

AM Valuation Services, PLLC

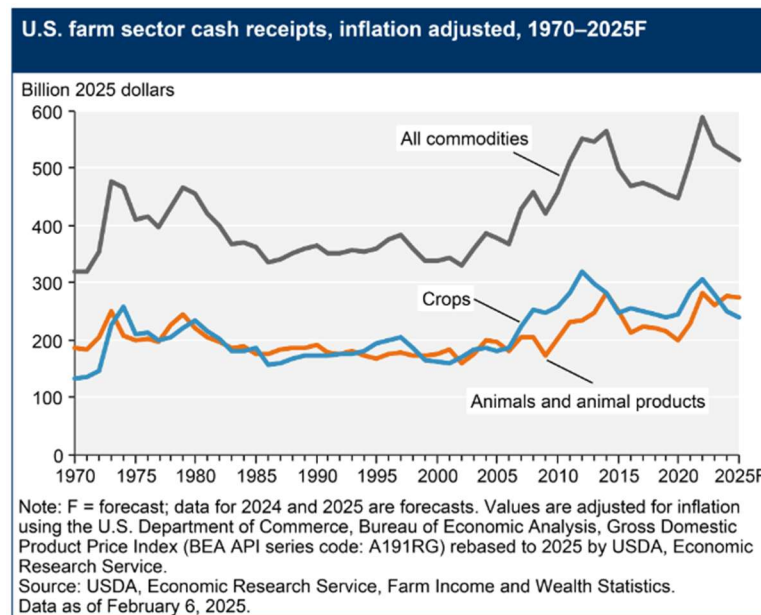
Commercial Real Estate Appraisals

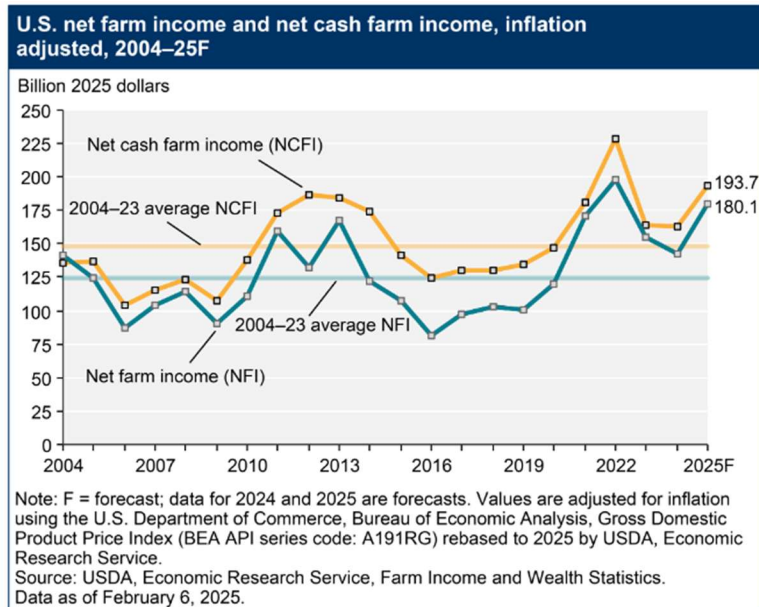
IRRIGATED CROPLAND MARKET STUDY – 2/2025

For this analysis, we researched the national, state, and local market areas for market data. We started with a macro analysis on the cropland market nationwide including current prices, tariffs, immigration, farm bills, and climate change. Then we focused on Arizona and the southwest market. Following this we discussed market value, rates of return, and market rent for the irrigated cropland market with a primary focus on Arizona.

