

Statewide Summary

Arizona County Agricultural Economy Profiles University of Arizona Cooperative Extension

Overview

Arizona is a largely urban state, with roughly 90% of the state's population in urban areas. It includes the country's 10th largest metro area, the Phoenix-Mesa-Chandler metropolitan statistical area (MSA), with 4.9 million residents.

Major industries include mining, high-tech manufacturing, business services, and tourism. Agriculture accounts for approximately 1.1% of private employment in the state and less than 1% of state GDP. Nonetheless, approximately 36% of Arizona's land area is used for agricultural purposes, either crop or livestock production. Agriculture in Arizona is diverse, characterized by highly productive irrigated crop production in the central, western, and southern parts of the state, and by livestock grazing over expansive rangelands in the northern and eastern parts of the state. Arizona is known as a leading state in the production of winter vegetables, particularly in the Yuma area. Much of the state's livestock and animal product production by value occurs in large dairies in central Arizona that serve the state's main population centers.

The types of crops and livestock produced, the amount of water used for agricultural purposes, and the role of agriculture in county economies varies significantly across the state. ***This collection of county profiles presents agricultural production, water use, and regional economic data in a standardized, integrated, and easy-to-read format to provide context on the role of agriculture within state and county economies, as well as its role as a manager of land and natural resources.***



Map of Arizona & Counties

Top 20 Private Industries in AZ by Employment LQ, 2018

Industry	Location Quotient
Copper, nickel, lead, & zinc mining	30.98
Satellite telecommunications	11.58
Professional employer organizations	6.67
Research & development in nanotech.	5.48
Other credit intermediation activities	5.45
Semiconductors & related device mfg.	5.09
Solar electric power generation	4.87
Financial trans. processing & clearing	4.84
Citrus, except orange, groves	4.71
Translation & interpretation services	4.52
Bus & other motor veh. transit systems	4.47
Hay farming	3.75
Small arms & ordnance manufacturing	3.57
Scenic & sightseeing transportation, oth.	3.56
Cotton farming	3.53
Support act. for nonmetallic minerals	3.52
Crop harvesting, prim. by machine	3.42
Telemarketing & other contact centers	3.37
Lessors of other real estate property	3.30
Flight training	3.29

Indicator	Arizona
Land Area (square miles)	113,990
Land in Farms (Crops, Grazing) (square miles)	40,822
Population (2018)	7,171,646
Annual Average Population Growth Rate (2010-18)	1.4%
Percent of Population Over 65 (2018)	17.5%
Percent Population Rural (2010)	10.2%
Total Employment (2018)	2,826,095
Share Federal, State, & Local Government Employment (2018)	13.8%
GDP (2018)	\$348.3 billion
Ag, Forestry, & Hunting GDP (2018) (on-farm only)	\$2.3 billion

An economy can be characterized by the industries that make up the “base” of the economy. A common way to measure this is with location quotients (LQs), which are the ratio of a particular industry's share of employment within a region to the same industry's share of national employment. An industry with a LQ greater than 1.25 is considered part of the economic base, exporting goods and services and bringing money into the region. LQs also help identify a region's areas of specialization. Higher LQs indicate greater specialization. Four agricultural industries rank in Arizona's top 20 industries by employment LQ. These include citrus (except orange) groves (4.71 times more concentrated than the national average), hay farming (3.75), cotton farming (3.53), and crop harvesting (3.42). These reflect some of the state's largest agricultural industries.

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Every 5 years, U.S. Department of Agriculture releases the Census of Agriculture, which provides the most comprehensive source of information on agricultural production by county. The Census provides information on the number of farms, types of crops and livestock produced, and farm characteristics, among other information. A farm is defined as any establishment that produced and sold, or could have sold, more than \$1,000 or more of agricultural products in the Census year. The following information comes from the most recent 2017 Census of Agriculture.

Farms

There were 19,086 farms in Arizona as of 2017, covering 1,286,648 acres of cropland (96% irrigated) and 22,656,597 acres of pastureland (<1% irrigated). The average farm size was 1,369 acres, though the top 7% of farms account for 91% of state acreage. Farms are distributed across the state unevenly with a large number of farms in the northeastern portion of the state. Areas of central and southwestern Arizona have a smaller number of farms, but account for a larger share of agricultural production in terms of the value of their sales. More than half of total farms in Arizona (11,132 farms) had sales of less than \$1,000 and a large majority of county farms (84%) are family- or individually-held farms.

