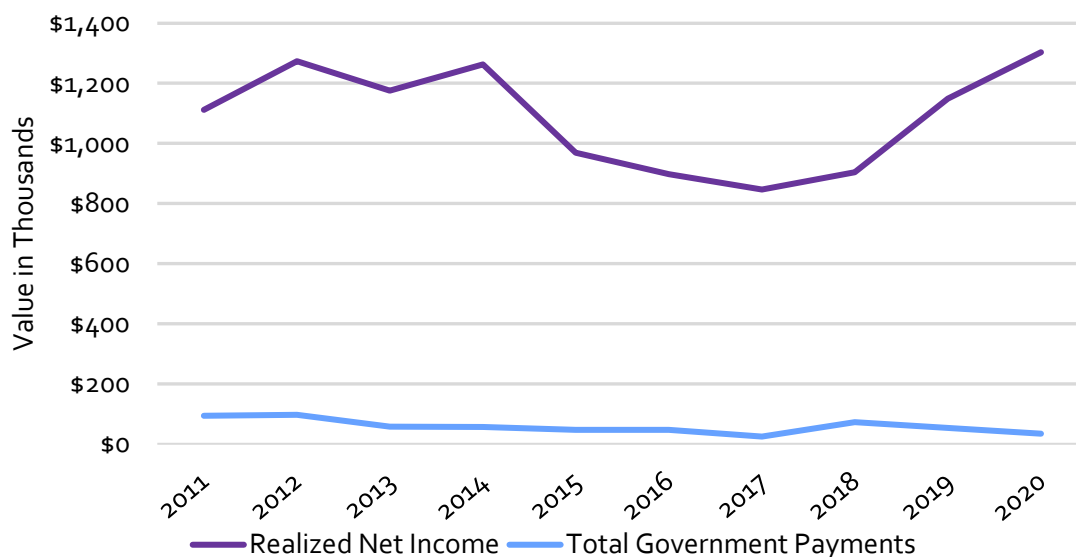
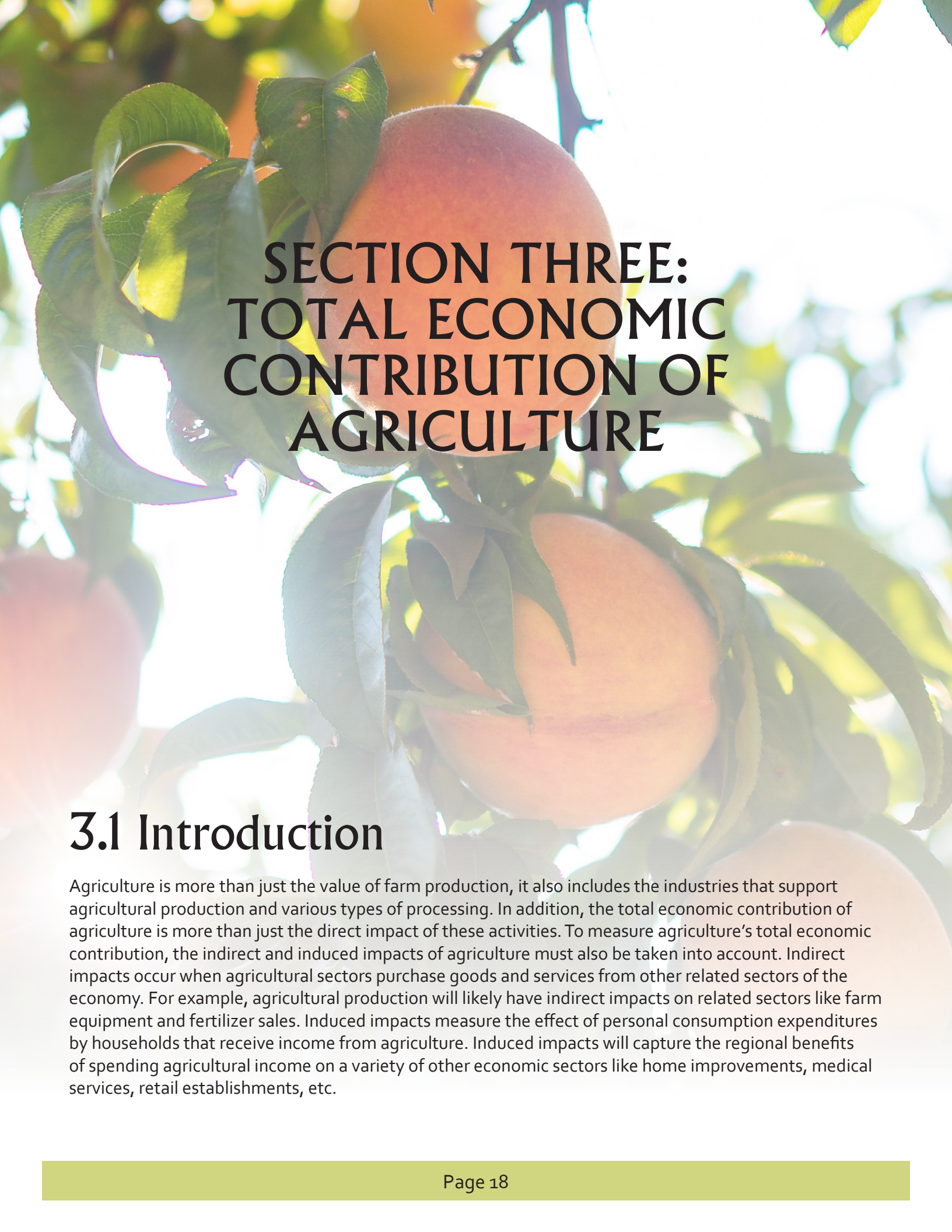