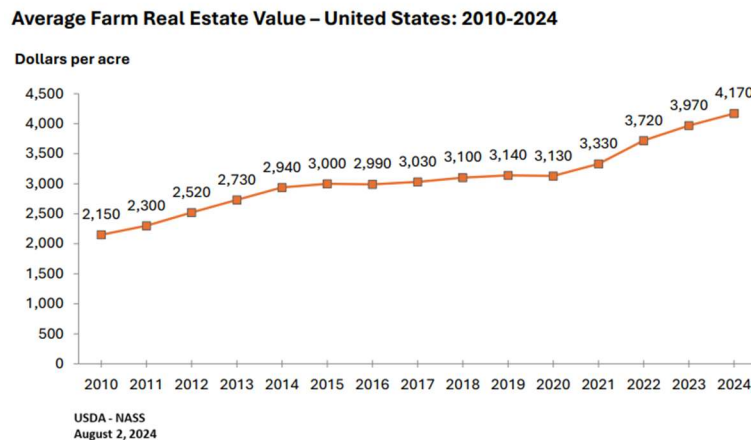
National Market

The national agriculture market is anticipated to see growth in some sectors, and others will face challenges. Farm cash receipts, income that a farm receives from selling agricultural products, are predicted to decrease by \$1.8 billion from 2024 to 2025. Crop cash receipts are expected to decrease to \$239.6 billion, a decrease of about \$5.6 billion from 2024 to 2025. The receipts for animal product are expected to increase to \$275.4 billion for 2025, and increase of about \$3.8 billion. Net farm income is anticipated to increase to \$193.7 billion in 2025 after declining in 2023 and 2024.



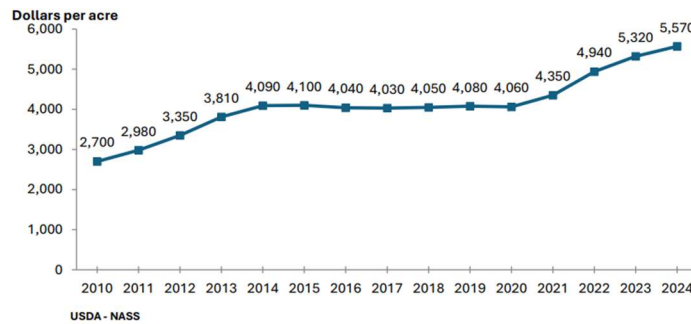


In August of 2024, the USDA released the 2024 Land Values Summary Report. The average per acre for farms in the United States was \$4,170, which was up about \$200 per acre from 2023.



Croplands averaged about \$5,570 per acre, an increase of about \$250 per acre from 2023.

Average Cropland Value – United States: 2010-2024



For Arizona, irrigated and non-irrigated cropland averaged \$8,000 per acre, in 2023. This is an increase of \$400 per acre from 2020 levels.

Irrigated and Non-Irrigated Cropland Average Value per Acre – States: 2020-2024 (continued)

[Only states with significant irrigated acreage appear in this table]

Region, State, and Land type	2020	2021	2022	2023	2024	Change 2023-2024
	(dollars)	(dollars)	(dollars)	(dollars)	(dollars)	(percent)
Mountain						
Arizona, all cropland ¹	7,600	7,600	7,900	8,000	(D)	(X)
Irrigated	7,600	7,600	7,900	8,000	(D)	(X)

- Represents zero.

(D) Withheld to avoid disclosing data for individual operations.

(X) Not applicable.

¹ Excludes American Indian Reservation land.

Source: USDA Land Values 2024 Summary August 2024

There are several challenges that the agriculture market faces in the future. This includes the recent tariff announcements which may spark a potential trade war, immigration reform, the extension of the Farm Bill, potential removal of USAID, and climate change.

Tariffs/Trade War

First, we will discuss tariffs, retaliatory tariffs, and the impact of a trade war. During the last trade war, farmers took substantial losses due to tariffs and retaliatory tariffs. According to the USDA, the tariffs caused nearly \$26 billion in agriculture export losses from 2018 through 2019 <https://www.capradio.org/news/npr/story?storyid=nx-s1-5288119#:~:text=According%20to%20the%20USDA's%20economic,farmers%20could%20pay%20the%20costs.>

Similar to the first DJT administration, 25% tariffs have been announced on Mexico, Canada, and additional 10% China. These trading partners accounted for more than 40% of all imports in the United States in 2024. Retaliatory measures were announced by each country, with tariffs currently on hold for Mexico and Canada as negotiations continue. China has implemented a 15% tariff on coal and liquefied gas, and a 10% tariff on crude oil, agricultural machinery, and large cars. There are numerous articles and data showing the damage tariffs place on American farmers.