Farms are classified by the type of agricultural products they produce. When a farm or ranch produces more than one agricultural product, they are classified by the product that constitutes more than 50% of their sales. The most common type of operation in Arizona is beef cattle ranching and farming (5,572 farms), followed by sheep and goat farming (5,139 farms), and aquaculture and other animal production* (4,550 farms).

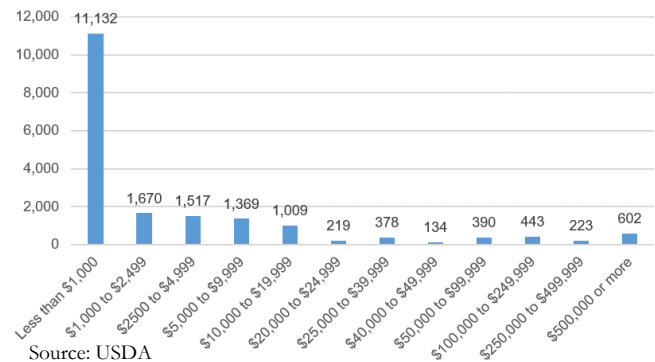
While the number of farms is helpful in understanding how many farms “specialize” in different types of agricultural production, it does not reflect the magnitude or scale of production by commodity, which is better captured by sales or cash receipts.

Arizona Farms by Industry

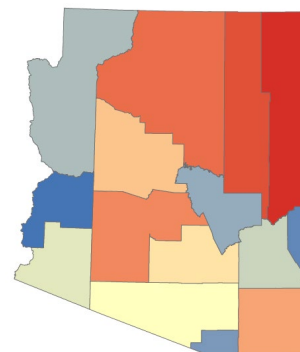
Category	Farms
Total farms	19,086
Oilseed and grain farming	188
Vegetable and melon farming	903
Fruit and tree nut farming	760
Greenhouse, nursery, and floriculture production	227
Other crop farming	1,318
Cotton farming	173
Hay and all other crop farming	1,145
Beef cattle ranching and farming	5,572
Cattle feedlots	40
Dairy cattle and milk production	116
Hog and pig farming	130
Poultry and egg production	143
Sheep and goat farming	5,139
Aquaculture and other animal production*	4,550

* Includes farms where no single type of livestock accounts for >50% of farm sales.

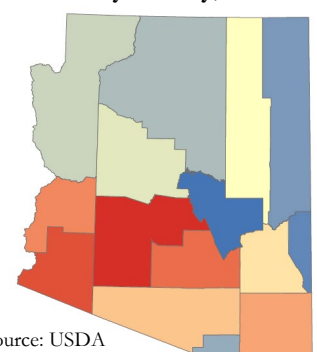
Arizona Farms by Annual Sales, 2017



Farms by County, 2017

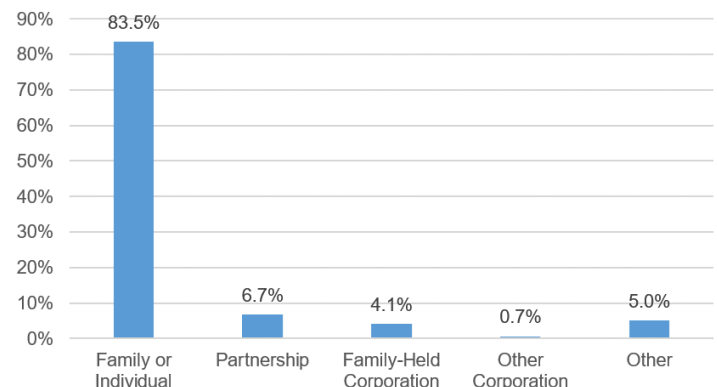


Value of Ag Products Sold by County, 2017



less  more

Arizona Farms by Legal Organization, 2017



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Production & Marketing

Arizona's agricultural production is neither crop- or livestock-dominant, but rather value of production of crops and livestock track together, with year-to-year fluctuations in value of sales.

According to the 2017 Census of Agriculture, major agricultural products by sales includes **vegetables, melons, potatoes, and sweet potatoes** (\$1 billion), **milk from cows** (\$856 million), **cattle and calves** (\$641 million) and **other crops and hay** (\$402 million).

Similar to the national average, local marketing represents less than 1% of state cash receipts. Additionally, there were 74 farms reporting a total of \$97 million in sales of organic production.