Figure 16: Northeastern California Net Farm Income and Government Payments (2011-2020)

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.

3.2 Methods

The total economic contribution of agriculture was modeled using the Impact Analysis for Planning (IMPLAN) System (IMPLAN Group, 2019). 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 546 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 Miller (2013), the 546 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.

3.3 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 68,974 jobs or 18.1% of total employment in the region. Approximately, one in five jobs in the region can be attributed to agriculture. This includes 48,357 jobs directly within agricultural production, processing, and related sectors and an additional 20,617 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 16.5% of all labor income in the region. In terms of total value added, \$4.2 billion was added to the Northeastern California economy as a result of the direct, indirect, and induced effects of the agricultural industry. This represents 12.7% of all economic value that was created by the Northeastern California economy in 2020. 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 1.6 million jobs (9.7% of state total), \$111.4 B in labor income (5.8% of state total), and \$144.5 B in total value added (4.8% of state total) in 2020. 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 2020

	Employment		Labor Income		Value Added	
	# Jobs ¹	% NE CA Jobs ²	Million \$	% NE CA Labor Income ³	Million \$	% NE CA Value Added ⁴
Direct Impacts	48,357	12.7%	\$2,495	11.4%	\$2,278	6.8%
Production Direct ⁵	30,380	8.0%	\$1,427	6.5%	\$738	2.2%
Processing Direct ⁵	9,354	2.4%	\$554	2.5%	\$970	2.9%
Ag Related Direct ⁵	8,623	2.3%	\$514	2.4%	\$569	1.7%
Indirect Impacts	9,855	2.6%	\$554	2.5%	\$936	2.8%
Induced Impacts	10,762	2.8%	\$560	2.6%	\$1,028	3.1%
Total Contribution of Agriculture	68,974	18.1%	\$3,609	16.5%	\$4,242	12.7%

¹ Includes full-time and part-time jobs.

² Total number of jobs in Northeastern (NE) California estimated at 382,003.

³ Total labor income in Northeastern (NE) California estimated at \$21,863 M.

⁴ Total value added in Northeastern (NE) California estimated at \$33,293 M.