**Announced Tariffs By The Current
Administration, as of February 10, 2025**

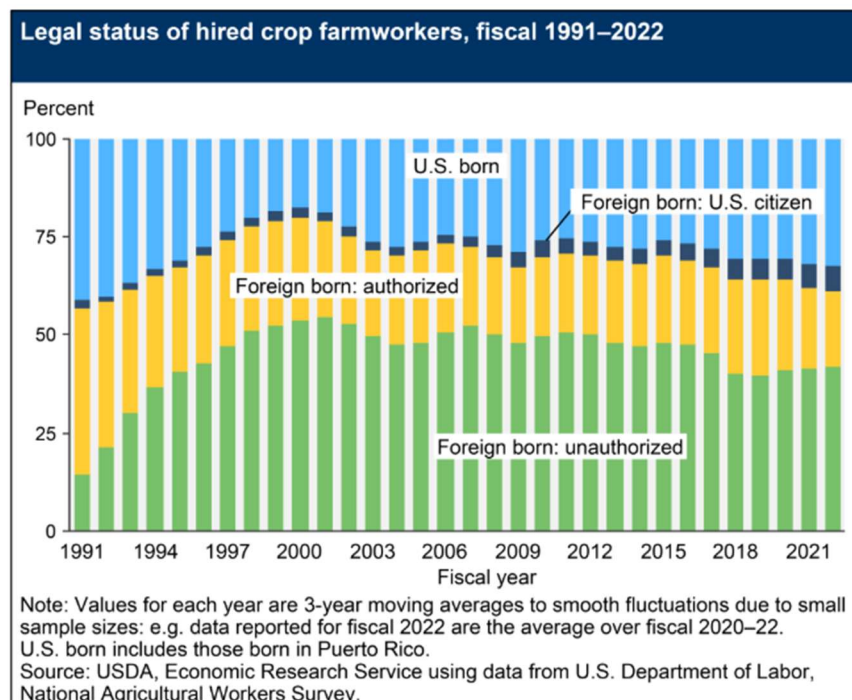
	Tariffs	Retaliatory
Mexico*	25%	5%-20%
Canada*	25%	25%
China	10%	15%
Steel/Aluminum	25%	N/A

*Currently on hold

On February 10, 2025, the President announced a 25% tariff on steel and aluminum imports. There will be various retaliations depending on the country, and some of this could impact farm good sales. It is also noted that removing USAID will impact US farms that supply about 41% of the food aid for the agency. In 2020 the U.S. government bought \$2.1 billion in food aid from American farmers.

Immigration reform

The current administration has announced plans to increase immigration enforcement. This has raised concerns for farmers as more than 80% of the approximately 2 million farm workers are immigrants, and about 42% without work authorization. One of the reasons food prices have remained relatively affordable in the United States is that farm labor has been at a low cost. Many farmers are concerned that the industry could potentially collapse or prices of various crops could skyrocket with increased wages and better benefits to an “American” worker.



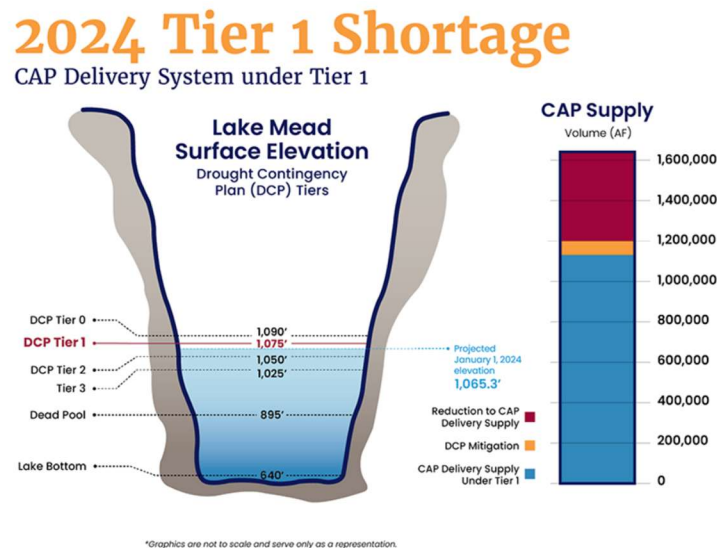
Farm Bill

The Agriculture Improvement Act of 2018 (also known as the 2018 Farm Bill) was enacted into law in December of 2018, and is updated every five years and signed into law (<https://sustainableagriculture.net/our-work/campaigns/fbcampaign/what-is-the-farm-bill/>).