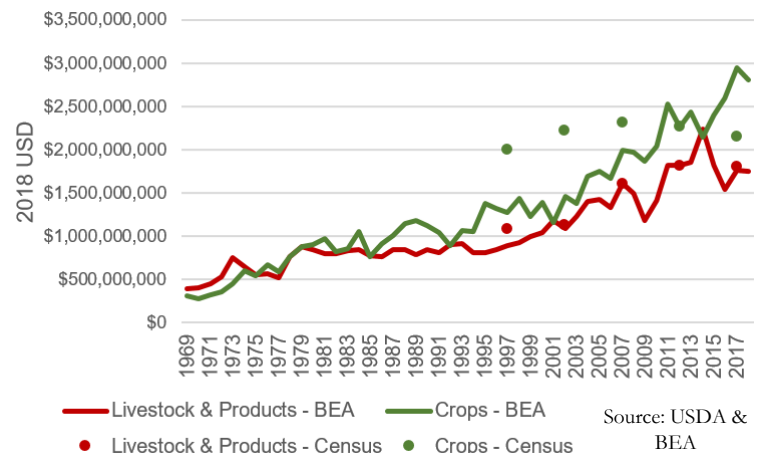
Agriculture in State Economies

Nationally, on-farm agriculture accounts for less than 1% of national GDP. This is also the case in Arizona (0.6%). In California, the country's largest agricultural producer, agriculture represents 1.3% of state GDP (gross state product or GSP). Meanwhile, in some Midwestern states agriculture accounts for upwards of 6% of state GDP.

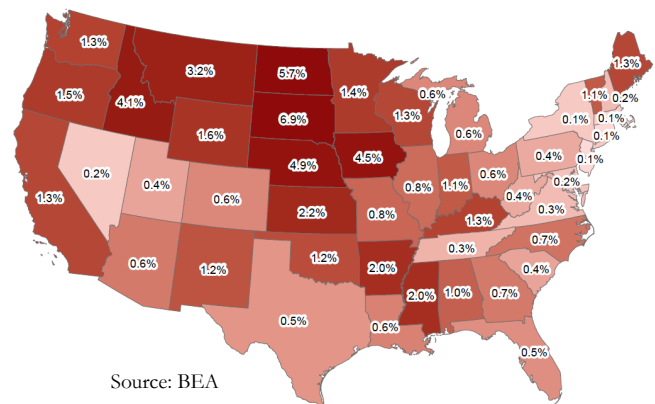
In terms of water use nationally, irrigation accounts for 37% of total water use, though in western states the share is much higher as most agriculture is irrigated. For example, in Arizona 77% of water use is for irrigation (crops and golf), livestock, and aquaculture. A common trend among states, particularly in the West, is agriculture representing a relatively small share of state GDP while constituting a large share of water use. Food, feed, and fiber production are, by nature, water-intensive.

Nationally, Arizona ranks highly in the production of a number of agricultural commodities. For 2018, this includes value of production of broccoli (2nd), cabbage (6th), cantaloupes (2nd), cauliflower (2nd), chile peppers (4th), hay (8th), long-staple cotton (3rd), lemons (2nd), lettuce (2nd), pecans (4th), pistachios (2nd), spinach (2nd), and watermelon (5th) (USDA ERS). For total value of vegetables and melons sold, Arizona ranked second, after California. So while agriculture overall may not comprise a large share of the state's economy as measured by state GDP, Arizona plays an important role nationally and internationally in the production of specific commodities.

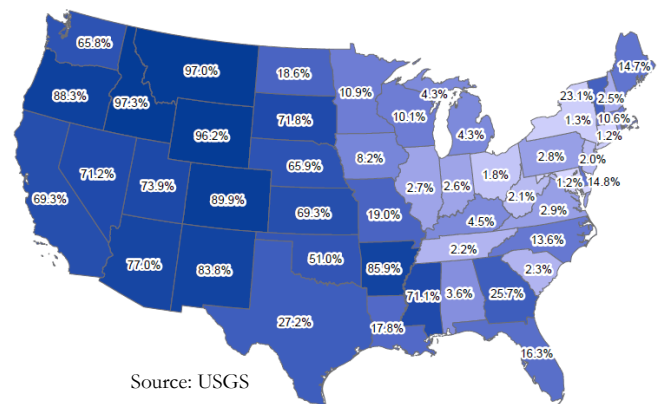
Arizona Agricultural Cash Receipts for Crops & Livestock, 1969 to 2018