⁵ Appendix A, Table A.1 defines 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
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	1	Oilseed Farming	Agricultural Processing Industries (Continued)	111	Tobacco product manufacturing
	2	Grain Farming		112	Fiber, yarn, and thread mills
	3	Vegetable and melon farming		113	Broadwoven fabric mills
	4	Fruit farming		114	Narrow fabric mills and schiffli machine embroidery
	5	Tree nut farming		115	Nonwoven fabric mills
	6	Greenhouse, nursery, and floriculture production		116	Knit fabric mills
	8	Cotton farming		117	Textile and fabric finishing mills
	9	Sugarcane and sugar beet farming		118	Fabric coating mills
	10	All other crop farming		119	Carpet and rug mills
	11	Beef cattle ranching and farming		120	Curtain and linen mills
	12	Dairy cattle and milk production		121	Textile bag and canvas mills
	13	Poultry and egg production		122	Rope, cordage, twine, tire cord, and tire fabric mills
	14	Animal production, except cattle, poultry, and eggs		123	Other textile product mills
	15	Forestry, forest products, & timber tract production		124	Hosiery and sock mills
	16	Commercial logging		125	Other apparel knitting mills
	17	Commercial fishing		126	Cut and sew apparel contractors
	18	Commercial hunting and trapping		127	Mens and boys cut and sew apparel manufacturing
Agricultural Processing Industries	65	Dog and cat food manufacturing	Agricultural Related Industries	128	Womens and girls cut and sew apparel mfg.
	66	Other animal food manufacturing		129	Other cut and sew apparel manufacturing
	67	Flour milling		130	Apparel accessories and other apparel mfg.
	68	Rice milling		131	Leather and hide tanning and finishing
	69	Malt Manufacturing		132	Footwear manufacturing
	70	Wet corn milling		133	Other leather and allied product manufacturing
	71	Soybean and other oilseed processing		134	Sawmills
	72	Fats and oils refining and blending		135	Wood preservation
	73	Breakfast cereal manufacturing		136	Veneer and plywood manufacturing
	74	Beet sugar manufacturing		137	Engineered wood member and truss manufacturing
	75	Sugar cane mills and refining		138	Reconstituted wood product manufacturing
	76	Nonchocolate confectionery manufacturing		139	Wood windows and door manufacturing
	77	Chocolate & confectionery mfg. from cacao beans		140	Cut stock, resawing lumber, and planing
	78	Confectionary mfg. from purchased chocolate		141	Other millwork, including flooring
	79	Frozen fruits, juices, and vegetables manufacturing		142	Wood container and pallet manufacturing
	80	Frozen specialties manufacturing		143	Manufactured home (mobile home) manufacturing
	81	Canned fruits and vegetables manufacturing		144	Prefabricated wood building manufacturing
	82	Canned specialties		145	All other miscellaneous wood product mfg.
	83	Dehydrated food products manufacturing		147	Paper mills
	84	Fluid milk manufacturing		148	Paperboard mills
	85	Creamery Butter Manufacturing		149	Paperboard container manufacturing
	86	Cheese manufacturing		150	Paper bag and coated and treated paper mfg.
	87	Dry, condensed, & evaporated dairy product mfg.		151	Stationery product manufacturing
	88	Ice Cream and frozen dessert manufacturing		152	Sanitary paper product manufacturing
	89	Animal, except poultry, slaughtering		153	All other converted paper product manufacturing
	90	Meat processed from carcasses		368	Wood kitchen cabinet and countertop mfg.
	91	Rendering and meat byproduct processing		369	Upholstered household furniture manufacturing
	92	Poultry processing		370	Nonupholstered wood household furniture mfg.
	93	Seafood product preparation and packaging		373	Wood office furniture manufacturing
	94	Bread and bakery product, except frozen, mfg.		374	Custom architectural woodwork and millwork
	95	Frozen cakes and other pastries manufacturing	Agricultural Related Industries	19	Support activities for agriculture and forestry
	96	Cookie and cracker manufacturing		169	Nitrogenous fertilizer manufacturing
	97	Dry pasta, mixes, and dough manufacturing		170	Phosphatic fertilizer manufacturing
	98	Tortilla Manufacturing		171	Fertilizer mixing
	99	Roasted nuts and peanut butter manufacturing		172	Pesticide and other agricultural chemical mfg.
	100	Other snack food manufacturing		173	Medicinal and botanical manufacturing
	101	Coffee and tea manufacturing		262	Farm machinery and equipment manufacturing
	102	Flavoring syrup and concentrate manufacturing		263	Lawn and garden equipment manufacturing
	103	Mayonnaise, dressing, and sauce manufacturing		267	Food product machinery manufacturing
	104	Spice and extract manufacturing		269	Sawmill, woodworking, and paper machinery
	105	All other food manufacturing			
	106	Bottled and canned soft drinks & water			
	107	Manufactured ice			
	108	Breweries			
	109	Wineries			
	110	Distilleries			

Appendix B

Table B.1: The Contribution of Agriculture to California's Economy in 2019

	Employment		Labor Income		Value Added	
	# Jobs ¹	% California Jobs ²	Million \$	% California Labor Income ³	Million \$	% California Value Added ⁴
Direct Impacts	929,182	4.0%	\$61,785	3.2%	\$91,667	3.0%
Production Direct ⁵	277,976	1.2%	\$19,402	1.0%	\$27,064	0.9%
Processing Direct ⁵	396,608	1.7%	\$28,135	1.5%	\$47,194	1.6%
Ag Related Direct ⁵	254,598	1.1%	\$14,248	0.7%	\$17,409	0.6%
Indirect Impacts	294,191	1.3%	\$25,849	1.3%	\$10,049	0.3%
Induced Impacts	349,832	1.5%	\$23,786	1.2%	\$42,783	1.4%
Total Contribution of Agriculture	1,573,205	6.7%	\$111,420	5.8%	\$144,499	4.8%

¹ Includes full-time and part-time jobs.

² Total number of jobs in California estimated at 23,441,392.

³ Total labor income in California estimated at \$1,916,285 M.

⁴ Total value added in California estimated at \$3,036,351 M.

⁵ Appendix A, Table A.1 defines economic sectors for each category.



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