The bill impacts farmers as it covers topics such as commodity prices and income support, conservation, loan programs, rural economic growth, and energy. The 2018 Act expired in September of 2023, but was extended to September of 2024. A second extension was approved through September of 2025 in The American Relief Act 2025. The continued renewal of the Farm Bill is essential to many farmers' livelihoods.

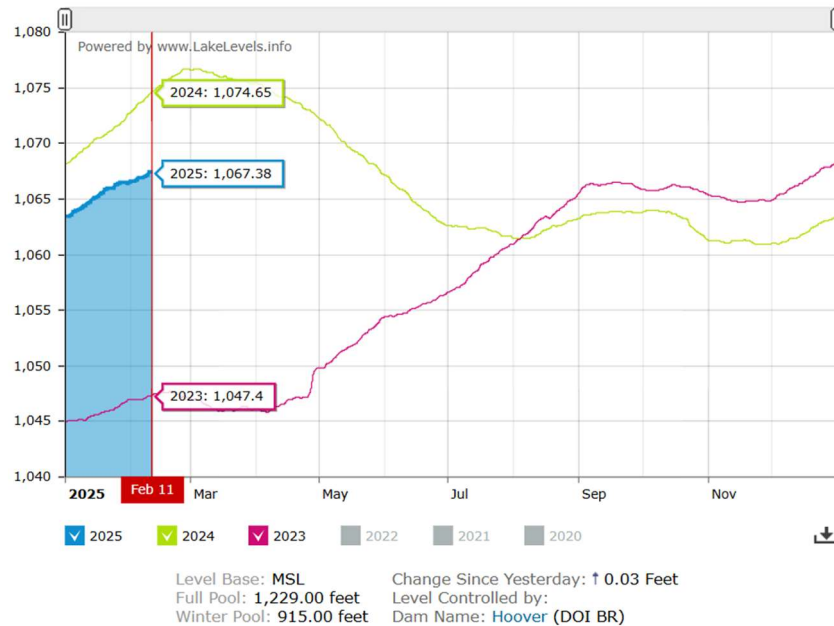
Climate Change

Climate change has affected the southwest region in many ways. Projections for climate change could impact agricultural land with increases in extreme heat and severe drought conditions, which affects crops depending on what stage of the life cycle the agricultural crop is in. The changes with warmer temperatures have resulted in heat waves, less cold weather, and longer frost-free seasons. Crops are affected as they ripen and mature prematurely, which reduces harvest yields. Droughts have caused a shortage to the Colorado River supply. The Colorado River Basin was in a Tier 1 shortage, representing a 512,000-acre foot reduction to the water supply for 2024.



Source: <https://www.cap-az.com/cap-system/planning-and-processes/shortage-impacts/>

The current water level at Lake Mead as of February 11, 2025, is 1,067.38, which would constitute a level between Tier 1 and Tier 2.



Source: <https://mead.uslakes.info/level.asp>

Arizona

Agriculture in Arizona is a more than \$23 billion industry with an estimated 162,000 employed, and about 138,000 supported by the industry. According to the 2022 USDA Census of Agriculture, Arizona has 16,710 total farms encompassing 26 million acres or 40,000 square miles.

For 2023, the USDA reports that hay is the top produced crop in Arizona, at 345,000 acres, with cotton second at 184,000 acres.

2023 Arizona Agriculture Overview

Crops	Acres
Hay	345,000
Cotton	184,000
Corn	105,000
Wheat	38,000
Lettuce	30,200
Pecans	25,000

https://www.nass.usda.gov/Quick_Stats/Ag_Overview/stateOverview.php?state=ARIZONA

For irrigated land in 2022, Arizona reported 4,701 farms with 897,330 acres. This is a reduction of 107 farms and a -1% change from 2017. Maricopa County reports a reduction of farms from the 2017 census, but a gain in acreage for 2022. Pinal County reports a loss of 17 farms over the five years, and an increase of acreage for 2022. Small farms accounted for most losses with most out of business making less than \$1,000 for the year.