Agriculture's Share of Gross State Product (GSP), 2018



Agriculture's Share of State Water Withdrawals, 2015



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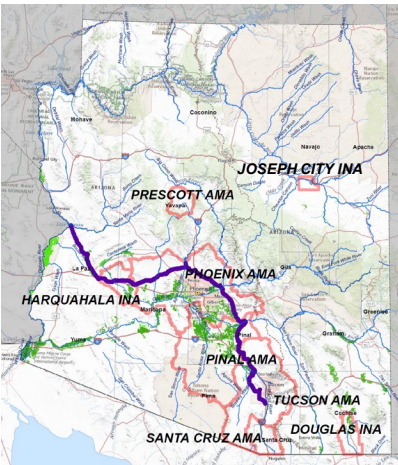
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Irrigation Water Use

Major sources of surface water in Arizona include the Colorado River, the Central Arizona Project which delivers Colorado River water to central and southern Arizona, and the Salt and Gila Rivers. In Arizona, irrigated agriculture accounts for about 75% of the state's water use (77% including golf course irrigation). More than half of withdrawals for agricultural uses in the state are from surface water. In some areas of the state with high demand, groundwater withdrawals for irrigated agriculture are limited by the 1980 Groundwater Management Act. This legislation established five Active Management Areas (AMA) as well as other Irrigation Non-Expansion Areas (INA) where groundwater pumping and expansion of irrigated agriculture are limited. These include the Phoenix AMA, Prescott AMA, Pinal AMA, Santa Cruz AMA, and Tucson AMA. Within AMAs, water use for agriculture has decreased from roughly 66% of total demand in 1985 to 47% of demand in 2017. Overall, AMA water demand for agriculture has fallen from over 2.2 million acre-feet in 1985 to 1.7 million acre-feet in 2017.

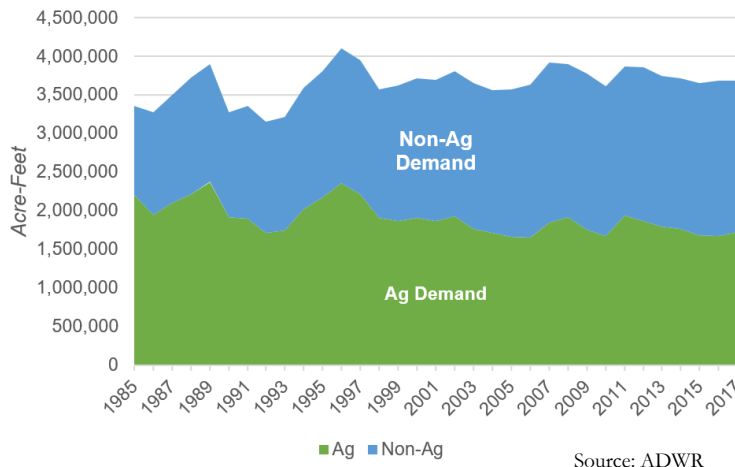
Statewide, total agricultural water use is estimated to have decreased slightly between 2010 and 2015, the most recently available data. Use of surface water for crop irrigation decreased over the period, while groundwater use for crop irrigation increased, as did groundwater use for livestock. Gravity-flow irrigation represents a large majority of statewide acreage, however, between 2010 and 2015 drip irrigation acreage increased substantially.

Arizona Water Map

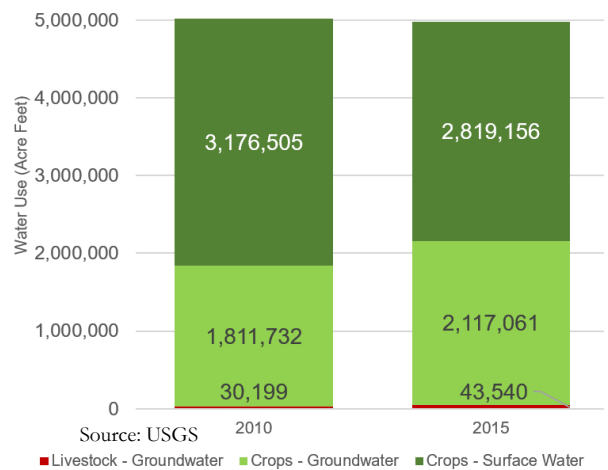


The Central Arizona Project (CAP) is depicted in purple on the map to the left. It delivers Colorado River water to the state's largest population centers in central and southern Arizona. Those same population centers account for most of the state's AMAs (outlined in red), and a large share of the state's irrigated agriculture (areas in green). Irrigated agriculture along the Colorado River mainstem represents another large share of the state's agricultural production.

Arizona Total AMA Water Use



Arizona Agricultural Water Use by Use and Source



Arizona Irrigated Acres by Irrigation Technology