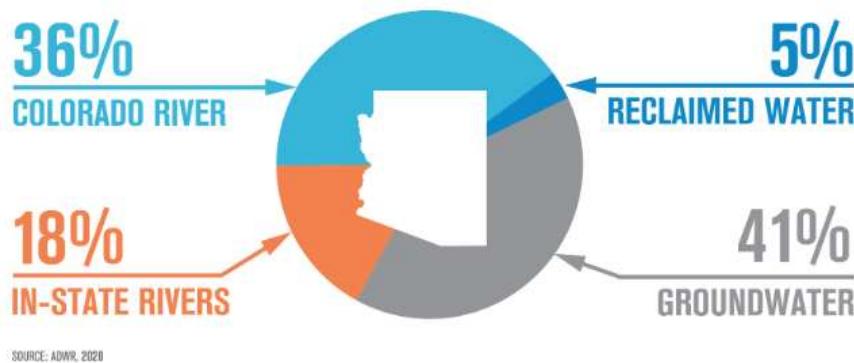
Census of Agriculture Irrigated Land

	2017 Total Farms	2022 Total Farms	Change	% Change	2017 Total Acreage	2022 Total Acreage	Change	% Change
Arizona	4,808	4,701	(107)	-2%	910,883	897,330	(13,553)	-1%
Maricopa	914	654	(260)	-28%	180,214	264,018	83,804	47%
Pinal	449	432	(17)	-4%	232,224	295,876	63,652	27%

**Source: 2017 & 2022 USDA Census of Agriculture*

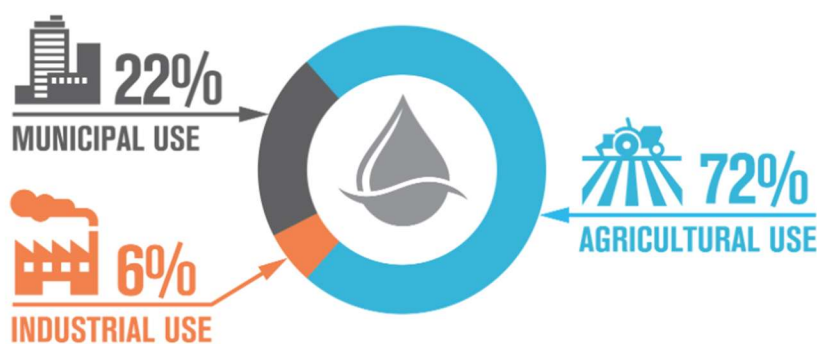
Water

According to the Arizona Department of Water Reclamation, the water supply in Arizona is generally used for three different uses: agricultural, municipal, and industrial use. The largest source of Arizona's water is from groundwater 41%, with water from the Colorado River next at 36%, in-state rivers at 18%, and 5% accounting for reclaimed water.



About 72 percent of the available water supply is consumed by irrigated agriculture, making it the largest user of water in Arizona. This marks a reduction from the high of 90 percent, with the urbanization of agricultural land and by conservation measures with farm and delivery systems. The Department of Water Reclamation is required to conduct a water supply and demand assessment of each groundwater basin in the state at least once every five years.

ARIZONA'S WATER USE BY SECTOR



SOURCE: ADWR, 2020

Arizona requires a majority of water users to be under mandatory conservation requirements. This requires the following to users of agricultural land.

AGRICULTURAL USE



- No new agricultural acreage in production.
- Each farm (Irrigation Grandfathered Right) is assigned a maximum annual groundwater allotment, based on assumed irrigation efficiencies of 65 to 80%.
- Certain farms have enrolled in an optional best management practices program.
- Irrigation district distribution system losses are not to exceed 10%.

Source: ADWR 2020

With the mandatory conservation requirements, many farmers have switched crops due to restrictions. In an article titled “The Future of Water in Arizona” by Mary Beth Faller (<https://news.asu.edu/20221115-arizona-impact-future-water-arizona>), Faller explains, “Change is already happening. A recent survey about the drought by the American Farm Bureau Federation of more than 650 farmers in 15 Western states found that 74% saw a reduction in harvests and 42% switched crops. Among Arizona respondents, 40% removed orchard trees or other multi-year crops because of water restrictions.”

Market Value of Irrigated Cropland

For this analysis, we analyzed various market studies from March of 2011 to 2024. The first shows market values for irrigated cropland that range from \$883/AC in an Arizona survey to \$11,014/AC in Arizona per Acretrader.com. Per market discussions, the farms that have access to the Colorado River water have significant benefit over farms that rely on ground water.

Market Value Studies			
Source	Date	Location	\$/AC
Census of Agriculture	2022	National	\$3,846
Census of Agriculture	2022	Arizona	\$883
Census of Agriculture	2022	Maricopa County, AZ	\$7,203
Census of Agriculture	2022	Pinal County, AZ	\$2,148
Acretrader.com	2022	California	\$11,014
Acretrader.com	2022	Arizona	\$8,546
USDA (Cropland)	Oct-24	National	\$5,570
USDA (Ag Land)	2024	National	\$4,170
USDA (Ag Land)	2024	Arizona	\$4,000
USDA (Ag Land)	2024	California	\$13,400

Rate of Return

Next, we looked at rates of return for irrigated cropland. The rates of return were as low as 2.20% in California and as high as 12.75% per a national survey. Love Appraisals in Cortez Colorado was contracted by the US Forest Service to develop support for the relationship between sales prices and rental rates for government land. Her research indicated that although rates would vary depending upon the type and location of a property that the average conversion factor was 8%. More importantly, her data went back decades and showed a consensus that the rate remained relatively stable despite market conditions, inflation, interest rates, etc.

Rate of Return and Cap Rates			
Source	Date	Location	Rate
Love Appraisals	2004	National	8.00%
Acretrader.com (Rate of Return on Farmland)	2022	National	12.75%
Acretrader.com (Rate of Return on Farmland)	2022	California	6.10%
Acretrader.com (Rate of Return on Farmland)	2022	Arizona	4.00%
Acretrader.com (Cap Rate on Farmland)	2022	Arizona	4.00%
Acretrader.com (Cap Rate on Farmland)	2022	California	2.20%

Inferred Data

We also looked at rates of return inferred from market value and market rent studies, which shows very low rates of return from 0.79% from a sale in Stanfield, AZ to 4.40% from a national survey

by the USDA in 2024, this seems low based on the rate of return and cap rates reported in the prior table.

Rate of Return Inferred from the Market Studies

Source	Date	Location	\$/AC	\$ Rent/AC	Rate of Return
Acretrader.com	2022	California	\$11,014	\$320	2.91%
Acretrader.com	2022	Arizona	\$8,546	\$245	2.87%
USDA (Cropland)	Oct-24	National	\$5,570	\$245	4.40%
ARMLS No. 6535189	2024	Stanfield, AZ Sale	\$7,984	\$63	0.79%

Utilizing a 6% rate of return shows that the rental rates range from as low as \$53/AC to as high as \$661/AC. Utilizing a 10% rate of return shows that the rental rates range from as low as \$88/AC to as high as \$1,101/AC.

Rate of Return

Source	Date	Location	\$/AC	6% Rate of Return	10% Rate of Return
Census of Agriculture	2022	National	\$3,846	\$231	\$385
Census of Agriculture	2022	Arizona	\$883	\$53	\$88
Census of Agriculture	2022	Maricopa County, AZ	\$7,203	\$432	\$720
Census of Agriculture	2022	Pinal County, AZ	\$2,148	\$129	\$215
Acretrader.com	2022	California	\$11,014	\$661	\$1,101
Acretrader.com	2022	Arizona	\$8,546	\$513	\$855
USDA (Cropland)	Oct-24	National	\$5,570	\$334	\$557
USDA (Ag Land)	2024	National	\$4,170	\$250	\$417
USDA (Ag Land)	2024	Arizona	\$4,000	\$240	\$400
USDA (Ag Land)	2024	California	\$13,400	\$804	\$1,340

Market Rent Studies

Based on our research, rental rates for irrigated cropland ranges from \$63/AC for a property in Stanfield, Arizona to \$800 for cropland in the Gila Valleys. The ground rental rates vary to a large degree based on soil conditions, source of water, crop type, farm size, and other factors.

Market Rent Studies

Source	Date	Location	\$ Rent/AC
Southwest Agricultural Services (1)	Mar-11	Pinal County, AZ	\$150
Robert J. Moody and Associates (2)	Mar-11	Gila Valleys, AZ	\$600-\$800
Robert J. Moody and Associates (3)	Mar-11	Yuma Valley, AZ	\$100-\$175
Southwest Farm Credit Services (4)	Mar-11	Imperial County, CA	\$100-\$225
Acretrader.com (5)	2022	California	\$320
Acretrader.com (6)	2022	Arizona	\$245
ASFRMA AG Forum (7)	2023	Maricopa Stanfield Irrigation and Drainage	\$150-\$225
ASFRMA AG Forum (8)	2023	Hohokam Irrigation and Drainage District	\$150-\$200
ASFRMA AG Forum (9)	2023	San Carlos Irrigation and Drainage District	\$50-\$200
ASFRMA AG Forum (10)	2023	New Magma Irrigation and Drainage District	\$150-\$200
USDA (11)	2024	National	\$245
Census of Agriculture (12)	2024	Arizona	\$343
Census of Agriculture (13)	2024	Maricopa County, AZ	\$256
Census of Agriculture (14)	2024	Pinal County, AZ	\$174
ARMLS No. 6535189	2024	Stanfield, AZ Sale	\$63.38

(1) <https://www.farmprogress.com/marketing/crop-prices-elevate-arizona-farmland-lease-rates>

(2) <https://www.asfmraaz.com/forum/2012/Papers/Moody%20Yuma.pdf>

(3) <https://www.asfmraaz.com/forum/2012/Papers/Moody%20Yuma.pdf>

(4) <https://www.asfmraaz.com/forum/2011/Imperial%20County%20R.pdf>

(5) <https://acretrader.com/resources/farmland-values/rankings?type=all&period=20#rent>

(6) <https://acretrader.com/resources/farmland-values/rankings?type=all&period=20#rent>

(7) <https://www.asfmraaz.com/forum/2024/Presentations/Pendleton%20->

(8) <https://www.asfmraaz.com/forum/2024/Presentations/Pendleton%20->

(9) <https://www.asfmraaz.com/forum/2024/Presentations/Pendleton%20->

(10) <https://www.asfmraaz.com/forum/2024/Presentations/Pendleton%20->

(11) <https://www.nass.usda.gov/Publications/AgCensus/2022/index.php>

(12) https://www.nass.usda.gov/Publications/AgCensus/2022/Full_Report/Census_by_State/Arizona/index.php

(13) https://www.nass.usda.gov/Publications/AgCensus/2022/Full_Report/Census_by_State/Arizona/index.php

(14) https://www.nass.usda.gov/Publications/AgCensus/2022/Full_Report/Census_by_State/Arizona/index.php

Conclusions

For this analysis we considered various market studies, water availability, tariffs, immigration, and climate. Values and rental rates vary based on differences in soils, crop types, crop size, and water availability. The lower end of the range is for lower return crops such as cotton, hay, small grains, alfalfa, and other lower return crops with inferior soil conditions and water availability. The higher end of the range is for produce and higher return crops with better soil conditions and water availability. Most rates will likely be somewhere in between, depending on the crop type(s), soil conditions, and water availability.

The trend seems to be generally stable to a slow decline with some headwinds including water availability/costs, hotter and drier climate, tariffs, and labor shortages. Farmers continue to be creative and change crops based on supply/demand, and have superior technology and data than prior generations of farmers. Another consideration in Arizona is that metropolitan areas around

the state are encroaching on agriculture areas, and the highest and best use of the land changes from an agriculture use to a single-family residential development, or another intensive use of the property. Change is inevitable, and agriculture will continue to be a staple of Arizona in the foreseeable future.

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